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Key to the North American Sucking Lice in the Genera *Hoplopleura* and *Neohaematopinus* with Descriptions of Two Species: (Anoplura: Hoplopleuridae)

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KEY TO THE NORTH AMERICAN SUCKING LICE IN THE GENERA  
*HOPLOPLEURA* AND *NEOHAEMATOPINUS* WITH DESCRIPTIONS  
 OF TWO SPECIES: (ANOPLURA: HOPLOPLEURIDAE)

CHESTER J. STOJANOVICH\* AND HARRY D. PRATT\*\*

Since 1951 when Ferris published his monograph of the sucking lice of the world, additional new species have been discovered and species complexes have been divided into groups of closely related species. Cook and Beer (1959) described two new species of *Hoplopleura*, *H. ferrisi* and *H. onychomydis*, and Johnson (1959) has divided *Neohaematopinus sciurinus* complex into *Neohaematopinus sciurinus* (Mjoberg), *N. sciuri* Jancke, and *N. semifasciatus* Ferris based on good morphological characters and host associations. Additional research has revealed at least two more new species which are described and figured in this paper, with notes on related species and keys to the North American species of both genera incorporating new characters discovered during the past year.

*Neohaematopinus spilosomae* n. sp.  
 (Plate I)

*Comparative Notes.* This new species is closely related to *Neohaematopinus citellinus* Ferris and *N. pacificus* Ferris in having three spines on the posterior margins of paratergal plates 3 to 6. It differs from *N. citellinus* principally in lacking the middle abdominal sternal and tergal plates in the female and the middle sternal plates in the male. Other differences can be noted in the shape of the sternal plate of the thorax. In *spilosomae* the posterior angles are prolonged so as to form a deeper emargination than in *citellinus*. The number of setae on the posterior margin of paratergal plate 2 differs in that *N. citellinus* has three setae and *N. spilosomae* has only two. The occipital region of the head is more constricted in *spilosomae* with a distinct "neck-like" area and posterior

lateral angles. *H. spilosomae* differs from *N. pacificus* in lacking a stout spine on the posterior angle of the first antennal segment.

*Types.* Holotype, a female; allotype, a male; and 50 paratypes of both sexes from *Citellus spilosoma*, Bernalillo County, New Mexico. Type series collected by Dr. C. Clayton Hoff, University of New Mexico. The holotype and allotype are deposited in the U. S. National Museum, Washington, D. C.

*Female.* Length about 1.2 mm. Head with occipital region rather strongly narrowed into a "neck." Antenna without the usual enlarged seta on posterior-apical angle of segment 1. Sternal plate of thorax with its posterior angles produced to form a deep posterior emargination. Abdomen with tergal and sternal plates lacking with the exception of the first three and the last two tergal plates, the first sternal plate and the genital plate. Paratergal plates 3 to 6 with three setae on the posterior margin; paratergal plates 2, 7, and 8 with only two setae on the posterior margins.

*Male.* Length 1.2 mm. Antenna with the third segment slightly modified and bearing a pair of recurved stout setae. Abdominal tergal plates well developed, each bearing a row of setae except for the eighth tergite which lacks setae but extends entirely across the abdomen. Sternal plates of the abdomen lacking except for the genital plate and the first sternite.

*Other Records.* This new species was determined as *N. citellinus* by Morlan and Hoff (1957). Examination of their material and the type material in the Stanford University collection indicates that *spilosomae* always lacks the sternites in both sexes, while *citellinus* has these plates. We are indebted to Dr. C. C. Hoff for loan of his mounted material and the type series of specimens.

Paratypes of both new species have been deposited in the collections of the British Museum; Canadian National Collection; the Rocky Mountain Laboratory, Hamilton, Montana; the San Francisco Field Station, U. S. Public Health Service; and the private collection of Dr. K. C. Emerson.

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Key to the North American Species of  
*Neohaematopinus*

- |   |    |
|---|----|
| 1. Thoracic sternal plate concave on posterior margin .....                         | 2  |
| Thoracic sternal plate somewhat oval, more or less convex on posterior margin ..... | 11 |
| 2. Paratergal plates 3 to 6 with three stout spines on posterior margins .....      | 3  |

- Paratergal plates 3 to 6 with two spines on posterior margins ..... 5
3. Posterior angle of first antennal segment with a stout spine. (On *Eutamias*)  
*N. pacificus* (Kellogg and Ferris)  
 Posterior angle of first antennal segment without a stout spine ..... 4
4. Abdominal tergal and sternal plates present on each segment in both sexes. (On *Citellus tereticaudus*) ..... *N. citellinus* Ferris  
 Abdominal tergal and sternal plates absent in the middle segments of female; male with only sternal plates absent. (On *Citellus pilosoma*)  
*N. pilosomae* Stojanovich and Pratt
5. First antennal segment prolonged posteriorly, with a stout spine ..... 6  
 First antennal segment without such a prolongation ..... 8
6. Female without sternal and tergal plates on abdominal segments except for the normal terminal and genital segments. (On *Sciurus griseicolus*) ..... *N. griseicolus* Ferris  
 Female with sternal and tergal plates on all abdominal segments ..... 7
7. Second antennal segment with short spine-like seta on posterior margin. (On *Tamiasciurus hudsonicus*) ..... *N. semifasciatus* Ferris  
 Second antennal segment without spine-like seta (On *Sciurus niger*)  
*N. sciurinus* (Mjöberg)
8. Abdominal sternal and tergal plates absent in female; male with only sternal plates absent. (On *Neotoma cinerea*)  
*N. inornatus* Ferris  
 Abdominal sternal and tergal plates present in both sexes ..... 9
9. A row of setae present on membrane between tergal and sternal plates of female and between tergal plates of male ..... 10  
 A row of setae absent on membrane between tergal and sternal plates in both sexes. (On *Glaucomyz*)  
*N. sciuropteri* (Osborn)
10. First antennal segment with a spine-like seta at the postero-apical angle. (On *Sciurus carolinensis*) ..... *N. sciuri* Jancke  
 First antennal segment with a spine-like seta set somewhat away from the margin in the postero-apical angle (On *Neotoma albigula*, *streator* and *micropus*)  
*N. neotomae* Ferris
11. Thoracic spiracle small, about one-fourth length of second coxa. (On *Citellus* and *Cynomys*) ..... *N. laeviusculus* (Grube)  
 Thoracic spiracle large, almost one-half length of second coxa. (On *Marmota*)  
*N. marmotae* Ferris

*Hoplopleura arizonensis* n. sp.  
 (Plate II)

*Comparative Notes:* This new species is related to *Hoplopleura hirsuta* Ferris in the shape

of the sternal and paratergal plates. *H. arizonensis* has a longer, more pointed head and differs especially in the male having 13 tergites instead of 9 tergites found in *H. hirsuta*. Another difference is the more elongate paratergal plates 4 and 5 in *arizonensis*. Both species are ectoparasites of the cotton rat, *Sigmodon hispidus*.

*Types:* Holotype, a male; allotype, a female, collected at Pinal County, Arizona, March 2, 1947, from *Sigmodon* sp. The holotype and allotype on the same slide deposited in the U. S. National Museum, Washington, D. C. Five male and 26 female paratypes, Pinal County, Arizona, March 2, 1947, from *Sigmodon* sp. Two male and four female paratypes, Pinal County, Arizona, March 14, 1947, from *Sigmodon* sp.

*Male:* About 1.5 mm mounted on slide. Head longer than wide and pointed anteriorly. Sternal plate of thorax longer than wide, rounded and produced posteriorly. First sternal plate on segment three with two stout spines on each side, three finer setae in between. Accessory setae in several irregular rows in the membrane between sternites and tergites and paratergal plates. Paratergal plates similar to those of *H. hirsuta* in having a pointed process on each posterior-lateral angle of paratergal plates 2 to 5. Paratergal plates 4 and 5 more elongate in *arizonensis* than in *hirsuta*, almost twice as long as wide; paratergal plate 6 with only slight points on posterior angles; seventh and eighth paratergal plates without points. Thirteen tergal plates present, 11 of them bearing inflated setae, the last 2 without setae. The individual tergal plates are shorter than those of *hirsuta*. There are no decided differences in the male genitalia of the two species.

*Female:* About 2 mm long mounted on slide. Similar to the male but with more sternites and tergites, as is usual with female specimens of *Hoplopleura*. Anterior and posterior genital plates of the female fused more or less along mid-ventral lines; each gonopod with three setae; tergite IX with two median setae shorter than those on either side; spine X rather short and stout, intermediate in size between the very short, stout spine of *erratica* and the long slender spine of *acanthopus*.

*Other Records:* Ferris had material of both *hirsuta* and *arizonensis* before him when he described *hirsuta*. The type of *hirsuta* designated by Nowell (1958) is from North Carolina. It has a blunt head. The female "*hirsuta*" which Ferris described and figured in 1921 is actually *arizonensis* from Sacaton, Arizona. Figure 75 in this 1921 paper clearly shows the elongate pointed head and figure 76C shows the long and slender paratergal plates of the new species.

Key to the North American Species of *Hoplopleura*

1. Third abdominal sternal plate with two groups of two stout setae ..... 2  
 Third abdominal sternal plate with two

- groups of three stout setae. (On *Glaucomyz*) ..... *H. trispinosa* Kellogg and Ferris
2. Posterior margins of paratergal plates 3 to 5 with a broad or pointed lobe on each side ..... 3
- Posterior margins of paratergal plates 3 to 5 with four rounded lobes. (On *Oryzomys*) ..... *H. oryzomydis* Pratt and Lane
3. Paratergal plates 4 and 5 with broad lobes on posterior margin ..... 4
- Paratergal plates 4 and 5 with pointed lobes on posterior margin ..... 7
4. Paratergal plates 4 and 5 with one large and one minute seta on posterior margin ..... 5
- Paratergal plates 4 and 5 with two large setae on posterior margin. (On field rodents) ..... *H. acanthopus* (Burmeister)
5. Abdomen with setae in some of the membrane between sternal and paratergal plates. (On *Rattus*) ..... *H. oenomydis* Ferris
- Abdomen without setae in membrane between ends of sternal and paratergal plates ..... 6
6. Thoracic sternal plate pointed posteriorly. (On *Peromyscus*)

\**H. hesperomydis* (Osborn) and

\* These species are separated only in the immature stages.

*H. ferrisi* Cook and Beer

Thoracic sternal plate blunt posteriorly. (On *Onychomys*)

*H. onychomydis* Cook and Beer

7. Thoracic sternal plate broadly triangular, about as long as broad; first sternal plate of abdominal segment 3 with two stout setae set close together on each side ..... 8
- Thoracic sternal plate definitely longer than broad; first sternal plate of abdominal segment 3 with two stout setae more widely spaced on each side ..... 9
8. Paratergal plate 6 with both posterior angles produced into points. (On *Eutamias*)
- H. arboricola* Kellogg and Ferris
- Paratergal plate 6 without points on posterior angles. (On *Tamias*)
- H. erratica* (Osborn)
9. Posterior margin of paratergal plate 6 with angles produced to form a deep emargination. (On *Sciurus*) ..... *H. sciuricola* Ferris
- Posterior margin of paratergal plate 6 with angles not produced to form a deep

- emargination. (On *Sigmodon*) ..... 10
10. Female with paratergal plates 4 to 5 elongated; male with 11 tergal plates bearing a row of setae

*H. arizonensis* Stojanovich and Pratt

Female with paratergal plates 4 to 5 only slightly elongated; male with only seven tergal plates bearing a row of setae

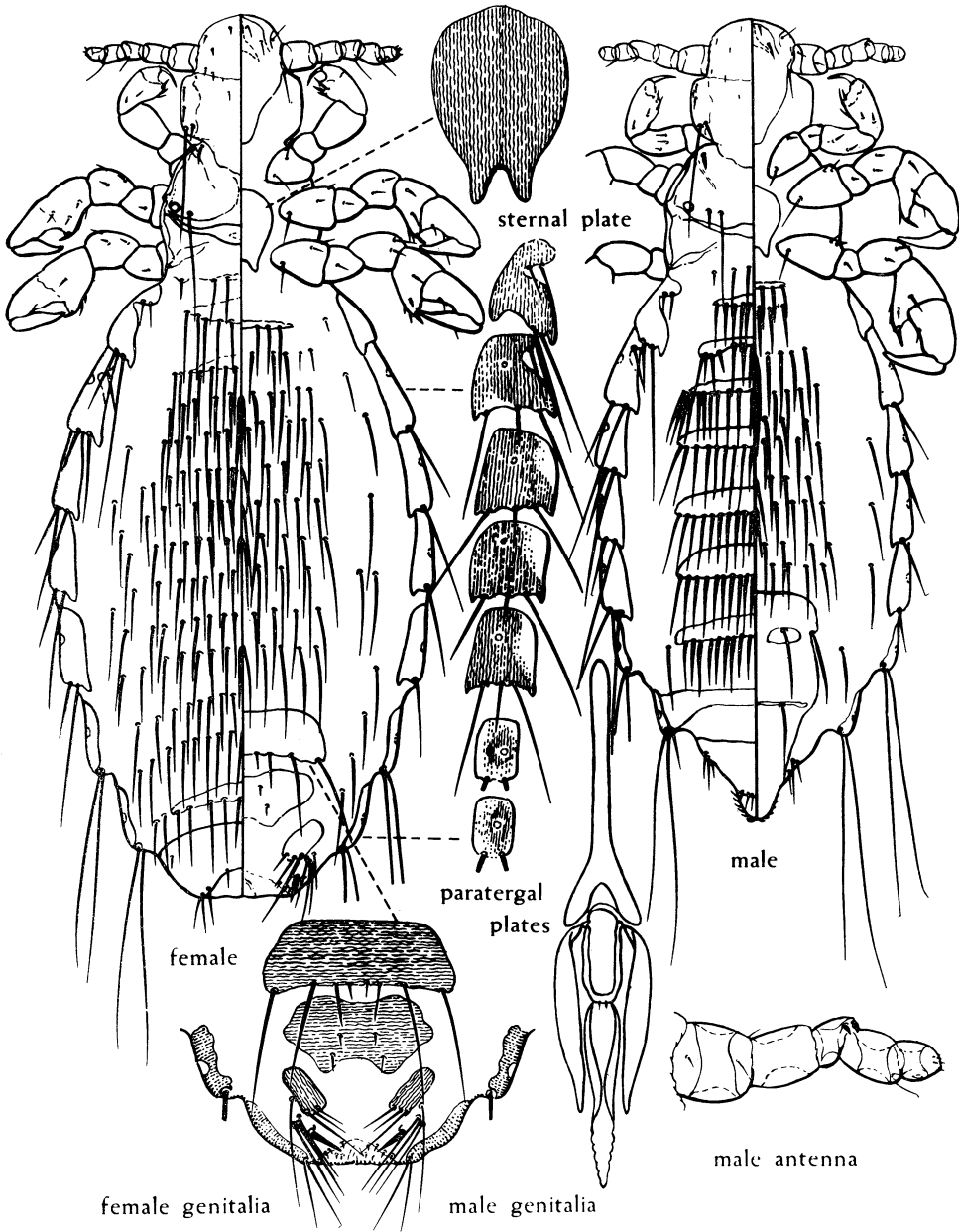
*H. hirsuta* Ferris

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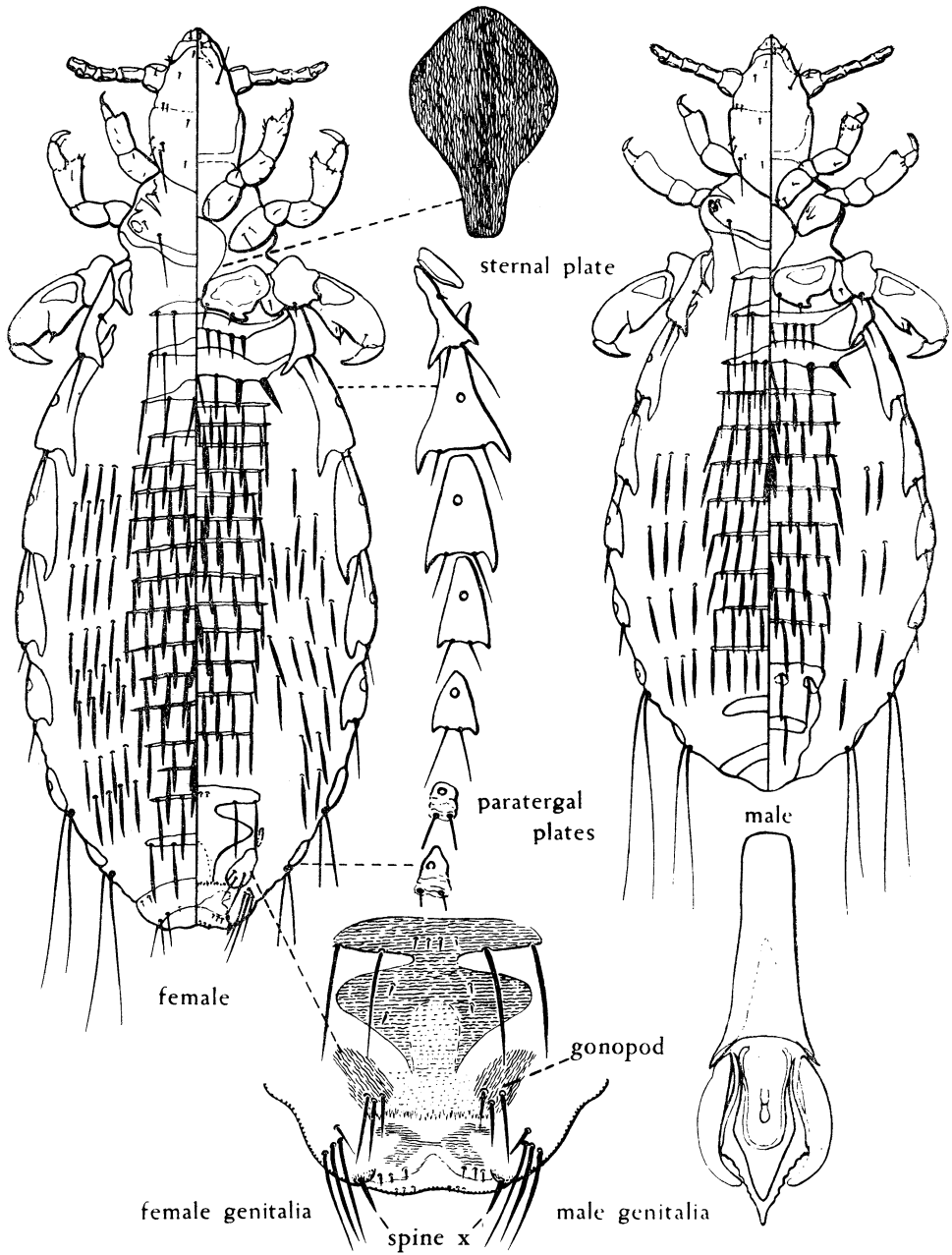
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*Neohaematopinus spilosomae*, new species

Plate I



*Hoplopleura arizonensis*, new species

Plate II