

MITES OF THE FAMILY LOHMANNIIDAE (ACARI:
ORIBATEI) FROM TEXAS

B. MCDANIEL, ROY A. NORTON, AND ERIC G. BOLEN

(BMcD) Entomology-Zoology Department, South Dakota State University, Brookings, South Dakota 57007; (RAN) SUNY College of Environmental Science and Forestry, Syracuse, New York 13210; and (EGB) Rob and Bessie Welder Wildlife Foundation, Sinton, Texas (present address: Dean's Office, The Graduate School, Texas Tech University, Lubbock, Texas 79409).

Abstract.—Members of the Oribatei family Lohmanniidae were collected from the Gulf Coastal region of south Texas and included a new genus *Pseudocryptacarus* and two new species, *Pseudocryptacarus graminosus* and *Torpacarus gramineus*. The distribution of *Lohmannia banksi* Norton, Metz, and Sharma is extended to include Texas.

During an investigation on the microarthropod fauna of the Rob and Bessie Welder Wildlife Foundation located in the Gulf Coastal region of south Texas, members of the Oribatei family Lohmanniidae were collected and included two new species, a new genus, and an extension of the known distribution of *Lohmannia banksi* Norton, Metz and Sharma. Descriptions are of adults only.

Pseudocryptacarus McDaniel, Norton, and Bolen, NEW GENUS

Diagnosis.—Genital plate with transverse suture; preanal plate broad; 5 adanal setae; anal and adanal plates fused; strong neotrichy over entire notogaster.

Type species.—*Pseudocryptacarus graminosus*, new species.

Pseudocryptacarus graminosus

McDaniel, Norton, and Bolen, NEW SPECIES

Figs. 1-2

Dimensions and color.—Mean total length of 6 specimens 486 μ (range 485-488 μ); mean maximum notogastral width 251 μ (range 250-252 μ). Color, reddish brown. Shape similar to members of the genus *Cryptacarus* Grandjean, flat and elongated with parallel borders (Fig. 1). Transverse band

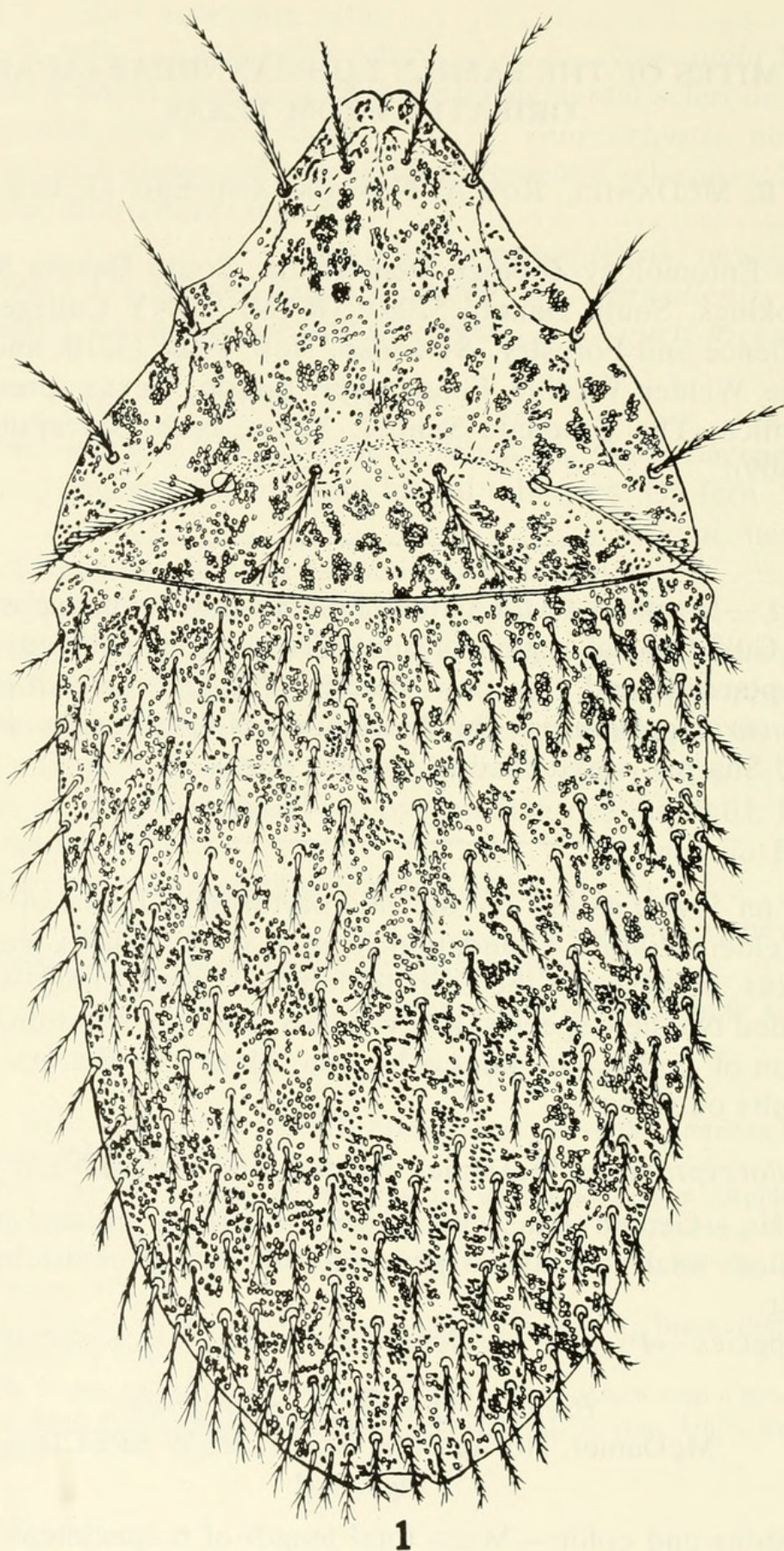


Fig. 1. *Pseudocryptacarus graminosus*, dorsal view, holotype.

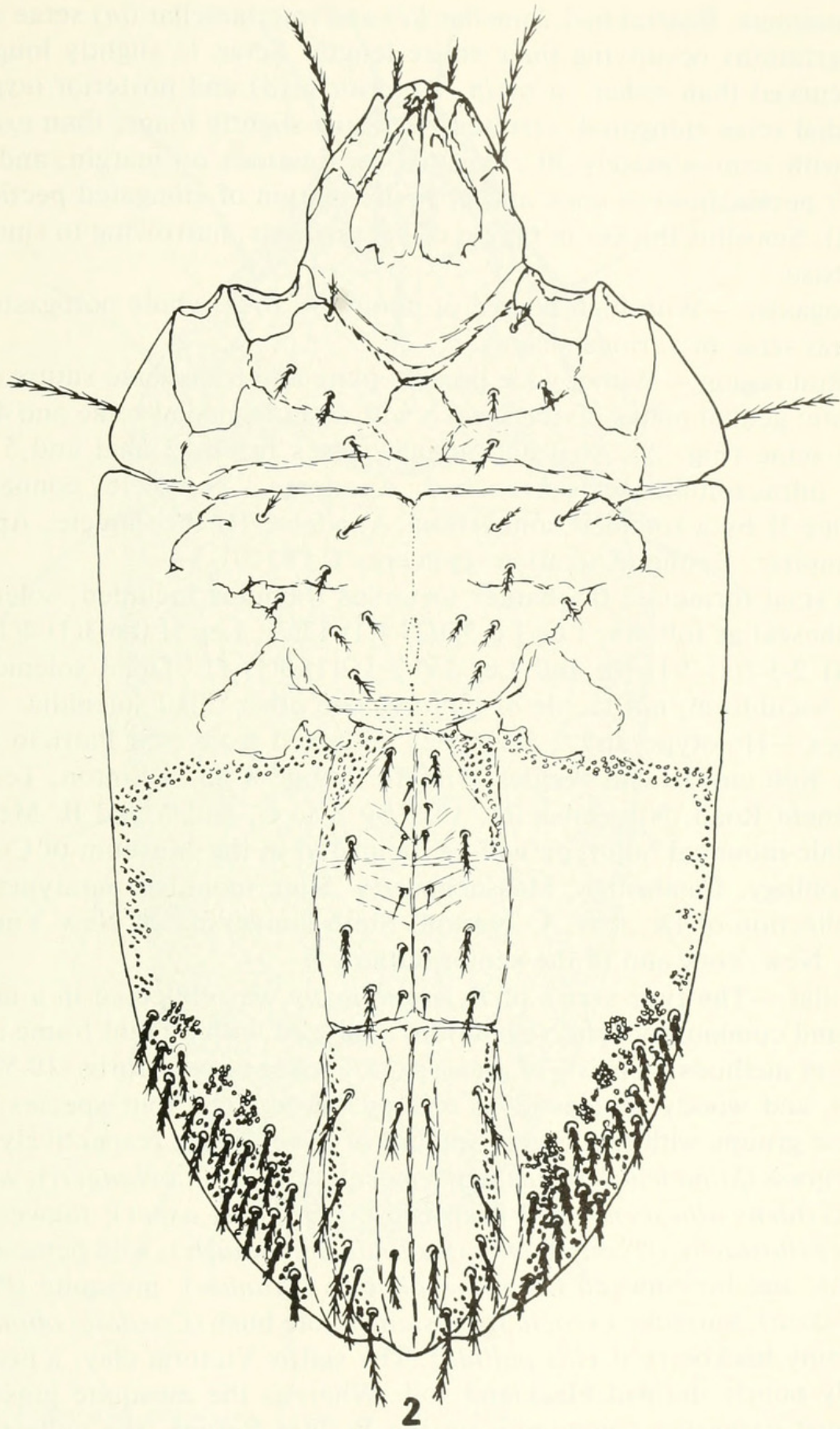


Fig. 2. *Pseudocryptacarus graminosus*, ventral view, holotype.

sb continuous. Rostral (*ro*), lamellar (*le*) and interlamellar (*in*) setae all with long serrations occupying their entire length. Setae *le* slightly longer and more curved than either *ro* or *in*. Anterior (*exa*) and posterior (*exp*) exobothridial setae elongated, serrated, with *exp* slightly longer than *exa*. Sensillus with approximately 20 elongated pectinations on margin, and 6 or 7 smaller pectinations at apex and opposite margin of elongated pectinations (Fig. 1). Sensillus thicker in region of pectinations, narrowing to small stalk at its base.

Notogaster.—With high degree of neotrichy over whole notogaster. Notogastral setae of various shapes.

Ventral region.—With a wide preanal plate and transverse suture on genital plate; genital plates divided, each with 6 short medial setae and 4 longer lateral setae (Fig. 2). Anal and adanal plates fused; 2 anal and 5 adanal setae. Infracapitular setae branched. Apodome I complete, connected to apodome II by a rounded connection. Apodome III incomplete. Apodome IV complete. Epimeral setation (epimeres I–IV) 3-1-3-4.

Leg setal formulae, trochanter to tarsus (famulus included, solenidia in parentheses) as follows: Leg I 0-5-3(2)-4(1)-17(2); Leg II 0-6-3(1)-4(1)-11(2); Leg III 2-3-2(1)-2(1)-10; and Leg IV 2-3-2(1)-3(1)-11. Tibial solenidion III short, baculiform, not tactile or piliform like other tibial solenidia.

Types.—Holotype and 2 paratypes collected from San Patricio County on the Rob and Bessie Welder Wildlife Refuge 8 mi N Sinton, Texas, off Monument Road, November 23, 1977 by Eric G. Bolen and B. McDaniel. The slide-mounted holotype will be deposited in the Museum of Comparative Zoology, Cambridge, Massachusetts. Slide mounted paratypes are in the collection of Dr. Roy A. Norton, State University of New York, Syracuse, New York and of the senior author.

Habitat.—The type-series of *P. graminosus* was collected in a mesquite grassland community. The vegetation, analyzed with a point frame and line intercept methods, consists of grasses (35% foliar cover), forbs (10.5% foliar cover), and woody species (29% canopy cover). The four species in each of these groups with the largest amount of cover were, respectively: Texas wintergrass (*Stipa leucotricha*), curlymesquite (*Hilaria belangeri*), white tridens (*Tridens albescens*) and dropseed (*Sporobolus asper*); ragweed (*Ambrosia psilostachya*), cone-flower (*Ratibida columnaris*), wild petunia (*Ruellia* sp.), and broomweed (*Xanthocephalum texanum*); mesquite (*Prosopis glandulosa*), huisache (*Acacia farnesiana*), lote bush (*Condalia obtusifolia*), and spiny hackberry (*Celtis pallida*). The soil is Victoria clay, a heavy and usually poorly drained blackland soil. Whereas the mesquite grassland is the most extensive community on the Welder Refuge, the collection site was in a subunit that was formerly overgrazed for many years; the area is now recovering under a less intensive grazing program but still reflects the

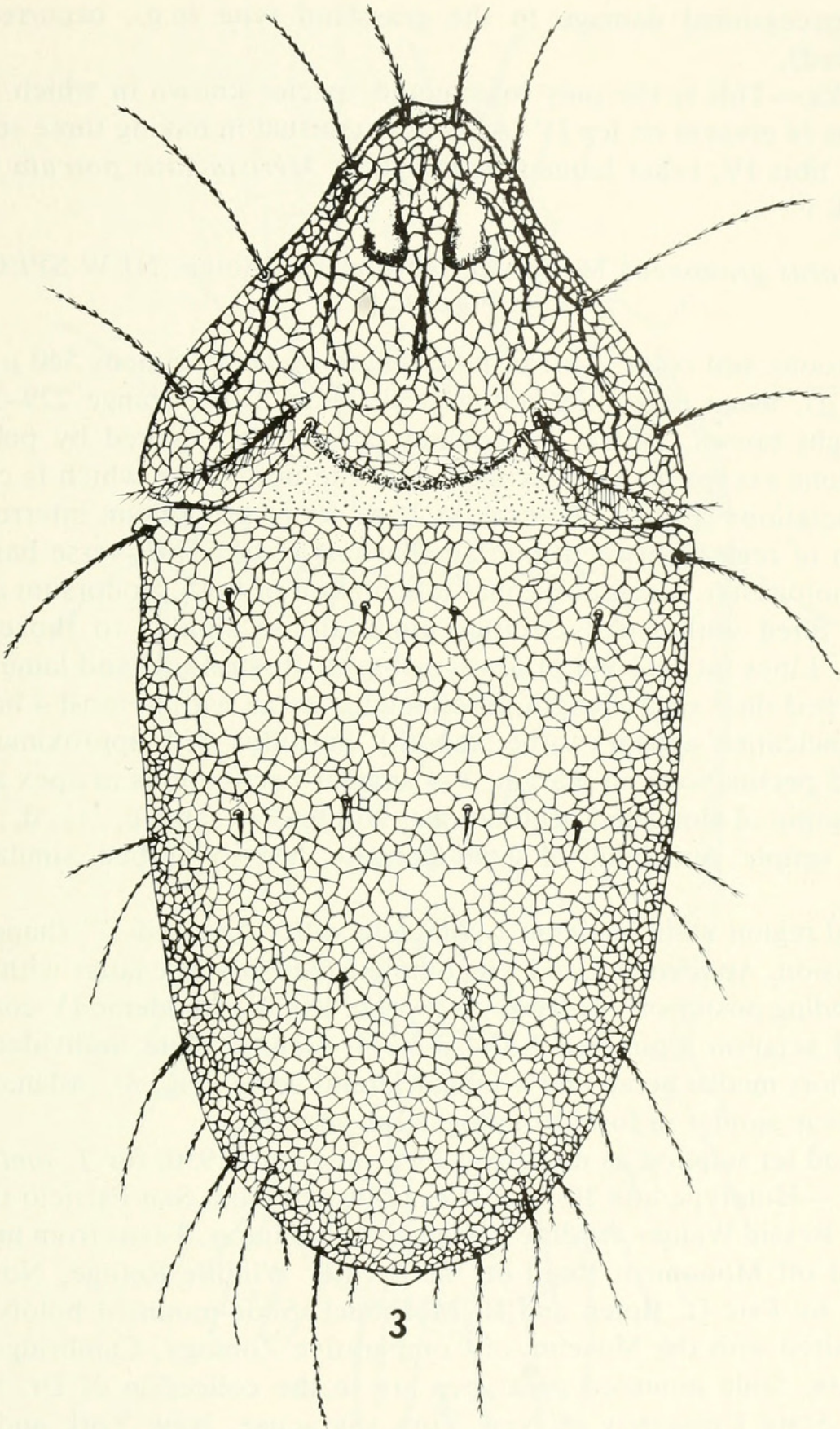


Fig. 3. *Torpacarus gramineus*, dorsal view, holotype.

earlier successional damage to the grassland type (e.g., occurrence of broomweed).

Remarks.—This is the only lohmanniid species known in which a tibial solenidion is present on leg IV. Also, it is unusual in having three setae (*d*, *l'*, *v'*) on tibia IV; other lohmanniids, except *Meristacarus porcula* Grandjean, lack *v'*.

Torpacarus gramineus McDaniel, Norton, and Bolen, NEW SPECIES
Figs. 3–4

Dimensions and color.—Mean total length of 11 specimens 540 μ (range 538–542 μ), mean maximum notogastral width 230 μ (range 229–231 μ). Color, light brown. Dorsal integument completely covered by polygonal reticulations except on anterior tectum of the notogaster which is covered with punctations (Fig. 3). Transverse band *sb* of prodorsum interrupts reticulation of region between interlamellar (*in*) setae. Transverse bands absent on notogaster. Each polygonal reticulation of both prodorsum and notogaster filled with small circular punctations, similar to those of *T. omittens*. Lines *mt*, *nt*, and *pt* always absent. Rostral (*ro*) and lamellar (*le*) setae barbed their entire length, interlamellar setae with at most 4 barbs (at low magnification appears to be smooth). Sensillus with approximately 19 elongated pectinations on margin, 3–4 smaller pectinations at apex and opposite margin of elongated pectinations. Notogaster setae *c*₁, *c*₂, *d*₁, *d*₂ and *e*₁ short, simple; remainder of setae elongate, heavily barbed, similar to *ro* and *le*.

Ventral region with apodeme 1 complete with “inverted-Y” shaped sternal extension. Apodemes 2 and 3 incomplete medially; the latter with sternal bar extending posteriorly halfway to level of leg IV. Apodeme IV complete. Epimeral setation (epimeres I–IV) 3-1-3-4. Genital plate undivided, each with 6 short medial setae and 4 longer lateral setae (Fig. 4). Adanal plates with 5 setae similar in form to notogastral setae *f*₂.

Palp and leg setation as described by Grandjean (1950) for *T. omittens*.

Types.—Holotype and 10 paratypes collected from San Patricio County, Rob and Bessie Welder Wildlife Refuge 8 mi N Sinton, Texas from mesquite grassland off Monument Road on the Welder Wildlife Refuge, November 23, 1977 by Eric G. Bolen and B. McDaniel. Slide-mounted holotype will be deposited with the Museum of Comparative Zoology, Cambridge, Massachusetts. Slide mounted paratypes are in the collection of Dr. Roy A. Norton, State University of New York, Syracuse, New York and of the senior author.

Habitat.—The habitat for the holotype and paratypes of *T. gramineus* is the same as described earlier for *Pseudocryptacarus graminosus*.

Remarks.—The absence of the polygonal reticulation on the tectum is

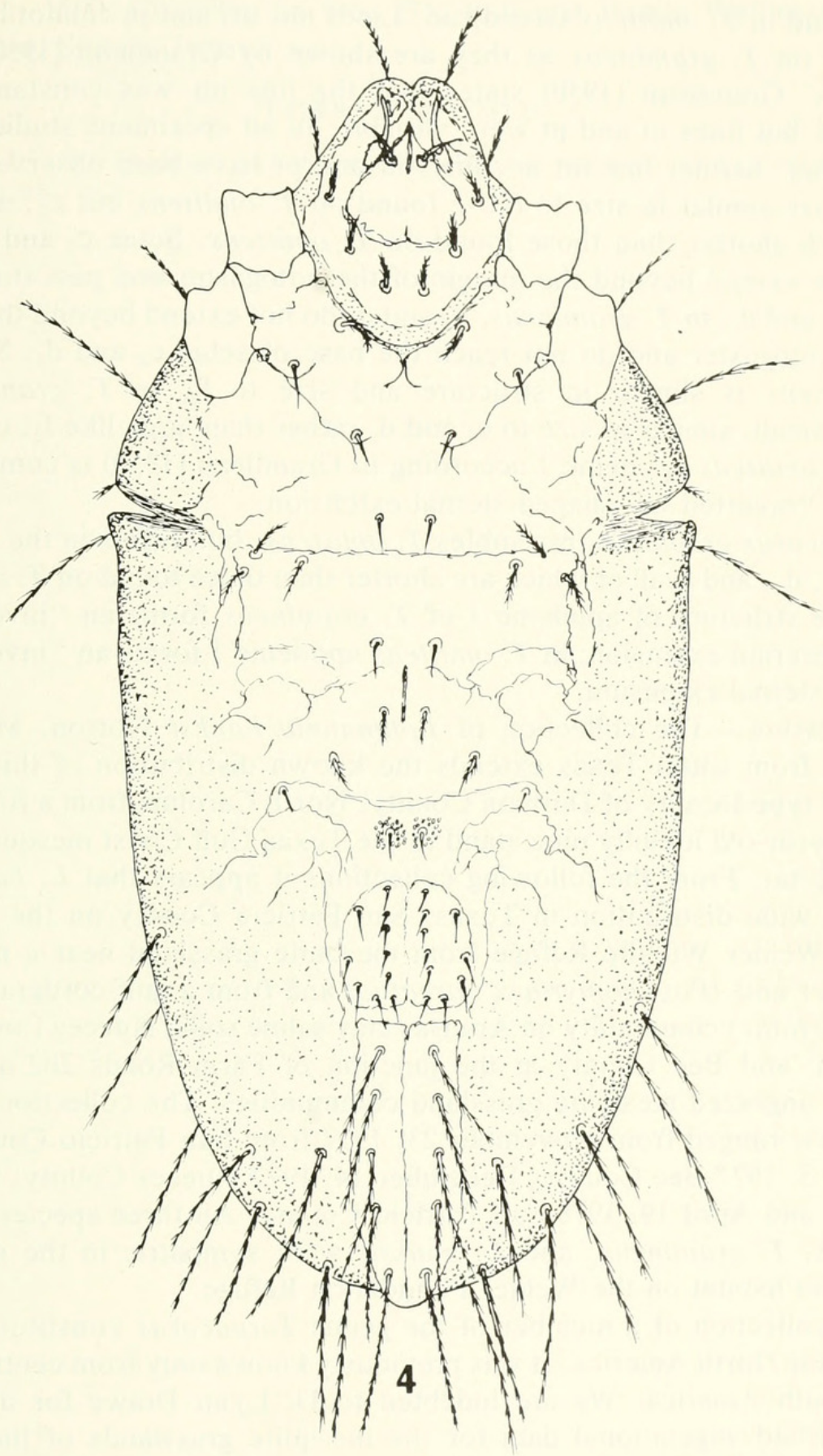


Fig. 4. *Torpacarus gramineus*, ventral view, holotype.

also found in *T. omittens* Grandjean. Lines mt, nt, and pt cannot be distinguished on *T. gramineus* as they are shown by Grandjean (1950) for *T. omittens*. Grandjean (1950) states that the line mt was constant for *T. omittens* but lines nt and pt were variable. In all specimens studied for *T. gramineus*, neither line mt nor lines nt and pt have been observed. Setae c_1 , d_1 , are similar in size to those found on *T. omittens* but c_2 , d_2 , and f_1 are much shorter than those found on *T. omittens*. Setae c_2 and d_2 of *T. omittens* extend beyond the margin of the notogaster and past the base of setae c_3 and d_3 ; in *T. gramineus*, c_2 and d_2 do not extend beyond the margin of the notogaster and do not reach the base of setae c_3 and d_3 . Seta f_1 of *T. omittens* is similar in structure and size to f_2 . In *T. gramineus* f_1 is very small, similar in size to c_2 and d_2 rather than large like f_2 , c_3 and d_3 .

In *T. omittens* apodeme 1 according to Grandjean (1950) is complete but with an "inverted U" shaped sternal extension.

Tropacarus gramineus resembles *T. omittens*, but differs in the length of setae c_2 , d_2 , and f_1 all of which are shorter than those found on *T. omittens*. Also the structure of apodeme 1 of *T. gramineus* forms an "inverted Y" shaped sternal extension; in *T. omittens* apodeme 1 forms an "inverted U" shaped sternal extension.

Discussion.—The collection of *Lohmannia banksi* Norton, Metz, and Sharma from south Texas extends the known distribution of this species from its type-locality of Durham County, North Carolina from a forest floor of a 20-year-old loblolly pine stand to the Texas Gulf Coast mesquite-grassland habitat. From the following collections it appears that *L. banksi* has a fairly wide distribution in Texas: San Patricio County on the Rob and Bessie Welder Wildlife Refuge from mesquite grassland near a mound of harvester ants (*Pogonomyrmex barbatus*) and from a gulf cordgrass (*Spartina spartinae*) community on Aransas clay saline soils; Nueces County near Calallen; and Bee County at the junction of Farm Roads 202 and 2441, both in ungrazed mesquite grassland communities. The collection dates of *L. banksi* ranged from November 23, 1977 from San Patricio County, December 3, 1977 Bee County, December 14, 1977 Nueces County, February 2, 1978 and April 19, 1978 San Patricio County. All three species, *P. graminosus*, *T. gramineus*, and *L. banksi*, were sympatric in the mesquite-grassland habitat on the Welder Foundation Refuge.

The collection of a member of the genus *Tropacarus* constitutes a new record for North America. It was previously known only from central Africa and South America. We are indebted to D. Lynn Drawe for use of his unpublished vegetational data for the mesquite grasslands of the Welder Wildlife Refuge.

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