

A NEW FLEA OF THE GENUS *MEGARTHROGLOSSUS* JORDAN
AND ROTHSCHILD FROM NEW MEXICO (SIPHONAPTERA:
HYSTRICHOPSYLLIDAE: ANOMIOPSYLLINAE)¹

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Abstract: *Megarathroglossus cavernicolus* Méndez & Haas, n. sp. of flea from New Mexico, is described and illustrated. This new taxon was found to be sympatric with *M. bisetis* Jordan and Rothschild.

During ecological studies of mammal populations and their ectoparasites conducted by the junior author and his colleagues in the Jemez Mountains of Sandoval Co., New Mexico, many rodent nests were obtained for examination. Subsequent study of this material has disclosed the presence of several species of fleas, including a large number of specimens of a new species of *Megarathroglossus* which is described below. This new taxon increases the number of known species of the genus to 10.

It is of interest to note that the species described in this paper was found together with *M. bisetis*

Jordan & Rothschild. The specimens of the latter species, collected from the Jemez Mountains, show patterns of differences from typical members of this taxon. This fact indicates the probable existence of a complex of forms which is presently being studied by the authors in addition to an apparently new species of the genus recently obtained from a *Eutamias* sp. nest in Colfax Co., New Mexico. There is a strong probability that further collections of rodent nests in Western North America will reveal additional species of *Megarathroglossus*.

***Megarathroglossus cavernicolus*, n. sp.**

FIG. 1-6

Diagnosis: This new species is easily differentiated from other members of the genus by its narrower, distally projected and arched fixed process of clasper (FIG. 2). In other *Megarathroglossus* this process is markedly broad, semitruncate and not as expanded posteriorly.

The reports by Méndez (1956) and by Hopkins & Rothschild (1962) discuss the taxonomic distinctions of the species of the genus and should also be consulted to appreciate and evaluate similarities and differences between the present n. sp. and its known congeners. Attention is directed to the fact that the ♂ of *M. cavernicolus* resembles *M. procus*, *M. beeki*, *M. bisetis* and

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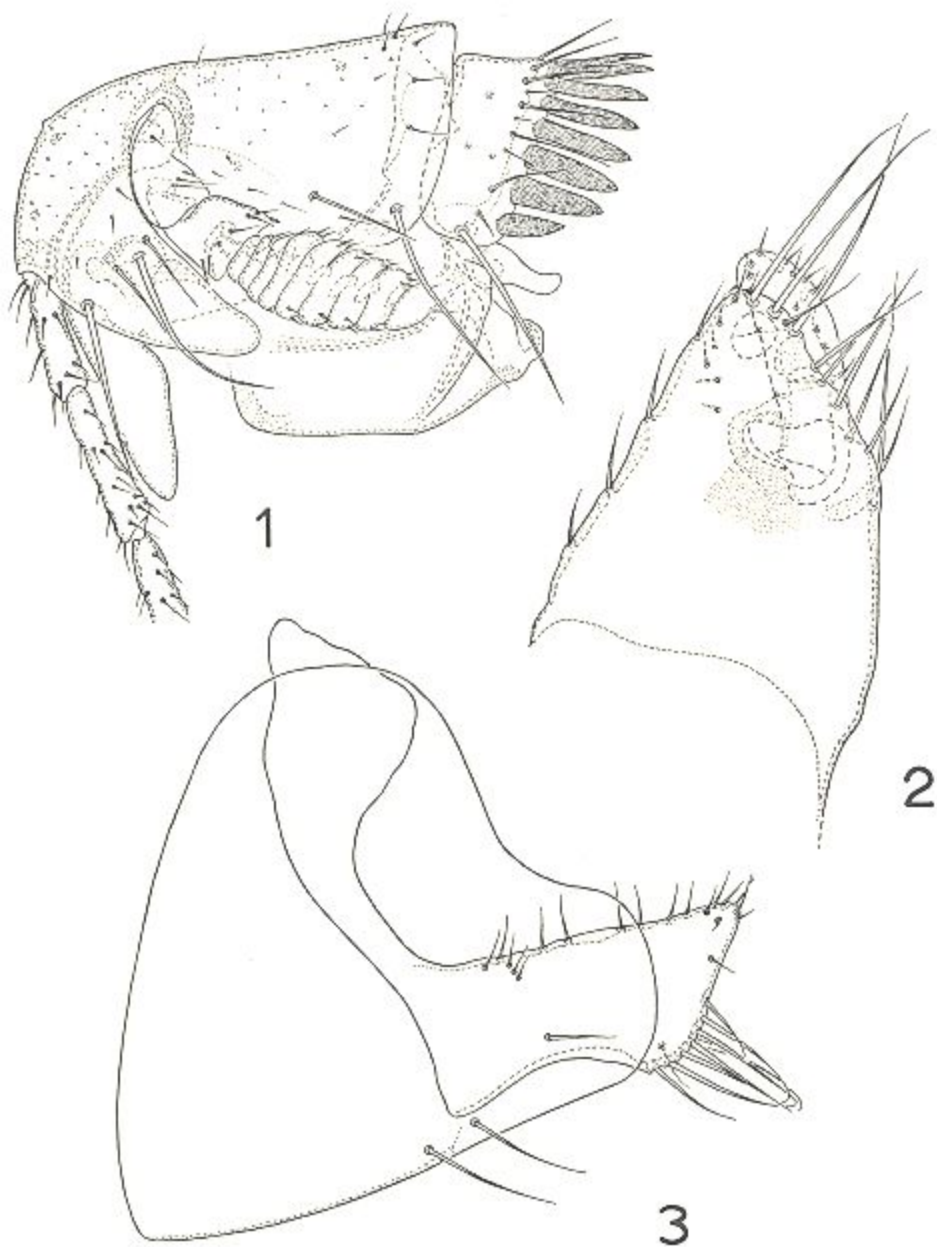


FIG. 1-3. *Megarthroglossus cavernicolus* n. sp. (1) ♂: head and prothorax, (2) ♂: fixed process and digitoid of clasper, (3) ♂: sterna VIII and IX.

M. divisus in having the dorsal region of the aedeagus without a lobular protuberance (FIG. 4). The ♀ of the new species has in common with *M. procus*, *M. becki*, *M. sicamus* and *M. sierrae* a spermatheca with the bulga lacking a swollen portion or "collar" (FIG. 6).

The following are the most obvious differences that distinguish the new taxon from the sympatric *M. bisetis*: In both sexes of *M. cavernicolus* n. sp., the maxillary lobe is blunt, devoid of a sharp process, and does not extend beyond 2nd segment of maxillary palp (FIG. 1); in *M. bisetis* this lobe has an acuminate process that reaches 3rd segment of maxillary palp. The pronotal comb of the n. sp. commonly has a total of 14 spines; that of *M. bisetis* 16 spines. Sternum VIII of the ♂ of the n. sp. has sinuate posterior margin and prominent, rounded or subrounded caudal lobe (FIG. 3); sternum VIII in *M. bisetis* has convex posterior margin usually with reduced subrounded caudal lobe projected downwards. The ♀ *M. cavernicolus* n. sp. usually has 3 antepygial bristles per side and spermatheca

without distinct "collar", whereas in *M. bisetis* this sex normally has 2 antepygial bristles per side and spermatheca provided with well developed "collar". In *M. cavernicolus* the female posterior margin of sternum VII is sinuous but not incised (FIG. 5) in all individuals of the type series (63 specimens). In *M. bisetis* it is also sinuous and may or may not present a short sinus.

Description of ♂: Head (FIG. 1).—As illustrated. Maxillary lobe with rounded or subrounded apex of moderate length, lacking a slender pointed process, barely reaching end of 2nd segment of maxillary palp.

Thorax: Pronotum with single regular row of dissimilar bristles in addition to pronotal comb of normally 14 moderately broad, semi-acuminate spines. Mesonotum usually armed with 4 pseudosetae per side. Mesonotal and metanotal bristles apparently in 2 rows. Legs essentially similar to those of other species of the genus.

Abdomen: Terga I and II with 1 or 2 marginal spinelets on

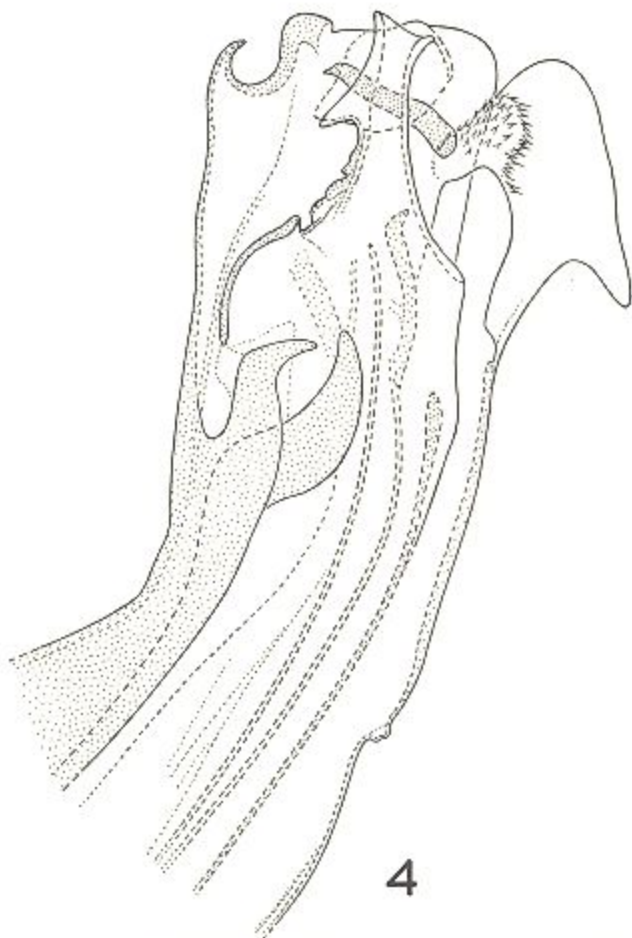


FIG. 4. *Megarthrogllossus cavernicolus* n. sp. Apex of aedeagus.

each side and single row of alternately short and long bristles.

Modified abdominal segments: 3 unequal antepygial bristles per side: middle bristle the longest, upper bristle longer than lower one. Sternum VIII (FIG. 3) with 2 moderately long bristles located near end of ventral ridge; outline of posterior margin sinuate, producing broad and rounded or subrounded caudal lobe. Proximal arm of sternum IX (FIG. 3) curved upward as an irregular spatula with narrow base and broad apex. Distal arm of this sternum slightly smaller than proximal arm, showing apex essentially angular, broader than base; with dorsal margin shallowly sinuate and ventral margin strongly sinuate; postero-caudal group of bristles somewhat prominent, standing out from dorsomarginal and inner bristles. Fixed or immovable process of clasper (FIG. 2) longer than wide, somewhat expanded distally into progressively narrow irregular arch. Apex of this process bearing conspicuous rounded pit and irregular row of short bristles on inner plane. Dorsomarginal bristles of moderate size. Posterolateral bristles larger and more prominent. Movable process of clasper (FIG. 2) curved cephalad, not conspicuous, barely projected beyond apex of fixed process. Bristles of movable process short, with irregular distribution. Anterodorsal region of aedeagus (FIG. 4) lacking a lobular protuberance. Median dorsal lobe small, claw-shaped, not reaching level of primary dorsal lobe. Lateral lobe slightly longer than broad. Apical sclerites of inner tube slightly sinuous, narrow and elongate. Crochet with short and subacuminate apical blade.

♀: *Modified abdominal segments* (FIG. 5). 3 antepygial bristles

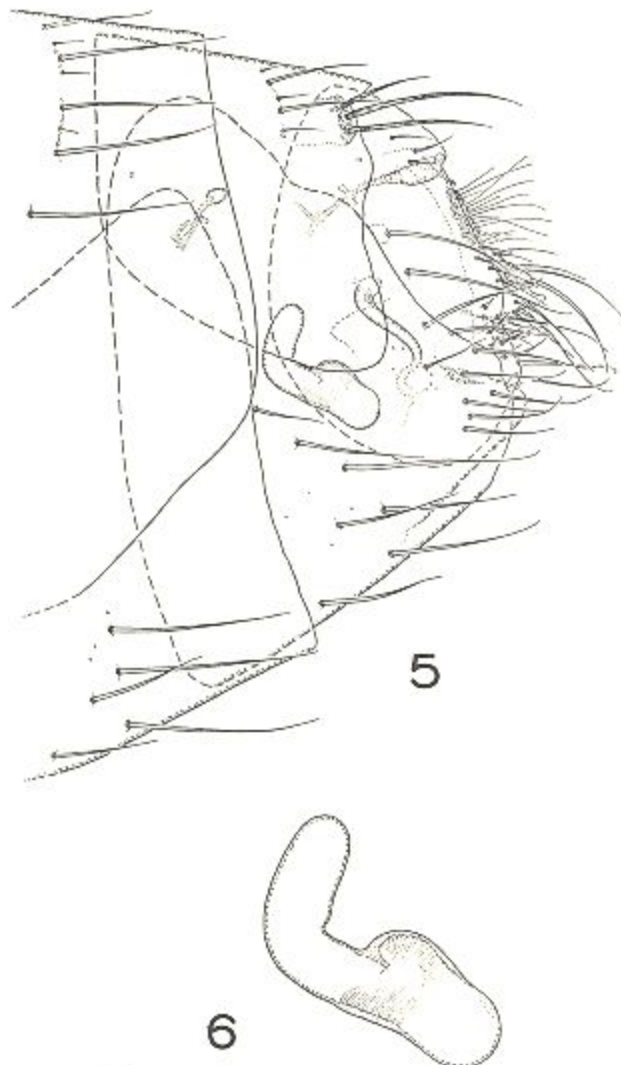


FIG. 5-6. *Megarthrogllossus cavernicolus* n. sp. (5) ♀: modified abdominal segments, (6) ♀: spermatheca.

on each side are normally present (2 of the 70 ♀♀ examined present the following arrangement of antepygial bristles: 2-3; while 3 specimens show: 3-4). Sensillum containing about 25 sensory pits. Sternum VII with posterior margin undulate, not incised, therefore having no sinus; its broad but irregular latero-caudal lobe has short sinuous sclerotization and about 7 bristles of variable size; these are preceded by group of 7 or 8 mesal bristles. Posterior portion of sternum VIII subangulate, having about 4 short apicomarginal bristles. Bursa copulatrix almost as long as spermatheca, sinuous, with slightly sclerotized walls and ending in dilated portion. Spermatheca (FIG. 6) of the type characterized by absence of a "collar". Bulga of spermatheca with rounded apex and humped posterodorsal portion; ventral margin shallowly undulate, showing no swelling; hilla strongly upturned, of about even width throughout and ending in rounded tip.

Length: Holotype ♂, 1.7 mm; allotype ♀, 2.3 mm.

Type material: Holotype ♂, allotype ♀, 26 ♂ and 49 ♀ paratypes (Coll. No. 13 B), ex *Neotoma cinerea* nest, cave on east edge of South Mountain (west edge of Valle Grande), Jemez Mtns., Sandoval Co., N. Mex., elevation 2595 m (8650 ft.); 18.IX.

1970; G. E. Haas, R. P. Martin, R. W. Hannemann; 1 ♀ paratype (Coll. No. 16 B); same locality and collectors; ex ♂ *Neotoma cinerea* (Cat. No. 1010); 25.IX. 1970; 2 ♂ and 2 ♀ paratypes (Coll. No. 27 B); ex *Neotoma cinerea* nest No. 2, cave SW side Cerro del Medio, Jemez Mtns., Sandoval Co., N. Mex., elevation 2580 m (8600 ft.); 16.XI.1970; G.E.H., R.P.M.; 13 ♂ and 14 ♀ paratypes (Coll. No. 28 B), ex *Neotoma cinerea* nest, cave NW side Telephone Canyon, Jemez Mtns., Sandoval Co., N. Mex., elevation 2580 m (8600 ft.); 20.XI.1970; G.E.H., R.P.M.; 1 ♂ and 3 ♀ paratypes (Coll. No. 31 B), ex *Neotoma cinerea* nest, Cerro del Medio, SW side in crevice above Tully's cave, Jemez Mtns., Sandoval Co., N. Mex.; elevation 2622 m (8740 ft.); 23.III.1971; G.E.H., M. Swickard.

Holotype, allotype and a small series of paratypes will be deposited in the U. S. National Museum. The rest of the paratypes will be distributed to collections of the following institutions and specialists: British Museum (Nat. Hist.); Environmental Improvement Agency, Santa Fe, New Mexico; Center for Disease Control, EIP, PHS, HEW, Fort Collins, Colorado; Field Museum of Natural History, Chicago; Bernice P. Bishop Museum, Honolulu, Hawaii; Canadian National Collection, Ottawa, Canada; Gorgas Memorial Laboratory, Panama; Dr Robert Traub, Dr Vernon J. Tipton and Dr Phyllis T. Johnson.

The latin name *cavernicolus* has been given to this new taxon to indicate the fact that most of our

material has been taken in nests located in caves. In 2 cases, the new species was found together with large numbers of *M. bisetis*. It is possible that *M. cavernicolus* may also be sympatric with *M. divisus*. The latter species seems to be relatively common in New Mexico and is sometimes found sharing a nest with *M. bisetis*. The recovery of large populations of *M. cavernicolus* n. sp. from nests of the Bushy-tailed Wood Rat *Neotoma cinerea* suggest a preference of that flea for this particular rodent.

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