

NEOTROPICAL MISCELLANY NO. VI  
NEW GENUS AND SPECIES OF MALLOPHAGAM. A. CARRIKER, JR.  
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## SUBORDER ISCHNOCERA

Genus *Fulicoffula* Clay and Meinertzhagen

In the new *Checklist of the Mallophaga* by Hopkins and Clay, eight species are included in this genus, one doubtfully (*Lipeurus volsellus* Ewing, from *Aramides cajanea*), the description of which included no figure and the type of which has been mislaid.

The genotype of *Fulicoffula* is *Philopterus luridus* Nitzsch (= *Lipeurus luridus* of Denny) from *Fulica atra* Linn. I have not been able to examine specimens of the genotype, nor has there been published any enlarged figure of the apical segments of the female abdomen which are so characteristic of the genus.

In the characterization of the genus, Clay and Meinertzhagen say: "Head with large clypeal signature bearing a median longitudinal slot and with a striated anterior margin; antennae exhibiting sexual dimorphism; abdomen elongated with segment IX bifid in male and more deeply bifid in female, and partly flanked on each side by a pointed prolongation of segment VIII."

I have a female of *F. longipila* (Kellogg), from *Fulica americana*, collected at Havana, Illinois, U.S.A., which agrees exactly with Kellogg's description, as far as it goes, and it has the characteristic abdominal segments VIII and IX of *Fulicoffula*.

Kellogg says: "Abdomen with segments gradually shortening from 1st. backward through the 7th., the 8th. slightly longer and 9th. deeply emarginate, the two acute points without hairs [they do have one strong bristle at tip]; from the dorsal face of the 8th. segment two very long hairs arise just inside the black lateral band; all segments wholly colored, *except posterior half of 8th.* [*italics my own*]; the transverse sutures uncolored, and indications of an uncolored median line on segments 3 to 6."

Note that his description of abdominal tergites is that of all females of the genus which I have seen. However, I have another female from the same host (*Fulica americana*), collected at Creston, Iowa, which is entirely different and agrees exactly with Kellogg's description and figure of his *Lipeurus picturatus* (also from *Fulica americana*) which Hopkins and Clay have, incorrectly, placed under the synonymy of *Fulicoffula*

*longipila* Kellogg, presumably because it somewhat resembles that species and because it came from the same host.

The generic position of this species is rather problematical. It certainly is not a *Fulicoffula* or an *Ardeicola* and agrees with no other. It not only has the abdominal tergites quite different from *Fulicoffula* but also the structure of the clypeus (in fact, nearly the whole head), and in addition it has *ten* abdominal segments, clearly defined, and the structure of the last two quite different from that of *Fulicoffula*. It lacks the curving, pointed extensions of pleurites VIII and the spines at the tips of the deeply bifurcated IX. There are, however, inconspicuous bars connecting IX and X which are somewhat analagous with those in *Fulicoffula* which connect VIII with IX, but they are extensions of pleurites IX instead of arising from the interior of VIII, as in *Fulicoffula* (see fig.).

The head, again, is entirely different from that of *Fulicoffula*, although there is a strikingly superficial resemblance. Among the generic characters of *Fulicoffula* we have the following: "Clypeal suture distinct and continued inward across dorsal surface of head and down the median line as a narrow suture as far as the anterior level of the mandibles."

In the present species the clypeal suture is *entirely absent*, the sides of the pre-antennary area being uninterrupted from trabeculae to end of clypeal bands, nor is the clypeal signature separated at all from the clypeal bands by a suture, the latter being wide and heavy and overlap the sides of the signature. The median clear suture of the clypeal signature opens posteriorly into a large clear space, extending backward to the mandibles and laterally to the edges of the clypeal bands which support the signature, more or less as shown in Kellogg's figure. In addition to the above difference there is a conspicuous, clear, dorsal suture running diagonally backward from the base of the trabeculae to the middle of the gular plate but not joining there.

Without the male sex of this species I hesitate to erect a new genus for its reception, but since four females were taken by Kellogg on two different specimens of the same host and I have a fifth female also from *Fulica americana*, there can be no doubt as to the authenticity of the host records for it. It is also clearly related to *Fulicoffula*, a genus found only on the Ralloidea, but cannot be considered as congeneric with that genus, so that it seems best to erect a new one for it, which I propose to call *Sakoskida*.

Genus *Sakoskida*<sup>1</sup> new genus

GENOTYPE: *Lipeurus picturatus* Kellogg. (Host: *Fulica americana*.)

The genus is distinguished by the characters of the head, the abdominal tergites, and the terminal segments of the female abdomen.

Elongated esthiopterine form with following characters: head with elongated clypeus and large clypeal signature, but with *no trace* of clypeal suture, the signature being overlapped laterally by the wide, heavy, continuous clypeal bands; clypeal signature divided longitudinally by a clear slit, ending anteriorly at the finely striated front of the signature (as in *Fulicoffula*), but opening posteriorly into a large clear area extending from signature to mandibles and from one clypeal band to the other.

Trabeculae small, triangular and uncolored; a narrow clear suture extends diagonally from base of trabeculae to the middle of the large gular plate, not quite meeting. Antennae thick and long, 1st., 3rd. and 5th. joints subequal and shortest. Thorax and legs as in *Fulicoffula*; abdomen long, slender and nearly parallel-sided, slightly wider at segments V and VI, and apparently with *ten* segments, narrowing abruptly at VIII and IX, with X parallel-sided, as wide as posterior margin of IX, and with posterior margin very deeply bifid (more than half the length of the segment), and with only a few very small setae. The tergites are much less deeply pigmented than the pleurites and consist of two rectangular sclerites, separated medially by a narrow clear space on segments I to VIII, and by a wider, clear band from pleurites on segments II to VIII. Tergite IX is continuous and more deeply colored, while X is uniformly the color of the divided tergites.

The structure of the head is very different from that of *Ardeicola*, which is the only other genus closely related, as well as the tip of the abdomen in the female.

*Sakoskida picturata* (Kellogg)

Fig. 10

*Lipeurus picturatus* Kellogg, 1896. Proc. Calif. Acad. Sci. (2) 6, page 121, pl. 8, figs. 1 and 2. (Host: *Fulica americana*.)

DIAGNOSIS.—The above characterization of the genus *Sakoskida* will suffice for a description of the species, in addition to that given by Kellogg, who apparently failed to observe that it had ten segments in the abdomen, calling the tenth the ninth, but his figure clearly shows ten, the same as my specimen. His description of the chaetotaxy is correct, as well as that of the thorax, while his figure is exceptionally good and his measurements are almost exactly the same as those of my specimen (see table below).

The junction of the head with the prothorax in this species presents a rather unique feature, there being no visible occipital margin to the head. Seemingly the anterior portion of the thorax is inserted *into* the head,

<sup>1</sup> From the Greek σχιεα (split) and σκασ (shield).

where it is held in position by a condyle on each side of the base of the gular plate.

## MEASUREMENTS OF THE FEMALE

	<i>Length</i>	<i>Width</i>
Body .....	2.23	.....
Head .....	.54	.326
Prothorax .....	.17	.23
Pterothorax .....	.29	.29
Abdomen .....	1.50	.35

Until now there has been no published record of the occurrence of any species of Mallophaga on *Heliornis fulica*; and since there has been considerable controversy over the nomenclatural position of this bird, it is with unusual interest that I can now record its Mallophagan parasite, and by discovering at the same time that the genus to which this parasite belongs (*Fulicoffula*) is a genus parasitic only on the Ralloidea, which adds rather unshakable proof of the very close relationship between the Rallidae and Heliornithidae.

While working on the new louse from *Heliornis* I searched carefully through my large series of *Ardeicola*, seeking a repetition of the unique abdominal structure peculiar to *Fulicoffula*. During this search I discovered a fine pair of lice with identical generic characters as that from *Heliornis* (but specifically different) collected on *Gallinula*, from Lake Junin, Peru. To add to my surprise, I also found a male and three females of another species of the same genus taken on *Laterallus albigularis* collected at widely separated places in Colombia. There seems to be no chance for error in these host records.

The three species of *Fulicoffula* described below are closely related, with the unique abdominal structure of the female practically identical, but all three easily separated by various specific characters. Did *Heliornis*, *Gallinula* and *Laterallus* have a common ancestor upon which lived this curious louse and which has persisted almost unchanged through the eons of time necessary for the development of three birds so entirely different from each other? Apparently that is just what has happened.

*Laterallus* is almost as different from *Heliornis* as *Gallinula* is from *Heliornis*, and yet this same genus of parasite, very little changed specifically, is found on all three birds, amazing proof of the stability of certain types of Mallophaga over unbelievably long periods of time, during which their hosts have become divided into very different genera and even families.

*Fulicoffula heliornis* n. sp.

Figs. 1, 2, and 3

Types, male and female adults, from *Heliornis fulica*, collected by R. J. Newman on Río Huichihuayán, near ferry on road to Xilitla, San Luis Potosí, México, July 16, 1947 (types in coll. La. State Univ. Mus. Zoology).

DIAGNOSIS.—Excepting for the hyaline area between the clypeus and the mandibles and that surrounding the gular plate, the whole head is rather deeply pigmented and with the lateral bands heavily chitinized. The portion of the clypeus, anterior to the median, dividing hyaline suture, is covered with a series of fine, parallel, wavy, transverse lines (somewhat semicircular in shape), not pitted as in most *Ardeicola*, and with the frontal margin translucent. The clypeal signature is anchored posteriorly to the head by means of a slender, recurving band on each side which extends from the anterior mandibular condyle to the middle of the clypeal signature. The temporal bands (posterior to the eye) are corrugated along their inner margins, deeply pigmented, and with the adjoining area somewhat "tesselated." The chaetotaxy consists of several short setae at sides of clypeus and one longish hair on the temples.

The lateral bands of the thorax are deeply pigmented, as well as the paratergals of the abdomen, but the tergites and pleurites are less deeply colored. There are four long pustulated hairs at each side of the pterothorax on the posterior margin; the acetabular bars, while strongly developed, extend but little beyond the margin of the pterothorax, but the socket in the rear coxae, in which their tips rest, is well marked. The legs are stout, with coxae and trochanter well developed, but the femora and tibiae are short. The abdomen in both sexes is widest medially, tapering to anterior and posterior ends in both sexes.

The male genital armature is also simple, consisting of short paramers, thickened basally and tapering to rather sharp points; a simple endomeral plate fills the space between the paramers. (Due to insufficient clearing, the genitalia cannot be studied as carefully as desirable.) The type series consists of the male holotype, female allotype and two male and three female paratypes. In addition, there are in the author's collection two females taken on the type host, one at Bonilla, Costa Rica, November 11, 1907, and the other at El Tingo, Peru, November 6, 1933.

## MEASUREMENTS OF THE TYPES

	Male		Female	
	Length	Width	Length	Width
Body .....	2.30	.....	2.69	.....
Head { clypeus .....	.605	.185	.632	.185
{ temples .....		.390		.412
Prothorax .....	.200	.273	.213	.285
Pterothorax .....	.340	.338	.347	.372
Abdomen .....	1.35	.453	1.69	.586
Antennae .....	.330	.07	.25	.043
Basal plate .....	.240	.087		
Paramers .....	.090	.090		

NOTE.—Measurements are in millimeters and are the extreme length of the segments from temples to frons and of entire thoracic segments, not at point of junction.

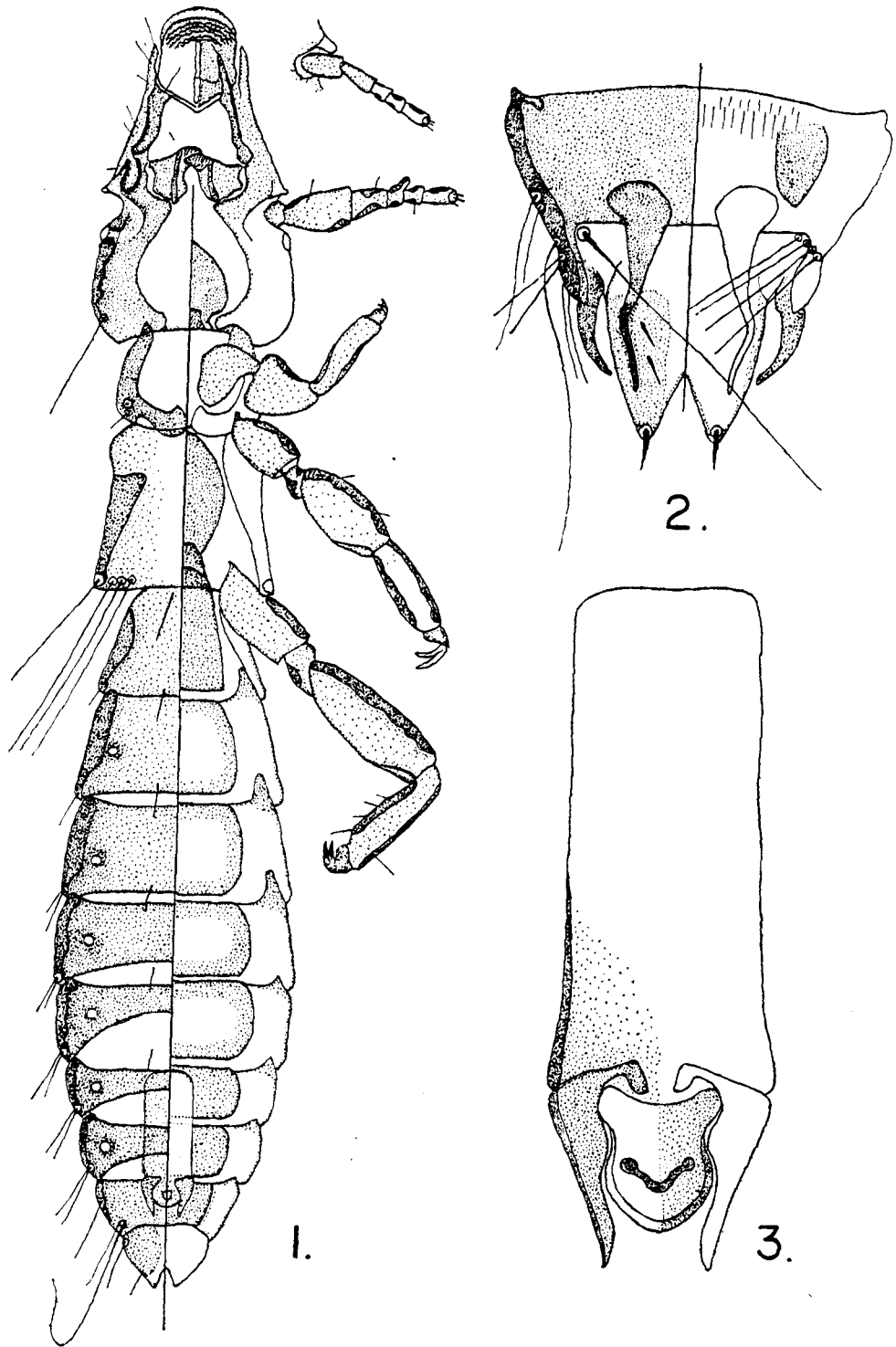


Figure 1. *Fulicoffula heliornis* ♂ (ex. *Heliornis fulica*)  
 Figure 2. *F. heliornis* ♀ tip of abdomen  
 Figure 3. *F. heliornis* ♂ genitalia

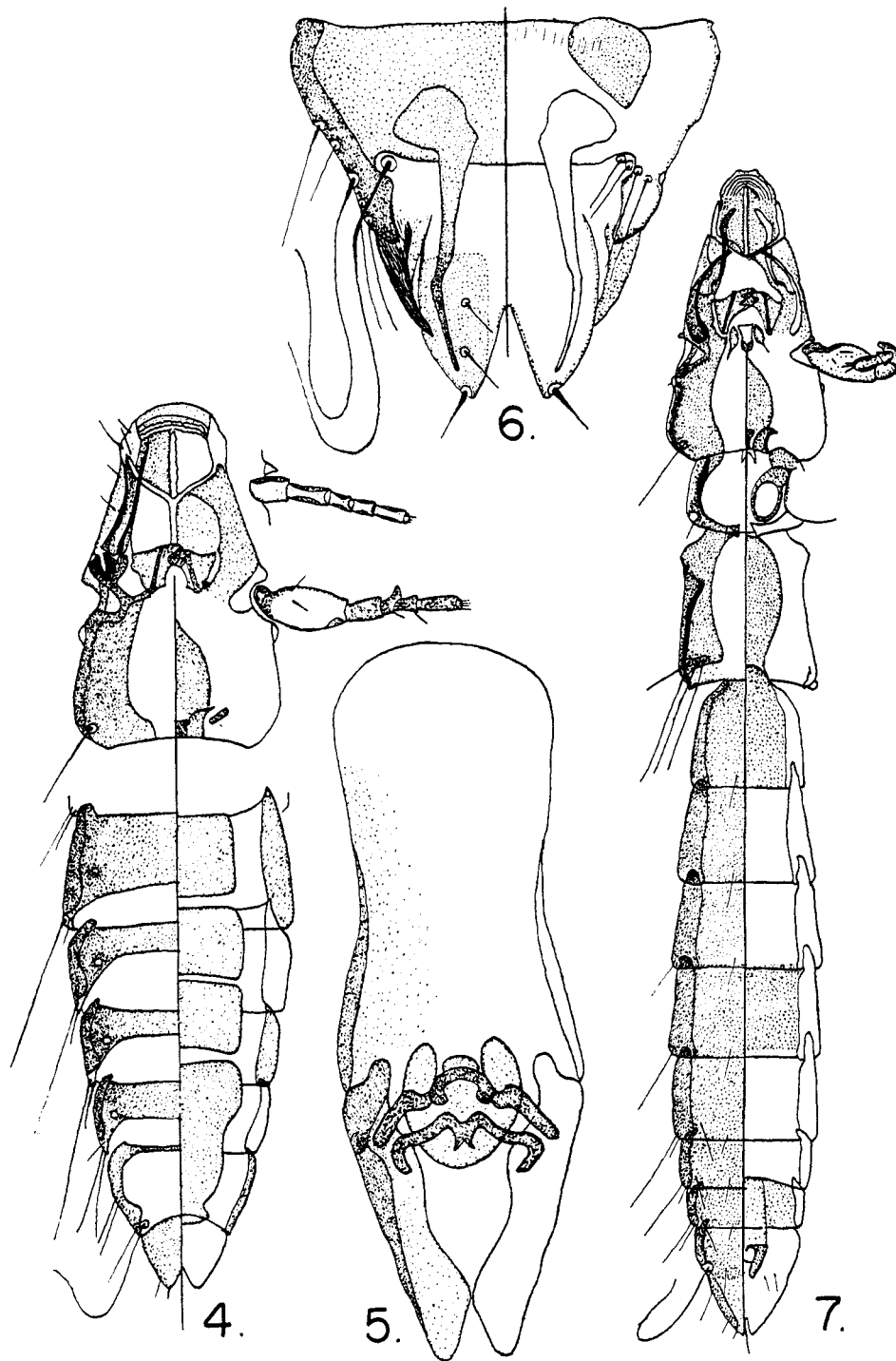


Figure 4. *Fulicoffula gallinula* ♂ (ex. *Gallinula chloropus garmani*)  
 Figure 5. *F. gallinula* ♂ genitalia  
 Figure 6. *F. gallinula* ♀ tip of abdomen  
 Figure 7. *Fulicoffula obstinata* ♂ (ex. *Laterallus albigularis albigularis*)

*Fulicoffula gallinula* n. sp.

Figs. 4, 5, and 6

Types, male and female adults, from *Gallinula chloropus garmani* Allen, collected by the author on Lake Junin, Peru, April 15, 1930 (types in coll. of author).

DIAGNOSIS.—This species resembles very closely (except for the male genitalia) the preceding one, *F. heliornis*.

It is uniformly larger in most measurements, excepting that the head (at temples) is the same width as in the male of *F. heliornis* but slightly wider at the clypeus; the abdomen is wider in both male and female; segment VIII in female is wider, but the combined segments VIII and IX are equal in length; the shape of the bifurcated tip of IX is distinct (the tips wider basally); the long, curving, lateral spines are longer, as well as the two internal bars running from VIII backward to tips of IX (see fig.). The median row of fine setae along the anterior margin of VIII in female (ventrally) are much shorter and finer, while the entire chaetotaxy of VIII and IX is considerably shorter (see fig.), excepting the two dorsal spines on the bifurcated tip and the apical spines on IX, which are longer and thicker. The tergites on segments V to VIII in the male are narrower, while the large pleurite covering VII and VIII seems to be of different shape (this plate not clearly visible in *F. heliornis*).

The male genitalia is quite different from that of *F. heliornis*, the paramers being much longer and of distinct shape, while the endomeral plate is very much reduced in size, and there are two curiously-shaped structures lying over the endomeral plate, whose function I am at a loss to explain (see figure). The species is represented only by the male holotype and female allotype.

## MEASUREMENTS OF THE TYPES

	Male		Female	
	Length	Width	Length	Width
Body .....	2.59	.....	2.97	.....
Head { clypeus .....	.....	.190	.....	.195
temples .....	.620	.390	.640	.367
Prothorax .....	.217	.285	.220	.293
Pterothorax .....	.370	.393	.380	.391
Abdomen .....	1.53	.415	1.90	.542
Antennae .....	.359	.077		
Basal plate .....	.25	.10		
Paramers .....	.132	.10		

*Fulicoffula obstinata* n. sp.

Figs. 7, 8, and 9

Types, male and female adults, from *Laterallus albigularis albigularis* (Lawrence), collected by the author at Acandí Chocó, Colombia, January 2, 1950 (types in U. S. Nat. Mus.).

DIAGNOSIS.—Whole insect much more slender than either *F. heliornis* or *F. gallinula*, with head much narrower, clypeus longer, and with its sup-



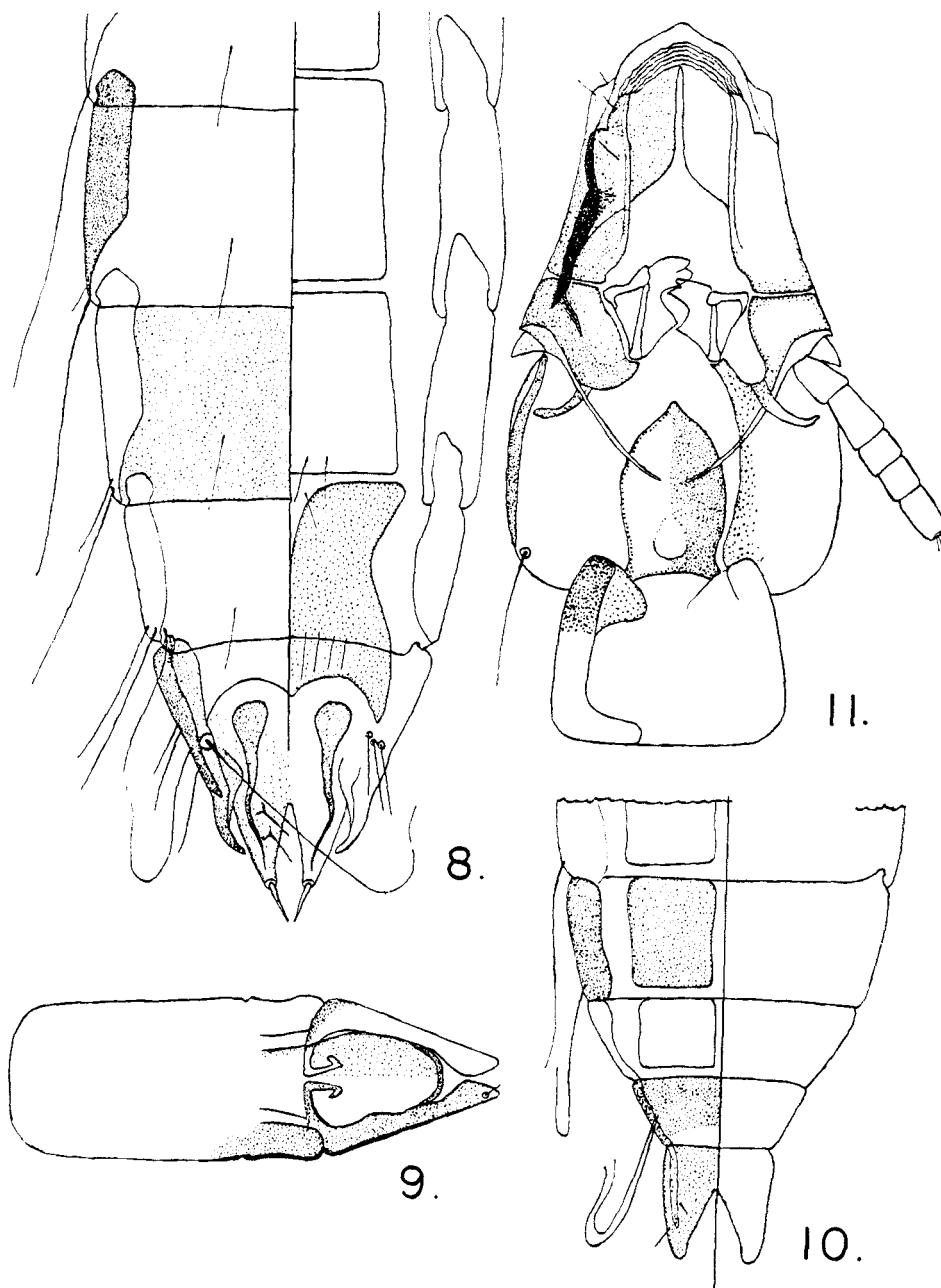


Figure 8. *F. obstinata* ♀ abdomen, V to IX  
 Figure 9. *F. obstinata* ♂ genitalia  
 Figure 10. *Sakoskida picturata* (Kellogg) ♀ tip of abdomen  
 Figure 11. *S. picturata* (Kellogg) ♀ head and prothorax

porting bands differently shaped, as well as the lateral clypeal bands (see fig.). Pharyngeal gland and sclerite present, although very small (obsolete in *F. heliornis* and *F. gallinula*); gular plate very long.

Prothorax longer than wide in male, as wide as long in female; abdomen more slender in both sexes; paratergals wider and more heavily chitinized. The structure of tergites and sternites is not clear (due to insufficient clearing). The tergites seem to be entire in all segments of both sexes and cover practically the entire area of the segments, excepting VIII and IX in female and IX in male. The sternites in male also seem to be entire, being mostly superimposed by the tergites, but in female they are apparently median, being widely separated from the pleurites. The combined segments VIII and IX in female are much smaller than in the other two species, but in all other respects are almost identical, even to the chaetotaxy.

The male genitalia is much smaller, with shorter, narrower basal plate and narrower at base of paramers, but the shape and length of paramers are very close to those of *F. heliornis*, except that their tips are broadened as in *F. gallinula*; the endomeral plate is not clearly visible and its details impossible to delineate. The species consists of the male holotype, the female allotype and another female taken at Santana, Santander N., Colombia, September, 1949.

#### MEASUREMENTS OF THE TYPES

	Male		Female	
	Length	Width	Length	Width
Body .....	2.07	.....	2.39	.....
Head { clypeus .....	.....	.120	.....	.120
{ temples .....	.488	.270	.51	.293
Prothorax .....	.160	.224	.160	.220
Pterothorax .....	.285	.260	.293	.293
Abdomen .....	1.17	.27	1.487	.391
Antennae .....	.28	.057	.195	.032
Basal plate .....	.132	.07		
Paramers .....	.085	.068		

A NEW SPECIES OF *BOTHYNOTUS* FROM FLORIDA  
(HEMIPTERA: MIRIDAE)

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Studying specimens of Neotropical Miridae in the collection of the United States National Museum, the author found a new species from Florida herewith described and figured. It belongs to the genus *Bothynotus* Fieber of the tribe Clivinemini, subfamily Deraeocorinae.

*Bothynotus* Fieber, 1864

*Bothynotus* Fieber, 1864. Wien. Ent. Monats. 8: 76.

*Neobothynotus* Wirtner, 1917. Ent. News 28: 33; Bergroth, 1920. Ann. Soc. Ent. Belg. 60: 69 (as synonym).

TYPE SPECIES: *Phytocoris pilosus* Boheman, 1852; palaeartic.

OTHER SPECIES IN THE GENUS: *B. modestus* (Wirtner, 1917) (Ill., Pa., Fla., Md., Ohio, Kans.); *B. barberi* Knight, 1933 (Ariz.); *B. johnstoni* Knight, 1933 (Miss., Ga.); *B. kiritschenkoi* Lindberg, 1934 (Asia).

*Bothynotus albus* n. sp.

(Fig. 1)

Characterized by its small size, color of hemielytra, and male genitalia.

MALE: Length 2.8 mm., width 1.2 mm. Head: length 0.2 mm., width 0.6 mm., vertex 0.39 mm. Antennae: segment I, length 0.1 mm.; II, 0.7 mm.; III, 0.3 mm.; IV, 0.3 mm. Pronotum: length 0.6 mm., width at base 1.1 mm.

Color: Castaneous with reddish head and whitish hemielytra; antennae, pronotum and scutellum, cuneus, veins of membrane, longitudinal line on commissure of hemielytra and along upper portion of veins, legs and underside of body, castaneous to dark brown; head reddish; corium, clavus, embolium and membrane, whitish translucent; legs and mesosternum showing a reddish tinge on high magnification.

Small species, erectly pilose, eyes very small, distant from pronotum by a space equal to length of eye, first two antennal segments noticeably incrassate, third and fourth very slender, veins of membrane thick, the apical angle pointed externally, scutellum with two median excavations.

Genitalia: Left clasper pointed, finger like, swollen at base, curved ventrad. Right clasper very small, rounded apically (visible portion).

FEMALE: Unknown.

<sup>1</sup> John Simon Memorial Fellow 1953. Additional assistance was also granted by the Brazilian National Research Council.