

A NEW SPECIES OF *GEOMYDOECUS* (MALLOPHAGA:  
TRICHODECTIDAE) FROM *PAPPOGEOMYS* (RODENTIA:  
GEOMYIDAE) POCKET GOPHERS IN JALISCO, MEXICO<sup>1</sup>

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ABSTRACT

The new species *Geomydoecus telli* is described and illustrated for material taken from the pocket gopher taxa *Pappogeomys gymnurus tellus* [type host], *P. tylosinus atratus*, and *P. t. zodioides* from Jalisco, Mexico.

Key Words : Mallophaga, *Geomydoecus*, Pocket gophers, *Pappogeomys*.

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INTRODUCTION

In our studies on lice (Mallophaga: Trichodectidae: *Geomydoecus* Ewing, *Thomomydoecus* Price and Emerson) of pocket gophers (Rodentia: Geomyidae), we have typically found the louse taxa to group themselves into species groups or complexes. Consistent with this, our approach for analysis and publication has been to treat each louse complex separately, until ultimately all available lice from pocket gophers have been delineated. When the first specimens of the series reported here were collected, some features were so strange that we assumed the lice represented some 'straggler' or 'contaminant' from a non-geomyid host. However, further extensive collecting has now convinced us that these lice are indeed from pocket gophers and we describe and illustrate this new species here.

In the following description, quantitative characters are followed by the minimal and maximal observed values and parenthetically the sample size, mean, and standard deviation. All measurements are in millimeters. For those not familiar with *Geomydoecus* lice, Price and Hellenthal (1980) provide labelled illustrations of pertinent structural and dimensional characters. All lice are from gopher skins housed in the collections of the Museum of Natural History at the University of Kansas (KU) or The Museum at Texas Tech University (TT).

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*Geomydoecus telli*, new species  
(Figs. 1-4)

*Female*

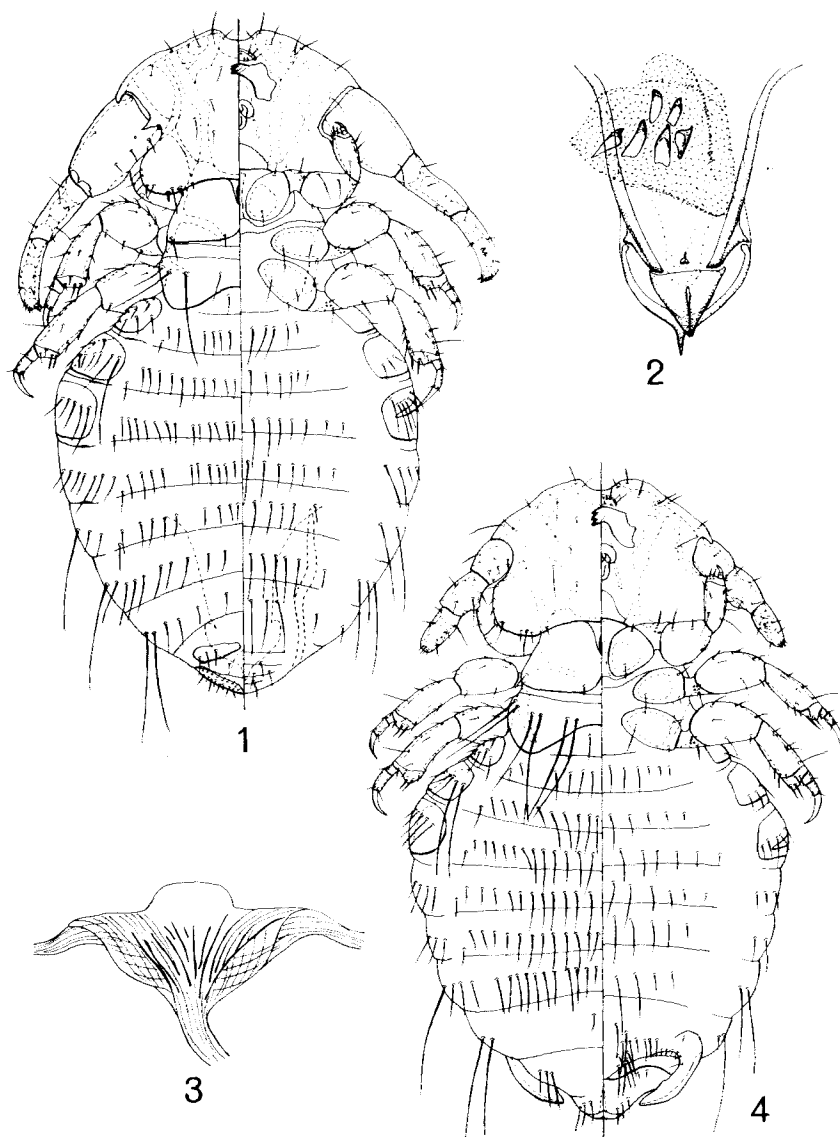
As in Fig. 4. Temple width 0.450-0.505 (14:  $0.480 \pm 0.0177$ ); head length 0.280-0.320 (14:  $0.306 \pm 0.0130$ ); submarginal and inner marginal temple setae 0.040-0.060 (11:  $0.052 \pm 0.0051$ ) and 0.035-0.050 (12:  $0.043 \pm 0.0042$ ) long, respectively; submarginal seta positioned between inner and outer marginal setae. Prothorax width 0.315-0.370 (14:  $0.341 \pm 0.0151$ ). Tergal setae: I, 2; II, 11-18 (14:  $13.4 \pm 1.74$ ); III, 19-25 (14:  $21.9 \pm 1.90$ ); IV, 23-32 (13:  $27.2 \pm 2.73$ ); V, 21-30 (13:  $26.4 \pm 2.69$ ); VI, 21-30 (12:  $25.7 \pm 2.31$ ); tergal and pleural setae on VII, 32-40 (13:  $35.5 \pm 2.07$ ). Longest seta of medial 10 on tergite VI, 0.080-0.095 (13:  $0.088 \pm 0.0048$ ); on tergite VII, 0.095-0.110 (9:  $0.104 \pm 0.0044$ ), with 0-5 (9:  $1.2 \pm 1.64$ ) of these longer than 0.100. Longer seta of medial pair on tergite VIII, 0.040-0.055 (12:  $0.048 \pm 0.0054$ ) long. Each side of last tergite with 3 lateral setae close together, with outer seta 0.035-0.055 (12:  $0.044 \pm 0.0059$ ), middle seta 0.050-0.075 (13:  $0.066 \pm 0.0088$ ), inner seta 0.045-0.075 (12:  $0.056 \pm 0.0090$ ) long. Pleura on abdominal segment III with pair of very long dorsal setae. Sternal setae: II, 8-13 (14:  $11.4 \pm 1.34$ ); III, 8-12 (14:  $10.6 \pm 1.02$ ); IV, 7-13 (11:  $11.4 \pm 1.69$ ); V, 8-14 (13:  $10.6 \pm 1.80$ ); VI, 8-11 (13:  $9.5 \pm 0.88$ ); VII, 9-12 (13:  $10.0 \pm 0.82$ ). Subgenital plate with 21-30 (13:  $25.4 \pm 2.90$ ) setae. Total length 1.195-1.450 (12:  $1.306 \pm 0.0715$ ). Genital sac as in Fig. 3, width 0.265-0.295 (12:  $0.282 \pm 0.0093$ ), length 0.155-0.200 (12:  $0.181 \pm 0.0116$ ), with only anteriorly directed lines, no suggestion of medioanterior transverse loops, and with pronounced medioanterior protrusion of border.

*Male*

As in Fig. 1. Temple width 0.420-0.455 (11:  $0.441 \pm 0.0127$ ); head length 0.300-0.340 (12:  $0.319 \pm 0.0126$ ); submarginal and inner marginal temple setae 0.050-0.065 (10:  $0.056 \pm 0.0055$ ) and 0.025-0.030 (12:  $0.026 \pm 0.0019$ ) long, respectively; both inner and outer marginal setae stout and spiniform, with submarginal seta situated between them. Antenna with scape length 0.185-0.210 (10:  $0.204 \pm 0.0089$ ), scape medial width 0.110-0.130 (10:  $0.123 \pm 0.0059$ ), scape distal width 0.115-0.135 (10:  $0.127 \pm 0.0058$ ); without process on posterior scape margin. Prothorax width 0.305-0.345 (11:  $0.324 \pm 0.0127$ ). Tergal setae: I, 2; II, 10-15 (12:  $12.9 \pm 1.62$ ); III, 18-22 (12:  $20.2 \pm 1.22$ ); IV, 20-26 (12:  $22.6 \pm 2.02$ ); V, 20-26 (12:  $22.6 \pm 2.35$ ); VI, 15-19 (12:  $16.5 \pm 1.38$ ); tergal and pleural setae on VII, 20-27 (12:  $22.1 \pm 2.27$ ). Sternal setae: II, 9-13 (12:  $11.0 \pm 1.28$ ); III, 9-13 (12:  $11.3 \pm 1.07$ ); IV, 9-14 (12:  $11.5 \pm 1.31$ ); V, 9-13 (12:  $11.0 \pm 1.35$ ); VI, 7-10 (12:  $8.8 \pm 0.83$ ); VII, 8-10 (11:  $8.5 \pm 0.69$ ); VIII, 5-8 (12:  $7.0 \pm 0.95$ ). Total length 1.275-1.465 (12:  $1.357 \pm 0.0627$ ). Genitalia as in Fig. 2; sac having 6 large spines; parameral arch evenly rounded, with medioposterior projection, width 0.150-0.170 (12:  $0.162 \pm 0.0050$ ); endomerale plate nearly triangular, with very deep apical division, width 0.085-0.095 (12:  $0.092 \pm 0.0036$ ), length 0.075-0.090 (11:  $0.083 \pm 0.0047$ ).

*Material*

Holotype female, ex *Pappogeomys gymnurus tellus* (Russell) (KU-31053), 1 mi NE Tala, Jalisco, Mexico, 30.III.1949, J. R. Alcorn; in collection of the University of Minnesota. Paratypes, ex *P. g. tellus*: 4 females, 1 male, same data as holotype; 2 females, same except KU-31052; 1 female, 2 males, same except KU-31054, 31055,



Figs. 1-4. *Geomydoecus telli* new species. 1. Male dorsal-ventral view. 2. Male genitalia. 3. Female genital sac. 4. Female dorsal-ventral view.

1 mi S El Refugio, 2½ mi W Tala, 15.III.1949; 3 females, 3 males, TT-9270, 9271, 9272, 15 mi E Ameca, Jalisco, Mexico, 18.VIII.1969, D. L. Berry. Paratypes of both sexes distributed among the U.S. National Museum of Natural History, Oklahoma State University, and the University of Minnesota.

Other specimens: 1 female, 2 males, ex *P. tylorhinus atratus* (Russell) (KU-31063, 31065), 19 mi S, 9 mi W Guadalajara, Jalisco, Mexico, 16.II.1949, J. R. Alcorn; 4 females, 4 males, ex *P. t. zodiuss* (Russell) (KU-31057, 31058), 13 mi S, 15 mi W Guadalajara, Jalisco, Mexico, 6/22.II.1949, J. R. Alcorn.

### Remarks

No other known species of *Geomydoecus* has the female genital sac with the broad conspicuous anterior protrusion or the male genitalia with an endomeral plate triangular in shape and with such a deep division. Supplementing these unique features are the female line configuration on the genital sac, the male scape structure and number of large spines on the genital sac, as well as various quantitative features. They leave no doubt that *G. telli* stands apart from all other *Geomydoecus* species. If one attempts to identify specimens of *G. telli* in the keys in Price and Emerson (1971), they will not fit either half of couplet 37 near the end of the male key and suffer a similar fate in couplet 33 of the female key.

Interestingly, *G. telli*, in every instance, was collected with specimens of the *Geomydoecus mcgregori* complex from the same host individual. While the *mcgregori* complex has a wider host range within *Pappogeomys*, *G. telli*, as far as now known, is limited to the 3 *Pappogeomys* taxa cited here. Of further note, these 3 gopher taxa are shown by Hall (1981) to be clustered at the northwest corner of the distribution of the two *Pappogeomys* host species.

### LITERATURE CITED

- Hall, E. R. 1981. The mammals of North America. 2nd Ed. Vol. I. John Wiley and Sons, New York.
- Price, R. D., and K. C. Emerson. 1971. A revision of the genus *Geomydoecus* (Mallophaga: Trichodectidae) of the New World pocket gophers (Rodentia: Geomyidae). J. Med. Entomol. 8: 228-57.
- Price, R. D., and R. A. Hellenthal. 1980. The *Geomydoecus oregonus* complex (Mallophaga: Trichodectidae) of the western United States pocket gophers (Rodentia: Geomyidae). Proc. Entomol. Soc. Wash. 82: 25-38.
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