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HOPLOPLEURA ORYZOMYDIS NEW SPECIES, WITH NOTES ON
OTHER UNITED STATES SPECIES OF HOPLOPLEURA
(ANOPLURA: HAEMATOPINIDAE)

HARRY D. PRATT, AND JOHN E. LANE, JR.¹

When G. F. Ferris (1921) published his paper on the genus *Hoplopleura*, only six species and one subspecies were recorded from the United States. Pritchard (1947) added a seventh species to the United States fauna when he reported *H. oenomydis* Ferris, 1921 from domestic rats in many parts of Southeastern United States. The present paper reports the discovery of an eighth species of *Hoplopleura* in this country. This is a new species from rice rats (*Oryzomys palustris*) which therefore is named *Hoplopleura oryzomydis*.

Class: *INSECTA* Linnaeus, 1758

Order: *ANOPLURA* Leach, 1815

Family: *HAEMATOPINIDAE* Enderlein, 1904

Genus: *Hoplopleura* Enderlein, 1904

The genus *Hoplopleura* briefly is characterized as being without eyes, antennae five segmented, anterior pair of legs smaller and weaker than both pairs of posterior legs, abdomen with well developed paratergal plates, and with the female having some of the abdominal sternites and tergites bearing three rows of setae. The genus is restricted to true hosts of the order RODENTIA.

Type of the genus: *Pediculus acanthopus* Burmeister, 1839.

HOPLOPLEURA ORYZOMYDIS n. sp.

Plate I, figs. 1, 2, 3.

Female (fig. 1). Length 1.2 to 1.5 (type 1.34) mm. mounted on slides in Canada balsam. Viewed dorsally, the head is narrowly rounded in front of the antennae behind which are the moderately swollen, rounded post-antennal angles which taper posteriorly to a point at the rear margin of the head. On the ventral side there is a broad posteriorly tapering sclerotized area extending medianly between the antennae. Antennae with second segment longer than wide, and with the usual sensory area between the fourth and fifth segments.

Thorax and legs of normal *Hoplopleura* form, apparently without any particular specializations. Sternal plate elongate egg-shaped, almost twice as long as wide (fig. 5), tapering posteriorly to a blunt tip.

Abdomen with paratergal plates (fig. 5) large, overlapping, and presenting a markedly scaly or reticulate appearance; plate I of normal form; plate II with strong dorsal and ventral posterior lobes which are tapering and sharply pointed; plates III, IV, V and VI with posterior margins divided into four prominent lobes of nearly equal size, which are more or less truncate and there is a pronounced emargination between the middle two lobes; plate VII with a single, pointed dorsal lobe projecting considerably beyond the insertion of two stout hairs; and VIII without lobes. Well defined spiracular openings present in paratergal plates III through VII, poorly defined in paratergal plate VIII. Paratergal plates II and III with one minute and one large seta in the emargination; IV, V, and VI with two minute setae in the emargination; VII and VIII with the usual pairs of long stout hairs on the posterior margin of each plate.

Tergal and sternal plates well developed, arranged as usual, second and third sternites extending to paratergal plates on each side, the third more stout than the second and bearing a pair of stout setae on each side of the 3 slender median setae. Posterior to the third sternite lie 13 additional shorter, transverse sclerites which do not extend from paratergal to paratergal. These bear 5 to 8 (usually 7 or 8) setae. Accessory setae are present between some of the sternal and

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paratergal plates. Posterior end with fused ventral plates. Dorsum with 18 dorsal sclerites bearing 2 to 8 setae.

Male (figs. 2, 3). Length 0.9 to 1.2 (type: 1.1) mm. mounted on slides in Canada balsam. The morphology of the male is essentially the same as the female but there are fewer dorsal and ventral sclerites. There are only 8 sclerites on the venter between the third sternite and the large fused plate on the seventh and eighth segments of the abdomen, and only 9 dorsal abdominal sclerites. The male genitalia (fig. 3) are without any special modifications. The basal plate is about as long as the parameres, the arms of the pseudopenis are strongly curved with saw-toothed edges, and the parameres are strongly curved.

Egg (inside a female mounted in chloral-gum medium). Approximately 0.55 mm. long and 0.20 mm. in diameter with a definite small bulb-like enlargement at the base and about nine spherical air cells around the periphery of the operculum. It thus resembles closely eggs of other species of *Hoplopleura* which have air cells around the periphery of the cap and a bulb-like projection at the base of the egg, whereas eggs of *Polyplax spinulosa* have the air cells across the top of the operculum, never near the periphery, and without the bulb-like projection.

Nymphs. The nymphs resemble nymphs of *Hoplopleura oenomydis* Ferris, *H. hirsuta* Ferris, and *H. acanthopus* (Burmeister) in having a heart-shaped abdomen with a coarsely granular integument without two submedian rows of setae (as in the late stages of *H. sciuricola* Ferris and *H. erratica arboricola* Ferris, or *Polyplax spinulosa* (Burmeister)). In life history studies of several species of *Hoplopleura* the developmental stages of this group of lice consisted of three nymphal instars. In working with large series of immature stages, it is often possible, in cleared specimens, to observe the almost fully developed succeeding instar within the enveloping exoskeleton. When several such observations are possible, it is positive evidence that the stage within the stage is without question the following developing instar. By studying these particular specimens it is possible to work out some of the diagnostic characters of the nymphal stages. Nymphs with pre-adult females inside them, here called third stage nymphs, have 6 long setae on the posterior end of the abdomen, 1 pair of long setae and a single long seta behind that pair, on each side.

The second stage nymph (with a well developed third stage nymph as described above inside it) has only a single long seta on each side.

The first stage nymph has not been seen by the authors.

Types. Holotype female; collected from a rice rat, *Oryzomys palustris palustris* (Harlan) No. 78, Oatland Island, Chatham County, Ga., February 26, 1948, by a survey team of the CDC Technical Development Services. Stained in acid-fuchsin and mounted on a slide in Canada balsam. Deposited in the United States National Museum (U.S.N.M. No. 60412).

Allotype male; same data as holotype female, also deposited in the United States National Museum (same No. as holotype).

Paratypes. Oatland Island, Chatham County, Ga., 1948, CDC Technical Development Services, from *Oryzomys palustris palustris* (Harlan). 36 males and 38 females mounted on slides in Canada balsam and chloral-gum medium.

Woodland Beach, Kent County, Del., November 6, 1932, collected by Francis Harper from *Oryzomys palustris* No. 707. (These lice are presumed to be from *Oryzomys palustris palustris* (Harlan).) 3 females mounted on one slide.

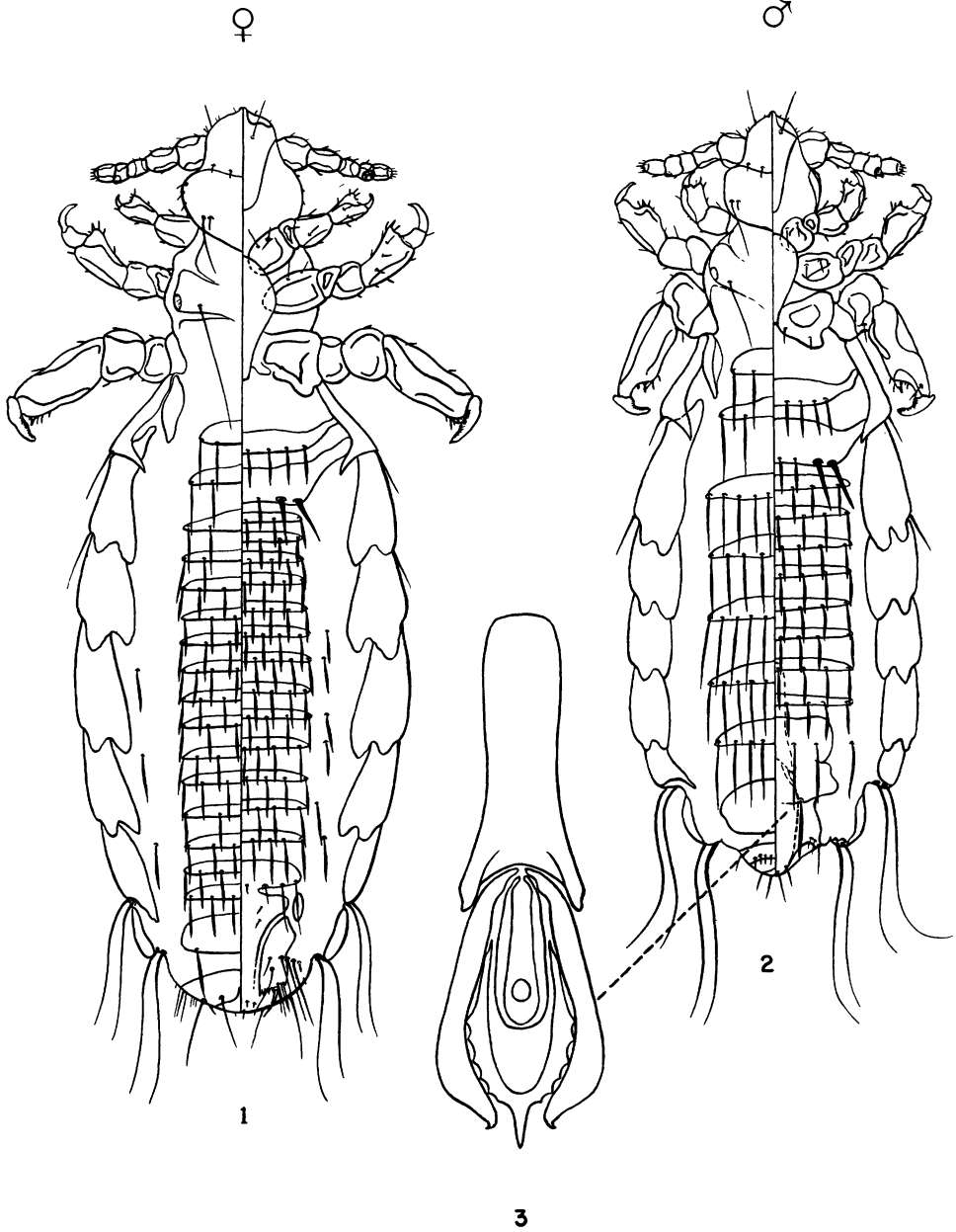
Bull Island, S. C., March 21, 1939, collected by W. P. Baldwin from *Oryzomys palustris* (these are also presumably *Oryzomys palustris palustris* (Harlan)), Bishopp No. 29613. 2 females mounted on one slide.

Everglades National Park, Florida, January 21, and February 2, 1949, collected by C. B. Worth from 8 rice rats (these are presumably *Oryzomys palustris coloratus* Bangs.) 7 females and 6 males mounted on 8 slides.

The paratype material collected in Georgia has been deposited in the following collections: 33 males and 35 females in the CDC Entomology Museum, Atlanta, Ga.; 1 male and 1 female in the Natural History Museum, Stanford University, Calif.; 1 male and 1 female at the Rocky Mountain Laboratory, USPHS, Hamilton, Mont.; and 1 male and 1 female at the Western CDC Laboratory, San Francisco, Calif. The material collected in Delaware, South Carolina, and Florida is deposited in the United States National Museum, Washington, D. C.

Hoplopleura oryzoimydis is very distinct from other North American species and appears to be intermediate between two other species, *H. quadridentata* Neumann, 1909 and *H. nesoryzoimydis* Ferris, 1921 from Central and South America. It resembles both these species in having the posterior margin of paratergal plates III, IV, and V with four distinct lobes, whereas all other United States species have only two well developed lobes on the posterior margins of these plates.

PLATE I



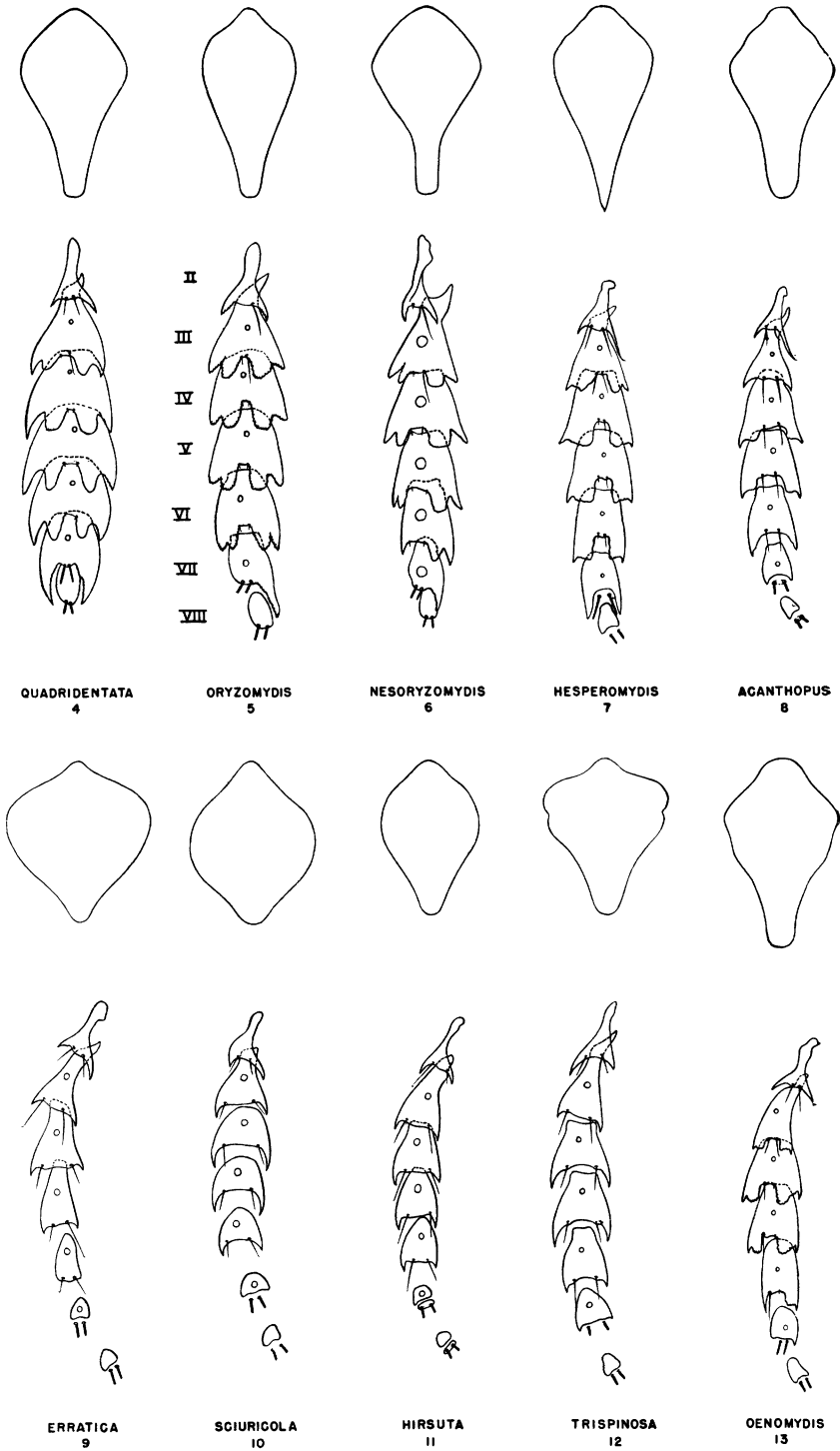
HOPLOPLEURA ORYZOMYDIS

EXPLANATION OF FIGURES

FIG. 1. *Hoplopleura oryzomydis* n. sp., female. Dorsoventral split drawing. Dorsal; left; ventral; right.

FIGS. 2-3. *H. oryzomydis* n. sp., male and detail of male genitalia.

STERNAL AND PARATERGAL PLATES OF HOPLOPLEURA



FIGS. 4-13. Sternal and left row of paratergal plates. 4. *Hoplopleura quadridentata*, 5. *H. oryzomydis*, 6. *H. nesoryzomydis*, 7. *H. hesperomydis*, 8. *H. acanthopus*, 9. *H. erratica*, 10. *H. sciuricola*, 11. *H. hirsuta*, 12. *H. trispinosa* and 13. *H. oenomydis*.

The new species *H. oryzomydis* (fig. 5) has the posterior margin of paratergite VI with four lobes as in *H. quadridentata* (fig. 4), whereas *H. nesoryzomydis* (fig. 6) has only three such lobes on paratergal plate VI. However, it resembles *H. nesoryzomydis* in having only a single dorsal lobe on the posterior margin of paratergal plate VII, while *H. quadridentata* has both a dorsal and a ventral lobe present on this plate.

Notes on *Hoplopleura* in the U. S.

At the present time four well-defined groups are known from the United States. The *trispinosa* group in which the third sternite has a group of three enlarged setae on the postero-lateral margin of its anterior plate, whereas the remaining groups have only two enlarged setae in this location; the *quadridentata* group in which the posterior margins of paratergal plates III, IV, and V have four distinct lobes; the *acanthopus* group in which the posterior margins of paratergal plates III, IV, and V have 2 broad truncate lobes and a deep emargination; and the *hirsuta* group in which the postero-lateral margins of paratergal plates III, IV, and V are extended as conspicuous acuminate lobes.

The species of *Hoplopleura* in the United States may be distinguished by the following key:

KEY TO THE UNITED STATES SPECIES OF *HOPLOPLEURA* ENDERLEIN*

1. Third sternite with a group of three stout spines on each side. On flying squirrels of the genus *Glaucomys* *trispinosa* Kellogg and Ferris, 1915
Third sternite with a group of two stout spines on each side2
2. Posterior margin of paratergal plates III, IV and V with four lobes. On rice rats of the genus *Oryzomys* *oryzomydis* nov. sp.
Posterior margin of paratergal plates III, IV and V with a broad or pointed lobe on each side, but never divided into four distinct lobes3
3. Paratergal plates IV and V deeply and broadly emarginate on posterior margin, the posterior lobes truncate4
Paratergal plates IV and V shallowly emarginate on posterior margin, the posterior lobes pointed or thorn-like6
4. Sternal plate long and pointed posteriorly; accessory setae not present between some sternites and paratergal plates; seventh paratergal plate deeply emarginate posteriorly. On white-footed mice of the genus *Peromyscus* *hesperomydis* (Osborn), 1891
Sternal plate rounded or truncate posteriorly; accessory setae present between some sternites and paratergal plates; paratergal plate VII without emargination posteriorly, a small pointed dorsal lobe may be present however5
5. Paratergal plates IV and V with one long seta and one minute seta in the emarginations. On domestic rats of the genus *Rattus* *oenomydis* Ferris, 1921
Paratergal plates IV and V with two long, subequal setae in the emarginations. On many North American rodents, especially *Microtus* *acanthopus* (Burmeister) 1839
6. Sternal plate broadly triangular, about as broad as long; female with sternites absent on segments IV and V. On chipmunks of the genera *Tamias* and *Eutamias*.
erratica (Osborn), 1896
Sternal plate elongate egg-shaped, definitely longer than wide, female with sternites present on segments IV and V7
7. Paratergal plates IV to VI about as long as wide, with moderately deep and evenly concave posterior emarginations. On squirrels of the genus *Sciurus* *sciuricola* Ferris, 1921
Paratergal plates IV to VI much longer than wide, with shallow and straight-edged emarginations. On cotton rats of the genus *Sigmodon* and often on domestic rats of the genus *Rattus* *hirsuta* Ferris, 1916

* *Hoplopleura erratica arboricola* Kellogg and Ferris, 1915 has not been included in this key because the authors have not seen sufficient materials of this subspecies.

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