

A NEW GENUS OF CHIGGERS (ACARI: TROMBICULIDAE) FROM A CLOUD FOREST IN MEXICO¹

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Abstract. *Oaxacarus geophis*, n. g. and n. sp., is described from the colubrid snake *Geophis anocularis*, taken in a cloud forest in Mexico.

Examination of specimens of the fossorial colubrid snake *Geophis anocularis*, collected in Mexico by workers from the University of Texas at Arlington, has revealed a new genus and species of chigger, described and illustrated below. The type-locality is in a cloud forest in the southern portion of the Sierra Mixe range in Oaxaca, at an elevation of 1855 m. As this area does not directly receive the prevailing winds from the Gulf of Mexico, this forest is drier than most cloud forests, receiving only 200–250 cm of annual rainfall and having dry seasons in winter and spring. Hosts were collected under rocks in a grassy meadow bordered by secondary vegetation. A total of 21 specimens of *G. anocularis* were collected, 14 of which were infested by chiggers. Chiggers were found attached only between the ventral scutes in an area approximately 3 cm long, immediately anterior to the anal plate.

The holotype is in the collection of the Bishop Museum, Honolulu, Hawaii and paratypes there and in the collections of the U.S. National Museum of Natural History (chigger collection currently housed at Bishop Museum); Field Museum of Natural History, Chicago; Acarology Laboratory, Ohio State University, Columbus; chigger research collection, California State University, Long Beach; and Institute for Medical Research, Kuala Lumpur, Malaysia. All measurements are given in micrometres, with those for the holotype followed by the means and ranges of the type series in parentheses. Terminology follows Brennan & Goff (1977).

Oaxacarus Goff & Spicer, new genus

Type-species: *Oaxacarus geophis* Goff & Spicer, n. sp.

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Diagnosis. Trombiculinae with palpal tarsus 7BS; galeala N; cheliceral blade strongly recurved, with tricuspid cap; palpal claw 2-pronged, axial prong internal; gnathobase produced anteriorly, rostrumlike, covered with cuticular striations; scutum pentagonal, completely covered by cuticular striations; sensilla flagelliform, with distal branches; legs 7-segmented; coxae I-III unisetose, covered with cuticular striations; 3 genualae I, genuala II and III; tibiala III; subterminala and parasubterminala I; no mastisetae III.

Oaxacarus geophis Goff & Spicer, new species

FIG. 1

Type data. Holotype (BISHOP 11,562) and 32 paratypes from MEXICO: Oaxaca, Sierra Mixe, 0.3 km W of Totontepec, 1855 m, cloud forest habitat, ex *Geophis anocularis* (UTAVC 8523) taken 9.IV.1979 by J. A. Campbell, J. Karges, L. Farris & J. Joy.

Description of species. Larva. *Idiosoma*. Measuring 330 × 260 in partially engorged holotype. Eyes 2/2, anterior larger, more oculate, on ocular plate. One pair of humeral setae, measuring 48–59; 22 dorsal body setae, measuring 38–58, arranged 6-6-4-4-2; 2 pairs of sternal setae, anterior 41–46, posterior 37–41; 8 preanal setae, 39–42; 2 postanal setae, 43–52; total body setae 38. *Gnathosoma*. Palpal setal formula B/N/NNB/7BS; palpal claw 2-pronged, axial prong internal; galeala N; cheliceral blade strongly recurved, with tricuspid cap; gnathobase sparsely punctate, covered with cuticular striations, produced rostrumlike anteriorly, bearing a pair of branched setae. *Scutum*. Pentagonal, sparsely punctate, completely covered with cuticular striations; anterior margin shallowly biconcave; posterior margin acute; AM base in line with or slightly posterior to AL bases; SB anterior to PL bases; PL > AM > AL; PW/SD = 1.32 (1.37, 1.28–1.45); sensilla flagelliform, branched on distal ½, nude basally. Scutal measurements: AW 73 (74, 65–80); PW 83 (85, 79–92); SB 41 (41, 38–45); ASB 22 (23, 21–25); PSB 41 (39, 33–45); AP 25 (23, 20–25); AM 39 (43, 38–47); AL 32 (30, 27–33); PL 50 (50, 45–64); sens. 56 (55, 53–57). *Legs*. All 7-segmented, terminating in a pair of claws and a spatulate empodium. Onychotriches absent. Coxae with cuticular striations. IP 851–857. *Leg I*. 307–316; coxa with 1 branched seta (1B); trochanter 1B; basifemur 1B; telofemur 5B; genu 4B, 3 genualae, microgenuala; tibia 8B, 2 tibialae, microtibiala; tarsus (80 × 19) 21B, tarsala (17–21), microtarsala, subterminala, parasubterminala, pretarsala. *Leg II*. 259–267; coxa 1B; trochanter 1B; basifemur 2B; telofemur 4B; genu 3B, genuala; tibia 6B, 2 tibialae; tarsus (64 × 17) 16B, tarsala (13–15), microtarsala, pretarsala. *Leg III*. 279–283; coxa 1B; trochanter 1B; basifemur 2B; telofemur 3B; genu 3B, genuala; tibia 6B, tibiala; tarsus (77 × 16) 15B.

Remarks. *Oaxacarus* keys to *Eutrombicula* Ewing, 1938, in Brennan & Goff (1977) and is similar to

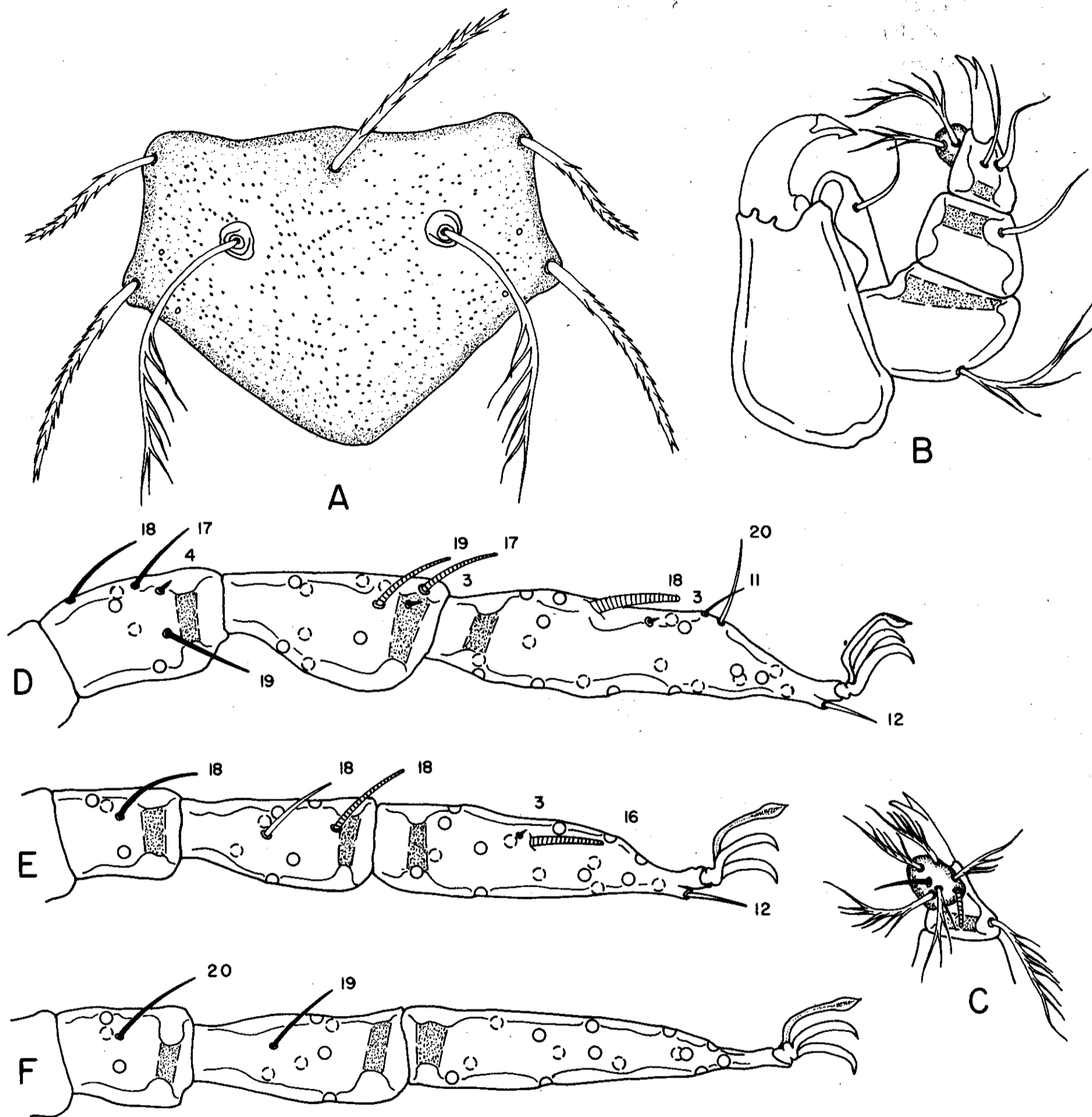


FIG. 1. Larva of *Oaxacarus geophis* Goff & Spicer, n. sp. (A) scutum; (B) dorsal aspect of gnathosoma; (C) ventral aspect of palpal tibia and tarsus; (D) leg I distal 3 segments showing specialized setae (measurements in micrometres) and bases of branched setae; (E) leg II as above; (F) leg III as above.

that genus as defined by Brennan & Reed (1974) in having a bifurcate palpal tibial claw, palpal tarsus with 7BS, cheliceral blade with tricuspid cap, nude galeala, 3 genualae I and cuticular striations on scutum, gnathobase, and coxae, but differs in having the axial prong of the palpal tibial claw internal (external in *Eutrombicula*), a pentagonal scutum (rectangular in *Eutrombicula*) and lacking mastisetae on legs III (0-2 mastitibialae and 1-3

mastitarsalae III in *Eutrombicula*). Bifurcate palpal tibial claw, lack of mastisetae III and presence of cuticular striations on scutum, gnathobase and coxae serve to separate *Oaxacarus* from *Neotrombicula* Hirst, 1925, which has a trifurcate palpal tibial claw, 1 or more mastitarsalae III and lacks cuticular striations. Cuticular striations are present on the coxae and scuta of species of *Blankaartia* Oudemans, 1911, and species of *Blankaartia* (*Megaciella*)

have a pentagonal scutum similar to that of *O. geophis*. *Oaxacarus* differs in lacking mastitarsala III (present in species of *Blankaartia*) and having a bifurcate palpal tibial claw (trifurcate in species of *Blankaartia*). Pentagonal scutum and presence of cuticular striations serve to separate *Oaxacarus* from *Iguanacarus* Vercammen-Grandjean, 1965, and *Whartonacarus* Vercammen-Grandjean, 1960. None of the above genera show the rostrumlike anterior projection of the gnathobase exhibited in *O. geophis*. Additionally, trachealike structures were observed in all specimens examined of *O. geophis*, originating near the cheliceral bases and extending posteriorly to the level of coxae III. No stigmatal openings were detected and the structures observed were probably glandular rather than respiratory in nature. Spiracles and tracheae have not been observed for species of Trombiculinae, but are present in some species of Leeuwenhoekinae.

Additional specimens examined (147). Same data as type series but ex 12 *G. anocularis* (UTAVC nos. 8523, 8527, 8529, 8530, 8531, 8532, 8533, 8534, 8536, 8537, 8538, 8541). All hosts are in the collection of the University of Texas Vertebrate Collections (UTAVC).

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