PROC. ENTOMOL. SOC. WASH.
95(2), 1993, pp. 182–188

A REMARKABLE NEW SPECIES OF *PARADEJEANIA* FROM THE DOMINICAN REPUBLIC (DIPTERA: TACHINIDAE)

NORMAN E. WOODLEY

Systematic Entomology Laboratory—USDA, ARS, PSI, % U.S. National Museum NHB 168, Washington, D.C. 20560.

Abstract.—The first species of *Paradejeania* from the Caribbean is described and illustrated (***P. xenisma***, type locality: Dominican Republic, Independencia Province, 1 km E of El Aguacate, 18°20′N, 71°42′W). A key to the three known species, and habitus photographs of each, are included.

Key Words: *Paradejeania*, Tachinidae, Caribbean, taxonomy

Paradejeania is a New World genus of Tachinidae, with two previously known species from western North America south to Costa Rica, and Colombia. Arnaud (1951) provided an excellent review of the genus. While collecting in the Dominican Republic in 1984, I encountered a third species that is described here. A single specimen had been collected previously by my colleagues Jason D. Weintraub and Francis M. Harrington during an earlier collecting excursion to the Dominican Republic. In 1989, Stephen A. Marshall and John E. Swann collected an additional three females. The species is being described here because it is quite different in general appearance from the previously known species and because its presence in the Greater Antilles is a significant extension of the range of the genus.

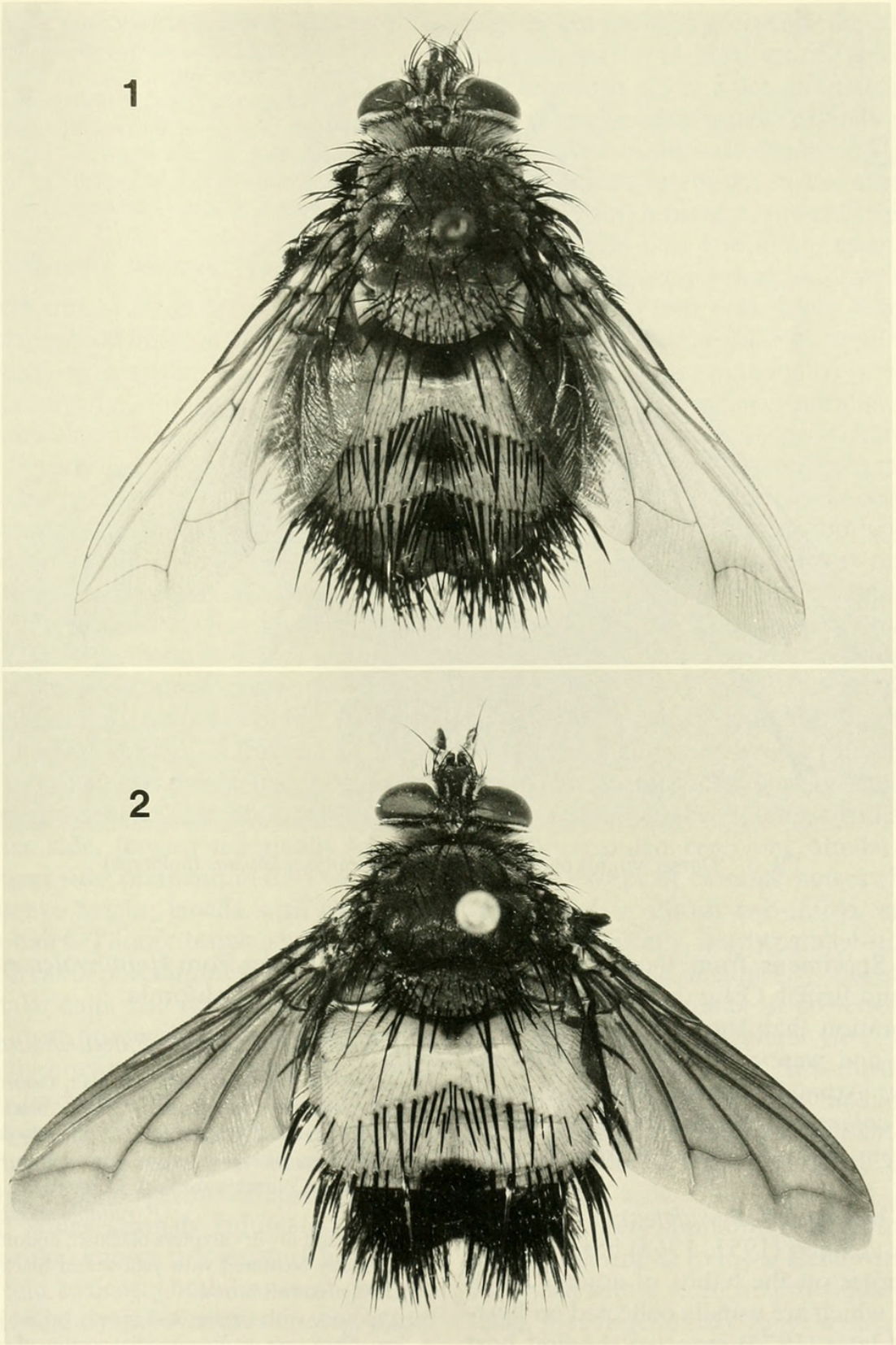
GENUS *PARADEJEANIA* BRAUER AND BERGENSTAMM

Paradejeania Brauer & Bergenstamm, 1893: 147, 184 (as subgenus of *Jurinia*). Type species, *Dejeania rutilioides* Jaennicke (by designation of Coquillett, 1910: 584).

Diagnosis.—The bare prosternum, pilosity on the posterior margin of the hind coxae, and well-developed palpi place *Paradejeania* in the tribe Dejeaniini. Within the tribe, the genus is unique in having a complete, sagittate row of marginal setae on abdominal tergites three and four that encloses a small patch of setae between it and the posterior margin of each tergite. This character state is considered autapomorphic for the genus.

Remarks.—The three species now known to compose this genus are very distinctive in appearance (see Figs. 1–3). A full generic description was given by Arnaud (1951), and as the new species described here conforms closely to it there is no reason to formulate a new one. Because the genera of Tachininae have not been reviewed on a worldwide basis, and the species of the largely New World Dejeaniini have not been comprehensively reviewed, it is impossible to comment on the phylogenetic relationships between *Paradejeania* and other members of the tribe.

Paradejeania rutilioides (Jaennicke) is known to range from Vancouver Island, British Columbia south to Costa Rica. In the United States it occurs mostly west of the continental divide, the easternmost records being from Colorado, New Mexico, and



Figs. 1–2. Dorsal habitus photographs of *Paradejeania* spp. 1, *P. rutilioides*. 2, *P. xenisma* (paratype).

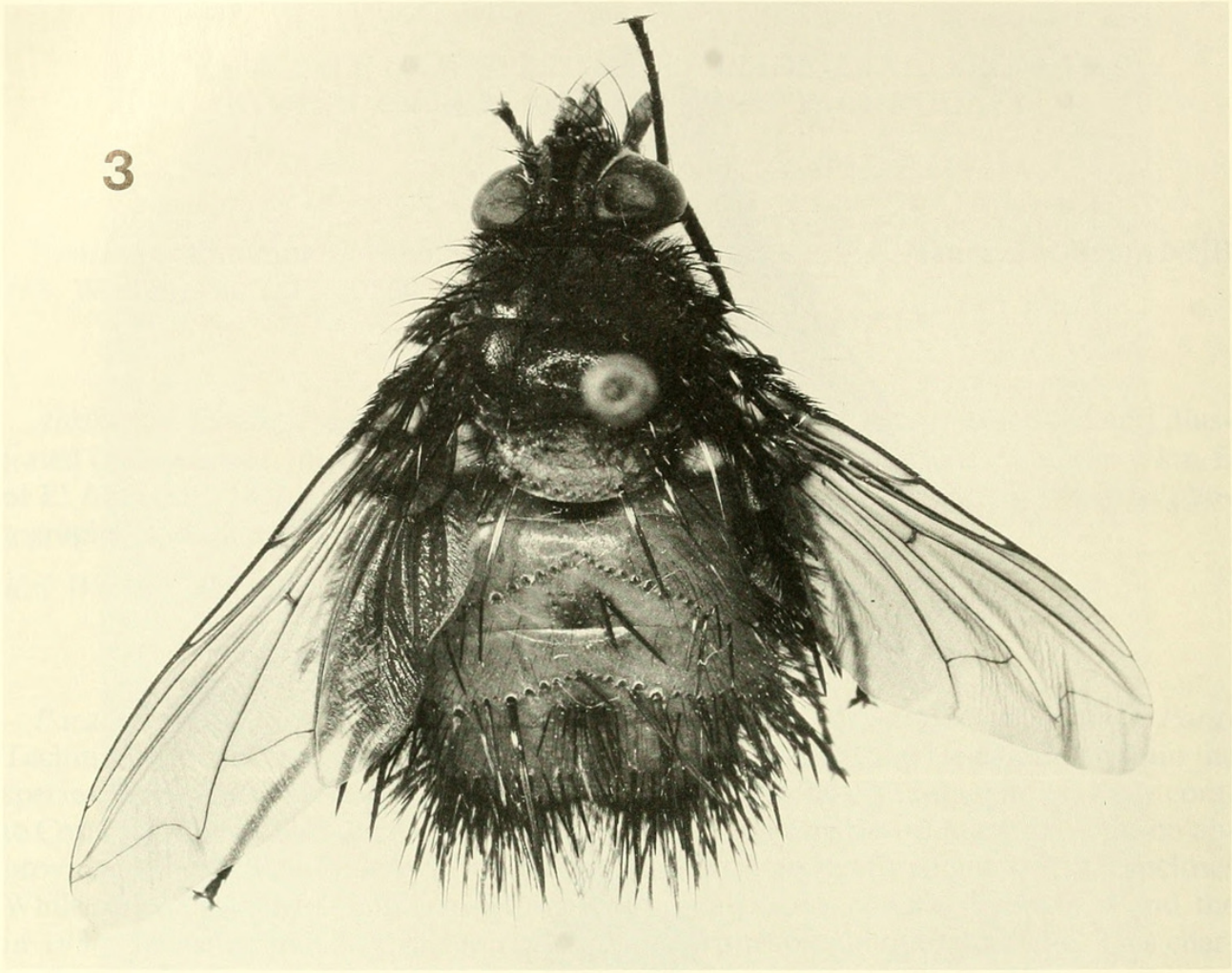


Fig. 3. Dorsal habitus photograph of *Paradejeania colombiae* (holotype).

Texas. Specimens from the Pacific Coast states and British Columbia average darker in coloration than those occurring further inland, and were named *P. rutilioides nigrescens* Arnaud (Arnaud 1951). *Paradejeania colombiae* Arnaud remains known only from the male holotype from Colombia.

The biology of *Paradejeania* is poorly known. Arnaud (1951, 1968) has provided some notes on the habits of adult *P. rutilioides,* which are usually collected on flowers. He later (1974) reported the first host information for the genus, recording *P. rutilioides nigrescens* as being reared from a species of *Hemihyalea* (Lepidoptera: Arctiidae). More recently, Hsu and Powell (1992) gave a more detailed account of rearing *P. rutilioides* from *Hemihyalea edwardsii* (Packard) in California.

Key to Species of *Paradejeania*

1. Upper and lower calypters yellowish; abdomen with pale portions tannish-yellow, blackish color variable in extent but not distinctly confined to apical region; general habitus in Fig. 1; British Columbia south to Costa Rica .... *P. rutilioides* (Jaennicke)
– Upper and lower calypters blackish; abdomen distinctly bicolored with yellow and black or mostly reddish brown 2
2. Abdomen with tergites 1–4 mostly bright yellow, black only on dorsomedial portion of syntergite 1 + 2 and with a medial spot posteriorly on tergite 4, tergite 5 nearly entirely black; wing with basicosta dark; scutellum appearing dark and concolorous with scutum to the naked eye; general habitus in Fig. 2; Dominican Republic ..... ***P. xenisma,* new species**

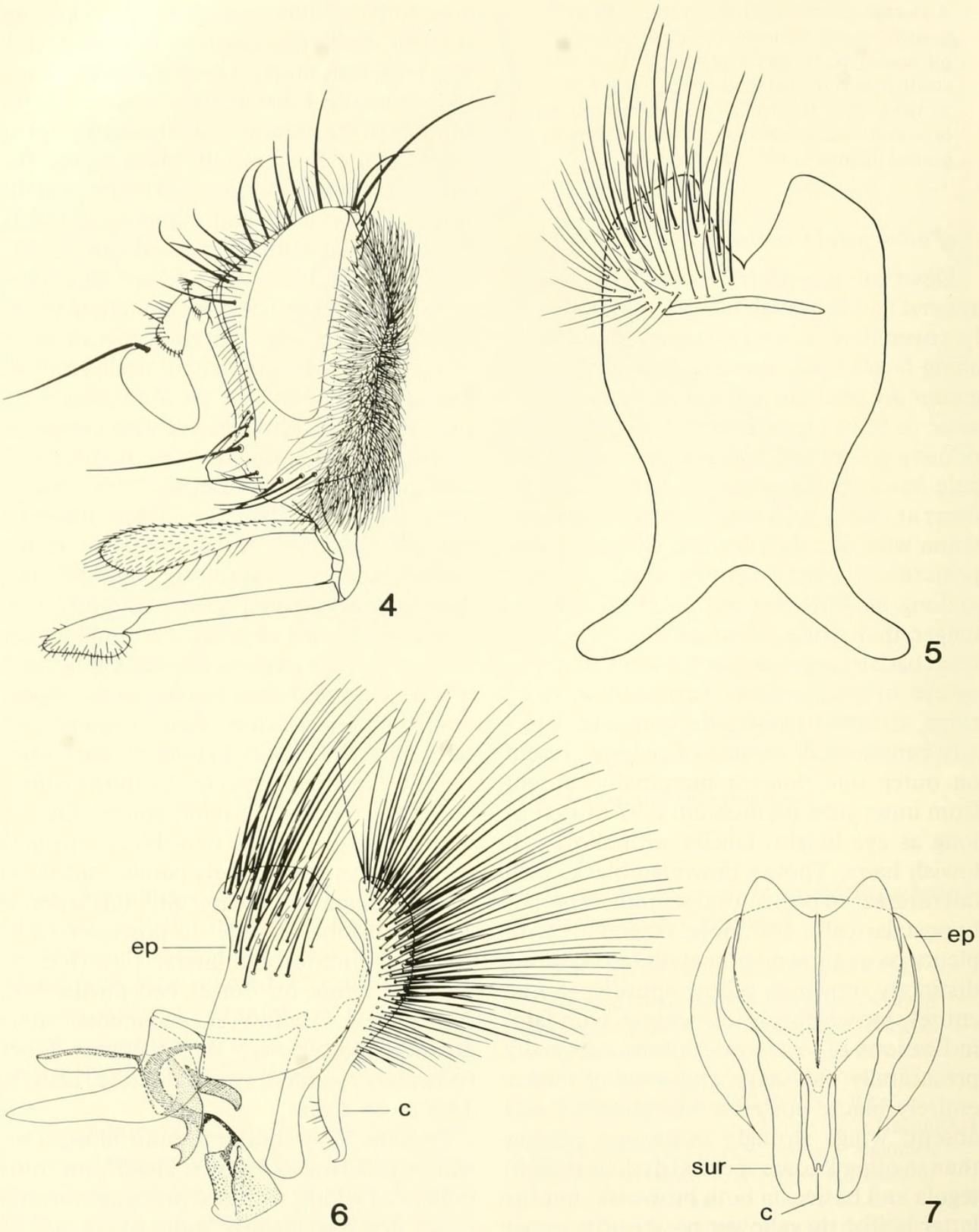
– Abdomen mostly reddish brown, with very limited, weakly contrasted blackish coloration on medial portion of syntergite 1 + 2, and small, posteromedial spots on tergites 3, 4, and 5; wing with basicosta yellow; scutellum brownish, nearly concolorous with abdomen; general habitus in Fig. 3; Colombia .... *P. colombiae* Arnaud

Paradejeania xenisma, New Species

Description.—*Male:* Head (Fig. 4) and appendages brownish black to black, densely covered with silvery tomentum except along facial ridge, tomentum of frontal region more blackish and not shiny; hairs and setae of head black, except for dense white pilosity on occiput and postgena and a few pale hairs on lower part of genal dilation; frons at vertex 0.23 to 0.25 head width; antenna with first flagellomere strongly lobed posteriorly; arista with first segment about as long as wide, second 1.5 to 2.0 times longer than wide, third gradually tapered from base to apex; palpus 0.94 to 1.0 as long as eye height, strongly narrowed in basal third, terminal two-thirds spatulate, laterally compressed; setulae of palpus present on outer side, longest marginally, absent from inner side; prementum 0.97 to 1.03 as long as eye height; labella with short yellowish hairs. Thorax brownish black, with lateral areas of postsutural scutum, especially postalar calli, and more ventral areas of pleura more brownish; scutellum becoming distinctly brownish yellow apically; thorax entirely brownish gray tomentose, with faint indications of vittae on scutum, especially presuturally; fine hairs and setae of thorax entirely black; posterior katepisternal seta absent; wings strongly infuscated (darker than in other known species) dark brownish; tegula and basicosta both brownish, but the latter is slightly yellower posteriorly; upper and lower calypters very darkly infuscated, with concolorous, dense fringe of short marginal hairs; halter brownish, becoming yellowish on knob; legs mostly black, coxae somewhat more brownish; pulvilli yellowish, claws of tarsi brownish basally. Abdomen bright yellow, excepting the extreme anterior, declivous portions of syntergite 1 + 2 brownish black, a posteromedial black spot on tergite 4 that usually extends slightly anterior of the anteriorly displaced marginal setae, tergite five entirely black except for narrow posterior margin, and entire postabdomen black; hairs and major setae black; patch of setae behind marginal row on tergites three and four with fewer setae than in other known species, 4–5 on tergite three, 5–7 on tergite four; marginal row of setae on tergite three incomplete ventrally, a small gap occurring between those in lateral region and those at posteroventral corner of tergite; on tergite four the row is complete, uniserial to weakly biserial; both tergites three and four with more or less uniserial marginals laterally, thus the outline of the abdomen appears less spinose in dorsal view than in other known species; sternite four with a single row of setae. Terminalia very similar to those of *P. rutilioides*; epandrium (Fig. 6) short and deep, evenly rounded posteriorly in lateral view, densely setose dorsally; surstyli (Figs. 6, 7) long, slender, apex slightly expanded; cerci long, almost entirely fused except at extreme apices (Fig. 7), very broad in dorsal two-thirds, strongly narrowed ventrally, nearly parallel-sided but slightly expanded subapically, the separated, apical lobes parallel in posterior view, recurved anteriorly in lateral view (Fig. 6), strongly setose on dorsal two-thirds; fifth sternite (Fig. 5) with V-shaped medial emargination posteriorly, the resultant lobes truncately rounded, strongly setose. Length, 14.5 to 16.2 mm.

Female: Very similar to male in most respects, differing as follows: Head with frons 0.28 head width, with two proclinate orbital setae; first flagellomere more ovate, not as strongly lobed posteriorly. Thorax with tarsomeres 2–4 of front leg flattened and expanded laterally. Abdomen with fifth sternite and terminalia black, with black hairs. Length, 13.8 to 15.1 mm.

Material examined.—♂ holotype (USNM),



Figs. 4–7. Features of *Paradejeania xenisma*. 4, left lateral view of male head. 5, ventral view of fifth abdominal tergite. 6, left lateral view of male terminalia. 7, posterior view, in outline, of male terminalia.

Abbreviations: c, cercus; ep, epandrium; sur, surstylus.

5 ♂ paratypes (USNM, CNC, GUE): DOMINICAN REPUBLIC: Independencia Province, 1 km E of El Aguacate, 18°20′N, 71°42′W, 950 m, 26 March 1984, F. M. Harrington, J. D. Weintraub, and N. E. Woodley; ♀ allotype (CNC), 2 ♀ paratypes (USNM, GUE): Pedernales Province, "Las Abejas," 7.3 km NNE of Las Mercedes, 18°09′N, 71°38′W, 1300 m, 19 January 1989, S. A. Marshall, J. E. Swann; ♂ paratype (USNM): Pedernales Province, "Las Abejas," 7.3 km NNE of Las Mercedes, 18°09′N, 71°38′W, 1100–1150 m, 23 August 1983, F. M. Harrington, J. D. Weintraub.

Etymology.—The species name, a noun in apposition, is from Greek, meaning amazement or surprise. This refers to the unexpected discovery of a *Paradejeania* in the Caribbean.

Remarks.—The discovery of this remarkable species on Hispanola extends the known range of *Paradejeania* several hundreds of miles. It is further remarkable in that its yellow and black color pattern is very similar to that found in some other tachinine genera in the Dejeaniini (e.g. *Adejeania* Townsend, *Protodejeania* Townsend) and Juriniini (e.g. *Xanthoepalpus* Townsend), but previously unknown in *Paradejeania.* The origin of this convergent color pattern is not known, but as not all species in some of the genera in which it occurs are so colored, some sort of mimicry is suggested. Because of its similar coloration, it was initially thought that *P. xenisma* might have been *Adejeania armata* (Wiedemann), which has a type locality of "Cuba." However, the type of *A. armata* has been discovered to be a well-known Brazilian species (D. M. Wood, from J. Butze, personal communication) of *Adejeania,* and the genus is not otherwise known to occur in the Caribbean.

The two localities at which *P. xenisma* was collected are in the Sierra de Baoruco in southwestern Dominican Republic. Both localities are in premontane wet forest areas that occur below the extensive pine forests found at higher elevations. The type locality is along the road just east of El Aguacate (which is very near the Haitian border) leading toward Duvergé. At the time of collection, this site consisted of a small patch of remnant forest vegetation along a south facing hillside paralleling the road. *Paradejeania xenisma* was found flying very rapidly along the ground and around low shrubs, rarely alighting. Individuals were very difficult to capture; numerous individuals were observed but not caught. It is likely that they frequent flowers as do other Dejeaniini. The "Las Abejas" locality in Pedernales Province is described floristically by Fisher-Meerow and Judd (1989).

Acknowledgments

I am very grateful to the staff of the Alcoa Exploration Company (now Ideal Dominicana), particularly Srs. Garcia, Reyes, and Kelly, for hospitality and use of the guest house at Cabo Rojo, Dominican Republic, during two collecting trips to the region. Jason Weintraub and Mimi Harrington were pleasant field colleagues during the 1984 trip, and provided a specimen of *P. xenisma* from an earlier trip. Stephen A. Marshall at the University of Guelph, Ontario, Canada (GUE) kindly loaned the specimens from his collecting trip. I thank Randall T. Schuh for the loan of the holotype of *P. colombiae* from the American Museum of Natural History, New York. Linda Lawrence of the Systematic Entomology Laboratory rendered Fig. 4 and inked Figs. 6 and 7. T. Britt Griswold provided the habitus photographs. Wayne N. Mathis, D. M. Wood, R. J. Gagné, and John Kingsolver kindly read the manuscript, providing useful criticism.

Literature Cited

Arnaud, P. H., Jr. 1951. A study of the genus *Paradejeania* Brauer and Bergenstamm (Diptera: Tachinidae or Larvaevoridae). Canadian Entomologist 83: 317–329.

———. 1968. Occurrence of *Paradejeania rutilioides nigrescens* (Diptera: Tachinidae) in San Francisco, California. Pan-Pacific Entomologist 44: 85–86.

———. 1974. *Paradejeania rutilioides nigrescens* Arnaud reared from *Hemihyalea* sp. (Diptera: Tachinidae; Lepidoptera: Arctiidae). Pan-Pacific Entomologist 50: 93.

Brauer, F. and J. E. von Bergenstamm. 1893. Die Zweiflügler des Kaiserlichen Museums zu Wien. VI. Vorarbeiten zu einer Monographie der Muscaria Schizometopa (exclusive Anthomyidae). Pars III. Denkschriften der Mathematische-Naturwissenschaftlichen Classe der Kaiserlichen Akademie der Wissenschaften (Wien) 60: 89–240.

Coquillett, D. W. 1910. The type-species of the North American genera of Diptera. Proceedings of the United States National Museum 37: 499–647.

Fisher-Meerow, L. L. and W. S. Judd. 1989. A floristic study of five sites along an elevational transect in the Sierra de Baoruco, Prov. Pedernales, Dominican Republic. Moscosoa 5: 159–185.

Hsu, Y. and J. A. Powell. 1992. *Hemihyalea edwardsii* (Packard) (Lepidoptera: Arctiidae) is the host of *Paradejeania rutilioides* (Jaennicke) (Diptera: Tachinidae) in central coastal California. Pan-Pacific Entomologist 68: 64–65.