

A REVISION OF THE GENUS *PARARCHYTAS* BRAUER AND BERGENSTAMM (DIPTERA: TACHINIDAE)

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Abstract.—The genus *Pararchytas* is revised. A new species is described, *P. apache* (type locality: New Mexico, Grant Co., Cherry Creek campground, 14 mi. N of Silver City, 7400 feet). A lectotype is designated for *Tachina decisa* Walker. A key to the three known species, diagnostic descriptions, distribution maps, and illustrations are provided.

Key Words: *Pararchytas*, Tachinidae, taxonomy, identification

The genus *Pararchytas* was described by Brauer and Bergenstamm (1894) to include the single species *Tachina decisa* Walker. It remained monotypic until Brooks (1945) described a second species, *P. hammondi*. Guimarães (1971) subsequently synonymized *Jurinia punctata* Wulp with *P. decisa* (Walker).

In his paragraph comparing *P. hammondi* with *P. decisa*, Brooks (1945: 80) noted a single specimen (CNC) from Oak Creek Canyon, Arizona that was more robust and more strongly bristled that he said “undoubtedly represents a distinct species.” I came to a similar conclusion independently after examining material of *Pararchytas* in the USNM collection. All three species are exceedingly similar morphologically, including the male genitalia.

This paper presents a review of the taxonomy of *Pararchytas*, including a key to the three known species. This study is based primarily on USNM and CNC material, with specimens from a few other collections included. Depository institutions are cited in the acknowledgments section, including abbreviations used elsewhere in the text. For the common *P. decisa*, local-

ity information is summarized rather than presented as full specimen label data.

Although species of *Pararchytas* may be fairly common, almost nothing is known about the biology of the genus. Larval hosts have not been recorded, and I did not examine any reared specimens during this study. I have collected *P. decisa* visiting flowers, a habit they have in common with many other large Tachininae.

Pararchytas Brauer and Bergenstamm

Pararchytas Brauer and Bergenstamm 1894: 76. Type species, *Tachina decisa* Walker, by monotypy.

Diagnosis.—The bare prosternum, pilosity on the posterior margin of the hind coxa, multiple bristle-like setae on the posterior margin of abdominal tergite three, and well-developed palpi place *Pararchytas* in the tribe Dejeaniini. The combination of normal-sized yellow palpi, bare eyes, well-developed ocellar setae, discal bristles on abdominal tergites 3 and 4, lack of marginal bristles on tergite 1+2, uniformly brownish-black abdomen, and wing with basal region and crossvein r-m darkened, will distinguish *Pararchytas* from other genera of

Dejeaniini. The darkened crossvein r-m may be a synapomorphy for all species of *Pararchytas*. Wood's (1987) key may be used to identify material to the generic level.

The phylogenetic relationships within the Tachininae are virtually unknown, so it is not possible to discuss the relationships of *Pararchytas* to other taxa. It is most similar to an apparently undescribed taxon (I have seen two specimens in the USNM) from Mexico and Trinidad, which differs from *Pararchytas* in having strong median marginal setae on abdominal tergite 1+2.

KEY TO SPECIES OF *PARARCHYTAS*

1. Tomentum of parafrontals with yellowish cast; ground color of vertex yellow, not readily visible by contrasting with tomentum; apical scutellar bristles variable

2

- Tomentum of parafrontals whitish; ground color of vertex dark, contrasting with tomentum and visible beneath it; apical scutellar bristles often absent, represented only by vestigial sockets, occasionally one or both are present, full-sized *hammondi* Brooks

2. Apical scutellar bristles reduced, hair-like and divergent to occasionally absent with only vestigial sockets present; third abdominal tergite with marginal setae between medians and laterals tending to be bristle-like, enlarged compared to setae of general vestiture

. *apache*, new species

- Apical scutellar setae of normal size, crossed at about their middle; third abdominal tergite with marginal setae between medians and laterals very little enlarged, similar to setae of general vestiture *decisus* (Walker)

Pararchytas decisus (Walker)
(Figs. 1, 2; Map 1)

Tachina decis Walker 1849: 715.
Jurinia punctata Wulp 1892: 191. Syn. by Guimarães, 1971: 59.

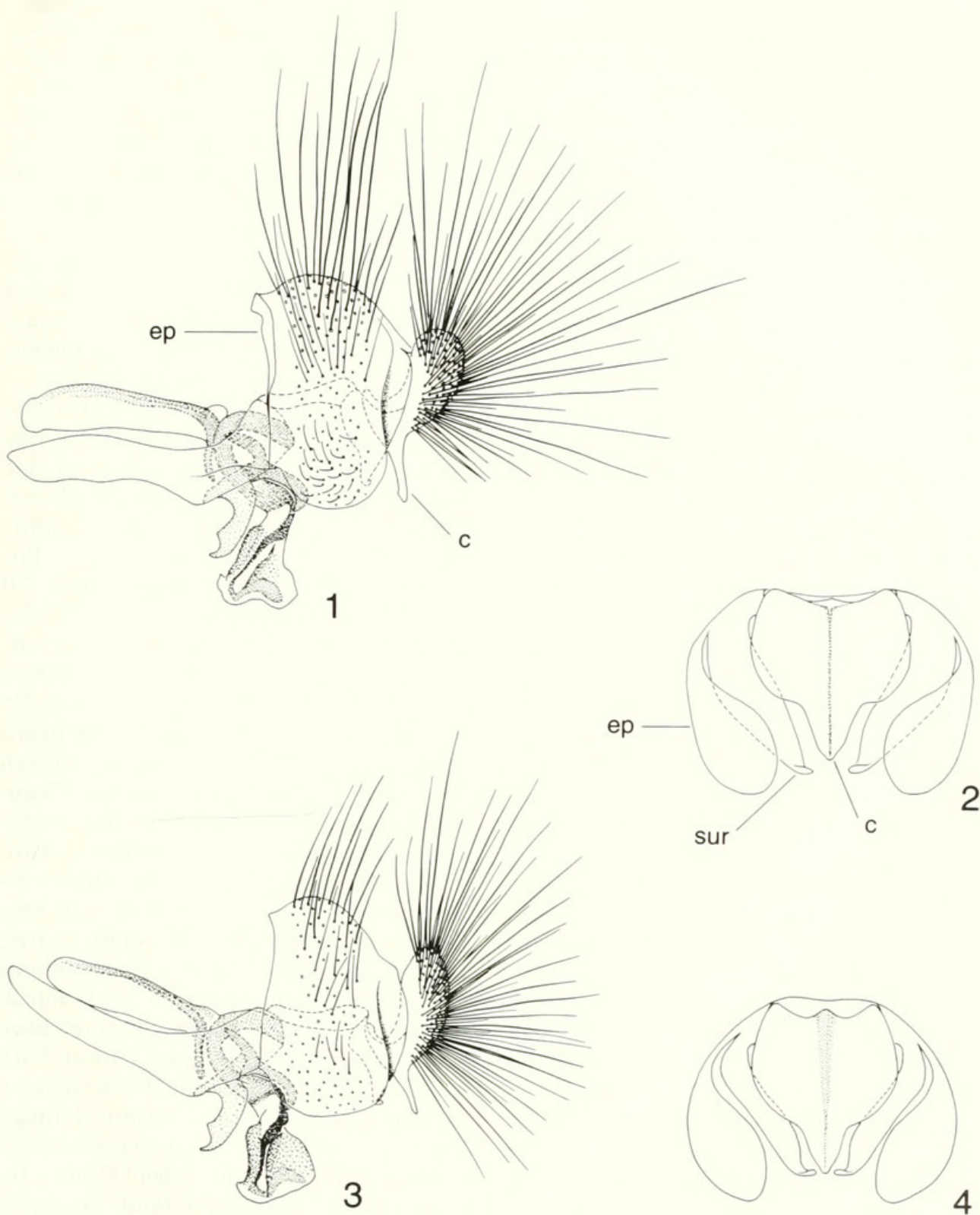
Type material.—There are 1 ♂ and 2 ♀ syntypes of *Tachina decis* in BMNH. I am hereby designating the male as lectotype. It is labeled: “SYN-TYPE/*Locality* ? Pres: by Entomological Club. 44.12./Ent. Club. 44-12./*Tachina decis* Walk [verso reads] One of Walkers series so named. EAW/SYN-

TYPE ♂ *Tachina decis* Walker R. W. Crosskey det 1972/LECTOTYPE ♂ *Tachina decis* Walker, 1849: 715. Des. N. E. Woodley 1997.” This specimen was cited by Walker (1849: 716) in series “c,” with a locality of “North America.” The two females are labeled as paralectotypes. One is clearly from Walker’s series “b” from Nova Scotia.

The ♀ holotype of *Jurinia punctata* Wulp is also in BMNH. It is labeled: “Type [verso reads] *Jurinia punctata* V.d.W./♀/Omiteme, Guerrero, 8000 ft. July. H.H. Smith/B.C.A. Dipt. II. *Jurinia punctata* v.d.W./Central America. Pres. By F. D. Godman. O. Salvin. 1903–172.”

Diagnosis.—*Pararchytas decisus* can be readily distinguished from *P. hammondi* by the yellowish tomentum of its head. It can be separated from *P. apache* by the large, crossed apical setae of the scutellum, and the generally smaller, less stout discal and marginal setae of the third abdominal tergite. This is most noticeable in the setae laterad of the larger median marginals, which normally differ little from the general vestiture of the abdomen.

Description.—*Male*: Head yellowish to brownish in ground color, occiput darker, densely covered with whitish yellow tomentum virtually obscuring ground color, thinnest on vertex; setae and hairs of head black except for dense yellowish white setae on occiput, which encroach onto lower, posterior portion of genal dilation; frons at vertex 0.26 to 0.34 head width; first antennal flagellomere ovoid to slightly produced posteriorly; palpus 0.80 to 0.95 as long as eye height, strongly narrowed in basal half, gradually spatulate in apical half, laterally compressed; setulae present on outer side of palpus, longest on apical part of lower margin; prementum 0.93 to 1.16 as long as eye height; labella with short yellowish golden hairs. Thorax brownish black, postpronotal lobes, vague lateral areas of scutum, postalar calli, and scutellum more yellowish to reddish brown; tomentum of scutum light brownish, becoming more whitish and



Figs. 1–4. Male terminalia of *Pararchytas*. *P. decisus*: 1, Left lateral view. 2, Posterior view, setae omitted. *P. hammondi*: 3, Left lateral view. 4, Posterior view, setae omitted. Abbreviations: *c*, cerci; *ep*, epandrium; *sur*, surstyli.

denser anteriorly, appearing weakly vittate presuturally; hairs and setae of thorax entirely black except for a few tiny pale hairs on anterior portion of postalar wall; scutel-

lum with apical setae large, crossed at about midpoints; wings nearly hyaline, with base up to fork of radial sector and a small spot over crossvein r-m darkened, and small area

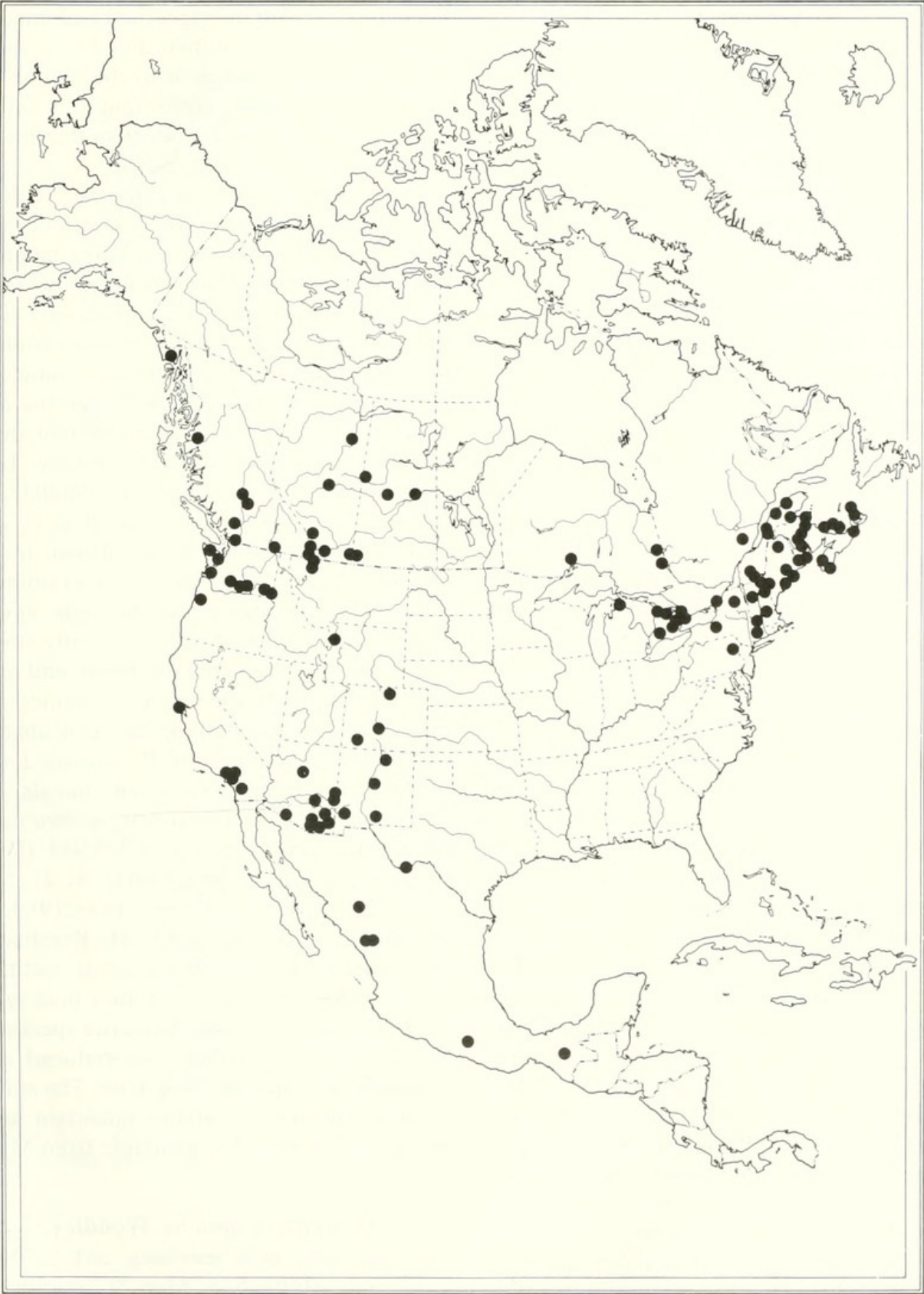
at bend of M faintly darkened; tegula blackish, basicosta dark yellow; both calypters dark, sometimes with darker margins, sometimes entirely very dark; halter with stem yellowish, knob dark; legs brownish to brownish black, tibiae sometimes more yellowish, pulvilli pale yellowish, bases of tarsal claws brownish to yellowish. Abdomen brownish to brownish black, blackish centrally, forming an irregular median vitta from the declivous portion of syntergite 1+2, narrowing posteriorly, most prominent in specimens with paler abdomens, terminalia dark yellowish to brownish, cerci darker; inconspicuous tomentum present, most easily visible on fifth tergite, less so on fourth, and present around discal setae on third; hairs and major setae black; tergite three with one pair of median discal setae and one pair of median marginals, with a small number of enlarged bristle-like hairs, mostly between and posterior to the discals, sometimes one or two enlarged hairs lateral to the marginals, but even if the marginal hairs are slightly enlarged, they do not appear bristle-like; fourth tergite usually with a single pair of median discal setae and very strong marginals extending to lateral margin, with an irregular row of smaller bristle-like setae just posterior to the marginals, sometimes a few enlarged hairs around discals, but these not very prominent; apical half of tergite five evenly set with bristle-like setae, slightly decreasing in size posteriorly; sternites two-four with short, stout bristle-like setae on apical half. Terminalia (Figs. 1, 2) with epandrium short and deep, evenly rounded in lateral view, densely setose with longest setae on dorsum; surstyli triangular in lateral view, apices slightly recurved; cerci laterally rounded in posterior view, the apical third produced triangularly, entirely fused, dorsal part evenly set with long setae; fifth sternite with narrow v-shaped emargination posteriorly, the resultant lobes truncately rounded, strongly setose. Length, 9.1 to 13.4 mm.

Female: Very similar to male in most respects, differing as follows: Head with

frons 0.32 to 0.36 width of head at vertex; with two strong proclinate orbital setae. Thorax with front legs with tarsomeres 2–4 slightly flattened and expanded laterally; tarsal claws and pulvilli shorter than in male. Abdomen with terminalia small, concolorous with rest of abdomen. Length, 8.9 to 13.5 mm.

Distribution (Map 1).—Transcontinental in the north, from the panhandle of Alaska to southern Quebec and Nova Scotia, south to Pennsylvania in the east, and mountainous areas in the west south into Mexico.

Locality records.—(380 ♂, 260 ♀). UNITED STATES: *Alaska:* Glacier Bay National Monument, Lituya Bay, west side of Cenotaph Island. CANADA: *Alberta:* Banff, Norquay Mountain Meadows; Bilby; Claresholm; Coaldale; Cypress Hills; Edmonton; Frank; Jumping Pond Creek, 20 mi. W Calgary; Mildred Lake, 57°03'N, 111°35'W; Waterton. *British Columbia:* Cultus Lake; Fitzgerald; Lillooet; Lillooet, Seton Lake; 100 Mile House; Robson; 25 km SW Terrace on Highway 25; Williams Lake. *New Brunswick:* Bathurst; Birch Cove, near Chamcook; Boiestown; Chamcook; Douglas; Fredericton; McGivney; Musquash; Renous; St. Andrews. *Nova Scotia:* Annapolis Royal; Cape Breton Island, Cheticamp; Frizzletown; Queen's County, White Point Beach; Smith's Cove; Tory Creek, Guysboro; Victoria County, Pony Island Point. *Ontario:* Belfountain; Belwood; Charlton; Elora; Elsinore; Erin; Fergus; Guelph; Keswick; Low Bush, Lake Abitibi; Lucan; Macdiarmid, Lake Nipigon; Meaford; St. Lawrence Island National Park, Adelaide Island; St. Lawrence Island National Park, Grenadier Island Centre; Toronto. *Prince Edward Island:* Brackley Beach; Portage; Wood Islands. *Quebec:* Cap Bon Ami; Cap Chat; Cross Point; Laurentide Park, Le Relais; Mont Joli; Mont Orford; North Hatley; Notre Dame du Portage; Parke Reserve; Saint Eleuthère; Saint Joseph de Kamouraska. *Saskatchewan:* Big River; Cypress Hills; Meadow Lake; Nipawin. UNITED STATES: *Arizona:*



Map 1. Distribution of *Pararchytas decusus*.

Apache Co.; Cochise Co.; Coconino Co.; Gila Co.; Graham Co.; Greenlee Co.; Pima Co.; Santa Cruz Co. *California*: Marin Co.; Los Angeles Co.; San Bernardino Co.; San Diego Co.; San Mateo Co. *Colorado*: Chaffee Co.; La Plata Co.; Larimer Co. *Connecticut*: Litchfield Co. *Maine*: Aroostook Co.; Hancock Co.; Kennebec Co.; Lincoln Co.; Oxford Co.; Penobscot Co. *Michigan*: Cheboygan Co. *Montana*: Flathead Co. *New Hampshire*: Cheshire Co.; Coos Co.; Grafton Co. *New Mexico*: Grant Co.; Mora Co.; Otero Co.; Torrance Co. *New York*: Erie Co.; Tompkins Co.; Warren Co. *Oregon*: Benton Co. *Pennsylvania*: Monroe Co. *Texas*: Brewster Co. *Vermont*: Washington Co. *Washington*: Benton Co.; Clallam Co.; Kitsap Co.; Lewis Co.; Yakima Co. *Wyoming*: Teton Co. **MEXICO**: *Chiapas*: San Cristobal, 7000 ft. *Chihuahua*: head of Rio Piedras Verdes, 7300 ft. *Durango*: 10 mi. W El Salto, 9000 ft.; Navios, 26 mi. E of El Salto, 8000 ft.; 30 mi. W Durango, 8000 ft.; road from Durango City to La Flor, 65–70 km SSW Durango City, 2590 m.

Flight period.—Over the entire range of *P. decisus* collection dates range from 4 April to 1 December. This range of dates occurs in southern California alone, so the species is apparently active much of the year in the southern part of its range. In Canada, dates range from 7 June to 6 October, with the vast majority from July and August, indicating a primarily summer activity period in the northern part of the species' range.

Biology.—Like other Dejeaniini, this species is often collected at flowers. Specimens I have examined were collected from *Apocynum*, *Aster*, *Ceanothus*, *Eupatorium perfoliatum*, *Helenium hooperi*, *Lomatium*, *Melilotus*, *Solidago sempervirens*, *Solidago* spp., and *Zygadenus elegans*.

Remarks.—*Pararchytas decisus* is the most widespread species in the genus, and the most common in collections. I have noted some variation in the species. Specimens from the southwestern United States are

slightly darker on average, the black medial markings on the abdomen thus being more indistinct. Also, males from the southwest often have a wider frons that is slightly more convex in appearance than that found in more eastern specimens.

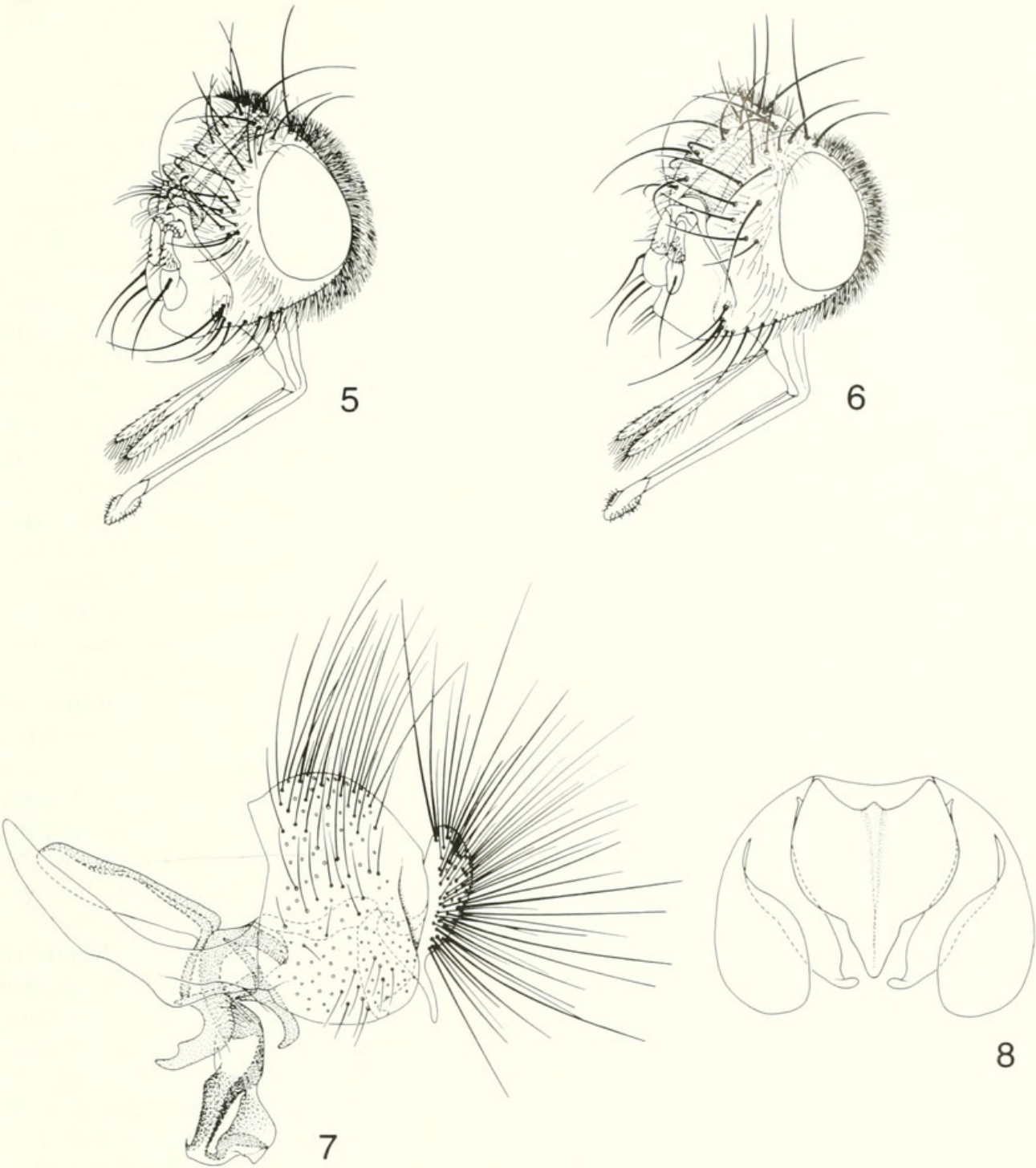
Pararchytas decisus is sympatric with *P. apache* in Arizona, New Mexico, and northern Mexico, sometimes being taken at the same locality. Unfortunately, the male genitalia of *Pararchytas* are extremely similar among species, being essentially useless for identification. However, the characters used in the key to separate *P. decisus* and *P. apache* are remarkably consistent even though they are based on chaetotaxy. This is especially true of the apical scutellar setae, which are large and crossed in *P. decisus* and very reduced or absent in *P. apache*. Of all the *P. decisus* I examined, only eight specimens had the right apical scutellar seta reduced or absent, only seven had the left seta reduced or absent, and only one (of 588 total specimens examined for this character) had both apical setae absent. All of the specimens of *P. apache* I examined have reduced or absent apicals.

I am uncertain of the identity of two male specimens from Mexico in USNM (Dist. Federal, La Cima, 26.ix.1991, A. L. Norrbom; and Veracruz, Perote, 14.ix.1989, E. Barrera, T. J. Henry, and I. M. Kerzhner). Both specimens have the general vestiture of the abdomen longer and finer than typical *P. decisus*. Also, the Veracruz specimen has the apical scutellar setae reduced and divergent as found in *P. apache*. The status of these specimens remains uncertain until much more material is available from Mexico.

***Pararchytas apache* Woodley,
new species**

(Figs. 5–8; Map 2)

Type material.—The holotype ♂ (CNC) is labeled: "USA NM Grant Co. Cherry Ck. campgrd. 14mi. N. Silver City 15–16.viii.1993 7400' J.E. O'Hara/HOLOTYPE ♂ *Pararchytas apache* N.E.Woodley



Figs. 5–8. *Pararchytas apache*. 5, Left dorsolateral view of male head. 6, Left dorsolateral view of female head. 7, Male terminalia, left lateral view. 8, Male terminalia, posterior view, setae omitted.

1997.” The specimen is in excellent, fresh condition.

Diagnosis.—*Pararchytas apache* can be distinguished from *P. hammondi* by the yellowish tomentum of the head, which it shares with *P. decisus*, and its geographic range is quite distant from that of *P. ham-*

mondi. It is most similar to *P. decisus*, from which it differs by having very reduced, divergent apical scutellar setae (sometimes absent) and setae lateral to the median marginals on abdominal tergite three often extending in a row to the laterals. In general, *P. apache* is more bristly in appearance and

more uniformly dark in color than *P. decisus*, but this is difficult to appreciate without comparing series of specimens.

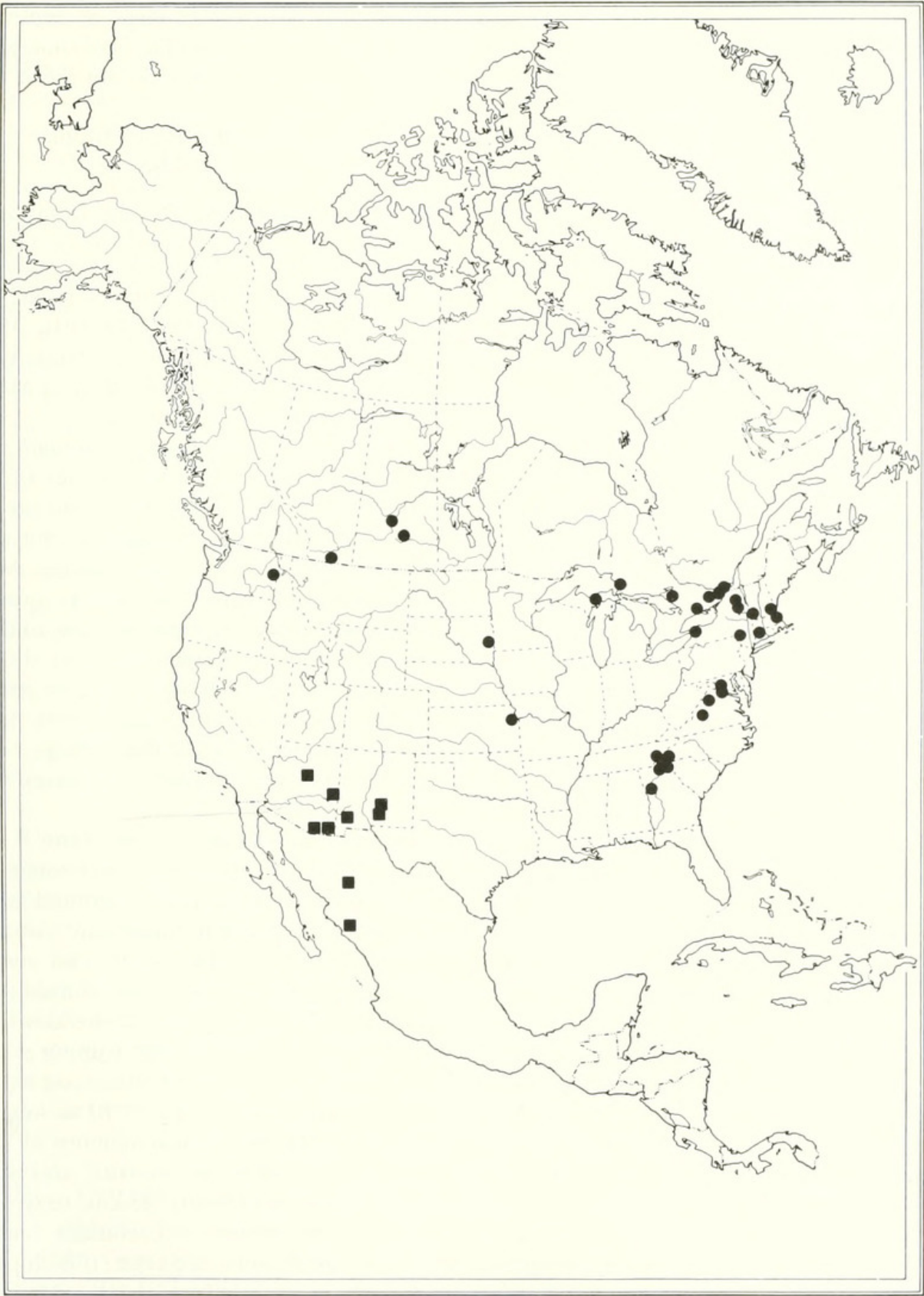
Description.—*Male*: Very similar to *P. decisus*, differing only in the following respects: Head (Fig. 5) with frons at vertex 0.28 to 0.32 head width; first antennal flagellomere ovoid to slightly produced posteriorly; palpus 0.93 to 1.10 as long as eye height; prementum 1.08 to 1.38 as long as eye height. Thorax with apical scutellar setae very reduced, hair-like to absent; legs with tibiae sometimes yellowish brown, but not as yellow as in some *P. decisus*. Abdomen brownish black, the central area only vaguely darker, not as readily discernible to the naked eye; tomentum less evident on fourth tergite, the lateral areas basally usually quite shiny, and tomentum around discal setae on third tergite vague to absent; tergite three with enlarged bristle-like hairs around discal setae usually stouter than in *P. decisus*, and setae lateral to median marginals usually noticeably enlarged and extending in a row to the lateral setae; fourth tergite usually with several enlarged seta-like hairs around discals that are stouter than in *P. decisus*. Terminalia (Figs. 7, 8) very similar to those of *P. decisus*. Length, 11.8 to 13.8 mm.

Female: Very similar to male in most respects, differing as follows: Head (Fig. 6) with frons 0.32 to 0.35 width of head at vertex; with two strong proclinate orbital setae; palpi 0.95–1.03 eye height; prementum 1.05 to 1.12 eye height. Thorax with front legs with tarsomeres 2–4 slightly flattened and expanded laterally; tarsal claws and pulvilli shorter than in male. Abdomen with terminalia small, concolorous with rest of abdomen. Length, 11.6 to 13.9 mm.

Distribution (Map 2).—Known from north-central Arizona and southwestern New Mexico south to Chihuahua and Sinaloa, Mexico.

Material examined.—(53 ♂ and 33 ♀). **PARATYPES: UNITED STATES: Arizona:** 1 ♂, Apache Co., Apache Sitgreaves Nat. Forest, Alpine Divide Campgr., 6 km

N of Alpine, 2600m, 11–12.viii.1980, J.E. and W.M. O'Hara (CNC); 2 ♂, Cochise Co., Chiricahua Mtns., Onion Flat, 12.viii.1940, E. S. Ross (CAS); 1 ♀, Cochise Co., Chiricahua Mtns., Onion Saddle, 7600 ft., 14.ix.1965, C. W. Sabrosky (USNM); 1 ♀, Cochise Co., Chiricahua Mtns., Rustler Park, 21.viii.1970, R. E. Woodruff (USNM); 1 ♀, Coconino Co., Oak Creek Canyon, Todd's Lodge, 3.x.1948, G. H. and J. L. Sperry (USNM); 1 ♂, same data but 12.ix.1947 (USNM); 1 ♀, same data but 28.ix.1948; 1 ♀, same data but 26.ix.1948 (USNM); 1 ♂, Coconino Co., Oak Creek Canyon, 8.ix.1932, R. H. Beamer (CNC); 2 ♀ Coconino Co., Oak Creek Canyon, 6000 ft., viii, F. H. Snow (CNC); 1 ♂, Coconino Co., Oak Creek Canyon, 4800 ft., 10.viii.1962, F. Werner, J. Bequaert (CNC); 1 ♂, Santa Cruz Co., 0–2 mi. Mt. Wrightson trail, Santa Rita Mtns, 6.ix.1961, Bequaert and Noller (CNC); 2 ♀, Santa Cruz Co., trail to Mt. Wrightson, 6–8000 ft., 27.viii.1962, H. E. Milliron (CNC). *New Mexico*: ♀ Allotype, 3 ♂, Grant Co., Gila National Forest, Cherry Creek Campground, 21 km N Silver City, 2250 m, 3–4.viii.1980, J. E. and W. M. O'Hara (CNC); 8 ♂, same data but 14–16.viii.1983, J. E. O'Hara (CNC); 5 ♂, same data but 16–19.viii.1982, flowers of *Ceanothus* (CNC); 1 ♂, 1 ♀, same data but 29–31.vii.1982 (CNC); 6 ♂, Grant Co., Gila National Forest, Cherry Creek Campground, 14 mi. N Silver City, 7400 ft., 15–16.viii.1993, J. E. O'Hara (CNC); 4 ♀, same data but 16.ix.1994 (CNC); 1 ♂, 1 ♀, Grant Co., Pinos Altos Mtns., 28.viii.1951, E. L. Kessel (CAS); 6 ♂, Lincoln Co., 1.5 mi. W of Alto, 7400 ft., 24–25.vii.1982, R. S. Anderson (CNC); 1 ♂, Lincoln Co., White Mtns., Rio Ruidoso, 6500 ft., 30.vii, C. H. T. Townsend (BMNH); 1 ♀, Otero Co., Cloudcroft, 8500–9500 ft., 6.ix.1963, H. V. Weems, Jr. (USNM); 2 ♂, 2 ♀, Otero Co., Sacramento Mtns., Lincoln National Forest, 3 km NE of Cloudcroft, 1–2.viii.1980, J. E. and W. M. O'Hara (CNC). **MEXICO: Chihuahua:** 1 ♂, Sierra Madre,



Map 2. Distribution of *Pararchytas hammondi* Brooks ● and *P. apache* ■.

about 7300 ft., 15.viii, C. H. T. Townsend (BMNH); 2 ♂, Sanchez (probably 27°27'N, 107°41'W), 2.ix.1909, C. H. T. Townsend (USNM); 3 ♂, 5 ♀ Mound Valley, 23.viii.1909, C. H. T. Townsend (BMNH, USNM); 4 ♂, 5 ♀, same data but 24.viii.1909 (BMNH, USNM); 1 ♂, 4 ♀, same data but flowers of *Rudbeckia*, 25.viii.1909 (USNM). *Sinaloa*: 2 ♂, 1–1.5 km SE of El Palmito, 1981 m, 11.ix.1979, D. E. and J. A. Breedlove (CAS).

Additional material.—4 ♂ Lincoln Co., 1.5 mi. W of Alto, 7400 ft., 24–25.vii.1982, R. S. Anderson (CNC). See remarks for status of these specimens.

Flight period.—*Pararchytas apache* has been collected from 24 July to 3 October. It seems to have a much more limited activity period than *P. decisus*.

Biology.—This species has been collected at flowers of *Ceanothus* and *Rudbeckia*, but nothing is known of its biology.

Etymology.—The species epithet, a noun in apposition, is based on the Apache Indian tribe that inhabited the area where this species occurs.

Remarks.—*Pararchytas apache* is probably sympatric throughout its range with *P. decisus*. There is some variation in the abdominal chaetotaxy, particularly in the development of the marginal row of setae lateral to the median marginals on abdominal tergite three. These are usually notably stronger than the surrounding general pilosity, but occasional specimens have them only weakly developed. The palpi and prementum are somewhat variable in length, and seem on average to be longer than those of *P. decisus*, but I have not made exhaustive measurements of the latter species to confirm this rigorously.

The series of specimens cited under additional material contains the only problematic specimens I have examined. Of the 8 ♂ in the series taken from this locality, four specimens are not considered paratypes because there is some uncertainty about their identity. Three have the apical scutellar setae larger than normal for *P. apache*, al-

though they are not as large as typically found in *P. decisus*, and they are somewhat convergent although they do not cross.

Pararchytas hammondi Brooks
(Figs. 3, 4; Map 2)

Pararchytas hammondi Brooks 1945: 80.

Type material.—The holotype male of *Pararchytas hammondi* Brooks (CNC) is labeled: "Avonmore. Ont. 13. VII. 1939 G.H.Hammond/HoloTYPE ♂ *Pararchytas hammondi* Brks No. 5516". It is in excellent condition.

Diagnosis.—*Pararchytas hammondi* can be distinguished from other species of the genus by having whitish tomentum on the head, especially the parafrontals, not yellowish as found in the other species. Also, the vertex of the head is dark in ground color and visible through the thin tomentum. *Pararchytas hammondi* also differs from *P. decisus* in having reduced apical setae of the scutellum. *Pararchytas hammondi* does not occur near the range of *P. apache*, so is very unlikely to be confused with that species.

Description.—*Male*: Differs from *P. decisus* as follows: Head with parafrontal region brownish to blackish in ground color, covered with whitish tomentum virtually obscuring ground color, but thin on vertex, the cuticle visible, sometimes subshining; frons at vertex 0.26 to 0.28 head width; dense pale setae on occiput without a yellow cast; palpus 0.85 to 0.90 as long as eye height; prementum 0.98 to 1.10 as long as eye height. Thorax with tomentum of scutum whiter than in *P. decisus*; scutellum with apical setae usually absent, only vestigial sockets present, occasionally one or both present as full sized setae, if both present they are crossed at about midpoints; legs with femora usually more brownish than in *P. decisus*. Abdomen dark brownish, blackish centrally but usually not as distinctly so as in *P. decisus* that have this coloration. Terminalia (Figs. 3, 4) essen-

tially as in *P. decisus*. Length, 9.5 to 12.9 mm.

Female: Very similar to male in most respects, differing as follows: Head with frons 0.29 to 0.33 width of head at vertex; with two strong proclinate orbital setae. Thorax with front legs with tarsomeres 2–4 slightly flattened and expanded laterally; tarsal claws and pulvilli shorter than in male. Abdomen with terminalia small, concolorous with rest of abdomen. Length, 10.3 to 12.5 mm.

Distribution (Map 2).—Transcontinental from New England across southern Canada to eastern Washington, south in the east to northern Georgia; South Dakota and Kansas.

Material examined.—(109 ♂, 25 ♀). CANADA: *Alberta*: 1 ♂, Writing-on-Stone Provincial Park, 23.viii.1982, D. McCorquodale (CNC). *Ontario*: Holotype ♂, Allotype ♀ (CNC), 22 ♂ Paratypes (CNC), 3 ♂ Paratypes (USNM), 32 ♂ (CNC), Avonmore, 13.vii.1939, G. H. Hammond; 12 ♂ Paratypes, 6 ♂, same data but 13.vi.1939 (CNC); 8 ♀ Paratypes (CNC), 1 ♀ Paratype (USNM), 4 ♂ (CNC), 1 ♀ (CNC), same data but 8.viii.1938; 1 ♀, Apple Hill, 9.viii.1938, G. H. Hammond (CNC); 1 ♂, Eldorado, 13.vii.1944, G. S. Walley (CNC); 1 ♂, Emsdale, 20.vii.1911, M. C. Van Duzee (CAS); 1 ♂, Innisville, 6.viii.1963, W. R. M. Mason (CNC); 2 ♂, Virgin's Bower, Icewater Creek watershed, 50 km N Sault Ste. Marie, 28.vi.1983, P. D. Kingsbury (DEBU). *Saskatchewan*: 1 ♀, Saskatoon, 3.ix.1911, T. N. Willing (CNC); 1 ♀, Earl Grey, 24.viii.1924, J. D. Ritchie (CNC); 1 ♀, same data but 16.viii.1925 (CNC); 1 ♂, same data but 4.vii.1926 (CNC). UNITED STATES: *Connecticut*: 1 ♀, Litchfield Co., Colebrook, 2.ix.1911 (USNM). *Georgia*: 1 ♀, Meriwether Co., Luthersville, 12.vii.1949, P. W. Fattig (USNM); 1 ♂, Rabun Co., Rabun Bald, 4714', 6–12.vii.1952, H. R. Dodge (CNC); 1 ♂, same data but 24.ix.1952 (WSU); 1 ♂, Towns-Union Cos., Mt. Enotah, 4782', 13.vii.1952, D. Sudia & H. R. Dodge,

(CNC); 1 ♂, same data but 1.viii.1952, J. M. Seago (WSU); 1 ♂, same data but 11.ix.1952 (WSU). *Kansas*: 1 ♀, Leavenworth Co., 25.vi.1924, R. H. Beamer (CNC). *Maryland*: 1 ♀, Montgomery Co., Plummers Island, 22.vii.1906, W. L. McAtee (USNM); 1 ♀, same data but 9.viii.1906 (USNM). *Massachusetts*: 1 ♂, Essex Co., North Saugus, 13.vii.1911, F. H. Mosher (CNC). *Michigan*: 1 ♀, Alger Co., 1.ix.1946, R. R. Dreisbach (CNC). *New Hampshire*: 1 ♀, Rockingham Co., Canobie Lake, "frequent flowers of *Bidens frondosa*," G. Dimmock (USNM). *New York*: 1 ♂, Erie Co., East Aurora, 29.vii.1917, M. C. Van Duzee (CAS); 2 ♂, Essex Co., Lake Placid, vii.1949, W. G. Downs (USNM); 1 ♀, Delaware Co., Cooks Falls, 19.ix.1929 (USNM); 1 ♂, Warren Co., North Creek, 15.vii.1918, W. T. M. Forbes (CNC). *North Carolina*: 1 ♀, Haywood Co., Mt. Pisgah, 20.vi.1955, "on *Hydrangea arborescens*," H. V. Weems, Jr. (USNM); 1 ♂, Swain Co., 5 mi. N Nantahalalah, 8.vi.1965, J. G. Chillingworth (CNC). *South Dakota*: 1 ♂, no further data (USNM); 1 ♂, Brookings (WSU); 3 ♂, Brookings, J. M. Aldrich (USNM); 1 ♂, same data but 19.vi.1891 (USNM). *Tennessee*: 1 ♂, Sevier Co., Great Smoky Mountains National Park, Headquarters, 12.vi.1946, R. R. Dreisbach (CNC). *Vermont*: Bennington Co., Manchester to Peru, 15.vii.1935, Blanton and Borders (CAS). *Virginia*: 1 ♀, Arlington Co., near mouth of Four Mile Run, 17.ix.1916, W. L. McAtee (USNM); 1 ♂, Bedford Co., Peaks of Otter, 26.vii.1906, W. Palmer (USNM); 1 ♂, Shenandoah National Park, 1600 feet, 7.vii.1945, J. E. Graf (USNM). *Washington*: Spokane Co., Spokane, 24.vi.1930, J. M. Aldrich (USNM).

Flight period.—Specimens examined have collection dates ranging from 8 June to 24 September, with most collections in July and August.

Biology.—As with other species, *P. hammondi* has been collected from flowers. Specimens I have seen are from *Bidens frondosa* and *Hydrangea arborescens*.

Nothing is otherwise known about the biology of the species.

Remarks.—Brooks (1945) cited only the date "13.VII.1939" for all male paratypes. As can be seen from the material examined, a number of them are dated "13.VI.1939." This was probably either an oversight by Brooks, or a labeling error by the original collector.

Pararchytas hammondi is a very uniform species in appearance and dimensions. I have noted very little variation in color or other characters. There is some variation in the apical scutellar setae. Sixteen specimens have been noted that have one fully developed seta (11.9% of all specimens examined, 14 ♂ and 2 ♀), almost equally divided between left and right. Fifteen specimens (11.2% of all specimens examined, all males) have both apical setae fully developed. I have not observed any specimens that have reduced setae; they are either present or absent.

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