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## FOUR NEW SPECIES OF GYROPIDAE (Mallophaga) FROM SPINY RATS IN MIDDLE AMERICA

By Eustorgio Méndez<sup>1</sup>

*Abstract:* The following new species of biting lice from mammals are described and figured: *Gyropus emersoni* from *Proechimys semispinosus panamensis*, Panamá; *G. mesoamericanus* from *Hoplomys gymnurus truei*, Nicaragua; *Glicicola arboricola* from *Diplomys labilis*, Panamá; *G. sylvatica* from *Hoplomys gymnurus*, Panamá.

The spiny rat family Echimyidae evidently is one of the rodent groups which is more favored by Mallophaga. Members of several genera belonging to two Amblyceran families of biting lice (Gyropidae and Trimenoponidae) are known to parasitize spiny rats. The present contribution adds to the knowledge of the Mallophagan fauna of these neotropical rodents two species each of *Gyropus* and *Glicicola* (Gyropidae).

My gratitude is expressed to Dr K. C. Emerson, who furnished most of the material used in this study. He also invited me to describe the first two species here treated and critically read the manuscript. The specimens of *Gyropus mesoamericanus* n. sp., kindly submitted for description by Dr J. Knox Jones Jr., were collected under contract (DA-49-193-MD-2215) between the U. S. Army Medical Research and Developmental Command and the University of Kansas.

*Gyropus emersoni* Méndez, new species      Fig. 1-3.

In general appearance this species resembles *G. setifer* Ewing and *G. mesoamericanus*, n. sp. It is, however, separated from these two species by characters of the male genitalia.

*Description.* ♂ (Fig. 1, 2). Head wider than long, showing clypeal margin shallowly sinuate, lateral margins strongly sinuate. Temples truncate, each bearing 1 long seta greater than width of head. Dorsal and ventral region of head moderately clothed with numerous short setae and few middle size setae oriented posteriorly. Labial palpi at level with clypeal margin, having several short setae. Maxillary palpi very short, apparently with 3 minute setae on apical segment. Antennae with few short setae limited to outer margin. Antennal fossae large and deep. Prothorax smaller than head, basally united to pterothorax, having several dorsal and ventral setae of various lengths. Pterothorax subquadrate, larger than prothorax, dorsally and ventrally

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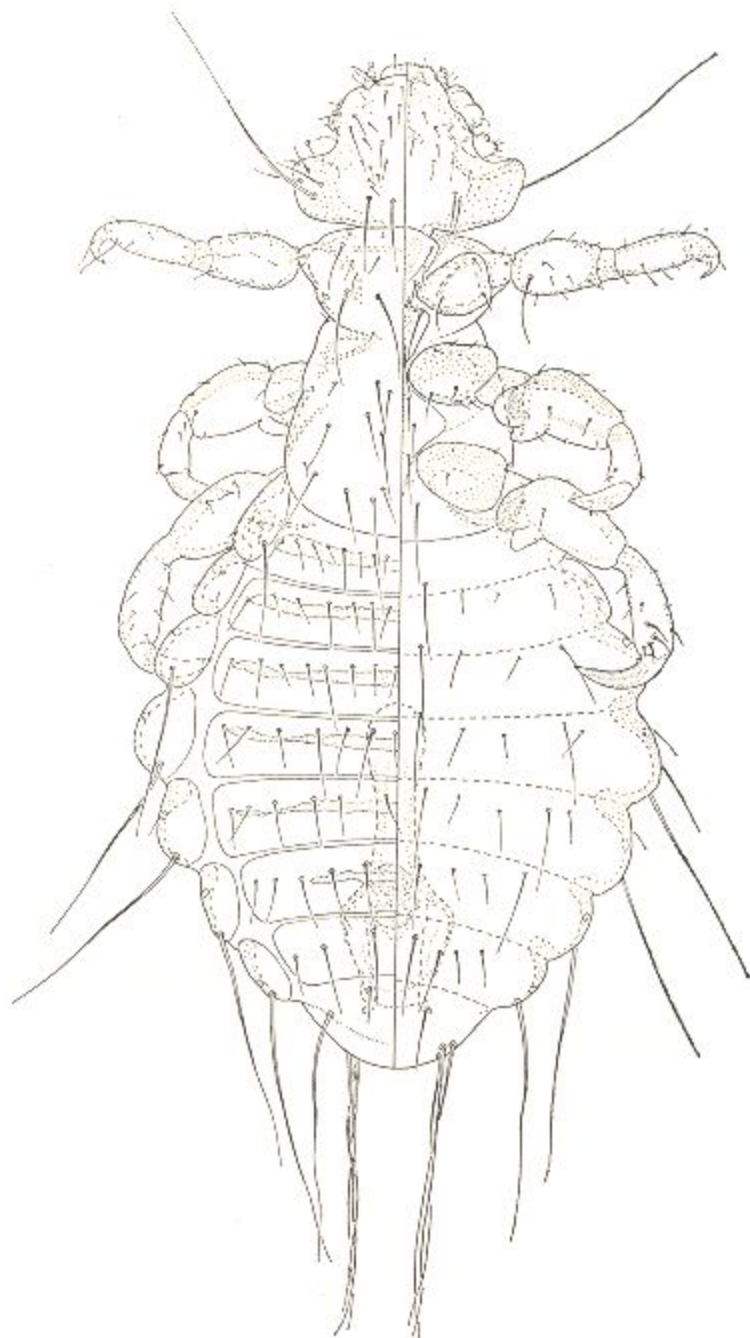


Fig. 1 *Gyropus emersoni*, n. sp.: 1, dorsal-ventral view of ♂.

sparsely covered with setae of moderate length. Anterior and median thoracic sternal plates subtriangular, posterior larger and subrhomboidal, all provided with several setae. Prothoracic legs short, moderately setose, each ending in claw slightly bifid at apex. Anterior pterothoracic legs much shorter than posterior legs, all showing reduced chaetotaxy consisting of short setae, except for ventroapical 1/2 of hind tibiae, which bear a somewhat prominent group of setae. Femoral tenacula bilobed: anterior lobe subangular, posterior lobe subrounded. All coxae heavily sclerotized, with few short setae. Abdomen moderately long, oval, with very indented lateral margins. Abdominal segments having 1 row of unequal sizes, both on dorsal and ventral areas. Segments III-VII with 1 prominent latera 1 seta per side. Segment VII provided on dorsal region with 1 long submarginal seta, besides 1 short anterior seta; ventral region of this segment with 1 marginal group of 3 long setae preceded by 1 shorter seta. Genitalia diagnostic, characterized by broad basal plate which is extended anteriorly into spatulate portion of concave margins and broad, rounded apex. Parameres of moderate length, basally broad, with blunt tips curved outward. Genital sac well developed, spiculose. Endomeral plate complicated, having a distinct anterior disk-like structure heavily covered with micropores.

♀ (Fig. 4). Not differing noticeably from the ♂ except for the primary sexual characters and its larger size. The genital plates of ventral genital area are not prominent, each one with 5 setae, the 2 outermost longer. Near this group of setae are other long, marginal and submarginal setae and 2 short, inner setae. Dorso-marginal area with 1 long submarginal seta and 2 inner setae of unequal length.

*Lengths.* ♂, 1.38 mm; ♀, 1.53 mm.

*Type data.* Holotype ♂, allotype ♀ (on single slide) from *Proechimys semispinosus*, 3.2 km W, Gamboa, Canal Zone, 27. I. 1953, H. W. Setzer. 4 ♂, 5 ♀ paratypes with same data as the types. Other paratypes as follows: 1 ♀, same host, Ft. Kobbe, C. Z., 13. I. 1953, Setzer; 2 ♂♂, same host, Fort Clayton, C. Z., 14. I. 1953, Setzer; 4 ♂♂, 10 ♀♀, 2 nymphs, same host, Ft. Clayton, C. Z., 20. XI. 1952, F. S. Blanton; 4 ♂♂, 4 ♀♀, 1 nymph, same host, Ft. Davis, C. Z., 9. X. 1952, Blanton; large series, same host, Madden Dam, C. Z., 19. IX. 1956, 5. X. 1956, 6. XI. 1956, Malaria Control Section personnel; large series, same host, Empire Road, K-10, C. Z., 16. I. 1957, 18. I. 1957, same collectors; 3 ♀♀, 1 nymph, same host, Rio Mandinga, Gamboa, C. Z., 22. I. 1952, same collectors; large series, same host, Piña Rd. 5-9, C. Z., 13, 15. XI. 1960, C. M. Keenan; 1 ♂, 1 ♀, from *Zygodontomys cherriei*, Empire Road, K-10, C. Z., 6. XI. 1956, Malaria Control Section personnel; 1 ♂, 1 ♀, same host, Cerro Azul, Panama, 7. VIII. 1956, same collectors.

Holotype, allotype and the majority of paratypes belong to the U. S. National Museum. Other series of paratypes will be distributed as follows: Snow Entomological Museum, Kansas U., British Museum (Nat. Hist.), B. P. Bishop Museum, Gorgas Memorial Laboratory and Dr K. C. Emerson's collection.

*Type host.* *Proechimys semispinosus panamensis* Thomas 1900.

*Remarks.* I am pleased to dedicate this species to Dr K. C. Emerson, a fine collaborator and an outstanding contributor to the knowledge of the bird and mammal Mallophagan fauna of the world.

#### *Gyropus mesoamericanus* Méndez, new species      Fig. 4, 5.

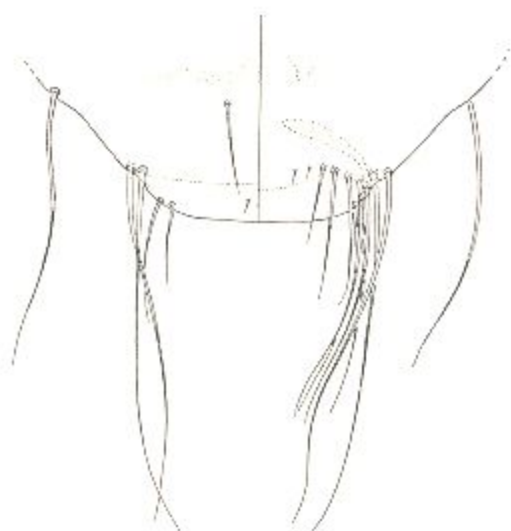
Significant characters for separating this species from other members of the genus, including *G. emersoni*, n. sp., are contained in the ♂ genitalia.

*Description.* ♂ (Fig. 4). Head distinctly broader than long, with anterior margin deeply emar-

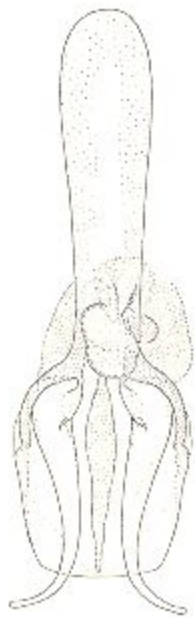




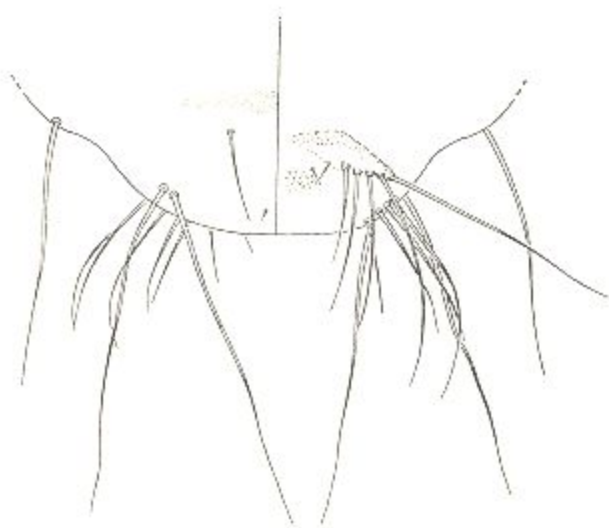
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Fig. 2-5. *Gyropus emersoni*, n. sp.: 2, ♂ genitalia; 3, dorsal-ventral view of ♀ genitalia. *Gyropus mesoamericanus*, n. sp.: 4, ♂ genitalia; 5, dorsal-ventral view of ♀ genitalia.

ginate. Lateral margins irregularly sinuate. Temples moderately sclerotized, each provided with long, conspicuous seta and several unequal, much shorter setae. Dorsal and ventral areas of head posteriorly with prominent setae reaching prothorax; dorsal ones fairly separated and arranged in single row; ventral ones forming 2 separate groups. Rest of chaetotaxy of head primarily consisting of short setae. Clypeal margin slightly produced, very shallowly convex, having short, unequal setae. Labial palpi reaching clypeal margin, bearing apical group of short setae on 4th segment. Each remaining segment with 1 noticeable seta on outer margin and apparently no more than 1 very short additional seta. Prothorax smaller than head and fused with pterothorax, having several dorsal and ventral setae. Pterothorax subquadrate, larger than prothorax, dorsally and ventrally clothed with several setae of different sizes. Legs short and stout, with relatively few short setae, each apical tarsal segment ending in single claw. Tenacula of 2nd and 3rd pair of legs with accessory subangular process. Abdomen broadly oval, with lateral margins strongly sinuate. Each segment except last essentially with 1 row of setae in addition to pleural setae. Last segment with caudal group of 3 long setae and other shorter inner setae. Genitalia somewhat complex, consisting of broad basal plate with rounded caudal margin; its anterior portion produced into large blade with broad apex and almost straight lateral margins. Parameres long, basally fused with basal plate, with apices strongly curved outward.

♀ (Fig. 5). Similar to ♂, with exception of genital characters and larger size. Ventrogenital region provided with laterocaudal setae, many fine spicules and paired simple gonopodes armed with about 9 strong and moderately long setae. In front of each gonopod there is a pair of short setae. Dorsogenital region with few inner setae besides pleural setae and 1 pair each of short and long subcaudal setae.

*Lengths.* ♂, 1.35 mm; ♀, 1.40 mm.

*Type data.* Holotype ♂, allotype ♀ (mounted on a single slide) from *Hoplomys gymmurus truei*, JDS-2989 (permanent catalogue No. KU 110580,) El Recreo, S side Rio Mico, 25 m, Zelaya, Republic of Nicaragua, 22.VI.1967. 36 ♂♂, 34 ♀♀ and 6 nymph paratypes with same data as the types. Holotype, allotype and a series of paratypes will be deposited in the U. S. National Museum. The remaining paratypes will be deposited in the Snow Entomological Museum, Kansas U., British Museum (Nat. Hist.), B. P. Bishop Museum, Gorgas Memorial Laboratory and the collection of Dr K. C. Emerson.

*Type host.* *Hoplomys gymmurus truei* J. A. Allen 1908.

#### *Gliricola arboricola* Méndez, new species      Fig. 6, 7, 10, 11.

This species is near *G. panamensis* Werneck and *G. sylvatica*, n. sp., forms also infesting spiny rats. It can be readily differentiated from these related species by morphological features of the ♂ and ♀ genitalia. The characteristic posterodorsal row of moderately prominent setae on the pterothorax of the ♀ further offers a good diagnostic character, since this row consists of very short setae on its allied species.

*Description.* ♂ (Fig. 6, 10). Head slightly larger than broad, with clypeal margin convex, bearing few short setae. Temporal lobes subrounded, barely projecting. Chaetotaxy consisting of short setae, dorsals exceeding ventrals in number. Labial palpi and antennae with very few short setae. Antennal fossae fairly long and deep. Prothorax subovate, definitely broader than long, smaller than pterothorax, with dorsal transverse row of short setae and relatively few marginal and inner setae. Ventral region apparently with 1 short antero-median seta. Pterothorax longer than broad, with dorsal region provided with 2 transverse rows of setae plus

several marginal setae. Ventral area apparently devoid of setae. Legs as in other members of the genus, moderately clothed with short dorsal and ventral setae. Abdomen subovate, armed with sternal, tergal and pleural plates extensively provided with short setae. Modified terminal segment with caudal margin irregularly sinuate, showing each pleural plate with a prominent posterodorsal seta which is slightly more than 2 X length of posteroventral seta. Caudal margin of this segment with several short submarginal setae and 1 very long marginal seta on each side. Genitalia (Fig. 10) rather simple, with anterior portion of basal plate extended into a long, ridged process, basally wide, becoming gradually attenuated but with maximum

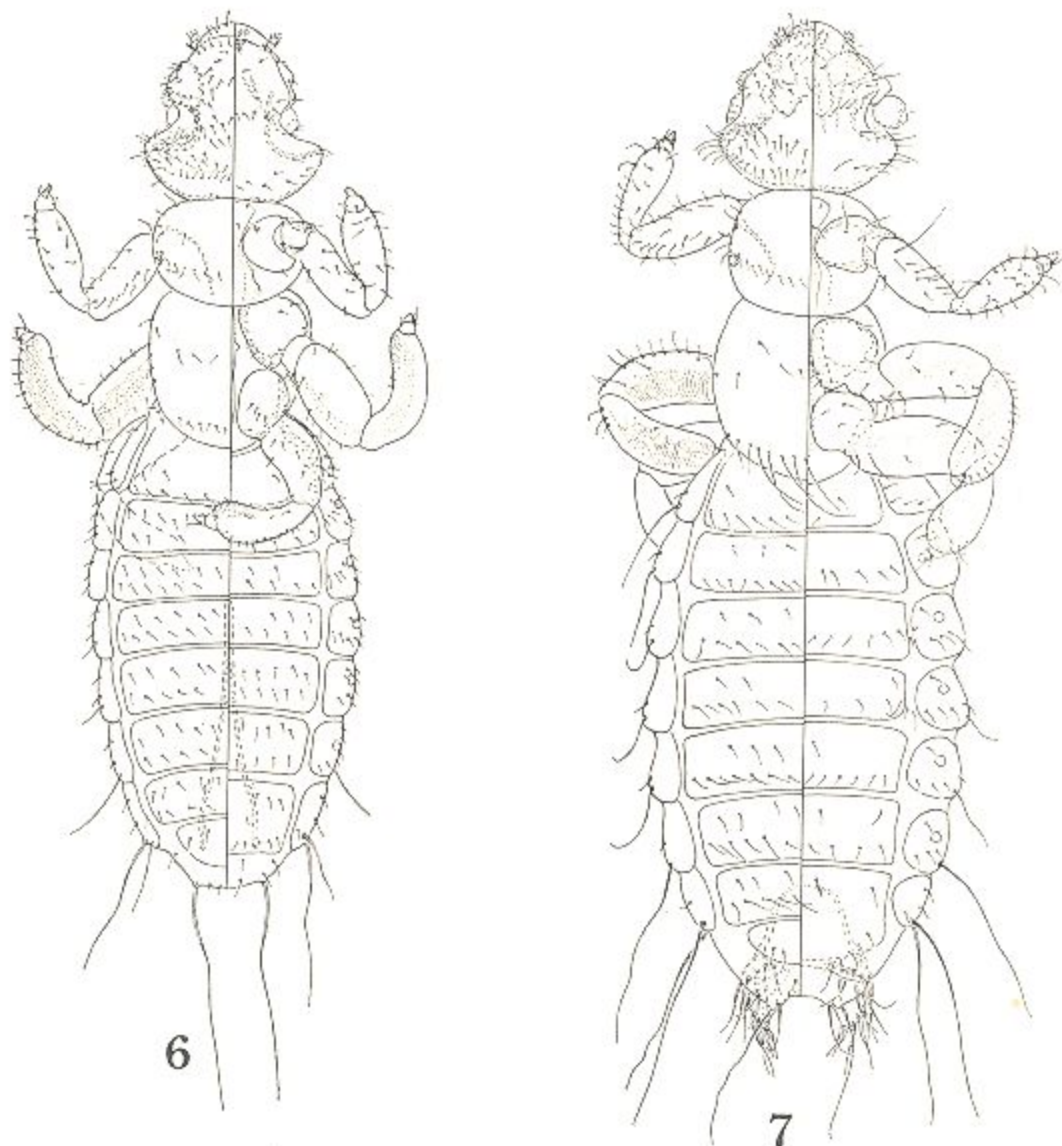


Fig. 6-7. *Gliricola arboricola*, n. sp.: 6, dorsal-ventral view of ♂; 7, dorsal-ventral view of ♀.



constriction before rounded apex. Parameres short, stout, with tips slightly slender and blunt. Genital sac hyaline and finely spiculate.

♀ (Fig. 7, 11). Besides differences of sexual nature, the ♀ exceeds the ♂ in size and has a more prominent chaetotaxy. In this respect the most important difference is the pterothoracic dorsocaudal row of setae, the majority being of moderate length, whereas in the ♂ this row is composed only of short setae. Terminal segment with caudal margin barely indented medially and bearing 3 sublateral unequal setae. Genital plate rounded anteriorly and with lateral margins sinuate and heavily chitinized. Most of gonopodal setae and those of lateral lobes slightly lanceolate.

*Lengths.* ♂, 0.84 mm; ♀, 1.10 mm.

*Type data.* Holotype ♂, allotype ♀, 11 ♂ and 17 ♀ paratypes (all mounted), besides additional series in alcohol, from *Diplomys labilis*, Achiote, Province of Colón, R. Panamá, 25.V.1956, V. E. Thatcher. Holotype and allotype will be deposited in the U. S. National Museum. Paratypes of both sexes will be deposited in the Snow Entomological Museum, the British Museum (Nat. Hist.), the B. P. Bishop Museum, the Gorgas Memorial Laboratory and the collection of Dr K. C. Emerson.

*Type host.* *Diplomys labilis* (Bangs 1901).

*Remarks.* The name *arboricola* refers to the arboreal habits of the type host.

#### *Gliricola sylvatica* Méndez, new species      Fig. 8, 9, 12, 13.

Superficially resembles *G. panamensis* Werneck and *G. arboricola*, n. sp., but separated on structures of the ♂ and ♀ genitalia.

*Description.* ♂ (Fig. 8, 12). Head slightly wider than width of prothorax, strongly deflexed, with both dorsal and ventral region provided with short marginal, submarginal and inner setae. Clypeal margin convex, having short setae. Temples showing moderate lobes. Prothorax rounded, shorter than pterothorax, with dorsal setae distributed in 1 transverse row besides few scattered marginal and inner setae. Ventral setae short and scarce. Pterothorax slightly oval, with dorsal region provided with few short setae. Setae on ventral region apparently absent. Abdomen elongate-oval. Sternal, tergal and pleural plates provided with short setae on both dorsal and ventral areas. 6th paratergal plate armed with only 1 long seta. Terminal segment broadly rounded and clothed with few short setae in addition to a pair of long setae. All legs moderately covered with short setae. Genitalia very simple, with basal plate expanded anteriorly into a fine blade with margins largely concave, terminating in broad, rounded apex. Genital sac delicately membranous, covered with fine spicules. Parameres of moderate size, slightly sinuous, each one provided with 2 apical short setae.

♀ (Fig. 9, 13). Similar in general morphology to the ♂. Differences from this sex are limited to its larger size, the primary sexual characters and minor details in the chaetotaxy. Caudal margin of terminal segment slightly indented at middle, with several unequal marginal setae. Genital plate broadly expanded, having sinuous lateral margins strongly sclerotized. Gonopods well developed, armed with several setae, 2 of which are lanceolate. Lateral lobes scarcely projecting beyond caudal margin of segment, each armed with 5 moderately foliaceous setae.

*Lengths.* ♂, 1.10 mm; ♀, 1.25 mm.

*Type data.* Holotype ♂, allotype ♀ (mounted on same slide), from *Hoplomys gymnurus*, Tacarcuna, Darién Prov., Panamá, 10.VII.1963, 3 ♂ and 3 ♀ paratypes with same

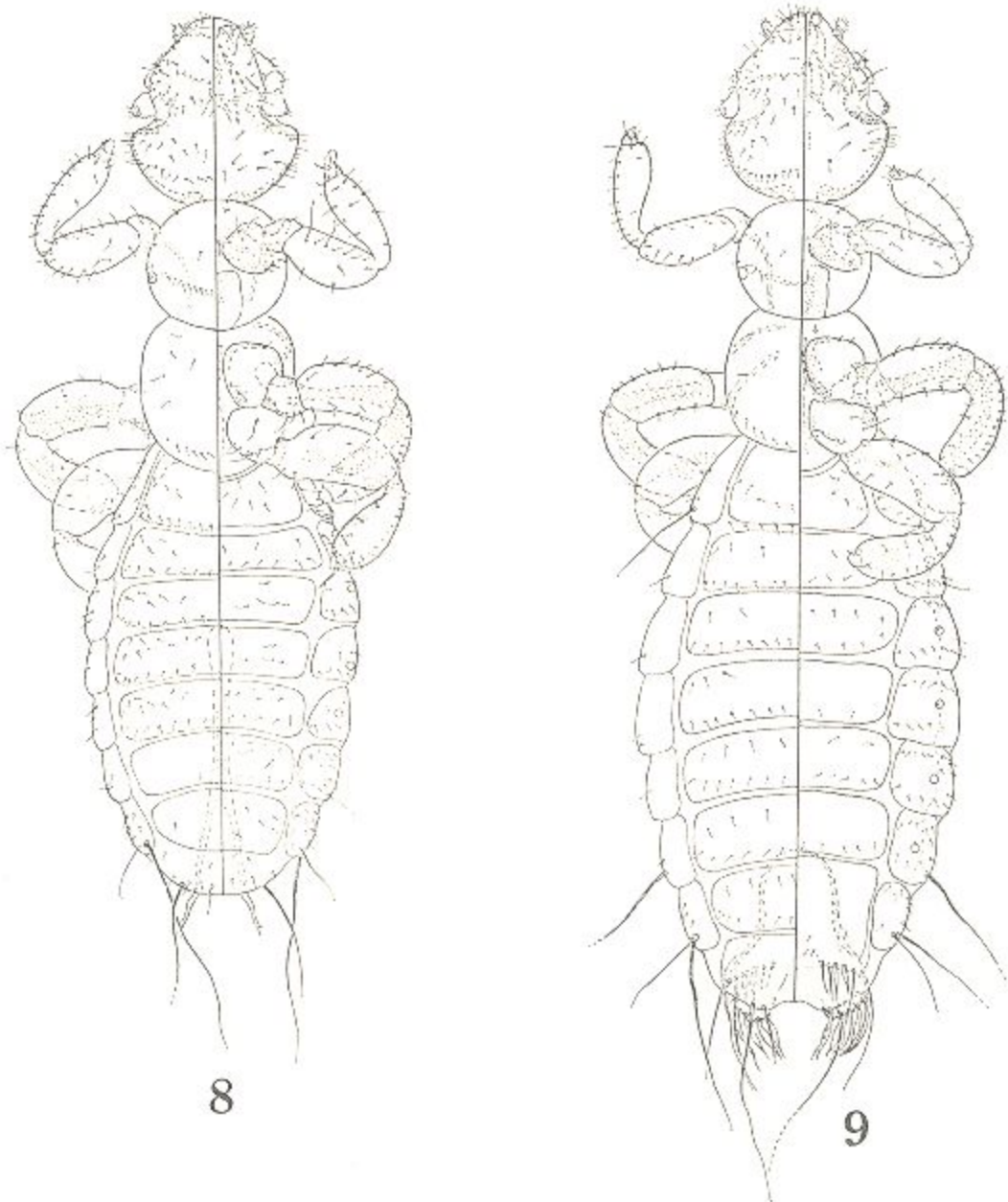
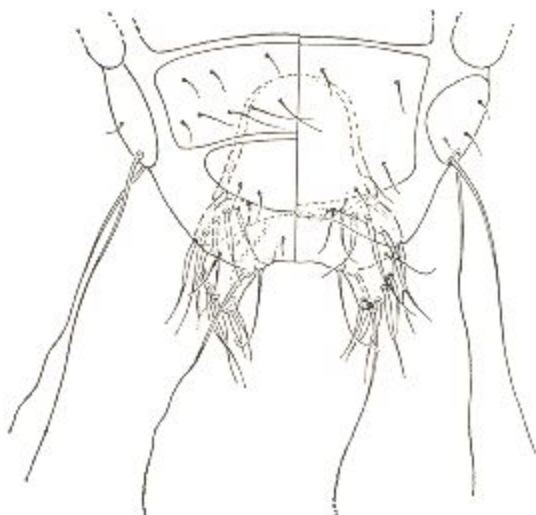


Fig. 8-9. *Gliricola sylvatica*, n. sp.: 8, dorsal-ventral view of ♂; 9, dorsal-ventral view of ♀.

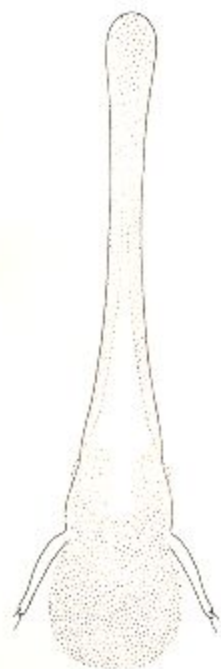




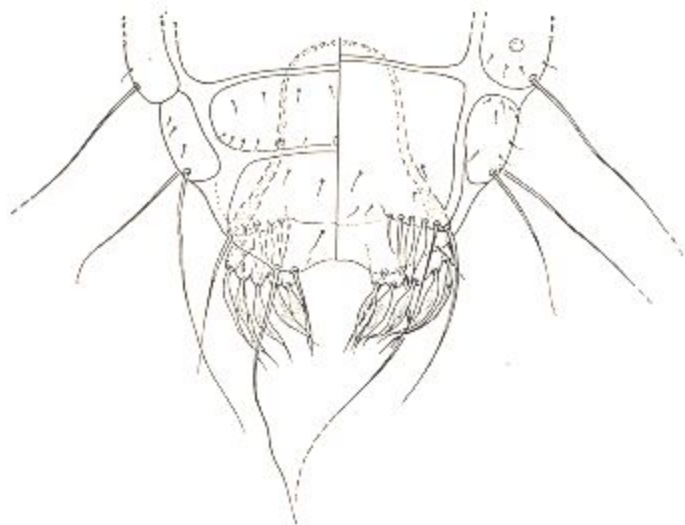
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Fig. 10-13. *Glicicola arboricola*, n. sp.: 10, ♂ genitalia; 11, dorsal-ventral view of ♀ genitalia. *Glicicola sylvatica* n. sp.: 12, ♂ genitalia; 13, dorsal-ventral view of ♀ genitalia.

data as the types; besides following paratypes from same host: 5 ♀♀, Cerro Azul, Panamá Prov., Panamá, 21. III. 1961, RML 40566; 2 ♀♀, same locality, 23. III. 1961; 7 ♀♀, Piña, Canal Zone, 6. XII. 1960, RML-40095; large series, Bocas del Toro Prov., Panamá, 29. I. 1960, No. 5504; 9 nymphs, Cayo Agua, Almirante, Bocas del Toro Prov., Panamá, 28. III. 1962.

Holotype, allotype and a large number of paratypes will be deposited in the U. S. National Museum. Other paratypes will be distributed among the collections of the Snow Entomological Museum, Kansas U., the British Museum (Nat. Hist.), the B. P. Bishop Museum, the Gorgas Memorial Laboratory and of Dr K. C. Emerson,

*Type host.* *Hopiomys gymmurus* (Thomas 1897).

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