

inconspicuous. Median mesonotal suture not extending beyond the transverse suture. Scutum very short and wide. Scutellum small. Vertical longitudinal cleft extending nearly to mesocoxal cavity. Venter elongated, slightly longer than wide, sternopleura only slightly longer than pleurotrochantines. *Wings*.—Brachypterous, venation essentially complete but variable. *Legs*.—Moderately developed, the middle legs shortest, the hind legs longest, metafemora about half again as long as mesofemora. Hind coxae large. Tarsi short; tarsomeres 1-4 strongly compressed antero-posteriorly, 5 large, conspicuous.

Abdomen.—Dorsal connexivum densely clothed with long setae. *Female*: Tergum VII very short and wide, or absent. Supra-anal plate cordiform, pointed at apex. Cerci articulated to supra-anal plate by a short process, united ventrally with the ventral arc. Seventh sternites elongated, their inner apical margins flange-like and strongly sclerotized, articulated with the median lobe of the ventral arc as well as with a pregenital sclerite (VIII ?). Sternum IX visible externally. *Male*: Hypopygium broadly conical. Sternum V divided into two transverse, oval, feebly sclerotized sternites. Sternum VI absent. Gonapophyses blade-like, the accessory setae situated anterior to the macrosetae.

Anatrichobius scorzai Wenzel, new species. Figures 76-78.

DESCRIPTION: Chaetotaxy as illustrated. Micropile present on upper surface of palpi, head, mesonotum (except a broad median area), and abdomen including setose area of sternum II, and upper setose areas (at least apically) of femora. Intervals between femoral and some coxal setae may appear scabrous in slide preparations. *Head*.—Broadly pyriform, the dorsum convex. Laterovertices with about 20 setae, most of the anterior setae shorter; occipital lobes with about 25-30 setae. Eyes small, horizontal, with seven or eight small facets. Genae and postgenae densely setose, the dorsal and apical setae longest. *Thorax*.—Median suture usually united with the transverse suture, sometimes extending only a little beyond middle; transverse suture usually complete, occasionally poorly defined at middle. Prescutum with 38-40 setae on each side of median suture. Scutum with about 24-26 setae. Scutellum with four scutellar macrosetae in a transverse row and two additional ones at middle of apical margin. Mesepisterna clothed with dense long setae above. *Wings*.—Brachypterous, as shown in fig. 76, venation variable. *Legs*.—Hind tibiae with denser short setae along inner apical face, but not forming a dense patch. Last tarsomere about as long as 1-4 combined. *Abdomen*.—Connexivum in both sexes dorsally clothed with long setae; lateral connexival setae shorter, the ventral setae minute. *Female*: Lateral lobes of tergum I+II longer than in the male, the posterior part of the lobe (viewed from the side) bare; the dorsal margin (near mid-length) with a cluster of 12-14 longer setae which are continued anteriorly and across middle of margin by a row of short setae. Dorsal connexivum clothed with long setae, these more prominent laterally; setae of lateral connexivum shorter, those of venter very short, except for segmentally arranged pairs of long setae. Tergum VII curved posteriorly on each side, with from 12-20 setae, some of these often displaced and situated on connexivum. Supra-anal plate with from 10-12 setae. Seventh sternites with numerous macrosetae apically, shorter setae basally. *Male*: Lateral lobe of tergum I+II posteriorly with numerous discal and marginal setae, these shorter ventrally. Dorsal connexivum with a mixture of long and shorter setae, the long ones shorter than in female. Setae of sternum V similar to those of ventral connexivum, the anterior ones a little shorter. Hypopygium with numerous long macrosetae dorsally and short setae ventrally. Gonapophyses (fig. 78C) nearly alike.

<i>Measurements:</i>	BL	TL
Male	2.42-2.64	0.52-0.55
Female	2.99-3.30	0.60-0.77

TYPE MATERIAL: Holotype male (host no. 7459) and allotype female (host no. 7468), both in alcohol, from *Myotis* sp., Cueva Lara (Chiriquí), 5600 feet elevation, 3 May 1961, C. M. Keenan and V. J. Tipton. In the collection of Chicago Natural History Museum.

Paratypes.—From *Myotis* sp.: 1, same data as holotype; 1, Casa Lewis, Cerro Punta (Chiriquí), 5600 feet elevation, 4 May 1960; 1, same data but 12 March 1962. From *Myotis nigricans*: 4, Cave, Finca Lara, (Chiriquí), over 5800 feet elevation, 5 May 1961; 3, Lara's Cave, Cerro Punta (Chiriquí), 6 March 1962; 1, Cerro Hoya (Los Santos), 21 February 1962. From *Myotis chiloensis*: 1, Lara's Cave, Cerro Punta (Chiriquí), 5600 feet elevation, 6 March 1962. From a mixed collection *Myotis nigricans* and *M.*

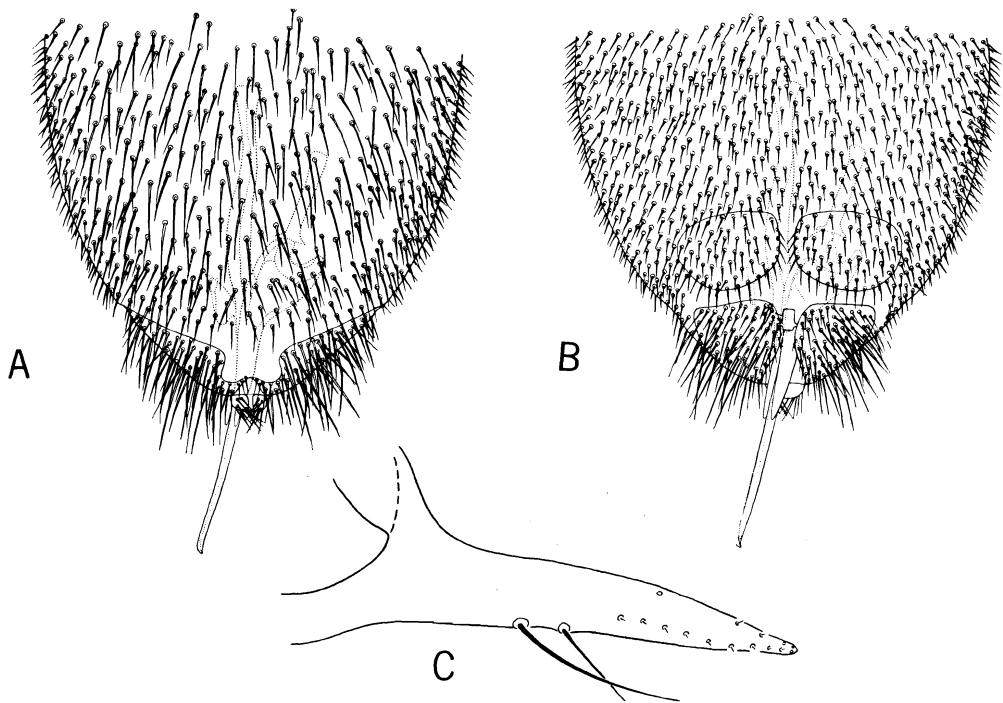


Fig. 78. *Anatrachobius scorzai* n. gen., n. sp., male abdomen. A, dorsal, and B, ventral views. C, left gonapophysis, lateral view. Data as for female (fig. 76).

chiloensis: 47 (3 lots), Lara's Cave, Cerro Punta (Chiriquí), 6 March 1962. From *bat guano*: 1, Lara's Cave, Cerro Punta (Chiriquí), 6 March 1962. *Without host*: 2, Cerro Azul (Panamá), elevation about 2000 feet, 25 and 27 January 1958.

From *Myotis n. nigricans*: 30, from a room of old building of Biological Station, Rancho Grande (Aragua), VENEZUELA, 7 July to 30 September 1962, C. and A. Machado, R. Antequera and M. Ramirez [FCUCV]. From *Myotis nigricans*: 3, San Antonio, San Agustín (Huila), COLOMBIA, 2350 meters elevation, 18 October 1951, P. Hershkovitz, CNHM Colombia Zoological Expedition (1948–52). From *Myotis chiloensis oxyotis*: 3, Hacienda Cadena, Marcapata (Cuzco), PERU, 1000 meters elevation, 19 February 1949, Celestino Kalinowski. From *Lonchophylla robusta* (!): 1, Rancho

Grande (Aragua) VENEZUELA, Wm. T. Beebe [MCZ]. Paratypes to be deposited in the collections of Chicago Natural History Museum; the United States National Museum; Museum of Comparative Zoology at Harvard University; the Gorgas Memorial Laboratory, at Panamá (Panamá); the Environmental Health Branch (United States Army) at Corozal (Canal Zone); and the Universidad Central de Venezuela, Caracas.

REMARKS: *Anatrichobius scorzai* is named in honor of Dr. José Vicente Scorza, Head of the Department of Parasitology, Escuela de Biología, Facultad de Ciencias, Universidad Central de Venezuela. The puparium of this species will be described later by Machado-Allison. The female specimen illustrated (figs. 76, 77) was distorted by pressure on the slide. In gravid females, the abdomen is never quite as broad and rounded as shown. Tergum VII of the specimen illustrated has fewer setae than is typical.

An undescribed species of *Anatrichobius* is known to us from Peru and Brazil. It differs strikingly from *scorzai* in that tergum VII is absent in the female and the chaetotaxy of the supra-anal plate is reduced to from four to six setae.

Genus *Joblingia* Dybas and Wenzel

Joblingia Dybas and Wenzel, 1947, Fieldiana, Zool., 31: 149. Jobling, 1949, Parasitology, 39: 322 (keyed).

Undescribed genus, Bequaert, 1942, Bol. Ent. Venez., 1: 86 (notes).

Type-species: *Joblingia schmidti* Dybas and Wenzel, 1947.

Until the Panamanian collections were obtained, the type-species of *Joblingia* was known only from the unique female holotype. Both males and females were collected in Panama, and it is now possible to give the characters of the male and to correct several errors in the original diagnosis of the genus and description of the species. The following may be added to the diagnosis of the genus.

Head.—Laterovertrices and occipital plates differentiated, but weakly sclerotized, connected by a narrow sclerotized strip along inner margins. Eyes small, vertical. *Thorax*.—Height greater than dorsal width. Mesonotum strongly convex; median suture extending posteriorly to scutellum. Longitudinal membranous cleft closed, the line of fusion marked by a dark pigmented suture. Vertical membranous cleft reaching about halfway to coxal cavity. *Abdomen*.—*Female*: Seventh tergum represented by a vertical elongate setose area (which encloses the spiracle VII) on each side of the hypopygium. Sternum VII a single median plate which is emarginate along mid-line both anteriorly and posteriorly. Cerci united with the ventral arc, the latter not united with the supra-anal plate. Both dorsal and ventral anal sclerites present. *Male*: Sterna V and VI absent, VII and VIII fused with IX. Hypopygium broadly conical. Gonapophyses with accessory setae inserted anterior to the macrosetae.

Joblingia schmidti Dybas and Wenzel. Figures 79, 80.

Joblingia schmidti Dybas and Wenzel, 1947, Fieldiana, Zool., 31: 152, figs. 25–27—Guatemala: Chocoyos (Chimaltenango), from *Myotis n. nigricans* (Chicago Natural History Museum). Jobling, 1949, Parasitology, 39: 316 ff, fig. 3G, H.

The following characters are added to the original description:

Legs.—Proportionally shorter in males than in females. *Abdomen*.—*Female*: Tergum I+II with dorsal and ventral groups of short bristles anteriorly and numerous very

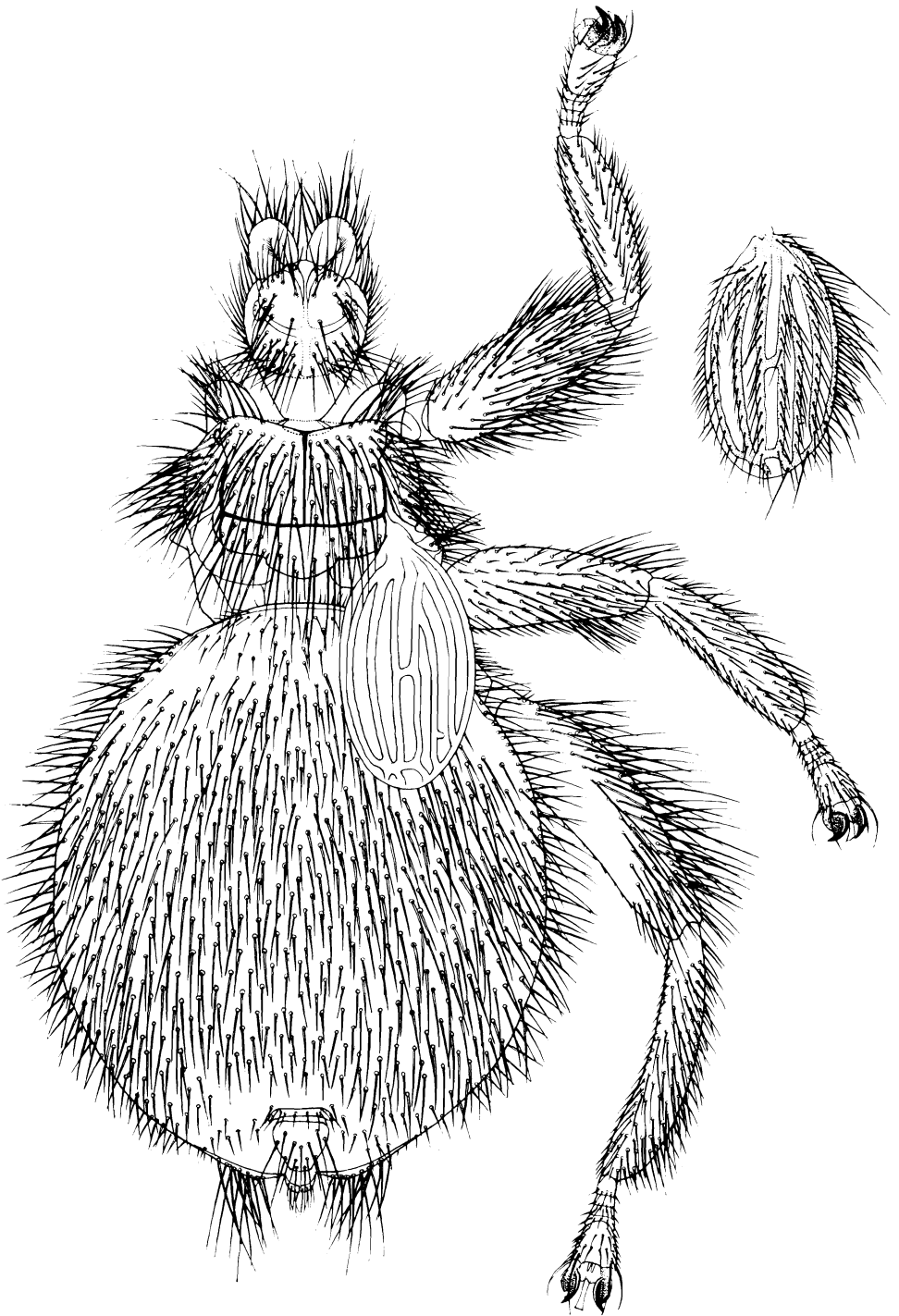


Fig. 76. *Anatrachobius scorzai*, n. gen., n. sp. Female paratype, dorsal view, and right wing. Made from specimens taken from a mixed collection of *Myotis n. nigricans* and *M. chiloensis*, at Cueva Lara, Casa Tilley, Cerro Punta (Chiriquí).

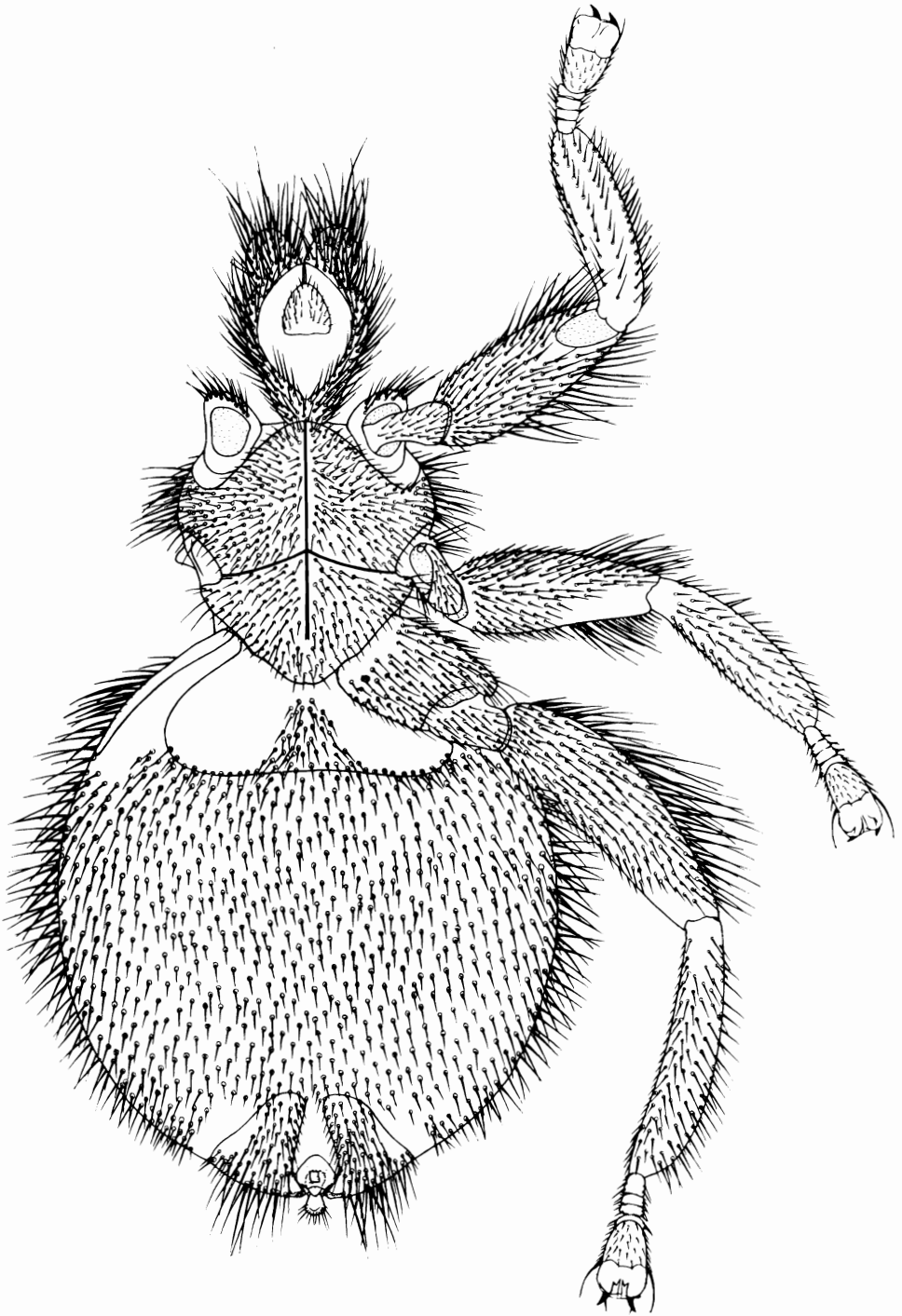


Fig. 77. *Anatrachobius scorzai*, n. gen., n. sp., female. Ventral view. From same specimens as fig. 76.