

Contribution Number 35

SOME NORTH AMERICAN, RODENT-INFESTING LICE (INSECTA:ANOPLURA)

Figures 39-42

By G. F. Ferris
Stanford University, CaliforniaI. The Anoplura of the Genus *Neohaematopinus* Occurring on Rats
of the Genus *Neotoma* in North America

Material now at hand makes it possible to rectify an error which was committed by the author more than fifteen years ago and which has to do with the identity of the species of sucking lice occurring on rodents of the Cricetid genus *Neotoma* and some of its close relatives in North America. The situation is this.

On the basis of their accepted systematic position, the "wood rats," "pack rats," or "cave rats" of the genus *Neotoma*, which is assigned to the subfamily Cricetinae of the family Cricetidae, should have upon them lice of the genera *Polyplax* and *Hoplopleura*, which are found characteristically on rodents of the families Cricetidae and Muridae. Instead, the genus *Neotoma* seems, on the basis of present information, to harbor only species of the genus *Neohaematopinus*, which otherwise is confined to members of the rodent family Sciuridae. One Anopluran species, *Neohaematopinus inornatus* Ferris, has been named from specimens taken from a single species of *Neotoma*. Other specimens, from another host of the same genus and a species of the related genus *Hodomys*, were referred by the writer to a squirrel-infesting species, *Neohaematopinus sciurinus* (Mjöberg), of which they were regarded as extreme variants. The writer was at that time very much influenced by a feeling that the occurrence of lice of this genus upon anything but a squirrel represented an abnormal condition, perhaps involving merely an occasional accidental transfer of individuals from the normal host.

However, it is now evident that lice of the genus *Neohaematopinus* occur normally on rodents of the genus *Neotoma* and that, in fact, there are at least two distinct species on this host genus. One of these is here described as new and the other is refigured in order that the evidence may be available for future students.

Neohaematopinus inornatus (Kellogg and Ferris) (Figure 39)

1923. Ferris, Contributions toward a monograph of the sucking lice, Part 4:252; figures 162,163.

HOSTS AND DISTRIBUTION. Up to the present the only published records known to the author have been his own; from *Neotoma cinerea occidentalis*, South Yolla Bolly Mountain and Yosemite Valley, California. However, specimens are now at hand from "mountain rat," from an indeterminate locality in Colorado. The host in this instance must almost certainly have been some subspecies of *Neotoma cinerea*.

NOTES. This species is here refigured from the type specimens in order that immediately comparable illustrations may be available for comparison with those of the next species.

Neohaematopinus neotomae, new species (Figure 40)1923. *Neohaematopinus sciurinus* (Mjöberg), Ferris, Contributions toward a monograph of the sucking lice, Part 4:243. (In part, as a misidentification.)

HOSTS AND DISTRIBUTION. Holotype, a female, and allotype and many paratypes from *Neotoma albigula*, Tucson, Arizona, R. A. Flock collector. Other specimens from the same host species on the Santa Rita Experimental Range Reserve, 35 miles south of Tucson, Arizona, collected by L. P. Wehrle and C. T. Vorhies. Numerous other specimens from *Neotoma streator* (or *fuscipes streator*), Hastings Reservation, near Carmel, California, collected by Dr. J. M. Linsdale, and Yosemite Valley, collected by G. F. Ferris, seem to be this species. Also specimens from *Hodomys alleni merriami*, Manzanillo, Mexico, skins in the United States National Museum, seem to be this species. Certain specimens from *Neotoma micropus leucopus*, White Sands, New Mexico, C. T. Vorhies collector, are referred here tentatively.

RECOGNITION CHARACTERS. Female (on the slide) 1.5 mm.; male 1.3 mm. Antennae

with a moderately enlarged seta set somewhat away from the margin in the posterior lateral angle of the first segment. On the dorsum of the abdomen of the female a sclerotized plate is developed in connection with the single row of setae which may be considered to belong to the first segment, the two rows belonging to the second segment, and the first row belonging to each of the third to seventh segments, with a larger plate on the eighth segment. On the ventral side a similar plate is associated with each of the two rows of setae which may be considered to belong to the second segment and the anterior row on each of the third to sixth segments, in addition to the usual genital plates. In the male the dorsum of the abdomen bears a small sclerotized plate associated with the single row of setae that may be considered to belong to the first segment, the two rows which seem to belong to the second segment, and the single row on each of the third to seventh segments, while on the eighth there is a very small median plate and no setae. The posterior plate of the second segment is posteriorly emarginate as is characteristic of the genus. On the ventral side of the male there is a small plate associated with each of the two rows of setae which apparently belong to the second segment and a plate associated with the anterior row on each of the third to sixth segments, in addition to the usual genital areas. The paratergites of the second to sixth segments in both male and female are well developed, each bearing two setae on its posterior border, the dorsal seta being the longer.

The genitalia of the male and female present no specially distinctive features but are here figured.

NOTES. With the amount of material now at hand, and with the close agreement shown throughout the entire range from northern California to half way down the west coast of Mexico, it is evident that this species cannot be associated with *Neohaematopinus sciurinus* and that it should be recognized as distinct.

The specimens from *Neotoma micropus* in New Mexico agree with this species in the development of the tergal and sternal abdominal plates, but the laterotergal plates seem to be smaller and the characteristic seta of the first antennal segment is very small as in *N. inornatus*, or is even lacking. It is possible that these represent a third species.

The new species differs from *N. inornatus* in the development of the seta on the first antennal segment, the much greater development of the tergal and sternal plates on the abdomen, and the larger laterotergal plates.

II. A New Species of *Neohaematopinus* from a Species of *Citellus*

The numerous species of the Sciurid genus *Citellus*—the "ground squirrels"—occurring in North America and in Siberia, as well as the Sciurid genus *Cynomys*—the "prairie dogs"—of North America, seem on the basis of existing records to have as one of their characteristic parasites the robust and extremely setose species that the present writer has identified as *Neohaematopinus laeviusculus* (Grube), a species that some authors have thought should be removed from *Neohaematopinus*. It would seem on the basis of present knowledge that any species of the genus *Citellus* might be expected to possess this parasite. It is therefore very much of a surprise to find that numerous collections of lice from *Citellus tereticaudus* near Tucson, Arizona, contain not this louse but an undescribed species that is apparently most closely related to *Neohaematopinus pacificus* Kellogg and Ferris, a species that occurs on the genus *Eutamias*, the "chipmunks" of western North America.

Neohaematopinus citellinus, new species (Figure 41)

HOSTS AND DISTRIBUTION. Type, a female, and allotype and many paratypes from various collections from *Citellus tereticaudus*, Tucson, Arizona, and other paratypes from the same host species, Santa Rita Mountains, Arizona; and a single collection from *Ammospermophilus harrissi*, Tucson, Arizona. All collected by R. A. Flock.

RECOGNITION CHARACTERS. Length of female (on slide) 1.5 mm. and of the male 1.3 mm. A quite robust species in which the sclerotized areas are strongly developed. Antennae entirely without the usual enlarged seta, or even any small seta, at the posterior apical angle of the first segment. Laterotergal plates of the abdomen large and strongly sclerotized, those of the third to fourth segments each with two setae on the dorsal lobe and one seta on the ventral lobe, the most dorsal seta being much longer than the others. On the dorsum of the abdomen of the female narrow sclerotized plates are associated with the single row of setae which presumably belongs to the first segment, the two rows which belong to the second

segment, and the anterior row of each of the third to seventh segments, while the eighth tergite presents a large tergal plate and the ninth the usual sclerotization. On the ventral side of the female there is a narrow sclerotized plate associated with each of the two rows of setae belonging to the second segment and with the first row of setae on each of the third to sixth segments. The usual genital plates are present on the seventh and eighth segments. In the male narrow sclerotized plates are associated with the row of setae belonging to the first tergite, the two rows of the second tergite, and the single row of each of the third to seventh segments, the eighth tergite having no setae but the sclerotized plate extending entirely across the abdomen. The second plate of the second tergite is posteriorly emarginate in the usual manner. On the ventral side of the abdomen of the male a narrow sclerotized plate is associated with each of the two rows of setae of the second segment and with the anterior row of each of the third to sixth segments, and the usual genital plates are present on the seventh to ninth segments.

The genitalia of male and female present no specially distinctive characters but are figured.

NOTES. In general this species is closest to *Neohaematopinus pacificus* Kellogg and Ferris, which occurs on species of the genus *Eutamias*, agreeing with it in the number and arrangement of the setae on the laterotergal plates of the abdomen but differing in the complete absence of any seta in the posterior apical angle of the first antennal segment. Over fifty mounted specimens have been examined and none of these show any trace of this seta.

III. The Species of *Polyplax* on American Microti

Polyplax abscisa Fahrenholz (Figure 42)

1925. *Polyplax spinulosa* (Burmeister), Ferris, Contributions toward a monograph of the sucking lice, Part 4:187. (In part, as a misidentification.)

1938. *Polyplax abscisa* Fahrenholz, Zeitschrift für Parasitenkunde 10:257,258; figures 13,14.

HOSTS AND DISTRIBUTION. Type from "*Arvicola* spec. (Californien)." This should, in all probability, be a species of *Microtus*. The species has been recorded by Ferris, under the name of *Polyplax spinulosa*, from *Microtus* sp., South Yolla Bolly Mountain, California; *Microtus californicus*, Inverness, Marin County, California; *Microtus intermedius*, Nevada; and *Phenacomys longicaudus*, Mendocino City, Mendocino County, California. In addition, specimens are at hand from *Microtus pennsylvanicus*, Orient, New York, Roy Latham collector, 1937.

NOTES. The writer has been responsible for a very definite error in referring the specimens above cited to *Polyplax spinulosa*. A re-examination of available material, induced by receipt of the specimens from *Microtus pennsylvanicus* and by Fahrenholz' description of *Polyplax abscisa*, shows that lice from *Microtus* and the related genus *Phenacomys* represent a distinct species. The description and figures of *Polyplax abscisa* given by Fahrenholz, which were based upon the male alone, offer no reason for the naming of this species and do not permit its recognition, but in view of the origin of his specimens there would seem to be every probability that he had the species which is at hand.

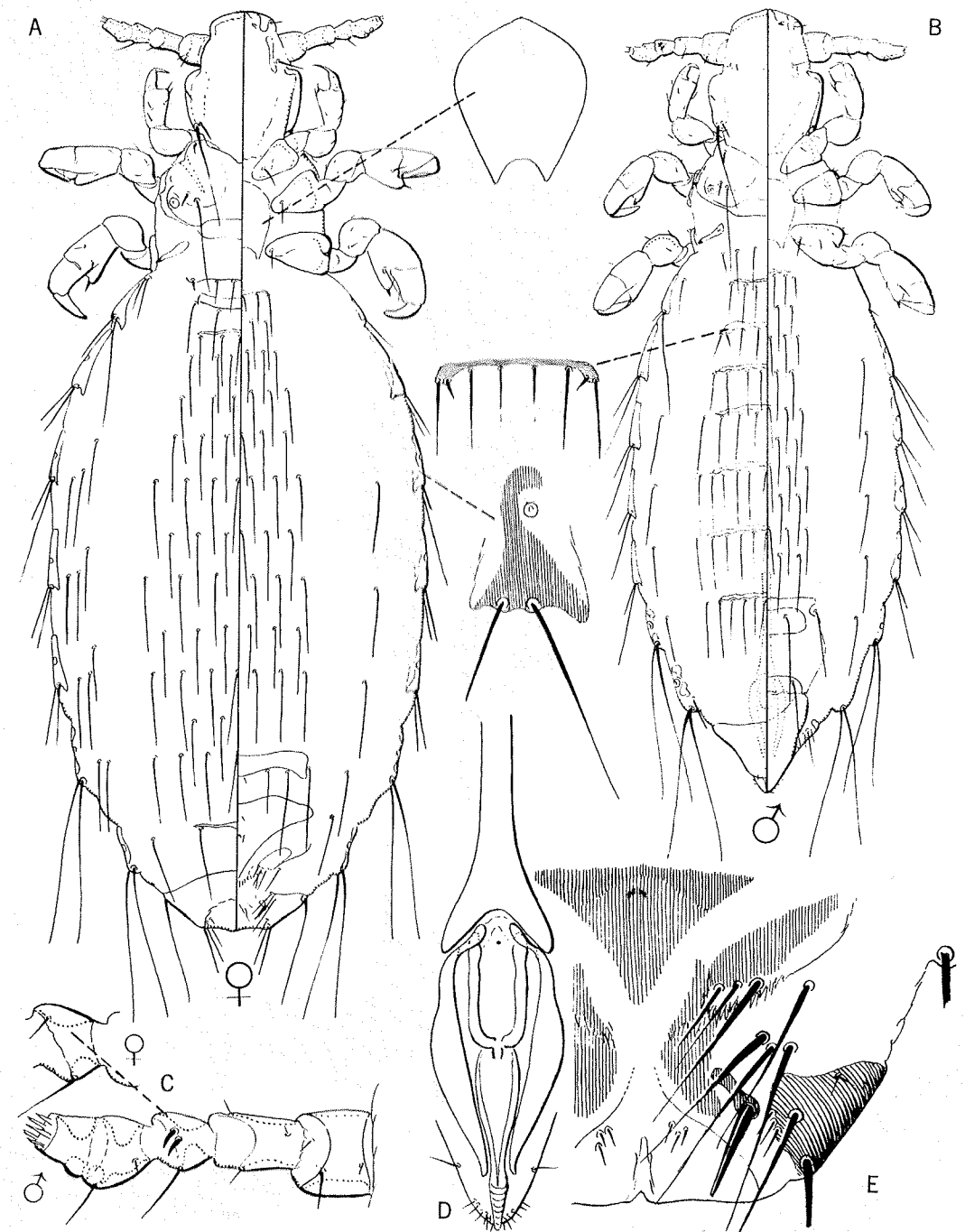
This differs from *Polyplax spinulosa* chiefly in the character of the genitalia of the male, the "pseudopenis" having a conspicuous, posteriorly directed, dorsal lobe, which is nearly half as long as the ventral lobe. In this respect it most closely resembles *Polyplax alaskensis* Ewing (= *Polyplax borealis* Ferris), to which it is evidently closely related. But from this it differs in the form of the first abdominal sternite, this being very small and not arcuate as in *alaskensis*.

The accompanying figures are based upon specimens from *Microtus* sp., South Yolla Bolly Mountain, California.

Explanation of Figures

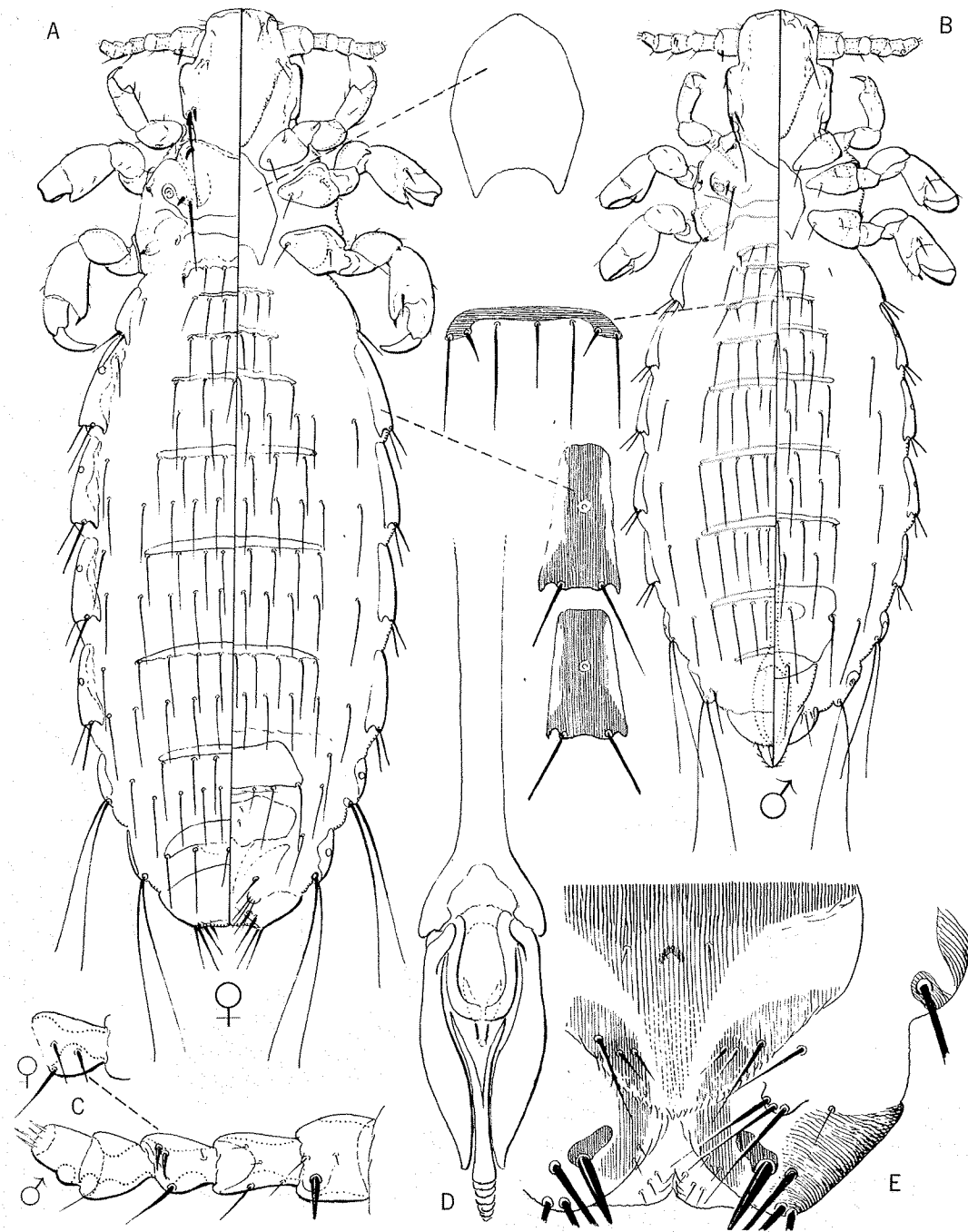
In the accompanying figures the labelling is the same throughout. Details not labelled are connected with their points of origin by guide lines and should be readily recognizable.

A, adult female; B, adult male; C, antennae; D, genitalia of male; E, genital region of female. In all divided drawings the left half represents the dorsal aspect and the right half represents the ventral aspect.



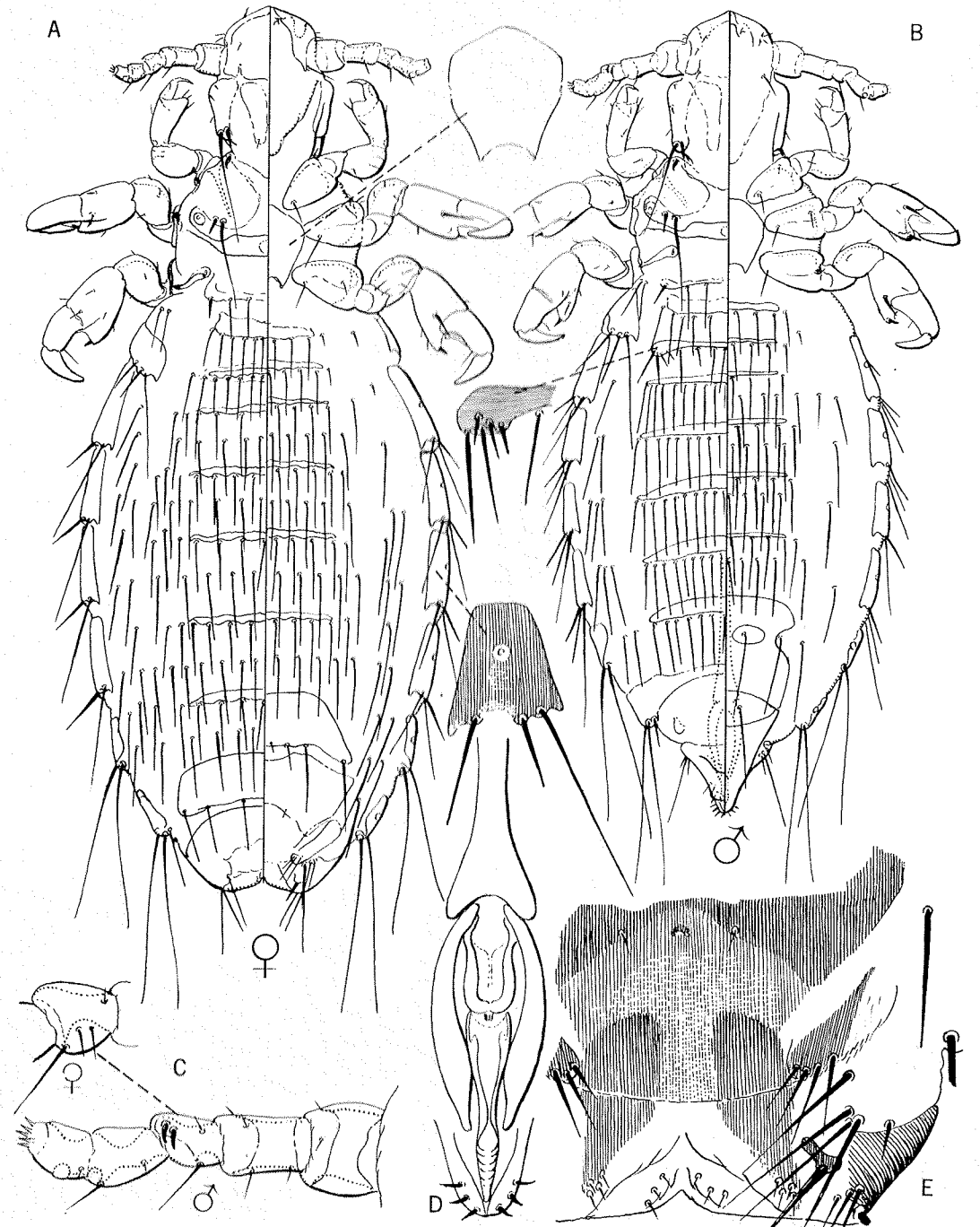
Neohaematopinus inornatus (Kellogg and Ferris)

Figure 39



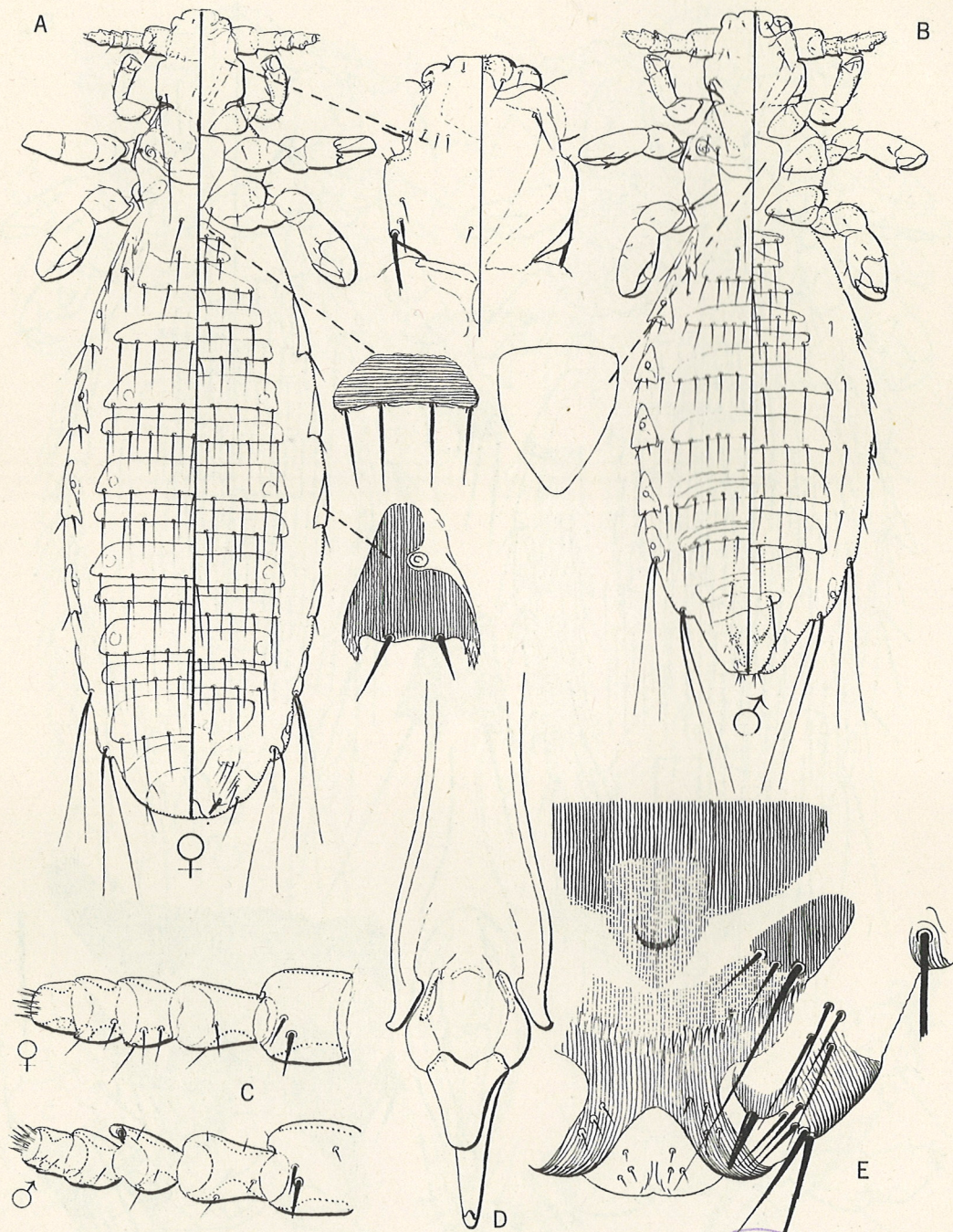
Neohaematopinus neotomae, new species

Figure 40



Neohaematopinus citellinus, new species

Figure 41



Polyplax abscisa Fahrenholz

Figure 42

