

## NEW NORTH AMERICAN MALLOPHAGA

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Through the kindness of Dr. L. A. Carruth, the writer recently examined the Mallophaga Collection of the University of Arizona. Described herein are five new species from that material, all of which were collected by Dr. Allan R. Phillip. All holotype and allotype material has been deposited in the United States National Museum, and paratypes have been distributed to other leading museums.

*Philopterus phillipi* n. sp.

Male: Total length 1.85 mm., greatest width 0.85 mm. The head length and width are the same, 0.60 mm. Forehead broad, signature prominent and pointed posteriorly; clypeus narrow. Ocular emarginations shallow and broadly curved. Trabeculae large. Antennae filiform, with large first segments and long second segments. Eyes large, each with a long seta. Temples evenly rounded. Prothorax small; sides convex, with a long seta in each posterolateral angle. Pterothorax with sides diverging distally. Abdomen wide, with prominent chitinous plates; each segment with one row of marginal setae. Dorsal chaetotaxy as shown in figure 1. Male genitalia as shown in figure 3.

Female: Total length 2.10 mm., greatest width 0.90 mm. All measurements, except for the abdomen, are the same as for the male. Chaetotaxy same as for the male, except for the abdominal terminal segments.

Type host: *Cyanocephalus cyanocephalus* (Wied), Pinon Jay.

Type material: Holotype male, allotype female and eight paratypes collected at Flagstaff, Arizona.

This species is very similar to *Philopterus cristatus* Malcomson 1929 found on the Blue Jay, and *Philopterus corvi* (Linnaeus 1758) found on the Raven. It differs from both in the form of the tergal plates, the chaetotaxy, and the structure of the male genitalia. The short parameres easily distinguish it from related species.

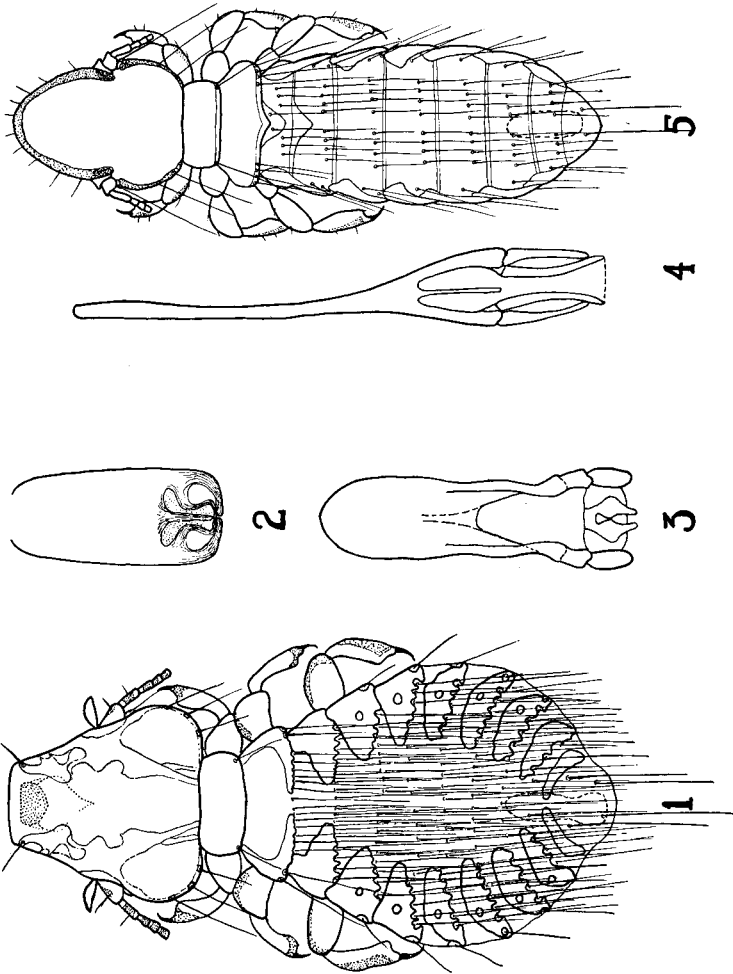
*Degeeriella carruthi* n. sp.

Male: Total length 1.80 mm., greatest width 0.5 mm. Head 0.52 mm. in length and 0.40 mm. in width. Head circumfasciate; almost pointed, with narrow clypeal margin. Eyes inconspicuous, each with a long seta arising from the dorsal surface. Antennae filiform. Temples convexly rounded with narrow marginal bands. Prothorax short, wide, and armed dorsally with one long seta in each posterolateral angle. Pterothorax with sides diverging distally, posterior margin pointed distally in the median. Abdomen with weakly chitinized tergal plates and heavily chitinized pleural plates. Tergal plates each with one row of medium-length setae, except for the terminal segments. Dorsal chaetotaxy as shown in figure 5. Male genitalia as shown in figure 2.

Female: Total length 2.10 mm., greatest width 0.52 mm. The head and abdomen are longer than in the male, all other measurements are the same. The chaetotaxy same as for the male, except for the abdominal terminal segments.

Type host: *Falco sparverius sparverius* Linnaeus, Eastern Sparrow Hawk.  
 Type material: Holotype male, allotype female and eight paratypes collected at Flagstaff, Arizona.

This species is very similar to *Degeeriella fasciata* (Rudow 1869) found on



## EXPLANATION OF ILLUSTRATIONS

## Plate I

- Figure 1. *Philopterus phillipi* n. sp., Male, dorsal.  
 Figure 2. *Degeeriella carruthi* n. sp., Male genitalia.  
 Figure 3. *Philopterus phillipi* n. sp., Male genitalia.  
 Figure 4. *Actornithophilus mexicanus* n. sp., Male genitalia.  
 Figure 5. *Degeeriella carruthi* n. sp., Male, dorsal.

the Gyrfalcon. The new form is smaller and possesses a more pointed head. The male genitalia easily distinguishes it from related species.

*Actornithophilus mexicanus* n. sp.

Male: Head of a shape typical of the genus. Temples prominent, ocular emarginations rather deep. Eyes large. Two long setae on the lateral margins of the ocular emarginations. Four long setae on each temple lobe. Two long setae on each lateral margin of the gular region. Four long setae dorsally, on the posterior margin of the head. Thorax except for size, same as in *A. albus* Emerson 1948. Four large setae on the posterior margin of the patch of spines on the venter of the hind femur—the spines in the patch being progressively smaller anteriorly. Abdominal tergites I-VII with twenty medium-length setae, evenly spaced on the posterior margin; and with scattered small setae. Pleural plates with one long and numerous short setae in each posterolateral angle. Sternal plates with three rows of evenly spaced medium-length setae. Patches of spines on the posterolateral angles of abdominal sternites four and five; the patch on sternite four being more prominent and dense. Genitalia as shown in figure 4.

Female: Larger than the male and of essentially the same form, there being a minimum of sexual dimorphism. The setae on the dorsum of the female are less numerous and all are larger than on the male. Measurements of the type are as follows:

	Male		Female	
	W	L	W	L
Head	0.50 mm.	0.42 mm.	0.50 mm.	0.42 mm.
Prothorax	0.38	0.13	0.40	0.15
Mesothorax	0.38	0.10	0.40	0.12
Metathorax	0.42	0.12	0.50	0.13
Abdomen	0.50	1.00	0.62	1.30

Type host: *Himantopus mexicanus* (Müller), Black-necked Stilt.

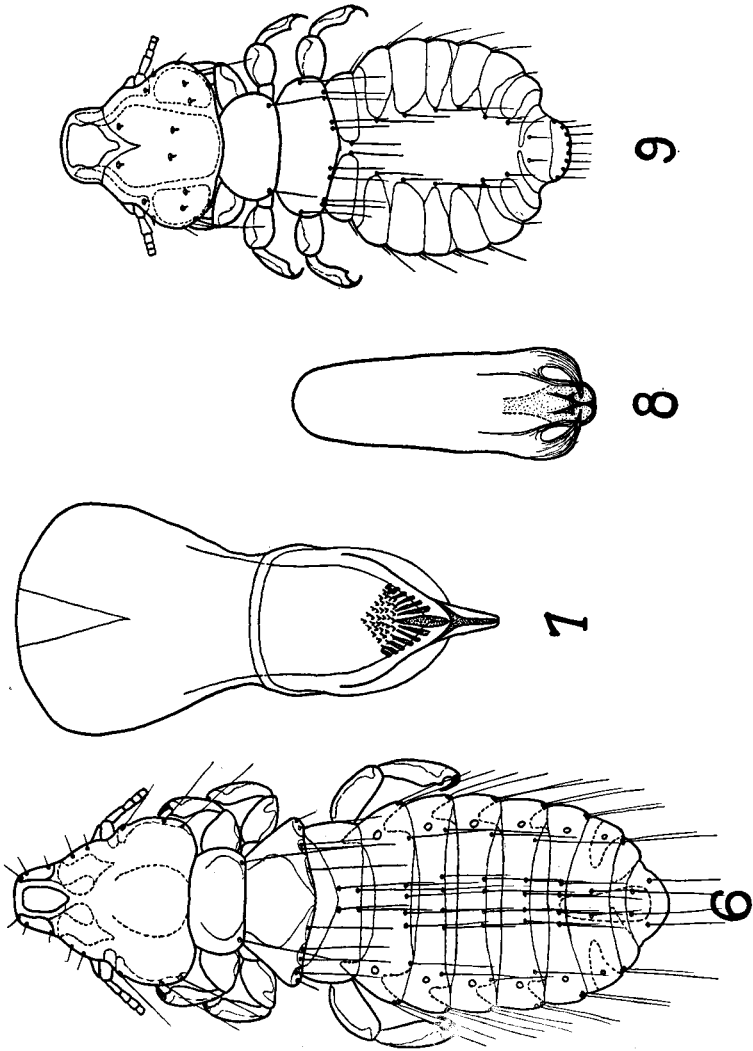
Type material: Holotype male, allotype female and fourteen paratypes collected at Tucson, Arizona.

This form closely resembles *Actornithophilus albus* Emerson 1948 found on the Sanderling. The forehead in the new form is longer and much narrower, and the male is much larger than in *A. albus*. The endomeres of the male genitalia are much longer than in related species.

*Penenirmus varius* n. sp.

Male: Total length 1.9 mm., greatest width 0.60 mm. Head 0.5 mm. in length and 0.48 mm. in width. Forehead narrow, clypeal signature long and prominent. Preantennal lateral margins slightly expanded. Trabeculae small, narrow and pointed. Eyes conspicuous, each with a long seta. Antennae filiform. Temples evenly rounded. Posterior margin of head slightly concave. Prothorax rectangular, with one long seta in each posterolateral angle. Pterothorax large, with diverging lateral and posterior margins. Abdomen narrow and elongate. Conspicuous tergal plates, each with one row of medium-length setae. Pleurites distinct and heavily chitinized. Dorsal chaetotaxy as shown in figure 6. Male genitalia as shown in figure 8.

Female: Total length 2.15 mm., greatest width 0.62 mm. The head and abdomen are longer than in the male, all other measurements are the same. Chaetotaxy same as for the male, except for the abdominal terminal segments.



## Plate II

- Figure 6. *Penenirmus varius* n. sp., Male, dorsal.  
 Figure 7. *Anatoecus clangulus* n. sp., Male genitalia.  
 Figure 8. *Penenirmus varius* n. sp., Male genitalia.  
 Figure 9. *Anatoecus clangulus* n. sp., Male, dorsal.

Type host: *Sphyrapicus varius varius* (Linnaeus), Yellow-bellied Sapsucker.

Type material: Holotype male, allotype female and four paratypes from the type host collected in Mohave County, Arizona. Also, ten paratypes from *Sphyrapicus varius nuchalis* Baird, Red-naped Sapsucker collected in Arizona.

This species in general appearance, resembles several species of the genus. The sparse chaetotaxy, large size and distinctive male genitalia easily separate it from the known species.

*Anatoecus clangulus* n. sp.

Male: Total length 1.45 mm., greatest width 0.62 mm. Forehead long, broadly rounded. Clypeal signature large. Temples broadly rounded, each with one long seta. Short peg-like spines on the dorsal surface of the head as illustrated. Prothorax narrow and long. Pterothorax large, lateral margins evenly rounded with diverging lateral and posterior margins. Abdomen oval-shaped. Prominent tergal plates on the lateral margins. Median area of the abdomen clear. Dorsal chaetotaxy as shown in figure 9. Male genitalia as shown in figure 7.

Female: Head length and width are the same, 0.5 mm. Prothorax 0.18 mm. in length and 0.33 mm. in width. Pterothorax 0.20 mm. in length and 0.43 mm. in width. Abdomen 1.0 mm. in length and 0.9 mm. in width. Chaetotaxy, except for the abdominal terminal segments, same as in the male.

Type host: *Clangula hymenalis* (Linnaeus), Old-squaw.

Type material: Holotype male and allotype female and sixteen paratypes collected at Tucson, Arizona.

The male genitalia of the new form closely resembles that of *Anatoecus icterodes* (Nitzsch 1818) found on the Red-breasted Merganser. In the latter named species, the parameres are shorter and stouter, and the endomeral plate is without the prominent chitinous serrations. The clypeal signature and chaetotaxy are also distinctive in the new form.

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