

TWO NEW SPECIES OF *GLIRICOLA* (PHTHIRAPTERA:
GYROPIDAE) FROM THE SPINY TREE RAT,
MESOMYS HISPIDUS, IN PERU

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Abstract.—Two new species of *Gliricola*, *G. woodmani* and *G. halli* (Phthiraptera: Gyropidae), are described and illustrated for specimens from the spiny tree rat, *Mesomys hispidus* (Rodentia: Echimyidae), in Peru.

Resumen.—Se describe e ilustra dos nuevas especies de *Gliricola*, *G. woodmani* y *G. halli* (Phthiraptera: Gyropidae) que fueron encontradas en una rata espinosa arbórea, *Mesomys hispidus* (Rodentia: Echimyidae), en Perú.

Thirty-three species of chewing lice of the genus *Gliricola* Mjöberg currently are recognized, these being found on members of the rodent families Echimyidae, Caviidae, and Capromyidae. The majority, or 23, of these louse species occur on echimyids, with 5 each on caviids and capromyids. In the most recent work on *Gliricola*, Emerson & Price (1975) describe five of these taxa as new, provide illustrations and brief reviews for seven described earlier, and give literature citations that include all previously known taxa.

We recently obtained two important series of *Gliricola* from the spiny tree rat, *Mesomys hispidus* (Desmarest) (Rodentia: Echimyidae), in Peru. Our study of these specimens confirms that two species are present and their unique features indicate that the specimens we have represent two undescribed species. It is our purpose here to describe and illustrate these new species.

The locality of capture for the host, *Mesomys hispidus*, is Reserva Cuzco Amazónico, 14 km E of Puerto Maldonado, Dept. Madre de Dios, in extreme southeastern Peru at an elevation of 200 m [12°33'S, 69°03'W]. Reserva Cuzco Amazónico is a national wildlife reserve located on the north bank of the Río Madre de Dios, approximately 300 km east-northeast of the city of Cuzco. For details of the habitat, climate,

and history of the reserve see Duellman & Koechlin (1991). Woodman et al. (1991) provide an annotated listing of the mammals at this site.

Gliricola woodmani, new species
Figs. 1–5

Type host.—*Mesomys hispidus* (Desmarest).

Female.—As in Fig. 1. Head longer than wide, with numerous short dorsal setae. Thorax as shown; mesonotum with row of 22 short setae. Marginal abdominal tergal setae: I, 21; II–V, 25–26; VI–VII, 23; VIII, 14; with markedly longer group of setae laterally on IV–VI. Anterior abdominal tergal setae: I, 2; II, 14; III–V, 20–23; VI–VII, 17–18; VIII, 14. Last tergite with total of 8 anterior setae and marginally each side with medium setae flanking pair of very long setae. Pleura II–VII each with 14–16 marginal and anterior setae, including medium to long seta at outer corner; pleuron VIII with 6–9 setae, including single very long corner seta. Large spiracles on pleura III–VII. Marginal abdominal sternal setae: II, 6; III–VII, 9–11. Anterior abdominal sternal setae: II, 5; III–VII, 6–10. Sterna II–III as in Fig. 3. Sternum VIII with total of 10 setae. Ventral terminalia (Fig. 4) with posterior margin bearing 3+2 short setae on each side and

anteriorly with three prominent lobes, each of outer pair of lobes with two slender spatulate setae and inner lobe with medium seta laterad of shorter broader spatulate seta.

Male.—As in Fig. 2. Much as for female, except as follows. Mesonotum with row of 22–23 setae. Marginal abdominal tergal setae: I, 19–20; II–V, 23–29; VI–VII, 20–23; VIII, 13–14; all setae short and of essentially similar length. Anterior abdominal tergal setae: II, 16–18; III–V, 25–27; VI–VII, 21–30; VIII, 14–17. Last tergite with total of 8–9 anterior setae and marginally each side with single very long seta flanked by several short setae. Pleura II–VII each with 12–17 marginal and anterior setae, including medium seta at outer corner; pleuron VIII with 9–11 setae, including very long corner seta. Marginal abdominal sternal setae: II, 6; III–VIII, 7–10. Anterior abdominal sternal setae: II–VII, 8–12; VIII, 12–14. Chaetotaxy of subgenital plate as shown. Genitalia (Fig. 5) relatively simple, with straight parameres slightly swollen basally, endomeral plate posteriorly flattened to slightly rounded, transverse bridge near paramere base, slender tapered basal apodeme, and small lightly spiculate sac.

Dimensions (in mm).—Temple width, female 0.23, male 0.21–0.22; prothorax width, female 0.20, male 0.19; metathorax width, female 0.28, male 0.26; abdominal width at V, female 0.43, male 0.31–0.33; head length, female 0.27, male 0.26; total length, female 1.68, male 1.39–1.41; male genitalia width 0.08, length 0.40–0.41, paramere length 0.07–0.08.

Type material.—Holotype male, ex *Mesomys hispidus*, Peru: Dept. Madre de Dios, 14 km E Puerto Maldonado, Reserva Cuzco Amazónico, el. 200 m, 14 June 1989; in the Snow Entomological Collection, University of Kansas, Lawrence. Paratypes, 1 female, 1 male, same data and depository as holotype.

Remarks.—This species is readily separated from all other species of *Gliricola* on the basis of its large dimensions, relatively

simple male genitalia, the unique arrangement of the spatulate setae on the female ventral terminalia, the longer lateral marginal tergal setae on female abdominal segments IV–VI, the single very long seta on pleuron VIII and the medium to long seta on each of pleura II–VII, the pair of very long setae on each side of the last female tergum and a single such seta on the male, and the large number of setae on sterna II–III. Although some other *Gliricola* may share features similar to some of the above, none has all of them. In fact, *G. woodmani* differs so significantly from all other congeneric species that it is difficult to select even a closely related species.

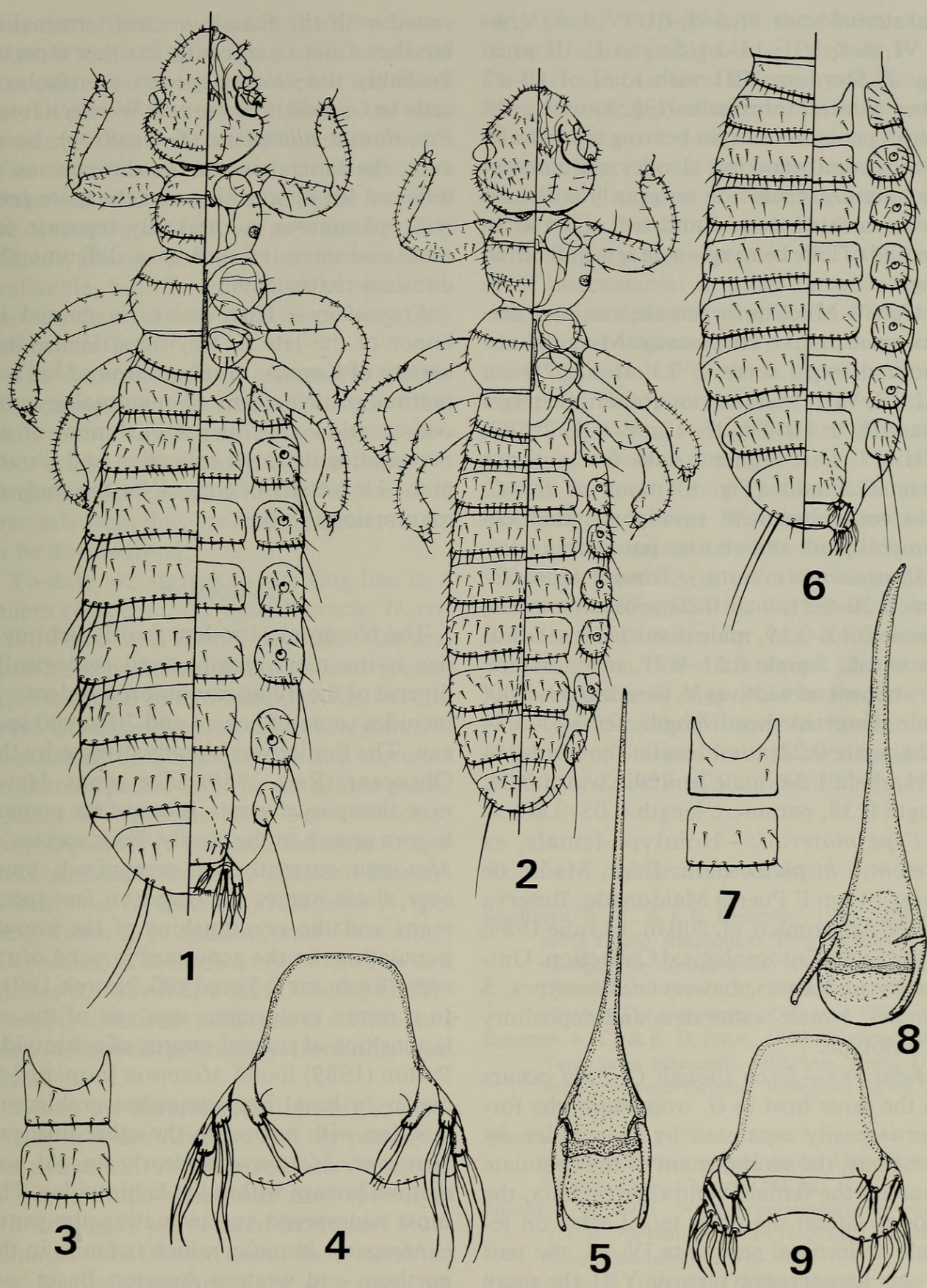
Etymology.—This species is named in honor of Neal Woodman, University of Kansas, in recognition of his efforts in obtaining these and other valuable specimens of ectoparasites and their hosts from the Neotropics, and his efforts in unraveling systematic problems in Neotropical mammals.

Gliricola halli, new species

Figs. 6–9

Type host.—*Mesomys hispidus* (Desmarest).

Female.—Head and thorax near to *G. woodmani*. Abdomen as in Fig. 6. Mesonotum with row of 20–21 short setae. Marginal abdominal tergal setae: I, 18–26; II–VI, 29–37; VII, 25–30; VIII, 21–22; with lateral setae only slightly longer than median setae. Anterior abdominal tergal setae: II, 9–17; III–V, 16–24; VI–VII, 21–28; VIII, 18–23. Last tergite with total of 6–14 anterior setae and marginally each side with medium setae flanking pair of very long setae. Pleural marginal and anterior setae, including longer seta at outer corner: II, 11–13; III, 9–15; IV–VII, 11–14; VIII, 7–10 setae, including 2 very long posterior setae. Large spiracles on pleura III–VII. Marginal abdominal sternal setae: II, 0; III, 6–8; IV–V, 9–11; VI–VII, 11–14. Anterior abdom-



Figs. 1-9. 1-5, *Gliricola woodmani*: (1) female; (2) male; (3) female sterna II-III; (4) female ventral terminalia; (5) male genitalia; 6-9, *Gliricola halli*: (6) female abdomen; (7) female sterna II-III; (8) male genitalia; (9) female ventral terminalia.

inal sternal setae: II, 4–5; III–IV, 1–8; V, 4–8; VI, 6–8; VII, 11–14. Sterna II–III as in Fig. 7. Sternum VIII with total of 10–17 setae. Ventral terminalia (Fig. 9) with each side of posterior margin bearing two minute setae medially and five slender spatulate setae laterally, each side anteriorly with two medium setae laterad and two short setae mediad of lobe bearing single seta and broad spatulate seta.

Male.—Much as for female, except in certain quantitative chaetotaxy. Marginal abdominal tergal setae: I, 23; II–VI, 28–32; VII, 27; VIII, 16. Anterior abdominal tergal setae: II, 6; III–IV, 16–17; V–VII, 20–23; VIII, 17. Last segment with five anterior setae. Genitalia (Fig. 8) much as for *G. woodmani*, but with evenly rounded endomeral plate and shorter parameres.

Dimensions (in mm).—Temple width, female 0.20–0.21, male 0.20; prothorax width, female 0.17–0.19, male distorted; metathorax width, female 0.21–0.27, male distorted; abdominal width at V, female 0.33–0.40, male distorted; head length, female 0.22–0.24, male 0.22; total length, female 1.35–1.51, male 1.24; male genitalia width 0.08, length 0.38, paramere length 0.05–0.06.

Type material.—Holotype female, ex *Mesomys hispidus*, Peru: Dept. Madre de Dios, 14 km E Puerto Maldonado, Reserva Cuzco Amazónico, el. 200 m, 14 June 1989; in the Snow Entomological Collection, University of Kansas, Lawrence. Paratypes, 3 females, 1 male, same data and depository as holotype.

Remarks.—Even though *G. halli* occurs on the same host as *G. woodmani*, the former is easily separated by its smaller dimensions, the arrangement of the spatulate setae on the female ventral terminalia, the shorter lateral marginal tergal setae on female abdominal segments IV–VI, the pair of very long setae on pleuron VIII, the small number of setae on sterna II–III, and the generally larger number of tergal setae and small number of pleural setae.

A number of other *Gliricola* species have a similar type of setal configuration asso-

ciated with the female ventral terminalia, but they differ significantly in other aspects. Probably the closest species morphologically to *G. halli* is *G. humilis* Werneck from *Proechimys albispinus* (I. Geoffroy); however, the latter has smaller dimensions, a different length and shape of the male genitalic parameres, a markedly truncate female abdomen, as well as a different abdominal chaetotaxy.

Etymology.—This species is named in honor of the late E. Raymond Hall, University of Kansas, in recognition of his numerous contributions to mammalogy and conservation and his establishment of an outstanding research collection and library at the University of Kansas for the study of mammalogy.

Discussion

The Neotropical rodent family Echimyidae is the most speciose and ecologically diverse of the living caviomorph rodents. It includes some 15 genera and 70 to 100 species. The family was already diverse by the Oligocene (Reig 1986). The genus *Mesomys*, the spiny tree rats, is one of the poorest known genera in the family. Four species of *Mesomys* currently are recognized; however, these names are based on few specimens and the relationships of the known populations in the genus are in need of review (Emmons & Feer 1990, Nowak 1991). In a recent preliminary analysis of the relationships of several groups of echimyids, Patton (1989) found *Mesomys* [*hispidus*] to occupy a basal but somewhat ambiguous position with respect to the other lineages. However, *Mesomys* is clearly an old and distinct lineage within the Echimyidae. The most widespread species within the genus is *Mesomys hispidus*, which is found in the northern and western Amazon Basin, occurring in southern Colombia and Venezuela, eastern Ecuador and Peru, and western Brazil.

Although the occurrence of two congeneric species of chewing lice on the same

host taxon is not typical, it is also not unusual. Within the *Gliricola*, a number of host taxa share two or more species of lice. This may in part be due to confusion in the host taxonomy, but there are sufficient examples of co-occurrence that we are not suspicious of the material we are using as the basis of the description of our two new species. Admittedly, longer series of the lice would be preferable, but the differences between the two are clearcut and there is no way they can be confused.

The discovery of two congeneric species of chewing lice on a single host individual confirms our suspicions that species of *Gliricola* can be truly sympatric. How these two congeners are distributed on the host and precisely what they are feeding upon remain to be documented.

To date, 42 species of chewing lice in 4 genera (*Gliricola*, *Gyropus* Nitzsch, *Harrisonia* Ferris, and *Hoplomyophilus* Méndez) have been described from 25 host species representing 8 genera of echimyids. Within these *Gliricola*, we find that each genus of host has its own fauna of lice and there are no shared species with any other host genus. Species of *Gliricola* have been described from *Diplomys* (1 species), *Echimyis* (3 species), *Kannabateomys* (1 species), *Euryzomatomys* (2 species), *Hopломys* (1 species), *Isothrix* (1 species), and *Proechimys* (14 species). The discovery of these two new species (*G. woodmani* and *G. halli*) on *Mesomys* is consistent with this, as no lice have been described previously from this host genus.

Given the diverse radiation of the echimyids in South America and the paucity of lice available from these rodents, we strongly suspect that numerous new species of *Gliricola* have yet to be collected and much remains to be learned about the systematics and host relationships in this diverse genus.

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