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PARASITIC WASPS OF THE GENUS *TRIMORUS* IN NORTH
AMERICA

By ROBERT M. FOUTS

ARNOLD FOERSTER established the genus *Trimorus* in 1856,¹ indicating as representatives *Gryon nanno* Walker and *Gryon phlias* Walker. These two species differed from other species of *Gryon* Walker in having the parapsidal grooves distinct, the metanotum armed with a strong though short spine, and the abdomen elongate. Foerster, not having before him any specimens referable to *Trimorus*, stated erroneously that the genus was characterized by having the marginal vein short and the postmarginal vein very long. According to Kieffer² the types of *nanno* and *phlias* have the marginal vein very long and the postmarginal vein absent. Ashmead in 1893³ perpetuated Foerster's error when he redescribed *Trimorus* and included his new species *americanus*. This species has been made the type of the genus *Protrimorus* Kieffer.

Ashmead's numerous species of *Prosacantha*⁴ were removed from that genus by Kieffer in 1908,⁵ and, since they differed from *Hoplogryon* Ashmead only in the relative length and width of the petiole, a character of doubtful generic value, they were referred to that genus.

Alan P. Dodd, in 1930,⁶ wrote a paper on the Australian Teleasinae in which he described many new Australian species and discussed the relationships of the genera, presenting a key to all those recognized by him. He showed that the two genera *Trimorus* Foerster and *Hop-*

¹ Hymenopterologische Studien, vol. 2, pp. 101, 104, 1856.

² Ann. Soc. Sci. Bruxelles, vol. 32, p. 191, 1908.

³ U. S. Nat. Mus. Bull. 45, p. 138, 1893.

⁴ *Ibid.*, pp. 185-198.

⁵ Ann. Soc. Sci. Bruxelles, vol. 32, p. 200, 1908.

⁶ Proc. Linn. Soc. New South Wales, vol. 55, pp. 41-91, 1930.

logryon Ashmead, which allegedly differ only in having the parapsidal grooves complete or incomplete (sometimes absent), cannot be separated. Several species are described in Mr. Dodd's paper which have the parapsidal grooves present in the male but absent in the female. I have found that it is sometimes difficult to determine whether the parapsidal grooves are complete or even whether they are present at all.

More recently, G. E. J. Nixon, of the British Museum, has written a paper on African Teleasinae⁷ in which he describes, with accompanying keys and numerous excellent illustrations, 3 new species of *Trimorus*, 24 new species of *Hoplogryon*, and 1 new genus (with 3 new species), all from South Africa, except one species from Kenya and one from Nyassaland. His new genus *Macrogyron* may be synonymous with *Gryonoides* Dodd (1919), differing, as far as I can determine from the descriptions, only in the larger size of its representatives and in having the eyes pubescent.

Little is known of the habits of the wasps belonging to the subfamily Teleasinae. In Europe one species of *Trimorus* and one of *Teleas* are parasites of a species of *Scolytus*; one species of *Trimorus* and one of *Teleas* are guests of *Lasius fuliginosus* (Latreille); one species of *Paragryon* is a guest of *Lasius flavus* (Fabricius); and one species of *Trimorus* was reared from the gall of *Rhabdophaga rosaria* Loew. In the United States *Trimorus bethunei* (Sanders) is recorded as a guest of *Formica subrufa* Roger, and *Trimorus caraborum* (Riley) is recorded as being parasitic in the eggs of the carabid beetle *Chlaenius impunctifrons* Say.

The following key may be used to separate the genera of the subfamily Teleasinae:

- | | |
|---|-----------------------------|
| 1. Second abdominal segment longer than third..... | Gryon Haliday |
| Second abdominal segment shorter than third..... | 2 |
| 2. Scutellum armed with a spine on each side..... | 3 |
| Scutellum unarmed..... | 4 |
| 3. Eyes bare; body 2 mm. or less in length..... | Gryonoides Dodd |
| Eyes clothed sparsely with fairly long hairs; body not less than 4.8 mm. in length..... | Macrogyron Nixon |
| 4. Legs stout, the femora thickened..... | 5 |
| Legs slender, the femora not thickened..... | 6 |
| 5. Metanotum with one tooth or spine..... | Teleas Latreille |
| Metanotum bidentate..... | Gryonella Dodd |
| 6. Male antenna with whorls of long hairs; parapsidal grooves deep and abbreviated..... | Xenomereus Walker |
| Male antennae merely pubescent; parapsidal grooves absent or delicate, not deep..... | 7 |
| 7. Metanotum unarmed..... | Paragryon Kieffer |
| Metanotum with one tooth or spine..... | Trimorus Foerster |
| Metanotum with three teeth or spines..... | Trissacantha Ashmead |

⁷ Ann. Mag. Nat. Hist., ser. 10, vol. 17, pp. 114-191, 18 figs., 1936.

Genus TRIMORUS Foerster ⁸

- Trimorus* FOERSTER, Hymenopterologische Studien, vol. 2, pp. 101, 104, 1856.—KIEFFER, Ann. Soc. Sci. Bruxelles, vol. 32, p. 191, 1908; Genera insectorum, fasc. 80B, p. 98, 1910; Das Tierreich, Lief. 48, pp. 176–182, 1926.—DODD, Proc. Linn. Soc. New South Wales, vol. 55, pp. 41–91, 1930.—NIXON, Ann. Mag. Nat. Hist., ser. 10, vol. 17, pp. 116–123, 1936.
- Prosacantha* THOMSON (*non* Nees, 1834), Öfv. Vet.-Akad. Förh., vol. 15, pp. 421–431, 1859.—ASHMEAD, U. S. Nat. Mus. Bull. 45, pp. 185–198, 1893.—KIEFFER, Ann. Soc. Sci. Bruxelles, vol. 30, p. 162, 1906.—BRUES, Genera insectorum, fasc. 80, pp. 21–22, 1908; Connecticut Geol. Nat. Hist. Surv. Bull. 22, p. 552, 1916.
- Hoplogryon* ASHMEAD, U. S. Nat. Mus. Bull. 45, pp. 200–205, 1893.—KIEFFER, Ann. Soc. Sci. Bruxelles, vol. 32, pp. 200–238, 1908.—BRUES, Genera insectorum, fasc. 80, p. 159, 1908.—KIEFFER, Spécies des hyménoptères d'Europe et d'Algérie, vol. 11, p. 168, 1913; Das Tierreich, Lief. 48, pp. 182–234, 1926.—NIXON, Ann. Mag. Nat. Hist., ser. 10, vol. 17, pp. 123–141, 161–181, 1936.
- Pentacantha* KIEFFER (part), Ann. Soc. Sci. Bruxelles, vol. 32, pp. 239–250, 1908; (part) Genera insectorum, fasc. 80B, p. 93, 1910.
- Hemimorus* CAMERON, Soc. Ent., Stuttgart, Jahrg. 27, p. 77, 1912.
- Propentacantha* KIEFFER (part), Das Tierreich, Lief. 48, p. 251, 1926.

The more important characters of the genus are as follows: Head transverse; ocelli close together, the lateral ones remote from the eye margin; antennae 12-jointed in both sexes, in the female with a compact 6-jointed club, in the male filiform, the flagellar joints usually long; thorax stout; pronotum not or scarcely visible from above; parapsidal grooves absent, complete, or partly complete; scutellum semicircular, unarmed; metanotum with one tooth or spine which may be very short, hardly distinguishable, or long, extending well over the petiole; propodeum short, frequently armed with a tooth at the posterior angles; front wings often abbreviated, in one Nearctic species absent; marginal vein very long, much longer than the stigmal vein; radius short; postmarginal vein absent; abdomen rather short, broadly oval, narrowed at base; first segment subpetiolate, sometimes with a slight basal prominence in the female; third segment the longest; segments 4–6 short.

CHARACTERS USED IN CLASSIFICATION

Characters found in the surface sculpture of the frons, mesonotum, and the first three tergites of the abdomen have proved to be the most useful and reliable. A median carina usually extends from the bases of the antennae all the way to the anterior ocellus. In one species this carina is entirely absent and in several others it is shortened above, not present below the ocellus. All the species known to the author have striations on the frons. These striae are usually short, but in some species they tend to become longer and sometimes extend the

⁸ Order Hymenoptera: family Scelionidae: subfamily Teleasinae.

entire length of the frons. The upper half of the frons may be reticulate, punctate, striate, without sculpture, or it may be reticulate and punctate, the clearness and depth of the markings different in various species.

The mesonotum may have a fine sculpture, in which case it is usually more or less distinctly scaly-reticulate, sometimes more or less wrinkled anteriorly, or it may have a much coarser sculpture, in which case it is punctate or variously wrinkled, not usually distinctly reticulate. The parapsidal grooves may be complete or nearly complete whether the general surface sculpture is fine or coarse, but they are usually shorter in those species with fine mesonotal sculpture. When the sculpture is strong the parapsidal grooves are often traced only with difficulty. It is sometimes difficult to make sure that the groove one is trying to follow is not just one of many furrows in a much wrinkled surface. Wrinkles posteriorly on the mesonotum appear always to run longitudinally; those situated anteriorly are apparently always directed transversely.

The shape and sculpture of the first, second, and third tergites present many characters of value in separating species and groups of species. The petiole varies, in different species, from broadly transverse to distinctly longer than wide (measured across base). The dorsal surface is always traversed by longitudinal ridges separated by more or less profound grooves. In the majority of the Nearctic species these ridges extend the entire length of the segment or nearly so. Several species, however, have the ridges very short, present only across the middle. In the female the petiole may be protuberant anteriorly, the longitudinal ridges not present on the swollen portion. A trough-shaped depression sometimes crosses the petiole, the ridges traversing it. In several species the anterior margin is narrowly reflexed.

The second tergite is always, as far as the author knows, wider (measured across base) than long, but the proportions are somewhat different in the various species. Like the petiole this segment is traversed by longitudinal ridges, or by deep grooves with the upper edges of the intervening ridges on a level with the general surface. Usually the ridges are longest medially, becoming progressively shorter as they approach the lateral margins. A few species have all the ridges equally long, their termini forming a straight line parallel with the posterior margin. In some species with shorter lateral ridges the second tergite is reticulate toward the sides.

Unlike the petiole and the second tergite the third tergite has no set form of sculpture. The surface may be partly or entirely striate, partly or entirely reticulate with the enclosed areas varying in size and the impressions varying in depth, or punctate, the pits varying in

size, depth, and number, or without sculpture of any kind, the surface smooth and polished. Punctures may accompany striation or reticulation or they may be the only type of sculpture present. Whatever the kind or kinds of sculpture present the lateral margins are usually broadly and the posterior margin narrowly smooth and polished, without sculpture. Pubescence may be evenly distributed over the surface of the segment or may be sparser medially. In a number of instances pubescence is entirely lacking medially.

There are, of course, a number of other characters more or less of value in classifying the species of this genus. The comparative and actual length of the front wing, the comparative lengths and widths of the head, thorax, abdomen, and antennal joints, and the colors of the body and appendages are all characters of importance in certain instances.

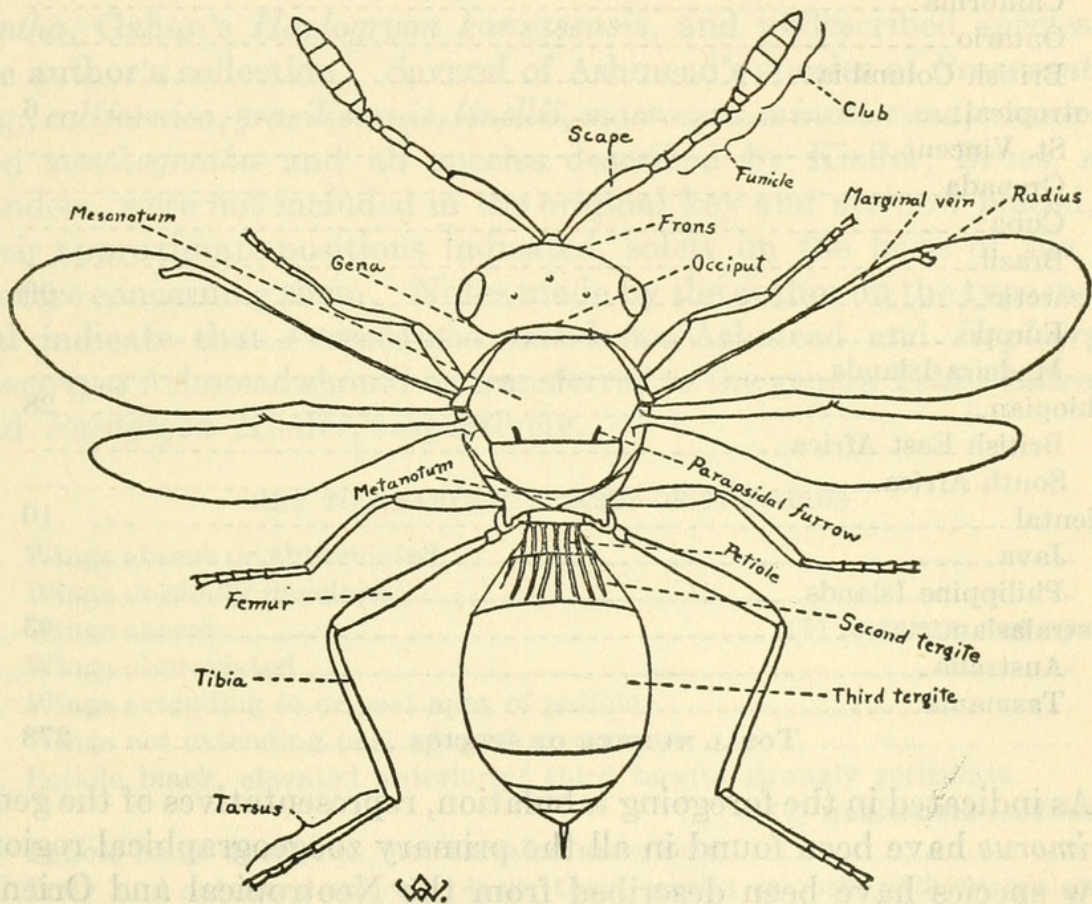


FIGURE 13.—Structure of *Trimorus*: Female of *Trimorus nigricoxa*, new species. Drawn by Oscar Whittaker.

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES

REGION	NUMBER OF SPECIES
Nearctic.....	92
New York.....	11
Pennsylvania.....	4
District of Columbia.....	17
Maryland.....	16
Virginia.....	10
Carolina.....	1
Florida.....	7
Iowa.....	1
Kansas.....	1
Illinois.....	1
Texas.....	4
Nevada.....	1
Utah.....	2
Oregon.....	1
California.....	2
Ontario.....	6
British Columbia.....	22
Neotropical.....	6
St. Vincent.....	3
Grenada.....	1
Cuba.....	1
Brazil.....	1
Palaearctic.....	99
Europe.....	98
Madeira Islands.....	1
Ethiopian.....	28
British East Africa.....	2
South Africa.....	26
Oriental.....	10
Java.....	3
Philippine Islands.....	7
Australasian.....	43
Australia.....	42
Tasmania.....	1
TOTAL NUMBER OF SPECIES.....	278

As indicated in the foregoing tabulation, representatives of the genus *Trimorus* have been found in all the primary zoogeographical regions. Few species have been described from the Neotropical and Oriental Regions. This paucity of described species is no indication that the genus is poorly represented but rather that little collecting has been done. It is probable that many undescribed species occur in these regions.

It may be observed that the total for the figures in the right hand column is somewhat greater than that for the figures on the left. This is so because some species have been recorded from more than one of the areas listed. A few species occur in widely separated areas in North America. *T. brevicarinatus*, for instance, is known to occur in

Maryland, District of Columbia, and Texas. *T. melanopus*, originally described from Ontario, has recently been collected in British Columbia. No species, so far as known, occurs in any two of the six primary zoogeographical regions.

Alan P. Dodd, Oscar Whittaker, and G. E. J. Nixon have contributed greatly to our knowledge of the species of Australia, of British Columbia, and of South Africa. All the 43 Australasian species of *Trimorus* have been described by Mr. Dodd. All the 22 new species from British Columbia are described from material collected by Mr. Whittaker. His generosity in sending this material to the author for study has made possible a substantial increase in our knowledge of Nearctic species. All but one of the 28 Ethiopian species were described by Mr. Nixon.

The key presented herewith is a development and expansion of a preliminary one prepared by the author in 1926. This included all Ashmead's species of *Hoplogryon*, some of Ashmead's species of *Prosacantha*, Gahan's *Hoplogryon kansasensis*, and undescribed species in the author's collection. Several of Ashmead's species of *Prosacantha*, e. g., *californica*, *gracilicornis*, *linellii*, *macrocera*, *minutissima*, *schwarzii*, and *xanthognatha* and all species described by Kieffer, Brues, and Sanders, were not included in the original key and are now placed, or their approximate positions indicated, solely on the basis of the literature concerning them. Notes made by the author on the type material indicate that *Prosacantha americana* Ashmead and *Hoplogryon obscuripes* Ashmead should be transferred to the genera *Teleas* Latreille and *Paragryon* Kieffer, respectively.

KEY TO NEARCTIC SPECIES OF TRIMORUS

1. Wings absent or abbreviated..... 2
 Wings normally developed..... 17
2. Wings absent..... (1) **apterus**, new species
 Wings abbreviated..... 3
3. Wings extending to or past apex of petiole..... 4
 Wings not extending past apex of propodeum..... 8
4. Petiole black, elevated anteriorly; third tergite strongly reticulate.
 (2) **utahensis** (Ashmead)
 Petiole black or reddish, not elevated anteriorly..... 5
5. Body and antennae entirely black; third tergite smooth, without sculpture.
 (3) **formosus**, new species
 Petiole reddish; third tergite reticulate, if punctate then with striae
 basally..... 6
6. Thorax mostly reddish; proximal four antennal joints and legs yellow... 7
 Thorax black or very dark brown; antennae black or dark brown, scape brown-
 ish basally; legs yellow to light brown..... (4) **bruesi** (Kieffer)
7. Wings extending to apex of petiole, ciliated; mesonotum strongly punctate,
 punctures almost confluent; third tergite smooth, with a few scattered
 punctures; mandibles with two long, equal teeth..... (5) **grandis** (Brues)

- Wings extending to about middle of second tergite, not ciliated; mesonotum not so strongly punctate, punctures for most part clearly separated; third tergite irregularly striate toward base, with sparse scattered punctures; left mandible with three teeth..... (6) **pulchricornis**, new species
8. Third tergite closely punctate, not reticulate..... (7) **crassellus**, new name
Third tergite not closely punctate, distinctly reticulate..... 9
9. Legs, reddish yellow..... (8) **solitarius** (Ashmead)
Legs mostly darker..... 10
10. Frons just below anterior ocellus not or very delicately sculptured..... 11
Frons just below anterior ocellus strongly sculptured..... 12
11. Frons with a very fine impressed line from antennae to anterior ocellus, without striae around base of this impressed line; third tergite 1.4 times as wide as long..... (9) **nitidus**, new species
Frons with a distinct impressed median line, striate just above antennae; third tergite 1.5 times as wide as long..... (10) **exilis**, new species
12. Frons strongly convex; head about one and one-fourth times as wide as long.
(11) **crassiceps**, new species
Frons not strongly convex; head about twice as wide as long..... 13
13. Petiole with a trough-shaped depression across middle..... 14
Petiole not depressed across middle..... 15
14. Third tergite faintly reticulate; posterior tibiae reddish brown.
(12) **punctithorax**, new species
Third tergite with impressed reticulation; posterior tibiae dark brown, reddish yellow basally..... (13) **subapterus**, new species
15. Legs brownish; coxae brown..... (14) **rufosignatus** (Kieffer)
Coxae, femora, and tibiae (except the latter proximally) black or very dark brown..... 16
16. Body 1.42 mm. in length..... (15) **robustus**, new species
Smaller, body 1.18 mm. in length..... (16) **finitimus**, new species
17. Parapsidal grooves more or less well defined, complete or nearly so..... 18
Mesonotum variously sculptured, parapsidal grooves sometimes partly indicated, never complete and always more or less obscured by sculpture. 31
18. Mesonotum punctate, striate posteriorly..... 19
Mesonotum may be either partly punctate or partly striate but not both. 20
19. Mesonotum rugose anteriorly; scutellum smooth, slightly roughened at anterior margin; parapsidal grooves distinct entire length of mesonotum..... (17) **pallidipes** (Ashmead)
Mesonotum not rugose anteriorly; scutellum strongly reticulate, high ridges separating enclosed areas; parapsidal grooves perceptible but not sharply defined, difficult to detect posteriorly in coarse sculpture.
(18) **striopunctatus**, new species
20. Third tergite with sculpture..... 21
Third tergite without sculpture..... 26
21. Third tergite punctate, not striate toward base.
(19) **erythrogaster**, new species
Third tergite striate toward base 22
22. Mesonotum longitudinally striate posteriorly (20) **sulcatus** (Kieffer)
Mesonotum not striate..... 23
23. Scape entirely light yellowish brown (21) **erythropus** (Ashmead)
Scape black entirely or in part 24
24. Scape yellow basally; legs yellow or light brown.. (22) **crosbyi**, new species
Scape entirely black; legs mostly dark brown..... 25

25. No median carina on upper half of frons; ridges on second tergite nearly reaching apex of segment..... (23) **distinctus**, new species
 A sharp median carina to anterior ocellus; ridges medially on second tergite not extending past basal two-thirds..... (24) **percurrans**, new species
26. Petiole black or faintly reddish brown; coxae black or dark brown..... 27
 Petiole and base of second tergite reddish yellow; coxae light yellowish brown..... (25) **minutus**, new species
27. Parapsidal grooves not present anteriorly (26) **tenuicornis** (Kieffer)
 Parapsidal grooves complete 28
28. Frons with a few short striae immediately below anterior ocellus; wings brownish; species larger, about 1.7 mm. in length..... 29
 Frons without striae below anterior ocellus; wings hyaline; species smaller, about 1.0 mm. in length..... 30
29. Mesonotum not roughened (except posteriorly where it is irregularly striate), reticulate, the areas very minute; scutellum smooth, with a few scattered punctures, with only a few fine scattered hairs. (27) **lionotus**, new species
 Mesonotum roughened, scaly-punctate, not irregularly striate posteriorly; scutellum rather thickly pubescent, scaly-punctate anteriorly.
 (28) **pictus**, new species
30. Mesonotum with a very fine scaly-reticulate sculpture; second tergite with ridges medially on basal two-thirds..... (29) **improcerus**, new species
 Mesonotum with similar but stronger sculpture; second tergite with ridges medially on basal four-fifths (30) **notabilis**, new species
31. Third tergite striate or with low ridges, at least in part..... 32
 Third tergite not striate and without low ridges..... 50
32. Petiole and thorax (in part) reddish..... (31) **varius**, new species
 Thorax black or dark brown (dark reddish brown laterally, black above in *flavicoxa*) 33
33. Posterior coxae light in color..... 34
 Posterior coxae black or mostly black..... 45
34. Striae usually strong, extending past middle of third tergite..... 35
 Striae not extending past middle of third tergite, or striae few, and, though extending past middle, very fine and interrupted..... 40
35. Third tergite with numerous large punctures. (32) **marylandicus** (Ashmead)
 Third tergite not punctate or with only a few small punctures laterally... 36
36. Frons with a strong median carina; upper frons striate..... 37
 Frons without a median carina or with a short low carina below..... 38
37. Scape brownish basally; striae on frons interrupted medially on each side of median carina; striae in middle of third tergite shorter, scarcely extending past middle..... (33) **striatifrons** (Ashmead)
 Scape black; striae on frons not interrupted medially; all striae on third tergite of equal length, nearly attaining apex of segment.
 (34) **rubripes**, new species, **rufocoxalis**, new variety
38. Frons punctate above; mesonotum posteriorly punctate; metanotal spine long and sharp; lateral angles of propodeum prominent, acute; striae on third tergite strong and regular, especially medially; petiole black.
 (35) **kansasensis** (Gahan)
 Frons without distinct sculpture above; mesonotum posteriorly not punctate; metanotal spine short, inconspicuous; striae on third tergite not so strong, more or less irregular and confluent..... 39
39. Mesonotum posteriorly longitudinally striate; petiole yellowish brown, lighter in color than rest of abdomen..... (36) **striativentris** (Ashmead)
 Mesonotum reticulate; abdomen mostly reddish brown.
 (37) **repentinus**, new species

40. Legs mostly dark brown.....(38) **brunneipes**, new species
 Legs mostly lighter in color..... 41
41. Mesonotum anteriorly finely punctate..... 42
 Mesonotum anteriorly coarsely punctate..... 43
42. Petiole elevated anteriorly..... (39) **pusillus** (Ashmead)
 Petiole not elevated anteriorly..... (40) **columbianus** (Ashmead)
43. Scape and pedicel light reddish brown..... (41) **flavicoxa** (Ashmead)
 Scape not entirely light reddish brown..... 44
44. Frons not striate except shortly below and narrowly laterally.
 (42) **xanthopus**, new species
 Frons entirely strongly striate..... (43) **fuscipennis** (Ashmead)
45. Third tergite not distinctly punctate..... 46
 Third tergite punctate..... 47
46. Third sternite strongly striate..... 48
 Third sternite not striate; mesonotum coarsely and thickly punctate.
 (44) **nigripes** (Ashmead)
47. Third antennal joint about twice as long as thick.
 (45) **jucundus**, new species
 Third antennal joint about four and one-half times as long as thick.
 (46) **caraborum** (Riley)
48. Frons entirely strongly carinate.
 (34) **rubripes**, new species, **rubripes**, new variety
 Frons with at least a median area that is not carinate..... 49
49. Frons above with strong beadlike sculpture; striae on third tergite few and
 extending only slightly past middle..... (47) **leonardi**, new species
 Frons without beadlike sculpture; striae on third tergite numerous and
 nearly attaining apex..... (48) **punctiventris** (Ashmead)
50. Thorax reddish laterally and partly reddish above..... 51
 Thorax black above at least..... 52
51. Antennal joints 3, 4, and 5 reddish brown... (49) **annulicornis** (Ashmead)
 Antennal joints 3, 4, and 5 black..... (50) **pleuralis** (Ashmead)
52. Petiole reddish or yellowish, lighter than rest of abdomen..... 53
 Petiole not decidedly lighter than rest of abdomen..... 56
53. Third tergite reticulate..... 54
 Third tergite closely punctate..... (51) **sculpturatus**, new species
54. Only basal half of second tergite with grooves... (52) **petiolatus**, new species
 Grooves nearly attaining apex of second tergite..... 55
55. Mesonotum thickly punctate, subopaque; petiole red; legs reddish brown,
 the coxae dark brown; petiole about one and one-third times as wide as
 long..... (53) **rufocinctus**, new series
 Mesonotum with a moderately fine sculpture, reticulate-punctate; petiole
 yellowish, about one and one-half times as wide as long; legs, including
 coxae, light brown..... (54) **flavocinctus**, new species
56. Third tergite without sculpture or very faintly reticulate (*pennsylvanica*) or
 aciculate..... 57
 Third tergite distinctly reticulate..... 65
 Third tergite punctate..... (55) **xanthognathus** (Ashmead)
57. Third tergite without sculpture or with a few fine punctures laterally... 58
 Third tergite faintly reticulate or aciculate..... 61
58. Upper part of frons smooth, without sculpture..... 59
 Upper part of frons with sculpture..... (56) **clarus**, new species
59. Second tergite with carinae or ridges at base only.
 (57) **californicus** (Ashmead)
 Ridges on second tergite extending at least to apical fourth..... 60

60. Parapsidal grooves briefly indicated posteriorly; wings not quite reaching tip of abdomen..... (58) **silvaticus**, new species
 Parapsidal grooves absent; wings extending past apex of abdomen. (59) **crassicornis** (Kieffer)
61. Posterior coxae entirely yellowish brown..... 62
 Posterior coxae mostly darker..... 64
62. Abdomen longer than the head and thorax combined. (60) **virginiensis** (Kieffer)
 Abdomen about as long as the head and thorax combined..... 63
63. Mesonotum subopaque, slightly roughened; wings hyaline. (61) **claripennis** (Ashmead)
 Mesonotum obscurely delicately sculptured; wings brownish. (62) **concinus**, new name
64. Metanotal spine nearly as long as petiole -- (63) **pennsylvanicus** (Ashmead)
 Metanotal spine less than half as long as petiole. (64) **brevicarinatus**, new species
65. Mesonotum with large scattered punctures anteriorly. (65) **punctiger**, new species
 Mesonotum without large scattered punctures..... 66
66. Mesonotum with sculpture rather strong..... 67
 Mesonotum with fine sculpture..... 73
67. Frons above punctate, not reticulate..... (66) **nanus** (Ashmead)
 Frons above not or extremely finely punctate..... 68
68. Frons above reticulate..... 69
 Frons above without distinct sculpture or with a few extremely small scattered punctures..... 72
69. Frons above with very close impressed reticulation, granular in appearance..... 70
 Frons not granular in appearance..... 71
70. Scape dark reddish brown; femora and tibiae light brownish. (67) **longipennis** (Ashmead)
 Scape piceous; femora and tibiae very dark brown. (68) **nigricoxa**, new species
71. The very close and fine reticulation on third tergite somewhat obscured by evenly distributed pubescence..... (69) **whittakeri**, new species
 Third tergite without pubescence medially on anterior half. (70) **obscurus**, new species
72. Legs, including coxae, mostly light brown..... (71) **bilineatus** (Ashmead)
 Legs, including coxae, mostly black..... (72) **pulchellus**, new species
73. Grooves on petiole not extending to anterior margin of segment..... 74
 Grooves on petiole extending to anterior margin..... 77
74. Legs, except trochanters, dark brown..... 75
 Legs, except coxae and most of tibiae, light brownish or reddish brown.. 76
75. Body black, a little over 1 mm. in length..... (73) **vinctus**, new name
 Body somewhat lighter in color, a rather dark reddish brown; length about 0.9 mm..... (74) **monticola**, new species
76. Petiole elevated anteriorly; posterior tibiae fuscous.. (75) **texanus**, new species
 Petiole not elevated anteriorly; posterior tibiae brown.. (76) **minor**, new species
77. Frons reticulate over most of its surface..... 78
 Frons not reticulate over most of its surface..... 79
78. Mesonotum distinctly reticulate (77) **melanopus** (Ashmead)
 Mesonotum indistinctly reticulate..... (78) **reticulatus**, new species
79. Petiole longer than wide..... 80
 Petiole much wider than long, not elevated anteriorly..... 81

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 "Face and cheeks strongly striated"----- (80) *schwarzii* (Ashmead)
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83. Vertex, and frons just in front of median ocellus, reticulate with distinct punctures----- (83) *amabilis*, new species
 Vertex and frons without distinct sculpture----- (84) *lepidus*, new species

(1) *TRIMORUS APTERUS*, new species

Female.—Length 0.82 mm. Head about twice as wide as long, about one and one-seventh times as wide as the thorax; occiput, vertex, and mesonotum with dense impressed reticulation; upper half of frons pubescent and finely reticulate; below on the sides the frons is striate; just above these striae on each side is a small reticulate area; median carina very fine, apparently not quite attaining the anterior ocellus; frons except as noted above smooth, without sculpture; scutellum smooth, reticulate anteriorly; parapsidal grooves very short; spine on metanotum short, a mere tubercle, acute at apex; thorax about as wide as long; lateral angles of propodeum scarcely projecting; wings wanting; abdomen not quite one and two-thirds times as long as wide, 2.2 times as long as the thorax, 1.3 times as wide as the thorax; petiole about twice as wide as long, with 9 or 10 grooves extending its entire length; second tergite twice as wide as long, twice as long as the petiole, with numerous small ridges extending to apical fifth, the grooves between the ridges are deep anteriorly but shallow and with flat bottoms posteriorly; third tergite one and one-third times as wide as long, 2.6 times as long as the second, pubescent, sparsely so medially, and with faint reticulation anteriorly, apparently without sculpture posteriorly; dark brown; legs yellowish brown, the femora and tibiae in part somewhat darker.

Type locality.—Washington, D. C.

One specimen collected May 20, 1915, by the author.

Type.—U.S.N.M. No. 57773.

(2) *TRIMORUS UTAHENSIS* (Ashmead)

Prosacantha utahensis ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 189, 1893 (female).—

BRUES, *Genera insectorum*, fasc. 80, p. 23, 1908.

Hoplogryon utahensis, KIEFFER, *Genera insectorum*, fasc. 80B, p. 95, 1910; Das Tierreich, vol. 48, p. 229, 1926.

Type locality.—Park City, Utah.

Type.—U.S.N.M. No. 24498.

(3) *TRIMORUS FORMOSUS*, new species

Female.—Length 1.27 mm. Head about twice as wide as long, nearly 1.3 times as wide as the thorax, not quite so wide as the abdomen; occiput with dense impressed reticulation; vertex finely reticulate; frons without sculpture except some indistinct markings above, with a fine suture from antennae to anterior ocellus; mesonotum, scutellum laterally, second tergite laterally, third tergite laterally and posteriorly, and following tergites with short white pubescence; mesonotum roughly scaly reticulate; parapsidal grooves present on posterior half of mesonotum; scutellum smooth, somewhat roughened anteriorly; spine on metanotum rather short, acute; abdomen 1.7 times as long as wide, 1.9 times as long as the thorax; petiole slightly wider than long, with 8 or 9 longitudinal grooves extending its entire length (except for the very narrow anterior and posterior margins); second tergite 1.4 times as wide as long, one and one-third times as long as the petiole, with 9 or 10 deep grooves separated by narrow ridges to posterior third; third tergite 1.2 times as wide as long, 2.6 times as long as the second, smooth, without sculpture, anterior wings extending nearly to the middle of the third tergite, about four times as long as wide; black; legs brown, the front and middle tibiae darker in part.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57774.

One specimen collected June 5, 1927, by Oscar Whittaker.

(4) *TRIMORUS BRUESI* (Kieffer)

Prosacantha brachyptera ASHMEAD, Can. Ent., vol. 20, p. 50, 1888 (female).

Hoplogryon bachypterus, ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 204, 1893 (female).—

HARRINGTON, Trans. Roy. Soc. Canada, ser. 2, sect. 4, p. 185, 1899 (male).—

BRUES, Genera insectorum, fasc. 80, p. 25, 1908.—FOUTS, Cornell. Univ. Mem. 101, p. 964, 1928.

Hoplogryon bruesi KIEFFER, General insectorum, fasc. 80B, p. 96, 1910.

Hoplogryon dolichopterus KIEFFER, Das Tierreich, Lief. 48, p. 216, 1926 (male, female).

Female.—Length 0.95 mm. Head not quite twice as wide as long, a little wider than the thorax, somewhat narrower than the abdomen; frons with a fine median carina to anterior ocellus, with short striae and reticulation below on the sides, laterally and above smooth, indistinctly punctulate; occiput with dense impressed reticulation; cheeks indistinctly aciculate; thorax as wide as long, convex dorsally; mesonotum scaly-reticulate, rather strongly but shortly longitudinally wrinkled posteriorly, with the parapsidal furrows present as broad depressions on posterior half; scutellum convex, reticulate on anterior half, polished posteriorly; metanotal spine triangular, acute at apex, less than half as long as the scutellum; anterior wings about four times as long as wide, with short cilia along margins, extending about to the apex of the third tergite; abdomen 1.3 times as long as wide, convex

dorsally; petiole about twice as wide as long, with a number of longitudinal grooves its entire length, with a slight transverse depression across middle; second tergite one and one-half times as long as the petiole, about 1.8 times as wide as long, with a number of parallel or slightly diverging ridges to posterior third, these ridges subequal in length except near the lateral margins of the segment where they are much shorter; third tergite 2.6 times as long as the second, 1.5 times as wide as long, faintly reticulate, sparsely pubescent laterally and along the posterior margin; body dark brown; antennae dark brown, the scape lighter basally; mandibles yellow, the teeth reddish; legs yellow, the femora, tibiae, and tarsi, in part, somewhat darker; wings tinged with brown.

Variations.—Body sometimes black; legs sometimes mostly brownish, but not darkly so; mesonotum in some specimens with the sculpture more delicate, without wrinkles posteriorly, with the parapsidal furrows shorter and shallower; metanotal spine sometimes half as long as the scutellum and sometimes very short, a mere tubercle; in several specimens the ridges on the second tergite are only half as long as the segment and the intervening grooves are deeper; the anterior wings may extend to the apex of the third tergite or scarcely extend past its base.

Type locality.—Ottawa, Canada.

Type.—U.S.N.M. No. 2244.

The description and notes on variation given above are based on a number of specimens in the author's collection procured from the following localities: Ottawa, Canada (three specimens); McLean, N. Y. (two specimens collected June 21, 1924, from spider material by sifting); McLean Bogs, N. Y. (three specimens, May 16, 1925); Cinnamon Lake, Schuyler County, N. Y. (two specimens, June 5, 1925); Nigger Pond, Oswego County, N. Y. (one specimen, September 3, 1926); Ithaca, N. Y. (one specimen, May 1924); Woodwardia Swamp in Freeville, N. Y. (one specimen, July 28, 1929); and two specimens labeled Wachocastinook Creek, Salisbury, Conn., June 29, 1930. All this New York material was sent to me for identification by Profs. C. R. Crosby and M. D. Leonard, of Cornell University.

(5) **TRIMORUS GRANDIS** (Brues)

Hoplogryon grandis BRUES, Bull. Wisconsin Soc. Nat. Hist., ser. 2, vol. 5, p. 102, 1907.—KIEFFER, Das Tierreich, Lief. 48, p. 218, 1926.—FOUTS, Cornell Univ. Mem. 101, p. 964, 1928.

Type locality.—Long Island, N. Y.

Type.—U.S.N.M. No. 42705.

(6) **TRIMORUS PULCHRICORNIS**, new species

Female.—Length 1.9 mm. Head twice as wide as long, one and one-third times as wide as the thorax, as wide as the abdomen; frons

with a median longitudinal carina, stronger below, extending to the anterior ocellus; below and laterally to the summit of the eye the frons is strongly carinate; upper part of frons smooth, with large punctures, these punctures several times their diameter distant from one another; below this punctate area the frons is smooth, and, except for the median carina, without sculpture; vertex separated from the occiput by a subacute ridge; occiput striatopunctate; mesonotum and scutellum umbilicately punctate, the punctures much shallower than wide; posteriorly on the mesonotum the punctures are larger, irregular, and more or less confluent; parapsidal grooves not present; spine of metanotum long, acute, reaching above the middle of the petiole; wings narrow, extending about to the middle of the second tergite, not ciliate; abdomen very little longer than the head and thorax combined, 1.2 times as long as wide, ovate; petiole about one and one-half times as wide as long, with a number of longitudinal grooves separated by low rounded ridges; second tergite likewise with grooves but they are wide and shallow, slightly wider apically than basally, the intervening ridges extending to apical fourth; third tergite about one and two-thirds times as wide as long, three times as long as the second, striatopunctate on basal three-fourths except medially where it is smooth; striae on third tergite irregular, wavy, becoming finer posteriorly; laterally and on a median longitudinal area the third tergite is smooth, punctate but not striate; punctures scattered, large anteriorly on the third tergite, becoming much smaller posteriorly, scattered all over the surface except on a narrow band posteriorly; black; proximal five antennal joints light brownish yellow; legs yellow, the posterior tibiae and tarsi light brownish; thorax reddish brown, the scutellum and a large median spot on the mesonotum black; petiole reddish brown.

Type locality.—Glen Echo, Md.

Type.—U.S.N.M. No. 57775.

One specimen collected by the author.

This pretty species is apparently closely allied to *grandis* Brues. Its distinctive color pattern enables it to be readily separated from all our described species.

(7) **TRIMORUS CRASSELLUS**, new name

Gryon columbianus ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 208, 1893 (female).—BRUES, *Genera insectorum*, fasc. 80, p. 25, 1908.

Paragryon columbianus, KIEFFER, *Genera insectorum*, fasc. 80B, p. 99, 1910.—BRUES, *Connecticut Geol. Nat. Hist. Surv. Bull.* 22, p. 554, 1916.—KIEFFER, *Das Tierreich*, Lief. 48, p. 237, 1926 (female).

The name *columbianus* is precoccupied in *Trimorus* by *columbianus* Ashmead (described in *Prosacantha* in 1893).

Female.—Length 1.36 mm. Head 1.8 times as wide as long, 1.1 times as wide as the thorax; frons striate below middle of eye except for a small area on each side of the median carina, which is polished; median carina present on lower half of frons, replaced by a narrow groove to anterior ocellus; frons above striae reticulate with small dense punctures; vertex densely punctulate; occiput impressed-reticulate; thorax about as wide as long, subconvex above; mesonotum uniformly densely punctulate, with parapsidal grooves on posterior half; scutellum densely punctulate; metanotal spine short, acute; lateral angles of propodeum rather prominent, acute; wings not reaching apex of propodeum; abdomen 1.5 times as long as wide, 1.1 times as wide as the head, strongly convex dorsally; petiole about 1.6 times as wide as long, with ridges to anterior margin, with a trough-shaped depression across middle; second tergite about 2.2 times as wide as long, 1.45 times as long as the petiole, with a few widely spaced grooves on anterior half, all the area between these grooves and posterior to them except a narrow marginal rim rugose; third tergite 1.4 times as wide as long, 2.5 times as long as the second, uniformly closely punctulate; black; antennae piceous, the scape and pedicel reddish brown; coxae dark brown; legs yellow.

Type locality.—District of Columbia.

Type.—U.S.N.M. No. 2246.

Redescribed from one specimen in the author's collection labeled: Washington, D. C., April 28. It was compared with the type of *Gryon columbianus* in 1926.

(8) *TRIMORUS SOLITARIUS* (Ashmead)

Hyplogyron solitarius ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 205, 1893.—KIEFFER, Das Tierreich, Lief. 48, p. 215, 1926.

Type locality.—Ottawa, Canada.

Type.—U.S.N.M. No. 24527.

(9) *TRIMORUS NITIDUS*, new species

Female.—Length 1.09 mm. Very closely allied to *exilis* from which it differs as follows: Head 1.8 times as wide as long, 1.2 times as wide as the thorax, strongly convex in front; a very delicate carina to middle of frons; no striae medially below on the frons; no reticulation along inner eye margin; upper third of frons with some very fine, indistinct punctures; pubescence more sparse generally, apparently not present on mesonotum and scutellum; second tergite 1.7 times as long as the petiole; third tergite 1.4 times as wide as long, 2.5 times as long as the second.

Type locality.—Hollyburn, British Columbia (September 3, 1929).

Type.—U.S.N.M. No. 57776.

Paratype locality.—Galiano Island, British Columbia (August 1, 1929).

Two specimens collected by Oscar Whittaker.

In the paratype the pubescence is absent medially on the third tergite. Paratype in Whitaker's collection.

(10) *TRIMORUS EXILIS*, new species

Female.—Length 1.27 mm. Head about twice as wide as long, 1.15 times as wide as the thorax, indistinctly narrower than the abdomen; frons with a delicate impressed median line to upper third, with short striae below, with an impressed-reticulate area laterally just above the striae, narrowly reticulate along inner eye margin, finely reticulate on upper third, the impressions less distinct medially; thorax as wide as long, convex above; mesonotum scaly reticulate, the sculpture moderately strong; parapsidal grooves distinct on posterior third; scutellum convex, reticulate, more strongly so anteriorly; mesonotum and scutellum evenly pubescent; propodeum arcuately emarginate posteriorly, the lateral angles sharp; metanotal spine triangular, rather broad basally, acute apically, about half as long as the scutellum; abdomen broadly elliptical, 1.5 times as long as wide, 1.8 times as long as the thorax; petiole twice as wide as long, with numerous narrow deep grooves to anterior margin, the anterior margin narrowly reflexed; second tergite about twice as wide as long, about twice as long as the petiole, with ridges medially to posterior fourth, the ridges becoming progressively shorter laterally, reticulate behind these shorter ridges; third tergite 1.5 times as wide as long, 2.2 times as long as the second, pubescent all over but more sparsely so medially, evenly reticulate, the impressions finer along the lateral margins, with the posterior margin narrowly smooth, without sculpture; wings narrow, not quite attaining the apex of the propodeum; black; legs very dark brown, the trochanters, tibiae proximally and distally, and metatarsi basally, reddish brown.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57777.

One specimen collected September 9, 1927, by Oscar Whittaker.

(11) *TRIMORUS CRASSICEPS*, new species

Female.—Length 0.97 mm. Head about one and one-fourth times as wide as long, 1.2 times as wide as the thorax; frons strongly convex, with impressed reticulation and pubescent except medially below, with a median carina to anterior ocellus, this carina not distinct except below where the surface is smooth; vertex and occiput impressed-reticulate like the frons; thorax about as wide as long, somewhat flattened above; parapsidal grooves nearly reaching anterior margin of mesonotum, sharply indicated; mesonotum scaly-reticulate, the sculpture moderately strong; scutellum with dense impressed reticulation, the areas small; metanotal spine very short, blunt apically, about a third the length of the scutellum; wings short, narrow, ex-

tending to apex of propodeum; abdomen 1.45 times as long as wide, slightly wider than the head, strongly convex dorsally; petiole about twice as wide as long, with numerous longitudinal ridges, with a trough-shaped depression across middle; second tergite about twice as wide as long, 1.6 times as long as the petiole, with many parallel or diverging longitudinal ridges which extend medially about to apical fourth; laterally the ridges are shorter; third tergite 1.3 times as wide as long, uniformly reticulate except narrowly laterally and posteriorly; black; scape dark brown, slightly paler proximad; flagellum piceous; legs reddish brown, the coxae, femora, and tibiae brown; posterior tibiae reddish brown; tarsi yellowish, the last joint of each brown.

Type locality.—Hollyburn, British Columbia.

Type.—U.S.N.M. No. 57778.

One specimen collected June 3, 1930, by Oscar Whittaker.

(12) *TRIMORUS PUNCTITHORAX*, new species

Female.—Length 1.5 mm. Head about twice as wide as long, a little wider than the thorax; frons laterally and above reticulate with fine striae and numerous minute punctures; frons with a carina to the anterior ocellus, medially polished, with a few wavy aciculae; except for this median smooth area the frons is closely and evenly pubescent; vertex and occiput with dense impressed reticulation; thorax about as wide as long; mesonotum very densely and finely punctate, closely and evenly pubescent; parapsidal grooves briefly indicated posteriorly; scutellum with close impressed reticulation, pubescent over its entire surface; metanotal spine short, acute, not reaching past the apex of the metanotum; wings narrow, not quite reaching to the apex of the propodeum; abdomen about one and two-thirds times as long as wide, about one and one-fourth times as long as the head and thorax combined, about one and one-tenth times as wide as the head; petiole about one and one-half times as wide as long, with eight or nine longitudinal grooves, slightly depressed across the middle; second tergite 1.6 times as wide as long, one and one-half times as long as the petiole, with ridges and grooves reaching apical one-fourth; the grooves widen apically and those toward the middle of the segment have each a small longitudinal ridge medially at the apex; posterior fourth of the second tergite smooth, without sculpture; following segments evenly and moderately thickly pubescent; third tergite 1.4 times as wide as long, 2.4 times as long as the second, entirely finely reticulate except narrowly along the posterior margin; black; legs dark brown, the knees, tibiae apically, posterior tibiae entirely, and each metatarsus yellowish brown to rather dark reddish brown; coxae black.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57779.

One specimen collected September 18, 1926, by Oscar Whittaker.

(13) TRIMORUS SUBAPTERUS, new species

Female.—Length 1.53 mm. Head about twice as wide as long, 1.1 times as wide as the thorax; occiput, vertex, frons above and on the sides, mesonotum, and scutellum with a strong granular sculpture; frons medially below smooth, with a carina extending to median ocellus; thorax 1.1 times as long as wide; parapsidal grooves short; spine on metanotum short, acute; wings attaining apex of metanotum, very narrow, the venation not discernible; lateral angles of propodeum projecting, blunt apically; abdomen 1.4 times as long as wide, 1.1 times as wide as the head; petiole 1.5 times as wide as long, with five deep grooves above and a much broader groove on each side; these grooves extend from the anterior margin nearly to the posterior margin, with a trough-shaped depression across middle; second tergite 1.7 times as wide as long, 1.3 times as long as the petiole, with about 10 strong diverging longitudinal ridges to apical fourth; third tergite 1.4 times as wide as long, 2.7 times as long as the second, evenly covered with decumbent white hairs, uniformly, except along the lateral and posterior margins, with dense impressed reticulation; black; extreme apices of femora, tibiae basally (proximal one-third of hind tibiae) and metatarsus of each leg, reddish yellow; tarsi, except as noted above, brown.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57780.

Three specimens collected September 6 and 11, 1926, by Oscar Whittaker.

Paratype in Whittaker collection.

(14) TRIMORUS RUFOSIGNATUS (Kieffer)

Hoplogryon rufipes ASHMEAD (*non* Thomson, 1859), U. S. Nat. Mus. Bull. 45, p. 205, 1893 (female).—BRUES, *Genera insectorum*, fasc. 80, p. 25, 1908.—FOUTS, Cornell Univ. Univ. Mem. 101, p. 964, 1928.

Hoplogryon rufosignatus KIEFFER, *Genera insectorum*, fasc. 80B, p. 97, 1910.

Hoplogryon ashmeadianus KIEFFER, *Das Tierreich*, Lief. 48, p. 215, 1926 (female).

Female.—Length 1.14 mm. Head about twice as wide as long, 1.2 times as wide as the thorax, sculptured as in *crassiceps*; thorax a little wider than long, subconvex dorsally; mesonotum closely scaly-reticulate, the sculpture rough, subopaque, the surface appearing closely punctulate; parapsidal grooves apparently nearly complete but not clearly defined except posteriorly; metanotal spine very short as in *crassiceps*; abdomen 1.4 times as long as wide, strongly convex dorsally; petiole nearly twice as wide as long, with numerous longitudinal grooves, not elevated anteriorly and without a transverse depression; second tergite not quite twice as wide as long, 1.4 times as long as the petiole, with ridges to apical fourth as in *crassiceps*; third tergite 1.4 times as wide as long, 2.9 times as long as the second, reticulate as in *crassiceps* but the enclosed areas a little smaller; black; scape very dark brown; legs brown, the femora and tibiae a little darker.

Type locality.—District of Columbia.

Type.—U.S.N.M. No. 24526.

This description is based on one specimen from McLean, N. Y. It was collected by Prof. C. R. Crosby, June 21, 1924, from spider material by sifting. The author's 1928 record of the occurrence of this species in New York was based on this specimen, which was compared with the type of *Hoplogryon rufipes* Ashmead.

(15) **TRIMORUS ROBUSTUS**, new species

Female.—Length 1.42 mm. Head twice as wide as long, about one and one-sixth times as wide as the thorax, about half as long as the thorax; occiput, vertex, and upper half of frons with dense impressed reticulation, the latter area with a number of small scattered punctures; median carina not evident above middle of frons; frons narrowly laterally reticulate, with fine wavy aciculae medially, striate below; thorax a little longer than wide; mesonotum and scutellum scaly reticulate, evenly pubescent; parapsidal grooves absent; spine on metanotum sharp and moderately long; wings extending to the apex of the propodeum, very narrow, the venation not discernible; lateral angles of propodeum projecting, subacute; abdomen about one and one-half times as long as wide, a little wider than the head, one and three-fourths times as long as the thorax; petiole 1.45 times as wide as long, with about ten deep grooves extending from the anterior margin to the posterior one-tenth, not elevated anteriorly and without a transverse depression; second tergite 1.7 times as wide as long, 1.7 times as long as the petiole, with a number of deep longitudinal grooves which are shorter toward the lateral margins of the segment, becoming lost in a moderately strong impressed-reticulate sculpture; five of the grooves, each of which is about twice as wide as any on the petiole, extending nearly to the apex of the tergite; third tergite 1.4 times as wide as long, 2.2 times as long as the second, smoothly reticulate, the enclosed areas fairly large, becoming considerably smaller posteriorly; black; knees and anterior tibiae apically, yellowish brown; tarsi brownish.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57781.

Two specimens collected September 26, 1926, and September 9, 1927 by Oscar Whittaker.

Paratype in Whittaker collection.

(16) **TRIMORUS FINITIMUS**, new species

Female.—Length 1.18 mm. Head twice as wide as long, a little wider than the thorax, about as wide as the abdomen, moderately convex in front, scarcely excavated behind; upper frons, vertex, and occiput impressed-reticulate; a fine median carina to anterior ocellus; frons narrowly laterally reticulate, below smooth, without sculpture;

thorax 1.2 times as wide as long, strongly convex above; parapsidal grooves on posterior half of mesonotum; mesonotum with fine scaly reticulation, thickly pubescent, shining; scutellum smooth, with indistinct sculpture, pubescent; metanotal spine about half as long as the scutellum, triangular seen from above, acute apically; abdomen 1.4 times as long as wide, ovate, rounded posteriorly; petiole 1.7 times as wide as long, with numerous longitudinal ridges extending its entire length, with a narrow depressed rim along the anterior margin, without a depression across the middle; second tergite twice as wide as long, 1.6 times as long as the petiole, with a few parallel or slightly diverging ridges medially to posterior fourth; ridges are present laterally but become progressively shorter toward the margin; second tergite reticulate laterally behind the ridges; third tergite 1.5 times as wide as long, 2.4 times as long as the second, evenly pubescent, smoothly reticulate, shining; wings short, extending to the apex of the propodeum; black; legs dark brown, the tarsi and the tibiae proximally reddish brown; last joint of each tarsus dark brown.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57782.

Two specimens collected by Oscar Whittaker on April 23 and May 20, 1926.

Paratype in Oscar Whittaker collection.

(17) **TRIMORUS PALLIDIPE** (Ashmead)

Xenomerus pallidipes ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 184, 1893 (female).—Brues, *Genera insectorum*, fasc. 80, p. 22, 1908.

Trimorus pallidipes KIEFFER, André, *Spécies des hyménoptères d'Europe et d'Algérie*, vol. 11, p. 110, 1912.—KIEFFER, *Das Tierreich*, Lief. 48, p. 180, 1926 (female).

Female.—Antennae, except three proximal joints of one, are lost. Mesonotum striatopunctate, rugose anteriorly. Scutellum smooth, flattened, slightly roughened at anterior margin. Parapsidal grooves distinct, complete.

Type locality.—Arlington, Va.

Type.—U.S.N.M. No. 24493.

Ashmead's type was examined by the author in 1927 and the preceding brief description made of it.

(18) **TRIMORUS STRIOPUNCTATUS**, new species

Female.—Length 2.36 mm. Head about twice as wide as long, about as wide as the thorax, arcuately concave posteriorly; frons smooth, without a median carina, without sculpture on upper half except some small scattered punctures; below the frons is strongly carinate except for a narrow median area, the carinae extending narrowly laterally to top of eye; occiput finely reticulate, aciculate medially; cheeks finely striate; thorax about as wide as long, moder-

ately convex above; mesonotum rather thickly covered with punctures on anterior half, not rugose in this area; on posterior half strongly, more or less irregularly, longitudinally striate; parapsidal grooves perceptible but not sharply defined, difficult to distinguish posteriorly in the coarse striation; scutellum strongly reticulate, high ridges separating the enclosed areas; metanotal spine about half as long as the scutellum, broad and shelf-like; lateral angles of propodeum projecting somewhat, subacute apically; abdomen 1.6 times as long as wide, a little wider than the thorax; petiole 1.2 times as wide as long, with about ten straight longitudinal ridges, without a transverse depression, but with the anterior rim slightly reflexed; second tergite 1.7 times as wide as long, scarcely longer than the petiole, with numerous longitudinal ridges as on the petiole, these ridges, however, diverging, lower and more widely separated than on the petiole; surfaces between these flat, without sculpture; third tergite 1.3 times as wide as long, with numerous somewhat irregular low longitudinal ridges, the intervals between these ridges punctate or with an irregular sculpture; medially on the third tergite the longitudinal ridges are obsolescent on posterior half; posterior margin of third tergite smooth, without sculpture; third and fourth sternites punctate; following tergites with dense, impressed reticulation, the fourth and fifth with several transverse rows of large punctures; black; scape at extreme base, mandibles, except the teeth, all legs, except the coxae, bright yellowish brown; wings tinged with brown.

Male.—Length 2.07 mm. Similar generally to the female from which it differs as follows: Head slightly narrower than the thorax; punctures on upper half of frons very few, inconspicuous; carinae laterally on the frons more numerous, continuous above with those on the cheeks; punctures anteriorly on the mesonotum smaller than in the female, the intervals between them greater than in the female; abdomen 1.7 times as long as wide, oval; second tergite about twice as wide as long; third tergite nearly one and one-half times as wide as long, a little more strongly sculptured than in the female, the low irregular ridges present over the whole surface (except a narrow area along the lateral margin); antenna about 0.8 the length of the entire body, filiform, the joints becoming narrower toward the apex; third joint a little over twice as long as wide; fourth joint about twice as long as wide; last joint about as long as the third, three times as long as wide, rounded apically; color as in the female except that the scape is not distinctly lighter colored proximad and that the legs, except the tarsi, are dark reddish brown.

Type locality.—Glen Echo, Md.

Other locality.—Mount Holly Springs, Pa.

Type and allotype.—U. S. N. M. No. 57783.

Three females and two males collected by the author. The Glen

Echo specimens bear the dates July 1926 and August 12, 1916. The Mount Holly Springs specimen was swept from wheat stubble on May 17, 1920.

Variation.—One of the two females from Glen Echo is 1.84 mm. long, the punctures on the frons are, as in the male, few and inconspicuous, and the sculpture on the third tergite is somewhat finer than in the type.

(19) **TRIMORUS ERYTHROGASTER**, new species

Male.—Length 1.65 mm. Head 2.1 times as wide as long, a little wider than the thorax, as wide as the abdomen; frons striate below and laterally to the vertex, with a few small scattered punctures above, without a median carina, otherwise smooth, without sculpture; vertex and occiput smooth, unsculptured; cheeks with a few fine striae; scape nearly twice as long as the third joint, about five times as long as the pedicel; pedicel as wide as long, a little thicker than third joint; third joint about three times as long as thick, as long as the fourth, fifth, or sixth, but a little thicker than any one of these joints; joints beyond the sixth missing; thorax 1.1 times as long as wide, convex dorsally; mesonotum very coarsely and thickly punctate anteriorly, smoother and with the punctures more widely separated on posterior half; along the posterior margin the punctures are close together but not so deep as those on the front half of the mesonotum; parapsidal grooves complete; scutellum smooth, with a few small scattered punctures; metanotal spine very sharp at apex, broadened basally, about half as long as the scutellum; wings faintly brownish, extending slightly less than a fourth the length of the abdomen past the latter's apex; abdomen 1.6 times as long as wide, broadly rounded posteriorly; petiole scarcely longer than wide, with numerous longitudinal ridges its entire length, with a broad trough-shaped depression across anterior third; second tergite 1.45 times as wide as long, as long as the petiole, with many slightly diverging ridges all of which extend to posterior fifth; third tergite 1.8 times as wide as long, nearly twice as long as the second, its whole surface covered with small punctures, these punctures thicker laterally; head black; thorax black above, reddish laterally and below; scape reddish brown, a little darker toward apex; petiole and second tergite reddish, the rest of the abdomen dark reddish brown; legs yellowish brown.

Type locality.—Arlington, Va.

Type.—U.S.N.M. No. 57784.

One specimen collected by the author.

(20) **TRIMORUS SULCATUS** (Kieffer)

Hoplogryon sulcatus KIEFFER, Ark. Zool., vol. 1, p. 538, 1904 (male).

Trimorus sulcatus, KIEFFER, Das Tierreich, Lief. 48, p. 179, 1926.

Type locality.—Texas.

Type.—In Kieffer's collection.

(21) **TRIMORUS ERYTHROPUS** (Ashmead)

Prosacantha erythropus ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 195, 1893 (female).

Hoplogryon erythropus, KIEFFER, Das Tierreich, Lief. 48, p. 226, 1926.

Type locality.—District of Columbia.

Type.—U.S.N.M. No. 24511.

Described from two specimens.

(22) **TRIMORUS CROSBYI**, new species

Female.—Length 2.0 mm. Head about 1.9 times as wide as long, slightly wider than the thorax; frons without a median carina except just above antennae; frons immediately above bases of antennae and laterally nearly to summits of eyes, and the genae, strongly striate; medially the frons is smooth, without sculpture; upper part of frons sparsely covered with small punctures, otherwise without sculpture; occiput and genae posteriorly aciculate; scape about 1.3 times as long as the club, 1.12 times as long as the joints between scape and club combined; thorax scarcely longer than wide, as wide as the abdomen; mesonotum thickly pubescent, with a rather strong, somewhat irregular reticulation; the intervals between the areas are raised lines so that the areas themselves appear as small, shallow depressions; parapsidal grooves appearing as irregular punctate and roughened lines to about the middle of the mesonotum; scutellum smooth, pubescent laterally and on anterior half, sparsely punctate on anterior half; spine on metanotum rather broad basally, sharp apically, reaching a little beyond the base of the petiole; posterior angles of propodeum about as long as the metanotal spine, acute at apices; abdomen about 1.3 times as long as the head and thorax combined, about 1.8 times as long as wide, ovate; petiole traversed longitudinally by a number of rather broad grooves which are separated one from another by rounded ridges; dorsal surface of the petiole not elevated anteriorly and without a transverse depression; second tergite with seven longitudinal grooves as on the petiole but these grooves wider, extending about to apical fifth of the segment, each on posterior half traversed longitudinally by a ridge (fig. 14); posterior to the grooves and ridges the second tergite is smooth, without sculpture; third tergite traversed longitudinally by grooves on anterior half; these grooves are not like those on the petiole and second tergite but are about half as wide as on those segments and narrow to sharp points apically; the intervals between the grooves are flattened, not so convex; toward the middle of the segment the grooves become shallower as well as narrower and the intervals merge with the flat smooth surface posterior to them; laterally the third tergite is smooth, without sculpture except for a

few small setigerous punctures; except as noted the third tergite is smooth, without sculpture; wings faintly brownish, extending to the apex of the abdomen; black, scape at extreme base, mandibles, and legs for the most part, stramineous; front coxae, hind coxae posteriorly, femora and tibiae outwardly, and last joint of each tarsus brown.

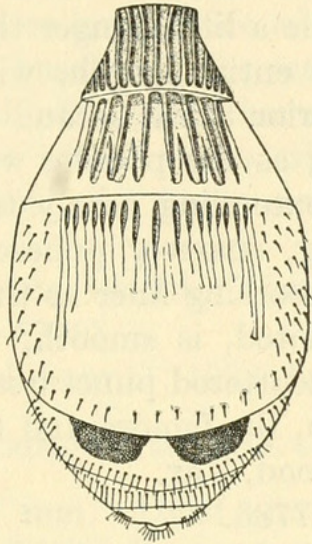


FIGURE 14.—*Trimorus crosbyi*, new species: Dorsal view of abdomen. The granulated areas on the fourth tergite show up somewhat more clearly in the drawing than they do on the type specimen.

Type locality.—Wolcott, N. Y.

Type.—U.S.N.M. No. 57785.

One specimen collected by Prof. C. R. Crosby on May 23, 1923. It gives me great pleasure to name this species after the late Professor Crosby. This is but one of the many interesting new species that he collected and sent to me for study.

(23) **TRIMORUS DISTINCTUS**, new species

Male.—Length 1.80 mm. Head a little less than twice as wide as long, as wide as the thorax, 1.1 times as wide as the abdomen, subconvex anteriorly, emarginate posteriorly; frons striate on lower half and laterally to top of eye, with a few small scattered punctures, with a median carina on lower half; vertex impressed-reticulate laterally; occiput striate; cheeks reticulate along eye margin, striate otherwise; antennae about 0.9 the length of the entire body; scape a little thicker than joints 3, 4, or 5, the latter subequal in thickness; third joint 2.5 times as long as thick, fourth joint 2.8 times as long as thick; fifth joint about twice as long as thick, obliquely excised on basal half; following joints subequal in thickness and length, about twice as long as thick; last joint about three times as long as thick, pointed at apex; thorax a little longer than wide, convex dorsally; mesonotum reticulate, transversely wrinkled anteriorly, with numerous rather small shallow punctures except where wrinkled; parapsidal grooves complete;

scutellum convex, with several small punctures along anterior margin, otherwise smooth, without sculpture; metanotal spine triangular, broad basally, acute apically, about half as long as the scutellum; wings hyaline, extending a little less than one-fourth the length of the abdomen past the latter's apex; abdomen 1.9 times as long as wide, a little longer than the head and thorax combined, long-ovate, broadly rounded posteriorly; petiole a little longer than wide, with a number of longitudinal ridges its entire length, with a transverse trough-shaped depression at anterior third; second tergite 1.5 times as wide as long, 1.2 times as long as the petiole, with numerous parallel or slightly diverging ridges extending nearly to the apex; third tergite 1.4 times as wide as long, sparsely pubescent laterally, striate on anterior half, the striae becoming finer as they approach the middle; third tergite, except as noted, is smooth, without sculpture; third sternite with a few small scattered punctures; black; coxae very dark brown; legs reddish brown, the femora and tibiae darker.

Type locality.—Brownwood, Tex.

Type.—U.S.N.M. No. 57786.

One specimen collected in May 1924 by the author.

(24) **TRIMORUS PERCURRENS**, new species

Male.—Length 1.78 mm. Head about twice as wide as long, about as wide as the thorax, indistinctly narrower than the abdomen; occiput impressed reticulate; vertex smooth, without sculpture; frons mostly smooth, with a rather strong median carina to anterior ocellus; a number of smaller carinae from this large one just above the antennae; laterally, nearly to the summits of the eyes, the frons is strongly striate; antennae filiform, about 1.1 times as long as the body; scape a little wider than the other joints; following joints becoming gradually narrower toward the apex of the antenna; scape a little shorter than joints 3 and 4 together; pedicel about as wide as long; third joint about three times as long as wide; following joints subequal in length, a little longer than the third, becoming gradually narrower; last joint about five times as long as thick; all joints, except the scape, thickly covered with short hairs; thorax 1.1 times as long as wide, convex dorsally and evenly covered above with whitish hairs; mesonotum very finely reticulate, more strongly so anteriorly; parapsidal grooves complete, narrow, sharply indicated, of equal width throughout; scutellum convex, smooth, without sculpture; spine on metanotum moderately long, acute at apex; wings hyaline, extending about a third the length of the abdomen past the latter's apex; abdomen 1.64 times as long as wide, a little more than one and one-half times as long as the thorax; petiole 1.36 times as wide as long, with a number of longitudinal grooves extending very nearly to the margins, with a

transverse depression just before the middle; second tergite 1.3 times as wide as long, 1.55 times as long as the petiole, with a number of longitudinal ridges, those near the middle shorter than those next to them on either side, extending from base to middle of segment; the longer ridges reach the posterior third; all these ridges diverge from one another, that is, the intervening grooves widen posteriorly; third tergite 1.4 times as wide as long, twice as long as the second, wavy-striate and reticulate on basal half, the markings very faint near the middle of the segment; third tergite otherwise smooth, without sculpture, without pubescence except a few white hairs laterally; black; legs dark brown to black, the knees and anterior tibiae apically brownish.

Type locality.—Hollyburn, British Columbia.

Type.—U.S.N.M. No. 57787.

One specimen collected June 11, 1928, by Oscar Whittaker.

(25) *TRIMORUS MINUTUS*, new species

Female.—Length 1.14 mm. Head about twice as wide as long, as wide as the thorax, indistinctly narrower than the abdomen; frons, except a small spot on each side at malar space which is impressed reticulate, and vertex, polished, without sculpture; frons with a very fine median carina its entire length; occiput impressed-reticulate; eyes pubescent; thorax about as wide as long; mesonotum shining, with a fine indistinct reticulate sculpture; parapsidal grooves complete, just as in *improcerus*, not finely and sharply indicated as in *percurrans* but easily distinguished nevertheless; scutellum convex, reticulate basally, smooth apically, with sparse pubescence laterally; metanotal spine moderate in length, acute apically; wings extending a little less than one-third the length of the abdomen past the latter's apex; abdomen one and one-half times as long as wide, hardly wider than the thorax; petiole 1.7 times as wide as long, with a few deep longitudinal grooves dorsally, not elevated anteriorly or depressed transversely; second tergite 1.5 times as wide as long, 1.25 times as long as the petiole, the ridges on basal four-fifths sharp, parallel, the median ones bifurcate apically; third tergite 1.3 times as wide as long, 2.7 times as long as the second, smooth, with extremely faint wavy-reticulate sculpture, pubescent laterally; black; antennae dark brown, the scape yellowish toward base; wings brownish; legs yellowish brown, the swollen parts of femora and tibiae darker; petiole and base of second segment reddish yellow.

Type locality.—Glen Echo, Md.

Type.—U.S.N.M. No. 57788.

Two specimens collected April 16 and April 23, 1918, by the author. Paratype in Whittaker collection.

(26) *TRIMORUS TENUICORNIS* (Kieffer)

Hoplogryon tenuicornis KIEFFER, Berliner Ent. Zeitschr., vol 50, p. 263, 1905 (male).—BRUES, Bull. Wisconsin Nat. Hist. Soc., vol. 7, p. 121, 1909.

Trimorus tenuicornis, KIEFFER, Das Tierreich, Lief. 48, p. 180, 1926.

Type locality.—San Mateo, Calif.

Other locality.—Orcas Island, Wash. (Brues).

Type.—In Kieffer collection.

(27) *TRIMORUS LIONOTUS*, new species

Male.—Length 1.71 mm. Head 1.8 times as wide as long, a little wider than the thorax, as wide as the abdomen; frons striate shortly below and on the sides to above middle of eye, with a fine carina to anterior ocellus, with several short striae below anterior ocellus, otherwise without sculpture; occiput impressed-reticulate, smooth posteriorly; cheeks faintly reticulate; antennae elongate, filiform, 1.3 times as long as the body, the joints becoming gradually thinner toward apex; scape about five times as long as thick, about five times as long as the pedicel, the latter scarcely longer than thick; scape 1.7 times as long as joint 3, 1.4 times as long as the terminal joint; joint 3 four times as long as thick, the following joints subequal in length, the last one a little longer; thorax 1.2 times as long as wide, convex dorsally; mesonotum finely reticulate, the areas very small, finely and rather closely punctate, with some small transversely directed wrinkles anteriorly, shortly striate posteriorly; parapsidal grooves complete; scutellum smooth, without sculpture except a few very minute punctures on anterior half; metanotal spine narrow, not widened basally, acute apically, about half as long as the scutellum; lateral angles of propodeum projecting a little, blunt apically; wings about three times as long as wide, projecting a little more than a third of the length of the abdomen past the latter's apex; abdomen 1.65 times as long as wide, ovate, broadly rounded apically; petiole 1.45 times as wide as long, with deep grooves to front margin, slightly depressed across anterior third; second tergite 1.2 times as wide as long, 1.6 times as long as the petiole, with numerous slightly diverging ridges which extend medially to posterior third; these ridges shorter toward the sides of the segment; except for the ridges the second tergite is without sculpture; third tergite 1.35 times as wide as long, twice as long as the second, pubescent laterally and narrowly posteriorly, without sculpture of any kind; following tergites smooth, without sculpture; black; scape, anterior and middle tibiae except at both ends, and all tarsi, except first joint of each, fuscous; coxae black; femora dark brown; tibiae proximally and distally and metatarsi yellowish brown; wings hyaline.

Type locality.—Hollyburn, British Columbia.

Type.—U.S.N.M. No. 57789.

One specimen collected on September 9, 1929, by Oscar Whittaker. This species may possibly be the opposite sex of *pictus*.

(28) *TRIMORUS PICTUS*, new species

Female.—Length 1.73 mm. Head twice as wide as long, 1.2 times as wide as the thorax, 0.93 times as wide as the abdomen; vertex and occiput with dense impressed reticulation, a little roughened medially; frons superiorly irregularly striatopunctate, pubescent, with a median carina to anterior ocellus, polished medially below; thorax about as wide as long; mesonotum roughened, scaly-punctate, the sculpture somewhat stronger posteriorly; parapsidal grooves complete but somewhat irregular anteriorly; scutellum rather thickly pubescent, scaly-punctate anteriorly; metanotal spine short, acute at apex, its upper surface excavated; wings pale fuscous, extending very little past the apex of the abdomen; petiole 1.55 times as wide as long, with a number of deep longitudinal grooves, with a slight constriction just before the middle; second tergite 1.35 times as wide as long, 1.55 times as long as the petiole, with a number of deep grooves which extend medially to apical third; the ridges dividing these grooves are parallel or diverge slightly posteriorly; third tergite 1.45 times as wide as long, 2.2 times as long as the second, smooth, without sculpture; abdomen finely pubescent except a broad median area from base to middle of the third tergite; black; legs reddish brown (except black coxae), the anterior femora, tibiae, and apical joints of all tarsi darker.

Type locality.—Hollyburn, British Columbia.

Type.—U.S.N.M. No. 57790.

Two specimens collected August 28, 1929 (paratype), and August 27, 1930, by Oscar Whittaker.

Paratype in Whittaker collection.

This species may be the opposite sex of *lionotus*. Although showing differences I would not hesitate to consider specific if they belonged to the same sex, their general appearance which is very similar, their similarity in size, and the identical sculpture of the petiole and second tergite make me doubtful whether they are really distinct.

(29) *TRIMORUS IMPROCERUS*, new species

Female.—Length 0.95 mm. Head about twice as wide as long, slightly wider than the thorax, about as wide as the abdomen; occiput finely reticulate; vertex and frons smooth, without sculpture except for a fine median carina on the frons, this carina stronger toward the bases of the antennae, gradually vanishing toward the anterior ocellus; mesonotum pubescent, with a very fine scaly-reticulate sculpture; parapsidal grooves complete, faint anteriorly, deeper and broader posteriorly; scutellum polished, without distinct sculpture; spine on metanotum short, triangular, acute apically; wings extending a third

the length of the abdomen past the latter's apex; thorax a little longer than wide; abdomen about one and three-fourths times as long as wide, convex dorsally; petiole about as long as wide, with a number of longitudinal grooves its entire length, with a transverse depression medially; second tergite 1.2 times as wide as long, 1.25 times as long as the petiole, with a number of diverging longitudinal ridges on basal two-thirds; third tergite not quite 1.3 times as wide as long, 2.2 times as long as the second, smooth, without sculpture, with the pubescence very fine, present only laterally; black; wings faint brownish; legs dark brown, the anterior tibiae at apices, other tibiae proximally, and all tarsi yellowish.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57791.

One specimen collected September 24, 1926, by Oscar Whittaker.

(30) *TRIMORUS NOTABILIS*, new species

Female.—Length 1.1 mm. Head as wide as the thorax; frons striate below, without sculpture otherwise except a delicate carina to anterior ocellus; in front of the ocellus this carina is extremely fine; thorax about as wide as long, as wide as the abdomen; mesonotum with sculpture similar to but stronger than that in *improcerus*; scutellum polished, without pubescence, with a few small punctures anteriorly; metanotal spine very short, acute; posterior angles of propodeum rounded; petiole about one and one-third times as wide as long, with longitudinal ridges separated by deep grooves; second tergite one and one-third times as wide as and one and two-fifths times as long as the petiole, with slightly diverging ridges nearly to apex; third tergite 1.4 times as wide as long, 2.5 times as long as the second, without sculpture of any kind; following tergites likewise without sculpture; front wing extending about half the length of the abdomen past the latter's apex; black; trochanters, and tarsi basally, brownish; wings faintly brownish.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57792.

Two specimens collected May 9 and May 24, 1926, by Oscar Whittaker.

Paratype in Whittaker collection.

(31) *TRIMORUS VARIUS*, new species

Male.—Length 2.18 mm. Head twice as wide as long, about as wide as the thorax, indistinctly wider than the abdomen; frons striate below and on the sides, the striae continuous with those on the cheeks, with a median carina to anterior ocellus, and with a few scattered punctures above; frons, except as noted, smooth, without sculpture; occiput rather finely and irregularly striate; antennae 1.45 times as

long as the body, filiform, the joints becoming gradually thinner toward the apex; scape four times as long as thick, five times as long as the pedicel, 1.4 times as long as the third joint, 1.2 times as long as the fourth, 1.1 times as long as the fifth, 1.2 times as long as the twelfth; fifth joint 1.2 times as long as the eleventh; last joint about seven times as long as thick, acuminate; thorax 1.1 times as long as wide, strongly convex above; mesonotum thickly covered with large punctures which are less than their diameter apart, with a few wrinkles anteriorly; laterally the punctures are larger, forming a coarse reticulation; parapsidal grooves present as short deep grooves; scutellum coarsely reticulate anteriorly, smooth and polished posteriorly; metanotal spine acuminate, gradually narrowed toward base, about as long as the scutellum, extending at right angle to the surface of the propodeum; lateral angles of propodeum prominent, subacute; wings three times as long as wide, hyaline, extending half the length of the abdomen past the latter's apex; abdomen ovate, broadly rounded posteriorly, 1.8 times as long as wide; petiole 1.2 times as long as wide, with numerous longitudinal ridges which extend only part way up on the broadly reflexed anterior margin; second tergite 1.2 times as wide as long, scarcely longer than the petiole, with many slightly diverging ridges of equal length extending to apical fifth; third tergite 1.4 times as wide as long, 1.8 times as long as the second, strongly striate medially on basal half, less strongly striate laterally on basal half, with a few scattered punctures, those toward the front somewhat larger and deeper; the striae really extend a little way past the middle of the third tergite but they are, beyond this point, shallow, not sharply indicated; a broad area along the lateral margin is sparsely punctate, without striae; scape and pedicel yellowish brown; mandibles red; thorax reddish, the scutellum and the mesonotum (except laterally and posteriorly) black; mesopleuron above and metapleuron mostly black; abdomen black, the petiole and base of second tergite red; legs entirely light yellowish brown.

Type locality.—Cabin John, Md.

Type.—U.S.N.M. No. 57793.

One specimen collected July 30, 1924, by the author.

(32) *TRIMORUS MARYLANDICUS* (Ashmead)

Prosacantha marylandica ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 193, 1893.—

BRUES, *Genera insectorum*, fasc. 80, p. 22, 1908; Connecticut Nat. Hist. Surv. Bull. 22, p. 552, 1916.

Hoplogryon marylandicus, KIEFFER, *Genera insectorum*, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 232, 1926.

Female.—Length 2.41 mm. Head as wide as the thorax; frons with a fine median carina to anterior ocellus; lower half of frons polished, impunctate, upper half with numerous, moderately large, shallow

punctures; frons laterally striate to top of eye; occipute shining, indistinctly transversely aciculate; thorax scarcely longer than wide, as wide as the abdomen; mesonotum coarsely punctate, the punctures arranged in more or less distinct rows posteriorly; scutellum punctate like the anterior part of the mesonotum, with a small median polished area posteriorly; metanotal spine long, acute at apex, broad basally; abdomen 1.8 times as long as wide; petiole about as long as wide, with numerous longitudinal ridges extending the entire length of the segment, without a transverse depression, and without the anterior margin reflexed; second tergite about one and one-fourth times as long as the petiole, slightly wider than long, with numerous parallel or slightly diverging ridges which nearly reach the apex; all of these ridges extend equally far posteriorly, leaving a narrow polished border behind them; third tergite 1.4 times as wide as long, twice as long as the second, strongly striate medially, the striae extending nearly to the apex, on lateral third irregularly striate with large scattered punctures; a row of small setigerous punctures limits the extension of the striae posteriorly; fourth tergite punctate, reticulate anteriorly; wings reaching the tip of the abdomen; black; scape brown proximad, fuscous on distal two-thirds; pedicel fuscous, brown at extreme apex; mandibles and legs reddish brown.

Type locality.—Oakland, Md.

Type.—U.S.N.M. No. 24505.

Other localities.—Washington, D. C., and Cabin John, Md.

Species redescribed from two female specimens collected by the author at Washington, June 25, 1920, and Cabin John, Md., July 14, 1917. The Washington specimen was collected in a low, rather swampy place in the Soldiers' Home Park. Both specimens were compared with the type in the National Museum.

(33) *TRIMORUS STRIATIFRONS* (Ashmead)

Prosacantha striatifrons ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 188, 1893.

Hoplogryon striatifrons, KIEFFER, Das Tierreich, Lief. 48, p. 225, 1926.

Type locality.—Jacksonville, Fla.

Type.—U.S.N.M. No. 24496.

Originally described from one specimen.

(34) *TRIMORUS RUBRIPES RUBRIPES*, new species and variety

Male.—Length 3.25 mm. Head about as wide as the thorax, a little wider than the abdomen, entirely, except the interocellar area and a small area to the side of each lateral ocellus, covered with strong carinae; frons with a strong median carina extending to the anterior ocellus; antenna slender, threadlike, the joints very gradually narrowing toward the apex of the antenna; scape slightly longer than joints 2 and 3 combined, about five times as long as thick;

third joint about four times as long as thick, a little more than one and one-tenth times as long as the fourth, about one and one-fourth times as long as the fifth; fifth joint about three times as long as thick, the oblique excision reaching nearly to the basal two-fifths of the joint; following joints becoming gradually thinner; last joint about five times as long as thick, acute at apex, a little shorter than the third; mesonotum strongly confluent punctate anteriorly, shallowly umbilicately punctate medially, rugosostriate posteriorly; parapsidal grooves briefly, indistinctly indicated posteriorly; scutellum shallowly umbilicately punctate (like the mesonotum medially); spine of metanotum long, acute, extending as far posteriorly as the base of the petiole; wings brownish, extending a little past the apex of the abdomen; abdomen about one and two-fifths times as long as the head and thorax combined, about two and two-fifths times as long as wide, seen from above elongate ovate in shape; petiole a little less than one and one-half times as long as wide, with strong longitudinal carinae from base to apex; second tergite one and three-tenths times as long as wide, as wide as the petiole is long, carinate like the petiole; third tergite one and one-fourth times as wide as long, one and two-fifths times as long as the second, carinate like the first and second tergites nearly to the apex, the median carinae not quite as long as those to either side; laterally the tergite has a few small punctures; third tergite rather sparsely pubescent laterally; following tergites with fine impressed reticulation except along the posterior margin of each one, all of them with long white hairs, thicker laterally; third sternite strongly striate; black; scape on proximal half dark rufous; coxae black except at apices where they are reddish brown; legs, except the terminal joint of each tarsus which is fuscous, reddish brown; mandibles yellowish brown, the tips reddish.

Type locality.—Glen Echo, Md.

Type.—U.S.N.M. No. 57794.

Three specimens collected by the author on June 5, 1921 (type), and April 25, 1926.

Paratype in Whittaker collection.

Variation.—The two paratypes have the scape dark reddish only at extreme base.

TRIMORUS RUBRIPES RUFOCOXALIS, new variety

Male.—Length 3.67 mm. Similar to var. *rubripes* except as follows: Scape black except at extreme base where it is dark reddish; coxae reddish brown like the rest of the legs; posterior coxae darker at bases; all carinae on the third tergite equally long.

Type locality.—Glen Echo, Md.

Type.—U.S.N.M. No. 57795.

One specimen collected by the author.

(35) *TRIMORUS KANSASSENSIS* (Gahan)

Hoplogryon kansasensis GAHAN, Proc. Ent. Soc. Washington, vol. 14, p. 7, 1912 (female); U. S. Dept. Agr. Misc. Publ. 174, p. 146, 1933.

Type locality.—Manhattan, Kans.

Type.—U.S.N.M. No. 14354.

This species was described from a specimen obtained from a cage in which experiments with the Hessian fly were being carried on, and Mr. Gahan says in his original description that it is "possibly, though not likely, a parasite of the fly."

(36) *TRIMORUS STRIATIVENTRIS* (Ashmead)

Prosacantha striativentris ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 197, 1893 (male).
Hoplogryon striativentris, KIEFFER, Das Tierreich, Lief. 48, p. 225, 1926.

Type locality.—District of Columbia.

Type.—U.S.N.M. No. 24517.

Described from one collected specimen.

(37) *TRIMORUS REPENTINUS*, new species

Female.—Length 0.95 mm. Head 1.8 times as wide as long, 1.2 times as wide as the thorax, scarcely wider than the abdomen, subconvex anteriorly: frons shortly striate below on the sides, with a fine median carina on lower half, otherwise without sculpture, smooth; vertex smooth, without sculpture; occiput impressed-reticulate; cheeks aciculate; thorax a little longer than wide; mesonotum convex, reticulate; parapsidal grooves represented by short broad depressions posteriorly on the mesonotum; metanotal spine very short, a mere tubercle; wings about four times as long as wide, with long cilia on all margins, extending nearly half the length of the abdomen past the latter's apex; abdomen 1.6 times as long as wide, 1.6 times as long as the thorax; petiole 1.5 times as wide as long, with numerous longitudinal ridges extending over the slightly upturned anterior margin to the edge of the segment; second tergite 1.4 times as wide as long, 1.5 times as long as the petiole, with deep parallel grooves to posterior third; the ridges between these grooves are flattened on top and widen posteriorly, merging with the flat polished surface of the segment; third tergite 1.2 times as wide as long, 2.4 times as long as the second, longitudinally striate to apical fifth, the striae becoming finer and wavy posteriorly; dark brown; abdomen reddish brown; legs, including coxae, light yellowish brown; wings hyaline.

Type locality.—Cabin John, Md.

Type.—U.S.N.M. No. 57796.

Two specimens collected July 31, 1916, and June 30, 1917, by the author.

Paratype in Whittaker collection.

(38) *TRIMORUS BRUNNEIPES*, new species

Female.—Length 0.98 mm. Head about twice as long as wide, as wide as the abdomen, distinctly wider than the thorax; frons with a very delicate median carina extending to upper third; lower part of frons and cheeks striate; frons otherwise smooth, without distinct sculpture; occiput finely reticulate; scape, following five joints combined, and club subequal in length; scape about five times as long as thick; mesonotum thickly clothed with short whitish hairs, with a delicate sculpture, not distinctly reticulate or punctate but rather leathery in appearance; parapsidal grooves absent; scutellum sparsely pubescent, smooth, without distinct sculpture; spine on metanotum short, acute at apex; posterior angles of propodeum rounded; wings brownish, extending about one-fourth the length of the abdomen past the latter's apex; petiole twice as wide as long, with about nine longitudinal grooves separated by narrow, sharp ridges; second tergite about one and one-third times as wide as long, about twice as long as the petiole, with about a dozen deep longitudinal grooves on basal two-thirds; these grooves are deep, considerably wider than those on the petiole, and are equally wide throughout their length; apical third of second tergite smooth, without sculpture; third tergite 1.45 times as wide as long, twice as long as the second, with numerous grooves basally which are similar to but narrower than, and not so deep as, those on the second tergite; medially these grooves reach the middle of the segment but they become gradually shorter toward the sides; terminal tergites smooth, without distinct sculpture; black; scape at extreme base brownish; trochanters and tibiae proximad yellowish; legs otherwise brown; petiole dark red.

Type locality.—McLean Bogs, N. Y.

Type.—U.S.N.M. No. 57797.

One specimen collected May 16, 1925, by M. D. Leonard.

(39) *TRIMORUS PUSILLUS* (Ashmead)

Prosacantha pusilla ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 192, 1893 (female).

Hoplogryon pusillus, KIEFFER, Das Tierreich, Lief. 48, p. 228, 1926.

Type locality.—Jacksonville, Fla.

Type.—U.S.N.M. No. 24504.

Described from a single specimen.

(40) *TRIMORUS COLUMBIANUS* (Ashmead)

Prosacantha columbiana ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 194, 1893 (female).

Hoplogryon columbianus, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910;

Das Tierreich, Lief. 48, p. 226, 1926.

Type locality.—District of Columbia.

Type.—U.S.N.M. No. 24507.

(41) **TRIMORUS FLAVICOXA** (Ashmead)

Prosacantha flavicoxa ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 196, 1893 (female).

Hoplogryon flavicoxa, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 231, 1926.

Type locality.—Virginia.

Type.—U.S.N.M. No. 24512.

Described from a single specimen.

(42) **TRIMORUS XANTHOPUS**, new species

Female.—Length 1.43 mm. Head about twice as wide as long, as wide as the thorax, as wide as the abdomen; frons with short striae below, narrowly striate laterally to middle of eyes, with small scattered punctures on upper half, with a fine median carina to anterior ocellus; vertex reticulate; occiput and cheeks smooth, without sculpture; thorax about as wide as long, convex above anteriorly, flattened posteriorly; mesonotum strongly sculptured, coarsely and confluent punctate, the punctures more distinct medially, coarsely reticulate posteriorly, the enclosed areas large; parapsidal grooves briefly indicated posteriorly, not clearly indicated; scutellum roughly sculptured, with large punctures, a median posterior area smooth, polished; metanotal spine triangular in shape, broad basally, acute apically, slightly more than half as long as the scutellum; abdomen 1.75 times as long as wide, convex dorsally; petiole about as long as wide, with numerous longitudinal ridges extending its entire length, not elevated anteriorly and without a transverse depression; second tergite 1.2 times as wide as long, 1.3 times as long as the petiole, with many parallel or slightly diverging ridges extending nearly to the posterior margin of the segment; third tergite 1.3 times as wide as long, 2.2 times as long as the second, striate basally, these striae continued posteriorly as fine wavy aciculations nearly to the apex of the segment; third tergite sparsely pubescent laterally, without pubescence anteriorly and medially; black; scape and pedicel brown, the former somewhat paler basally; legs (including coxae) yellow; wings hyaline.

Type locality.—Glen Echo, Md.

Type.—U.S.N.M. No. 57798.

One specimen collected September 29, 1917, by the author.

(43) **TRIMORUS FUSCIPENNIS** (Ashmead)

Prosacantha fuscipennis ASHMEAD, Ent. Amer., vol. 3, p. 117, 1887 (male); U. S. Nat. Mus. Bull. 45, p. 194, 1893.

Hoplogryon fuscipennis, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 225, 1926.

Type locality.—Jacksonville, Fla.

Type.—U.S.N.M. No. 24506.

(44) *TRIMORUS NIGRIPES* (Ashmead)

Prosacantha nigripes ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 188, 1893 (male, female).

Hoplogryon nigripes, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 225, 1926.

Habitat.—The Dalles and Portland, Oreg.

Type.—U.S.N.M. No. 24495.

“Described from specimens from Mr. H. F. Wickham.”

(45) *TRIMORUS JUCUNDUS*, new species

Female.—Length 1.60 mm. Head about 1.7 times as wide as long seen from above, a little wider than the thorax; head with impressed reticulation except as follows: malar area and frons to about middle of eyes striate; frons with a median carina to anterior ocellus, this carina smaller toward the ocellus; an area to either side of this carina on lower half of frons polished, without sculpture; occiput with a few irregular indistinct ridges; scape about seven times as long as thick, a little longer than the five following joints combined; third joint about twice as long as thick, subequal to the fourth; club a little shorter than the scape; mesonotum closely and rather finely punctate; parapsidal grooves not present; scutellum closely impressed-reticulate; spine on metanotum moderately long, acute at apex; abdomen a little longer than the head and thorax combined, intermediate in width between the head and thorax; petiole about as long as wide, with deep longitudinal grooves separated by narrow rounded ridges; second tergite about as long as wide, nearly one and one-half times as long as the petiole, with numerous longitudinal grooves about as wide as those on the petiole; these grooves deep anteriorly, shallower posteriorly, reaching to apical one-fifth, each one becoming narrower posteriorly, separated from one another by narrow rounded ridges; third tergite about as long as wide, about 2.3 times as long as the second, on anterior half with grooves which are similar to but smaller than those on the second tergite; for a short way past the middle of the tergite these grooves are replaced by fine wavy aciculae; apical third of the third tergite finely reticulate; third sternite punctate; wings hyaline, extending about a sixth the length of the abdomen past its apex; black; legs (except coxae which are black to very dark brown) bright reddish brown; tarsi brown.

Type locality.—Glen Echo, Md.

Type.—U.S.N.M. No. 57799.

Three specimens collected by the author on March 3 and 18, 1926. Paratype in Whittaker collection.

(46) *TRIMORUS CARABORUM* (Riley)

Prosacanthus caraborum RILEY, in Ashmead, U. S. Nat. Mus. Bull. 45, p. 191 (male, female), pl. 8, fig. 4 (female), 1893.

Hoplogryon caraborum, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 227, 1926.

Type locality.—Washington, D. C.

Other locality.—Arlington, Va.

Type.—U.S.N.M. No. 2241.

Described from specimens reared from eggs of a carabid beetle, *Chlaenius impunctifrons*, and from specimens collected in Arlington, Va.

(47) *TRIMORUS LEONARDI*, new species

Female.—Length 1.84 mm. Head about twice as wide as long, about as wide as the thorax; upper half of frons and vertex with a very dense impressed reticulation, coriaceous; occiput similarly but somewhat more delicately sculptured; frons smooth medially, striate laterally, with a sharp carina extending to the anterior ocellus; mesonotum and scutellum densely and finely punctate, subopaque; parapsidal grooves present as short shallow depressions posteriorly; spine on metanotum rather short, acute; thorax scarcely longer than wide, a little narrower than the abdomen; wings not quite reaching the apex of the abdomen; abdomen nearly one and two-thirds times as long as wide; petiole 1.3 times as wide as long, with about a dozen longitudinal grooves, with a pronounced transverse constriction just before the middle; second tergite twice as wide as long, twice as long as the petiole, with numerous longitudinal ridges extending to apical fifth, these ridges parallel to one another or diverging somewhat posteriorly; third tergite 1.5 times as wide as long, 2.3 times as long as the second, finely reticulate and with a few low flattened ridges on anterior three-fifths, without distinct pubescence except laterally; third sternite strongly striate; black; scape dark brown; flagellum piceous; trochanters yellow; coxae black; rest of legs reddish brown; wings brownish.

Type locality.—McLean Bogs, N. Y.

Type.—U.S.N.M. No. 57800.

One specimen collected May 16, 1925, by M. D. Leonard.

It is with pleasure that I dedicate this species to my friend Mr. Leonard.

(48) *TRIMORUS PUNCTIVENTRIS* (Ashmead)

Prosacantha punctiventris ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 192, 1893 (female).

Hoplogryon punctiventris, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 227, 1926.

Type locality.—Fortress Monroe, Va.

Other locality.—District of Columbia (male, not described).

Type.—U.S.N.M. No. 24502.

(49) **TRIMORUS ANNULICORNIS** (Ashmead)

Prosacantha annulicornis ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 188, 1893 (female).
Hoplogryon annulicornis, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910;
Das Tierreich, Lief. 48, p. 231, 1926.

Type locality.—Washington, D. C.

Type.—U.S.N.M. No. 2240.

Paratypes in the National Museum and in the collection of the American Entomological Society.

(50) **TRIMORUS PLEURALIS** (Ashmead)

Prosacantha pleuralis ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 195, 1893 (female).
Hoplogryon pleuralis, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das
Tierreich, Lief. 48, p. 231, 1926.

Type locality.—District of Columbia.

Type.—U.S.N.M. No. 24509.

Described from two female specimens.

(51) **TRIMORUS SCULPTURATUS**, new species

Female.—Length 1.73 mm. Head about twice as wide as long, as wide as the thorax, slightly wider than the abdomen; occiput without sculpture except a few short wrinkles behind each lateral ocellus; vertex and upper half of frons with small widely scattered punctures; frons without a median carina except just above the antennae, striate below and narrowly on the sides up as far as the median ocellus; thorax a little wider than long; parapsidal grooves absent; mesonotum and scutellum regularly reticulate, the enclosed areas large and the margins high; anteriorly the areas are smaller; spine on metanotum long, acute; spines at lateral angles of propodeum likewise long and acute at apices; wings reaching the apex of the abdomen; abdomen about one and three-fourths times as long as wide, 1.7 times as long as the thorax; petiole one and one-third times as long as wide, with a hump-like elevation anteriorly, with about ten longitudinal ridges, these ridges not traversing the hump just mentioned; second tergite 1.4 times as wide as long, as long as the petiole, with about 12 longitudinal ridges extending nearly to the apical margin; some of these ridges bifurcate near basal fourth; each of the intervening grooves equally wide throughout its length or becoming somewhat wider apically; third tergite one and one-third times as wide as long, two and one-fourth times as long as the second, strongly and fairly closely punctate, the punctures arranged in more or less definite rows longitudinally; black; petiole, base of second abdominal segment, and thorax on sides, dark reddish brown; legs stramineous; scape light brown; mandibles yellow, the teeth reddish.

Type locality.—Glen Echo, Md.

Type.—U.S.N.M. No. 57801.

One specimen collected by the author in July.

(52) *TRIMORUS PETIOLATUS*, new species

Female.—Length 1.0 mm. Head slightly wider than the thorax; head and dorsum of thorax moderately thickly covered with short whitish hairs; frons with a delicate median carina from antennal base to anterior ocellus, striate at bases of mandibles on each side halfway between the median carina and the inner margin of the eye and extending upward as far as the middle of the eye is a narrow reticulate area; except for the striations and reticulations just mentioned the frons is polished, without sculpture; vertex without distinct sculpture; mesonotum rather finely sculptured, not punctate, with indistinct punctures; parapsidal grooves briefly indicated posteriorly; scutellum shining, with the anterior half somewhat roughened; spine on metanotum sharp and rather long; abdomen a little more than one and one-third times as long as wide, widest just behind the middle; petiole and second tergite with numerous grooves separated by sharp ridges, these grooves becoming narrower posteriorly; second tergite polished, without sculpture on apical half, twice as long as the first tergite; third tergite one and one-half times as wide as long, two and three-tenths times as long as the second, very delicately reticulate over its entire surface, sparsely pubescent laterally; wings normally developed, extending a little beyond the tip of the abdomen; black; legs yellowish brown, the femora and tibiae medially darker; petiole rufous; mandibles yellow; wings faintly brownish.

Type locality.—Cinnamon Lake, Schuyler County, N. Y.

Type.—U.S.N.M. No. 57802.

One specimen collected on June 5, 1925, by Prof. C. R. Crosby.

(53) *TRIMORUS RUFOCINCTUS*, new species

Female.—Length 1.20 mm. Head about twice as wide as long, as wide as the thorax, with fine white pubescence except medially on the frons; vertex and frons with dense impressed reticulation; frons above smooth, with small scattered punctures, smooth below, without sculpture except a fine median carina which extends to the anterior ocellus; thorax as wide as long, about as wide as the abdomen; mesonotum subopaque, pubescent, densely finely punctate; parapsidal grooves briefly indicated posteriorly; scutellum smooth, with fine sculpture anteriorly; spine on metanotum rather short, broad basally, acute apically; wings extending a little past the apex of the abdomen, brownish; abdomen 1.7 times as long as wide; petiole one and one-third times as wide as long, with about a dozen longitudinal grooves dorsally, the grooves extending its entire length; petiole not elevated anteriorly and without a transverse depression; second tergite 1.5 times as wide as long, 1.7 times as long as the petiole, with numerous ridges nearly to its apex, these ridges parallel with one another or diverging posteriorly; third tergite 1.4 times as wide as long, two and one-fourth

times as long as the second, with impressed reticulation, the areas rather large, with pubescence only laterally; black; scape brown at base; legs reddish, brown in part; petiole and base of second tergite reddish.

Type locality.—Glen Echo, Md.

Type and paratype.—U.S.N.M. No. 57803.

Six females collected July 21, 1921, by the author on low forest undergrowth along the Cabin John Creek.

Paratype in collection of Oscar Whittaker.

(54) *TRIMORUS FLAVOCINCTUS*, new species

Female.—Length 1.14 mm. Head about twice as wide as long, a little wider than the thorax, as wide as the abdomen, evenly covered, except for the frons medially, with short white pubescence; vertex and upper frons reticulate; frons otherwise smooth, without sculpture except for a fine median carina which extends to the anterior ocellus; thorax a little longer than wide, its upper surface covered, like the head, with short white pubescence; mesonotum subopaque, reticulate-punctate; parapsidal grooves briefly indicated posteriorly; scutellum finely reticulate; spine on metanotum moderate in length, acute at apex; wings extending a little past the apex of the abdomen; abdomen 1.7 times as long as wide; petiole 1.6 times as wide as long, with a few longitudinal grooves, not elevated anteriorly or depressed transversely; second tergite 1.6 times as wide as long, 1.3 times as long as the petiole, the ridges extending nearly to the apex, parallel or diverging posteriorly; third tergite 1.3 times as wide as long, 2.7 times as long as the second, without pubescence except laterally, smooth, delicately reticulate, the enclosed areas rather large; dark brown; scape at base, and all legs light brown; mandibles, petiole, and base of second tergite yellow; wings hyaline.

Type locality.—McLean Bogs, N. Y.

Type.—U.S.N.M. No. 57804.

One specimen collected May 16, 1925, by M. D. Leonard.

(55) *TRIMORUS XANTHOGNATHUS* (Ashmead)

Prosacantha xanthognatha ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 197, 1893 (male).

Hoplogryon xanthognathus, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910;

Das Tierreich, Lief. 48, p. 230, 1926.

Type locality.—Jacksonville, Fla.

Type.—U.S.N.M. No. 24516.

(56) *TRIMORUS CLARUS*, new species

Female.—Length 1.83 mm. Head as wide as the thorax, subconvex anteriorly, moderately excavated behind, 1.8 times as wide as long; frons with a strong carina to anterior ocellus, shortly striate below, striate laterally to just above middle of eye, with a small reticulate

area medially on each side just within the lateral striae, with small scattered punctures above; vertex reticulate; occiput impressed reticulate; thorax a little longer than wide, convex dorsally; parapsidal grooves short; mesonotum roughly sculptured, reticulate, irregularly transversely wrinkled anteriorly, more strongly longitudinally wrinkled posteriorly; scutellum smooth, without sculpture, sparsely covered with fine hairs; metanotal spine triangular, broad at base, acute at apex, about half as long as the scutellum; wings faintly brownish, extending about one-ninth the length of the abdomen past the latter's apex; abdomen 1.7 times as long as wide, 1.1 times as wide as the thorax, convex dorsally; petiole 1.3 times as wide as long, with several longitudinal ridges extending its entire length, very slightly transversely depressed in front of middle; second tergite 1.2 times as wide as long, 1.6 times as long as the petiole, with numerous longitudinal parallel or diverging ridges to apical fifth; several of these ridges bifurcate before middle; third tergite 1.45 times as wide as long, twice as long as the second, sparsely pubescent laterally and posteriorly, smooth, without sculpture of any kind; fourth tergite longer than the following combined, finely reticulate anteriorly; black; legs dark brown, the trochanters, tibiae basally and apically, and metatarsus of each leg, reddish brown.

Type locality.—Hollyburn, British Columbia.

Type.—U.S.N.M. No. 57805.

One specimen collected on September 27, 1929, by Oscar Whittaker.

(57) **TRIMORUS CALIFORNICUS** (Ashmead)

Prosacantha californica ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 190, 1893 (female).

Hoplogryon californicus, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910;

Das Tierreich, Lief. 48, p. 229, 1926.

Type locality.—Santa Cruz Mountains, Calif.

Type.—U.S.N.M. No. 24499.

(58) **TRIMORUS SILVATICUS**, new species

Female.—Length 1.36 mm. Head about twice as wide as long, 1.1 times as wide as the thorax, about as wide as the abdomen; occiput and vertex laterally with close impressed reticulation; frons striate below and laterally nearly to top of eye, pubescent above, with a carina to anterior ocellus; thorax scarcely longer than wide; mesonotum scaly-reticulate anteriorly, irregularly wrinkled posteriorly, subopaque, covered with short semierect hairs; parapsidal grooves briefly indicated posteriorly; scutellum smooth, without distinct sculpture; spine on metanotum rather short, acute; lateral angles of propodeum very short, tubercle-like; anterior wings nearly four times as long as wide, not quite attaining the tip of the abdomen, light brownish; abdomen 1.75 times as long as wide, 1.75 times as long as the thorax; petiole

1.3 times as wide as long, with a number of longitudinal grooves extending to anterior fourth, not elevated anteriorly or depressed transversely; second tergite nearly 1.4 times as wide as long, 1.5 times as long as the petiole, with numerous slightly diverging ridges on basal four-fifths, the intervening grooves broad and shallow; third tergite 1.4 times as wide as long, twice as long as the second, smooth, without sculpture, without pubescence except laterally and narrowly posteriorly; black; legs dark brown; knees, anterior tibiae apically, and tarsi yellowish brown; petiole very dark reddish.

Type locality.—Hollyburn, British Columbia.

Type.—U.S.N.M. No. 57806.

Two females collected on May 15 and June 9, 1928, by Oscar Whittaker.

Paratype in Whittaker collection.

(59) *TRIMORUS CRASSICORNIS* (Kieffer)

Hoplogryon crassicornis KIEFFER, Berliner Ent. Zeitschr, vol. 50, p. 262, 1905; Das Tierreich, Lief. 48, p. 216, 1926.

Habitat.—California: Santa Clara and San Mateo. Nevada: Ormsby.

Type.—In Kieffer collection.

(60) *TRIMORUS VIRGINIENSIS* (Kieffer)

Hoplogryon tibialis (non Foerster, 1841) ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 203, 1893 (female).—BRUES, Genera insectorum, fasc. 80, p. 25, 1908.

Hoplogryon virginensis KIEFFER, Genera insectorum, fasc. 80B, p. 98, 1910; Das Tierreich, Lief. 48, p. 218, 1926.

Type locality.—Virginia.

Type.—U.S.N.M. No. 24523.

Described from one specimen.

(61) *TRIMORUS CLARIPENNIS* (Ashmead)

Hoplogryon claripennis ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 203, 1893 (female).—BRUES, Genera insectorum, fasc. 80, p. 25, 1908.—KIEFFER, Genera insectorum, fasc. 80B, p. 96, 1910.—BRUES, Connecticut Geol. Nat. Hist. Surv. Bull. 22, p. 553, 1916.—KIEFFER, Das Tierreich, Lief. 48, p. 218, 1926 (female).

Female.—Length 1.34 mm. Head twice as wide as long, about as wide as the thorax, as wide as the abdomen; cheeks and extreme lower part of frons strongly striate; rest of frons and vertex polished; antennae fuscous, the base of scape paler; pedicel, third, and fourth joint subequal in length and width, the pedicel a little shorter, about twice as long as wide; third and fourth joints a little over twice as long as wide; mesonotum subopaque, slightly roughened, punctulate; parapsidal grooves faintly indicated as small depressions on each side posteriorly on the mesonotum; wings hyaline, rounded apically, extending a little past the tip of the abdomen; abdomen 1.65 times as long as wide, 1.6 times as long as the thorax; petiole

about as wide as long, traversed longitudinally by deep grooves; second tergite with deep grooves medially to apical third, the grooves shorter laterally; area posterior to the grooves smooth, without sculpture; third tergite 1.35 times as wide as long, faintly reticulate; metanotal spine moderately long, acute at apex, extending horizontally.

Type locality.—Virginia.

Redescribed from the type, U.S.N.M. No. 24524.

(62) *TRIMORUS CONCINNUS*, new name

Hoplogryon coxalis FOUTS, Proc. Ent. Soc. Washington, vol. 27, p. 103, 1925 (female); Cornell Univ. Mem. 101, p. 964, 1928.

The name *coxalis* is preoccupied in *Trimorus* by *coxalis* Thomson (described in *Prosacantha* in 1859).

Type locality.—Suffern, N. Y.

Type.—In the author's collection.

Originally described from one specimen collected on May 26, 1924, by Prof. C. R. Crosby.

The type of *coxalis* Fouts was compared with the type of *virginiensis* Kieffer and appeared to differ only in having the abdomen about as long as the head and the thorax combined. They may be identical specifically.

(63) *TRIMORUS PENNSYLVANICUS* (Ashmead)

Prosacantha pennsylvanica ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 189, 1893 (female).

Hoplogryon pennsylvanicus, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 228, 1926.

Habitat.—Pennsylvania.

Type.—In Berlin Museum.

Described from one specimen.

(64) *TRIMORUS BREVICARINATUS*, new species

Female.—Length 0.90 mm. Head about twice as wide as long, a little wider than the thorax, the latter as wide as the abdomen; occiput and vertex delicately reticulate; frons without sculpture except a fine median carina which does not quite reach the anterior ocellus; thorax as wide as long; mesonotum apparently finely reticulate but the sculpture somewhat obscured by the short pubescence; scutellum smooth, slightly roughened anteriorly; parapsidal grooves absent; spine on metanotum short, acute, less than half as long as the petiole; wings about two and one-half times as wide as the cilia on the distal margins are long, extending about a fourth the length of the abdomen past the latter's apex; abdomen 1.7 times as long as wide; petiole about as long as wide, shaped and sculptured as in *monticolus*, with a narrow row of longitudinal grooves across its middle; second tergite 1.6 times as wide as long, 1.6 times as long as the petiole, with

deep longitudinal grooves on anterior half; the grooves are narrowed to points apically and their edges are clear and sharp; the grooves are moreover not branched or divided, each one is distinct from every other one; third tergite 1.4 times as wide as long, delicately reticulate; black; legs dark brown, the trochanters lighter; wings hyaline.

Type locality.—Glen Echo, Md. (August 14, 1916.)

Type.—U.S.N.M. No. 57807.

Paratype localities.—Washington, D. C. (August 14, 1917), and Brownwood, Tex. (April 20, 1924), Pecan Bayou.

Three females collected by the author on the dates and at the localities indicated above. The paratype from Washington was collected on lawn grass.

Paratype in Whittaker collection, 0.77 mm. in length.

(65) *TRIMORUS PUNCTIGER*, new species

Female.—Length 1.80 mm. Head about as wide as the thorax, as wide as the abdomen; occiput shining, very faintly reticulate; an area behind each lateral ocellus impressed-reticulate; frons smooth, sparsely punctate on upper half, striate below and on the sides; the striae become gradually less numerous as they approach the upper frons and vanish just above the middle of the eyes; the usual carina on the frons is represented only by a short and faint suture in the middle of the frons; thorax a little longer than wide; mesonotum punctate except posteriorly, the punctures rather large and shallow, more than their diameter distant from one another; posteriorly the mesonotum is coarsely reticulate, the areas large and elongate anteroposteriorly; parapsidal grooves short, quickly lost in the coarse reticulation; scutellum coarsely reticulate like the posterior part of the mesonotum; spine on metanotum in the form of a broad, roughly sculptured plate with a little rounded nipple at its apex; lateral angles of propodeum prominent, acute; wings extending slightly past the apex of the abdomen, faintly brownish in color; abdomen a little more than one and one-half times as long as wide; petiole 1.1 times as wide as long, with about a dozen strong longitudinal ridges, the intervening grooves wrinkled; there is no smooth area along the apical margin of the segment as is usual, the ridges attaining the extreme edge; second tergite two and one-half times as wide as long, as long as the petiole, with numerous longitudinal ridges which extend to the apical fourth of the segment, the intervening grooves shallow, somewhat narrower than those on the petiole; third tergite 1.3 times as wide as long, 3.1 times as long as the second, closely impressed-reticulate, anteriorly finely longitudinally wrinkled; no pubescence except sparsely on the sides; black; legs reddish brown; coxae dark brown; scape at base brownish.

Type locality.—Glen Echo, Md.

Type.—U.S.N.M. No. 57808.

One specimen collected by the author.

A remarkable species, easily separated by many characters from any species known to me.

(66) *TRIMORUS NANUS* (Ashmead)

Prosacantha nana ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 191, 1893 (female).

Hoplogryon nanus, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 229, 1926.

Type locality.—Utah Lake, Utah.

Type.—U.S.N.M. No. 24501.

Originally described from a single female specimen.

(67) *TRIMORUS LONGIPENNIS* (Ashmead)

Hoplogryon longipennis ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 202, pl. 8, fig. 6, 1893 (female).—HARRINGTON, Trans. Roy. Soc. Canada, ser. 2, vol. 5, sect. 4, p. 184, 1899 (male).—BRUES, Genera insectorum, fasc. 80, p. 25, 1908.—KIEFFER, Genera insectorum, fasc. 80B, p. 97, 1910; Das Tierreich, Lief. 48, p. 217, 1926 (male, female).

Prosacantha laevifrons ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 190, 1893 (female).

Hoplogryon pteridis ASHMEAD, *ibid.*, p. 203 (female).—BRUES, Genera insectorum, fasc. 80, p. 25, 1908.—KIEFFER, Genera insectorum, fasc. 80B, p. 97, 1910; Das Tierreich, Lief. 48, p. 216, 1926 (female).

Prosacantha levis DALLA TORRE, Catalogus hymenopterorum, vol. 5, p. 507, 1898.—BRUES, Genera insectorum, fasc. 80, p. 22, 1908.

Hoplogryon levis, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 229, 1926 (female).

Female.—Length 0.97 mm. Head a little over twice as wide as long, as wide as the thorax; upper part of frons, vertex, and occiput with dense impressed reticulation, beadlike in appearance; lower frons medially smooth, without sculpture except a delicate impression to anterior ocellus; frons laterally reticulate; clypeus, lower frons laterally, and malar area, striate; thorax a little wider than long, decidedly flattened above, as wide as the abdomen; mesonotum closely scaly reticulate, the sculpture strong, with short parapsidal grooves posteriorly; scutellum with sculpture which is similar to, but more delicate than, that on the mesonotum; metanotal spine short, acute; wings subhyaline, extending a little past the apex of the abdomen; abdomen one and one-fourth times as long as wide, broadly ovate, rounded posteriorly; petiole about twice as wide as long, without a transverse depression and with the anterior margin not reflexed; second tergite a little more than twice as wide as long, with numerous parallel ridges to apical fourth; third tergite 1.5 times as wide as long, with uniform close impressed reticulation; black; scape dark reddish brown; legs light brown, the femora and tibiae darker brown; coxae dark brown.

Description based on two specimens in the author's collection from Virginia and Glen Echo, Md. The specimen from Virginia, collected on July 13, was compared with the type of *Hoplogryon pteridis* Ashmead and seemed to be conspecific with it. The specimen from Glen Echo was compared with Ashmead's type of *Prosacantha laevifrons* with similar results. Some years ago the author had the opportunity of comparing the type of *Prosacantha laevifrons* with the type of *Hoplogryon longipennis* and found no specific differences between them.

This species is known to occur in Ottawa, Canada; Fortress Monroe and Arlington, Va.; Glen Echo, Md.; and the District of Columbia.

Type.—U.S.N.M. No. 24521 (*longipennis*).

(68) **TRIMORUS NIGRICOXIA**, new species

FIGURES 13, 15

Female.—Length 1.63 mm. Head 2.2 times as wide as long, as wide as the thorax; frons, except an area above the bases of the antennae extending as far up as the middle of the eyes, and vertex with very close reticulate sculpture, beadlike in appearance; frons with a

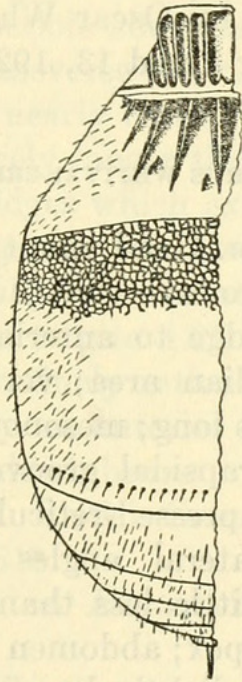


FIGURE 15.—*Trimorus nigricoxa*, new species: Dorsal view of abdomen. Only part of the sculpture is shown on the third tergite, the reticulation being continuous.

strong carina from antenna to anterior ocellus; head, except the smooth area described above, and dorsal surface of thorax thickly covered with short white hairs; scape about one and one-sixth times as long as the club, the latter about equal in length to joints 2–6 inclusive combined; mesonotum subopaque, very closely covered with small punctures; parapsidal grooves indicated as short broad depressions;

scutellum somewhat less strongly punctate than the mesonotum; spine on metanotum short, broad basally, acute apically; lateral angles of propodeum moderately produced, acute; abdomen broadly elliptical, 1.1 times as wide as the thorax, 1.6 times as long as wide; petiole 1.5 times as wide as long, with eight or nine longitudinal grooves separated by sharp ridges; second tergite 1.8 times as wide as long, 1.4 times as long as the petiole, with about ten grooves basally, these grooves deep anteriorly, becoming wider and shallower posteriorly, separated by sharp ridges; these ridges extend to the apical fourth of the segment; the grooves become more and more shallow and merge with the smooth area behind; third tergite 1.3 times as wide as long, 2.4 times as long as the second, with uniform impressed reticulation, pubescent only laterally; following tergites with close impressed reticulation, with fine scattered punctures; wings faintly brownish, extending slightly past the apex of the abdomen; black; trochanters, tibiae at extreme bases, and anterior tibiae at apices reddish yellow; femora and tibiae otherwise very dark brown; apical joints of tarsi brown.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57809.

Five specimens collected by Oscar Whittaker on September 4, 6, and 8, 1926, and September 9 and 13, 1927. One paratype in Whittaker collection.

(69) *TRIMORUS WHITTAKERI*, new species

Female.—Length 1.16 mm. Head about twice as wide as long, a little wider than the thorax; frons reticulate laterally and above, smooth medially, with a median ridge to anterior ocellus, evenly pubescent except on the smooth median area; vertex and occiput impressed reticulate; thorax as wide as long; mesonotum scaly-reticulate, evenly and closely pubescent; parapsidal grooves apparently not present; scutellum very closely impressed-reticulate, pubescent; spine on metanotum short-acute; lateral angles of propodeum projecting, acute; wings extending a little less than a third the length of the abdomen past the latter's apex; abdomen 1.4 times as long as wide, a little wider than the head, slightly longer than the head and thorax together; petiole twice as wide as long, with about a dozen longitudinal grooves which very nearly reach the margins of the segment, not elevated anteriorly and without a transverse depression; second tergite twice as wide as long, twice as long as the petiole, with about a dozen longitudinal ridges with deep intervening grooves; these ridges are parallel or diverge slightly from one another posteriorly, extending to apical third; third tergite 1.4 times as wide as long, impressed-reticulate, uniformly pubescent, 2.7 times as long as the

second; black; trochanters, knees, tibiae apically, and all tarsi reddish brown; wings brownish.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57810.

One specimen collected April 4, 1925, by Oscar Whittaker.

It gives me great pleasure to name this interesting species after my friend and collaborator Mr. Whittaker.

(70) *TRIMORUS OBSCURUS*, new species

Female.—Length 1.22 mm. Head about as wide as the thorax; vertex and upper half of frons impressed-reticulate; frons otherwise without sculpture except a small reticulate area midway between antenna and eye on each side; frons with a fine median carina to the anterior ocellus; thorax about as wide as long, a little narrower than the abdomen; mesonotum and scutellum thickly clothed with short whitish pubescence, the former with a rough reticulation, the areas rather small; scutellum less strongly sculptured, impressed-reticulate; parapsidal grooves absent; spine on metanotum short, blunt, barely projecting; lateral angles of propodeum short, blunt; wings distinctly brownish, extending a little past the apex of the abdomen; abdomen 1.6 times as long as wide; petiole about as long as wide, not elevated anteriorly and without a transverse constriction, with about 10 longitudinal grooves which very nearly reach both margins; second tergite twice as wide as long, scarcely longer than the petiole, with about a dozen strong longitudinal ridges which extend medially nearly to the posterior margin of the segment; the grooves between these ridges are broad, and each is equally wide throughout its length or widens somewhat posteriorly; third tergite 1.35 times as wide as long, 2.6 times as long as the second, finely reticulate, the areas rather large, without pubescence medially on anterior half; black; knees, anterior tibiae apically, and tarsi, reddish brown.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57811.

Two specimens collected on August 22 and 29, 1926, by Oscar Whittaker.

Paratype in Whittaker collection.

(71) *TRIMORUS BILINEATUS* (Ashmead)

Prosacantha bilineata ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 194, 1893 (female).

Hoplogryon bilineatus, KIEFFER, Genera insectorum, fasc. 80B, p. 95; 1910; Das Tierreich, Lief. 48, p. 230, 1926.

Type locality.—Washington, D. C.

Type.—U.S.N.M. No. 24508.

Originally described from four female specimens.

(72) *TRIMORUS PULCHELLUS*, new species

Female.—Length 1.56 mm. Head about twice as wide as long, about as wide as the abdomen, very little wider than the thorax; vertex and occiput with impressed reticulation; frons smooth, with a few minute scattered punctures on upper half; below and on the sides the frons is striate; median carina on frons inconspicuous and not present on upper half; thorax about as wide as long; parapsidal grooves not present or obscured by the heavy wrinkles on the mesonotum; mesonotum on anterior half scaly-impressed-reticulate, the areas very small; posterior half of mesonotum with heavy irregular wrinkles, not reticulate; scutellum densely impressed-reticulate, the areas very small, about the size of those on the anterior half of the mesonotum; spine on metanotum very short, lamelliform, broadly rounded posteriorly; posterior angles of propodeum projecting slightly, acute; wings brownish, reaching the apex of the abdomen; abdomen not quite twice as long as wide; petiole about as long as wide, distinctly but not greatly elevated anteriorly, with about 12 longitudinal grooves its entire length; second tergite 1.3 times as wide as long, a little longer than the petiole, with about 12 longitudinal ridges nearly reaching the posterior margin; the intervening grooves are flat, shallow, with approximately parallel sides; third tergite 1.2 times as wide as long, 2.3 times as long as the second, impressed-reticulate, more strongly so anteriorly; pubescence on third tergite sparse, present only laterally and posteriorly; black; knees, tibiae apically, and tarsi, except distal joints, reddish brown.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57812.

Two specimens collected April 1, 1926, and June 12, 1927, by Oscar Whittaker.

Paratype in Whittaker collection.

(73) *TRIMORUS VINCTUS*, new name

Hoplogryon similis Fouts, Proc. Ent. Soc. Washington, vol. 26, p. 160, 1924.

The name *similis* is preoccupied in *Trimorus* by *similis* Thomson (described in *Prosacantha* in 1859).

Type locality.—Ames, Iowa.

Type.—U.S.N.M. No. 26833.

(74) *TRIMORUS MONTICOLA*, new species

Female.—Length 0.88 mm. Head a little wider than the thorax; vertex smooth; occiput apparently delicately reticulate; frons smooth, without sculpture except a few fine striae below on the sides; median carina on frons not extending past the middle; thorax about as wide as long, as wide as the abdomen; mesonotum and scutellum pubescent, the hairs obscuring the very delicate sculpture; parapsidal grooves

absent; spine on metanotum short, acute; lateral angles of propodeum not projecting; wings extending about one-fourth the length of the abdomen past the latter's apex, hyaline, the cilia on the distal margins about a third as long as the wing is wide; abdomen 1.7 times as long as wide; petiole about as long as wide, with a row of short longitudinal grooves across its middle, otherwise smooth, without sculpture dorsally; second tergite twice as wide as long, 1.2 times as long as the petiole, with deep longitudinal grooves on anterior two-thirds; the ridges or intervals are parallel to each other and do no branching posteriorly; third tergite twice as wide as long, 1.7 times as long as the second, uniformly finely reticulate, the areas large and elongate anteroposteriorly; dark reddish brown; legs dark brown, the trochanters and anterior tibiae apically, yellowish.

Type locality.—Mount Holly Springs, Pa.

Type.—U.S.N.M. No. 57813.

One specimen swept from wheat by the author (July 16, 1920).

(75) *TRIMORUS TEXANUS*, new species

Female.—Length 1.62 mm. Head as wide as the thorax, a little wider than the abdomen; vertex finely reticulate laterally; occiput smooth, faintly reticulate; frons smooth, not reticulate, with a median carina extending to the anterior ocellus, striate laterally on lower half with a few minute scattered punctures above; mesonotum shagreened, shining, covered, as is also the scutellum with short whitish hairs; parapsidal grooves not sharply defined, nearly reaching the middle of the mesonotum; scutellum smooth, indistinctly shagreened anteriorly; spine on metanotum long, sharp at apex, nearly as long as the scutellum; lateral angles of propodeum projecting, acute; wings hyaline, extending a little more than one-fourth the length of the abdomen past the latter's apex; abdomen 1.7 times as long as wide; petiole about as long as wide, with a smooth rounded elevation anteriorly, the grooves, about ten in number, reaching to the middle of the segment; second tergite 1.3 times as wide as long, 1.5 times as long as the petiole, the ridges, which are mostly bifurcate medially, extending to posterior fourth; third tergite 1.5 times as wide as long, 1.8 times as long as the second, with an evenly (except narrowly laterally and posteriorly) distributed impressed reticulation, not pubescent medially; black; legs mostly light reddish brown; coxae, tibiae, except proximally, and posterior femora apically, fuscous.

Type locality.—Brownwood, Tex.

Type.—U.S.N.M. No. 57814.

One specimen collected on May 1, 1924, in Pecan Bayou by the author.

(76) *TRIMORUS MINOR*, new species

Female.—Length 1.50 mm. Head about two and one-fourth times as wide as long, as wide as the thorax, about as wide as the abdomen; occiput reticulate; vertex smooth; frons mostly smooth, without sculpture, striate just above the antennae and a spot on each side at about the middle of the eyes reticulate; thorax a little wider than long; mesonotum rather delicately scaly-reticulate, without a trace of parapsidal grooves; scutellum smooth, with a fine scaly reticulation anteriorly; spine on metanotum long, sharp, nearly as long as the petiole; lateral angles of propodeum projecting slightly, acute; wings hyaline, extending about one-seventh the length of the abdomen past the latter's apex; abdomen one and three-fourths times as long as wide, nearly 1.9 times as long as the thorax; petiole about as long as wide, not distinctly elevated anteriorly, the grooves not reaching the anterior margin medially; posterior fifth of the petiole smooth, without sculpture; second tergite 1.5 times as wide as long, 1.6 times as long as the petiole, traversed on basal three-fourths by numerous deep longitudinal grooves; the intervening ridges are flattened dorsally and become wider posteriorly; the upper edges of these ridges are on a level with the smooth surface behind them; third tergite 1.4 times as wide as long, twice as long as the second, uniformly finely reticulate, the areas moderately large; third tergite pubescent only laterally, polished along the posterior margin; black; coxae dark brown; legs mostly light brownish.

Type locality.—Rosslyn, Va.

Type.—U.S.N.M. No. 57815.

One specimen collected on June 8 by the author.

(77) *TRIMORUS MELANOPUS* (Ashmead)

Prosacantha melanopus ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 189, 1893 (female).—BRUES, *Genera insectorum*, fasc. 80, p. 22, 1908.

Hoplogryon melanopus, KIEFFER, *Genera insectorum*, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 228, 1926 (female).

Female.—Length 1.47 mm. Head twice as wide as long, slightly wider than the thorax, the latter as wide as the abdomen; frons striate below, reticulate except medially below, less strongly reticulate medially on the sides, the reticulation impressed below on the sides and above; vertex and occiput impressed, the sculpture beadlike; frons with a median carina nearly to anterior ocellus, the carina replaced by a thin line just below the ocellus; thorax as wide as long, strongly convex dorsally; mesonotum and scutellum evenly pubescent, finely scaly-reticulate; parapsidal grooves on posterior third, indistinct; metanotal spine triangular viewed from above, acute apically, about half as long as the scutellum; lateral angles of propodeum projecting slightly, blunt apically; wings tinged with brown, reaching

to the tip of the abdomen; abdomen 1.6 times as long as wide; petiole 1.35 times as wide as long, with numerous grooves to anterior margin which is narrowly reflexed, without a transverse depression; second tergite twice as wide as long, 1.3 times as long as the petiole, with parallel or slightly diverging ridges to apical fourth; laterally where the ridges are shorter, the surface is impressed reticulate; third tergite 1.45 times as wide as long, 2.1 times as long as the second, very strongly impressed reticulate, faintly reticulate laterally, polished narrowly along posterior margin; fourth tergite impressed-reticulate anteriorly; following tergites smooth, without sculpture; black; legs dark brown, the knees, tibiae distally, and tarsi, except terminal joints reddish brown.

Type locality.—Ottawa, Canada.

Type.—U.S.N.M. No. 24497.

New locality.—Chilliwack, British Columbia.

Redescribed from one specimen collected June 9, 1926, by Oscar Whittaker. This specimen was compared with the type of *melanopus* in the National Museum at Washington.

(78) *TRIMORUS RETICULATUS*, new species

Female.—Length 1.17 mm. Head about as wide as the thorax, a little wider than the abdomen; vertex, occiput, and frons above, and below on the sides, with impressed reticulation; a few small punctures in the reticulation above on the frons; frons with a fine median carina to median ocellus, otherwise, except as noted above, smooth, without sculpture; thorax as wide as long, about as wide as the abdomen; mesonotum and scutellum smooth, with a fine, somewhat indistinct, reticulation; parapsidal grooves short; metanotal spine moderately long, acute apically; lateral angles of propodeum rather long, acute; wings hyaline, extending nearly a fifth the length of the abdomen past the latter's apex; abdomen 1.6 times as long as wide; petiole about twice as wide as long, evenly rounded above, with about twelve longitudinal grooves extending to the anterior margin; petiole not elevated anteriorly and with a transverse depression; second tergite 1.8 times as wide as long, 1.4 times as long as the petiole, with about twelve grooves extending to apical third; third tergite 1.45 times as wide as long, 2.4 times as long as the second, with uniform, moderately impressed reticulation over its entire surface (except narrowly laterally and posteriorly), without pubescence medially; black; legs dark brown, the trochanters, knees, anterior tibiae apically, and tarsi, lighter.

Type locality.—Glen Echo, Md.

Type.—U.S.N.M. No. 57816.

One specimen collected in August 1922 by the author.

(79) *TRIMORUS FUMIPENNIS* (Ashmead)

- Gryon fumipennis* ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 206, 1893 (female).—BRUES, Genera insectorum, fasc. 80, p. 25, 1908.
- Paragryon fumipennis*, KIEFFER, Genera insectorum, fasc. 80B, p. 99, 1910.—BRUES, Connecticut Geol. Nat. Hist. Surv. Bull. 22, p. 553, 1916.—KIEFFER, Das Tierreich, Lief. 48, p. 236, 1926 (female).

Female.—Length 1.33 mm. Head 1.9 times as wide as long, a little wider than the thorax, the latter as wide as the abdomen; frons shortly striate below on the sides, with a fine median carina to anterior ocellus, with very fine punctures above; vertex and occiput reticulate, the areas small; thorax about as wide as long, subconvex above; mesonotum scaly-reticulate anteriorly, with a few transverse wrinkles, closely punctate posteriorly, with parapsidal grooves short; scutellum subconvex, reticulate anteriorly, polished posteriorly; metanotal spine short, acute; wings hyaline, about reaching tip of abdomen; lateral angles of propodeum short, blunt; abdomen twice as long as wide, about twice as long as the thorax, elliptical seen from above; petiole about 1.4 times as long as wide, with fine ridges to anterior margin, the dorsal surface sloping gradually upward to anterior margin from a narrow trough-shaped transverse depression near apex; second tergite 1.3 times as wide as long, 1.3 times as long as the petiole, with numerous slightly diverging ridges nearly to apex, all the ridges of approximately equal length; narrow area behind the ridges polished; third tergite 1.2 times as wide as long, 2.2 times as long as the second, uniformly impressed reticulate except laterally where it is faintly reticulate, and posteriorly where it is narrowly polished; tergites 4–6 reticulate anteriorly; body the color of mahogany; antennae piceous, the scape dark brown, yellowish brown on proximal half; legs, including coxae, stramineous.

Type locality.—District of Columbia.

Type.—U.S.N.M. No. 24528.

New locality.—Jacksonville, Fla.

Redescribed from one specimen in the author's collection. It was compared with the type of *Gryon fumipennis* Ashmead.

(80) *TRIMORUS SCHWARZII* (Ashmead)

- Prosacantha schwarzii* ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 192, 1893 (female). *Hoplogryon schwarzii*, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 232, 1926.

Type locality.—Washington, D. C.

Type.—U.S.N.M. No. 24503.

Originally described from one female specimen.

(81) *TRIMORUS NIGROBRUNNEUS*, new species

Female.—Length 1.16 mm. Head twice as wide as long, about as wide as the thorax; occiput and vertex with dense impressed reticula-

tion; laterally and above the frons is reticulate, below it is striate, medially it has a fine carina to anterior ocellus, otherwise smooth, without sculpture; mesonotum and scutellum uniformly pubescent, the former with a rather fine scaly-reticulate sculpture, the latter smooth, with a slightly roughened reticulate sculpture anteriorly; parapsidal grooves not present; spine on metanotum short, acute; thorax as wide as long; lateral angles of the propodeum about as long as the metanotal spine, subacute apically; wings extending a little less than a sixth the length of the abdomen past the latter's apex, lightly tinged with brown; abdomen nearly one and one-half times as long as wide, about one and one-eighth times as wide as the head; petiole about 1.7 times as wide as long, with a distinct but not deep transverse constriction, and with grooves which extend from its narrow polished posterior margin to its still narrower smooth anterior margin; second tergite about twice as wide as long, 1.4 times as long as the petiole, with about ten strong longitudinal ridges to posterior fourth, these ridges diverging from one another posteriorly; the intervening grooves are broad, with flat, smooth bottoms; third tergite 1.35 times as wide as long, 2.8 times as long as the second, uniformly finely reticulate, the impressions somewhat deeper and more strongly indicated anteriorly; black; legs brownish, the femora and tibiae in part somewhat darker.

Type locality.—Sudley, Md.

Type.—U.S.N.M. No. 57817.

One specimen collected on July 5, 1925, by the author.

(82) *TRIMORUS PERSPICUUS*, new species

Female.—Length 1.19 mm. Head about twice as wide as long, a little wider than the thorax, as wide as the abdomen, rather strongly convex anteriorly; frons striate shortly below, with a fine median carina from antennae to about the middle, with several small, indistinct punctures, otherwise without sculpture; occiput reticulate; cheeks finely reticulate; thorax a little longer than wide, convex dorsally; parapsidal grooves faintly indicated at base of mesonotum; mesonotum shining, with a faint reticulate sculpture; scutellum smooth, polished, with fine sculpture along the anterior margin; wings hyaline, extending about two-fifths the length of the abdomen past the latter's apex; abdomen 1.4 times as long as wide; petiole about twice as wide as long, with the anterior edge upturned, with a number of longitudinal ridges extending to the anterior margin; second tergite twice as wide as long, 1.4 times as long as the petiole, with numerous longitudinal ridges extending medially to posterior fourth; the grooves medially on the second tergite become narrower posteriorly, the intervening ridges flattened above, becoming wider behind

where they merge into the flat polished border of the segment; third tergite 1.5 times as wide as long, 2.4 times as long as the second, evenly reticulate except laterally, and narrowly posteriorly, the areas rather small; pubescence sparse laterally on the third tergite, not present except laterally; black; legs dark brown, the knees and tarsi paler.

Type locality.—Hollyburn, British Columbia.

Type.—U.S.N.M. No. 57818.

One specimen collected on August 25, 1928, by Oscar Whittaker.

(83) *TRIMORUS AMABILIS*, new species

Female.—Length 1.33 mm. Head about twice as wide as long, as wide as the thorax, as wide as the abdomen; malar area striate; frons just above malar areas reticulate; frons delicately reticulate and with distinct punctures above, with a median carina which vanishes above about midway between the antennae and the anterior ocellus; except as noted the frons is smooth, unsculptured; scape about seven times as long as thick, about one and one-third times as long as the five following joints combined; third joint about one and one-half times as long as thick, subequal to the fourth; club about as long as the scape; mesonotum and scutellum reticulate, with rather thick pubescence; parapsidal grooves not indicated; spine on metanotum rather broad anteriorly, acute at apex, reaching above middle of petiole; lateral posterior angles of propodeum projecting slightly, acute; abdomen not quite one and one-half times as long as wide, a little longer than the head and thorax combined; petiole nearly twice as wide as long, with numerous longitudinal grooves separated by narrowly rounded ridges, these grooves extending nearly to the apex of the segment; viewed from the side the upper edge of the petiole is straight; second tergite twice as wide as long, not quite twice as long as the petiole, with a number of grooves basally which are considerably wider than those on the petiole; these grooves medially on the segment become narrower posteriorly and extend about to the apical fourth; behind these grooves the surface of the second tergite is smooth, without sculpture; third tergite one and one-half times as wide as long, two and one-half times as long as the second, entirely closely reticulate, shining; wings light brownish, extending slightly past the apex of the abdomen; black; trochanters, femora at extreme apices, tibiae at extreme bases and apices, and metatarsus of each leg reddish brown.

Type locality.—Chilliwack, British Columbia.

Type.—U.S.N.M. No. 57819.

Two specimens collected by Oscar Whittaker on May 29 and May 30, 1926. Paratype in Whittaker collection.

(84) TRIMORUS LEPIDUS, new species

Female.—Length 1.07 mm. Head about twice as wide as long, 1.1 times as wide as the thorax, a little wider than the abdomen; frons smooth, without sculpture except a small reticulate spot below on either side, with a fine carina extending to median ocellus; vertex without sculpture; occiput finely reticulate; thorax slightly longer than wide, a little narrower than the abdomen; mesonotum finely scaly-reticulate, apparently without parapsidal grooves; scutellum smooth posteriorly, reticulate anteriorly; spine on metanotum short, acute apically; lateral angles of propodeum projecting, blunt; wings extending two-fifths the length of the abdomen past the latter's apex; abdomen 1.6 times as long as wide; petiole about twice as wide as long, with a number of grooves which extend to the very narrowly reflexed anterior margin; second tergite 1.7 times as wide as long, 1.6 times as long as the petiole, sculptured as in *perspicuus*, except that the ridges extend to apical third; third tergite 1.4 times as wide as long, 2.45 times as long as the second, evenly reticulate, without pubescence except laterally where it is sparse; pubescence everywhere on the body sparse and fine; black; legs dark brown, the trochanters, knees, tibiae apically, and tarsi except distally, somewhat lighter; wings light brownish.

Type locality.—Hollyburn, British Columbia.

Type.—U.S.N.M. No. 57820.

Two females collected June 9, 1928, and September 27, 1929, by Oscar Whittaker. Paratype in Whittaker collection.

NEARCTIC SPECIES NOT INCLUDED IN THE KEY

TRIMORUS BETHUNEI (Sanders)

Hoplogryon bethunei SANDERS, Can. Ent., vol. 42, p. 15, 1910 (male).—KIEFFER, Genera insectorum, fasc. 80B, p. 96, 1910; Das Tierreich, Lief. 48, p. 214, 1926 (male).

Mr. Sanders's description, although very good, does not include information necessary to place the species in the key. No mention is made of the presence or absence of the parapsidal grooves, of the sculpture of the third sternite, or of the color of the coxae.

Type locality.—Aurora, Ill.

One specimen collected June 15, 1909, in the nest of *Formica subrufa*.

Type.—In Illinois State Laboratory of Natural History, Acc. No. 39771.

TRIMORUS GRACILICORNIS (Ashmead)

Prosacantha gracilicornis ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 193, 1893 (female).—BRUES, Genera insectorum, fasc. 80, p. 22, 1908.

Hoplogryon gracilicornis, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 228, 1926 (female).

Runs to couplet 45 in the key to the species. The original description fails to mention the sculpture of the third sternite.

Type locality.—Carolina.

Type.—In Berlin Museum.

TRIMORUS LINELLII (Ashmead)

Prosacantha linellii ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 195, 1893 (female).—

BRUES, Genera insectorum, fasc. 80, p. 22, 1908.

Hoplogryon linellii, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 226, 1926 (female).—FOUTS, Cornell Univ. Mem. 101, p. 964, 1928.

Runs to couplet 41 in the key to the species. This species was not studied when the original key was made by the author, and so Ashmead's description must be used in placing it. The finely rugose sculpture of the mesonotum and scutellum serves to separate it from allied species that have the mesonotum punctate.

Type locality.—Long Island, N. Y.

Type.—U.S.N.M. No. 24510.

TRIMORUS MACROCERUS (Ashmead)

Prosacantha macrocera ASHMEAD, Ent. Amer., vol. 3, p. 117, 1887 (male).—

CRESSON, Synopsis of families and genera of Hymenoptera of America north of Mexico, p. 313, 1887.—ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 197, 1893 (male).—BRUES, Genera insectorum, fasc. 80, p. 22, 1908.

Hoplogryon macrocerus, KIEFFER, Genera insectorum, fasc. 80B, p. 95, 1910; Das Tierreich, Lief. 48, p. 226, 1926 (male).

Runs to couplet 34 in the key to the species. Further information is necessary before the species can be satisfactorily placed in the key.

Type locality.—Jacksonville, Fla.

Type.—U.S.N.M. No. 24515.

TRIMORUS MINUTISSIMUS (Ashmead)

Prosacantha minutissima ASHMEAD, Ent. Amer., vol. 3, p. 117, 1887 (female).—

CRESSON, Synopsis of families and genera of Hymenoptera of America north of Mexico, p. 313, 1887.

Hoplogryon minutissimus, ASHMEAD, U. S. Nat. Mus. Bull. 45, p. 202, 1893 (female).—BRUES, Genera insectorum, fasc. 80, p. 25, 1908.—KIEFFER, Genera insectorum, fasc. 80B, p. 97, 1910.—BRUES, Connecticut Geol. Nat. Hist. Surv. Bull. 22, p. 553, 1916.—KIEFFER, Das Tierreich, Lief. 48, p. 217, 1926 (female).

Runs to couplet 59 in the key to the species. Differs from *silvaticus* in having the wings extending a little beyond the tip of the abdomen. From *californicus* it differs in being smaller, 0.75 mm. as against 1.8 in *californicus*.

Type locality.—Jacksonville, Fla.

Type.—U.S.N.M. No. 24522.



Fouts, Robert M. 1948. "Parasitic wasps of the genus *Trimorus* in North America." *Proceedings of the United States National Museum* 98(3225), 91–148.
<https://doi.org/10.5479/si.00963801.98-3225.91>.

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