

PROCEEDINGS
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TWO NEW SPECIES OF *CRASPEDORRHYNCHUS*
(MALLOPHAGA) FROM NORTH AMERICA

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Species of the Ischnoceran genus *Craspedorrhynchus* Keler, 1938, are found in North America on avian hosts of the family Accipitridae (Hawks, Eagles and Kites). To date, no species have been recorded from hosts of the other families of Falconiformes. Species of this genus are of the short, round-bodied, robust type with a large head, and are found on the neck and head of the host. The premarginal carina and the ventral carina of the forehead are prolonged to a point well beyond the anterior margin of the dorsal anterior plate. This character and the distinctive male genitalia separate the genus from related genera found on other hosts.

The known North American species form a rather homogeneous taxon. Differences in the male genitalia do not appear to be great. The characters which appear to offer the best means of separation are: size, shape of the dorsal anterior plate of the forehead, chaetotaxy, and the sternal plate of the genital region. In some species, the chaetotaxy of abdominal segments II-VII (the first apparent segment is II) is not the same in both sexes. Individual differences of chaetotaxy within each species are slight. The sternal plate of the genital region of the male is more variable in shape than is the dorsal anterior plate of the forehead.

Two new species are herewith described and illustrated from material in the collection of the U. S. National Museum. In addition, keys are provided to the species known to occur in North America.

***Craspedorrhynchus subhaematopus*, new species**

Holotype male: Dorsal anterior plate of forehead as shown in Fig. 8.

Terminal abdominal segments as shown in Fig. 6. Male genitalia as shown in Fig. 7. Distinctive chaetotaxy as given in the key to the males.

Allotype female: Dorsal anterior plate of forehead as in the male. General shape as in the male, but larger and more robust. Distinctive chaetotaxy as given in the key to females. Terminal abdominal segments as shown in Fig. 5.

Measurements: Holotype male and allotype female measurements in millimeters, are respectively: length of head 0.76, 0.86; breadth of head 0.73, 0.79; breadth of prothorax 0.45, 0.49; breadth of pterothorax 0.60, 0.69; breadth of abdomen 0.92, 1.12; total length 1.98, 2.27.

Type host: *Accipiter cooperii* (Bonaparte), Cooper's Hawk.

Type material: Holotype male and allotype female, U. S. National Museum Catalog No. 64,938, collected at Laurel, Maryland, on 20 April 1938 by E. B. Marshall. Two paratypes collected in Leon County, Florida, on 2 December 1925 by H. L. Stoddard. Ten paratypes collected at Tillamook, Oregon, on 1 January 1931 by Alexander Walker.

Discussion: This species is closest to *C. haematopus* (Scopoli, 1763). In addition to the differences given in the keys, the two species can be separated by the differences illustrated in Figs. 1-8.

***Craspedorrhynchus americanus*, new species**

Holotype male: Dorsal anterior plate of forehead as shown in Fig. 13. Genital sternal plate as shown in Fig. 9. Genitalia as shown in Fig. 17. Distinctive chaetotaxy as given in the key to the males.

Allotype female: Dorsal anterior plate of forehead as in the male. General shape as in the male, but larger and more robust. Distinctive chaetotaxy as given in the key to the females. Shape of genital sternal plate as in *C. haematopus* (Scopoli, 1763).

Measurements: Holotype male and allotype female measurements, in millimeters, are respectively: Length of head 0.87, 0.93; breadth of head 0.79, 0.85; breadth of prothorax 0.47, 0.51; breadth of pterothorax 0.66, 0.71; breadth of abdomen 1.08, 1.31; total length 2.12, 2.60.

Type host: *Buteo jamaicensis* (Gmelin), Red-tailed Hawk.

Type material: Holotype male, allotype female, U. S. National Museum catalog No. 64,939, and sixteen paratypes collected at Rosedale, Mississippi, on 3 March 1952 by M. G. Vaiden. Five paratypes collected at Cedar Grove, Wisconsin, on 12 May 1956 by D. Berger. One paratype collected at Tooele, Utah, on 13 August 1951. One paratype collected in Pennsylvania, in November, 1931 by M. Wood. Five paratypes collected at Winchester, New Hampshire, on 25 September 1933 by L. R. Nelson. Two paratypes collected at West Point, New York, 30 October 1926 by W. Robinson. Two paratypes collected at Stag Lake, New Jersey, in 1926.

Discussion: This species is close to *C. buteonis* (Packard, 1870), *C. dilatatus* (Rudow, 1869), and *C. hirsutus* Carriker, 1956; the other species found on the host genus *Buteo*. In addition to differences given in the

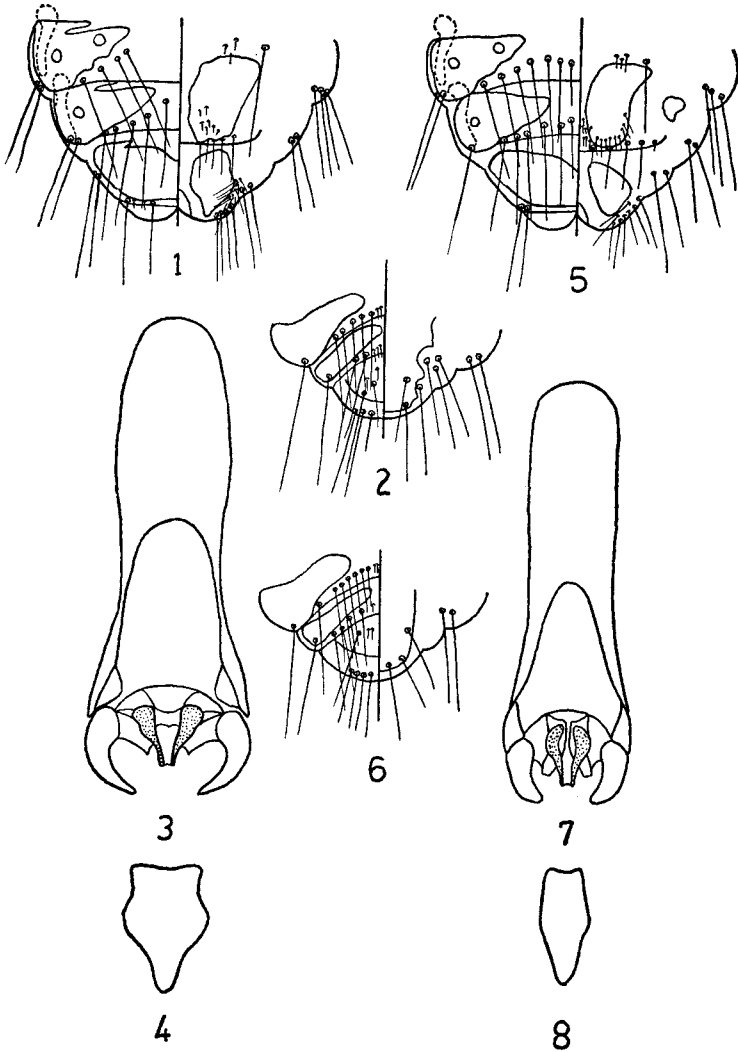


FIG. 1-8

keys, these closely related species can be separated by the differences illustrated in Figs. 9-16.

Key to females of North American species of *Craspedorrhynchus*

1. Posterior margin of pterothorax with 20 long setae *haematopus*
- Posterior margin of pterothorax with 14 long setae 2

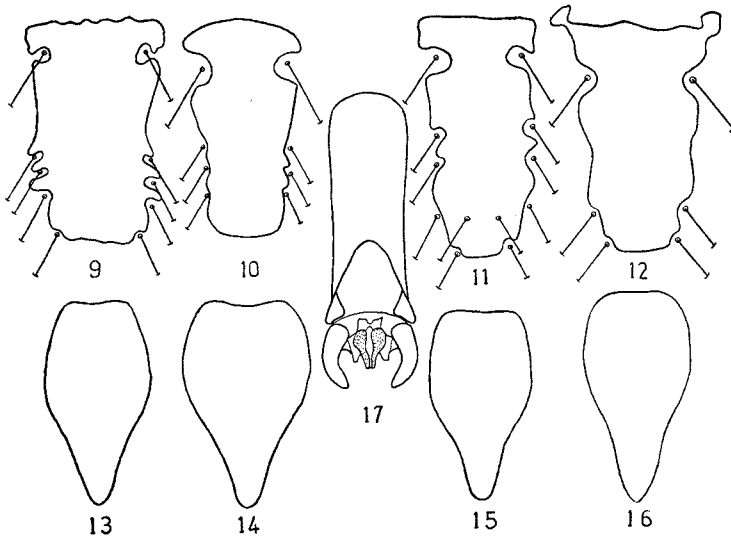


FIG. 9-16

- Posterior margin of pterothorax with 12 long setae 3
 Posterior margin of pterothorax with 10 long setae *hirsutus*
 2. Pleural plates of abdominal segment VII each with 10
 long setae *obscurus*
 Pleural plates of abdominal segment VII each with 6
 long setae *subhaematopus*
 3. Posterior margin of vulva with 14 medium-length setae *halieti*
 Posterior margin of vulva with 12 medium-length setae *aquilinus*
 Posterior margin of vulva with 10 medium-length setae 4
 4. Posterior margin of tergite VIII with 14 long setae *americanus*
 Posterior margin of tergite VIII with 12 long setae 5
 5. Posterior central margin of abdominal sternite III with 14
 long setae *dilatatus*
 Posterior central margin of abdominal sternite III with 20
 long setae *buteonis*

Key to males of North American species of *Craspedorrhynchus*

1. Posterior margin of pterothorax with 16 or more long
 setae *haematopus*
 Posterior margin of pterothorax with 14 or fewer long setae 2
 2. Abdominal sternite VI with a sparse row of setae 3
 Abdominal sternite VI with numerous scattered setae *obscurus*
 3. Abdominal tergite II with more than 14 long setae 4
 Abdominal tergite II with fewer than 14 long setae 5
 4. Abdominal tergite VIII with 8 long setae *americanus*

	Abdominal tergite VIII with 10 long setae	<i>halioti</i>
5.	Thoracic sternal plate between coxae II and III with two long setae	6
	Thoracic sternal plate between coxae II and III with four long setae	7
6.	Pleural plates of abdominal segment IV each with at least 7 long setae	<i>subhaematopus</i>
	Pleural plates of abdominal segment IV each with no more than 4 long setae	<i>aquilinus</i>
7.	Genital sternal plate with 3 long setae on each side in lateral indentations	<i>hirsutus</i>
	Genital sternal plate with 4 long setae on each side in lateral indentations	<i>dilatatus</i>
	Genital sternal plate with 5 long setae on each side in lateral indentations	8
8.	Genital sternal plate with median setae	<i>buteonis</i>
	Genital sternal plate without median setae	<i>americanus</i>

Host list for North American species of *Craspedorrhynchus*

- C. americanus* n. sp.—*Buteo jamaicensis* (Gmelin), Red-tailed Hawk.
C. aquilinus (Denny, 1842)—*Aquila chrysaetos* (Linnaeus), Golden Eagle.
C. buteonis (Packard, 1870)—*Buteo lineatus* (Gmelin), Red-shouldered Hawk.
C. dilatatus (Rudow, 1869)—*Buteo lagopus* (Pontoppidan), Rough-legged Hawk.
C. haematopus (Scopoli, 1763)—*Accipiter gentilis* (Linnaeus), Goshawk.
C. halioti (Osborn, 1896)—*Haliaeetus leucocephalus* (Linnaeus), Bald Eagle.
C. hirsutus Carriker, 1956—*Buteo regalis* (Gray), Ferruginous Hawk.
C. obscurus (Giebel, 1874)—*Rostrhamus sociabilis* (Vieillot), Everglade Kite.
C. subhaematopus n. sp.—*Accipiter cooperii* (Bonaparte), Cooper's Hawk.

EXPLANATION OF FIGURES

Figs. 1–4 are of *C. haematopus* (Scopoli, 1763). 1, dorsal-ventral view of terminal abdominal segments, female; 2, dorsal-ventral view of terminal abdominal segments, male; 3, male genitalia; 4, dorsal anterior plate of forehead, male.

Figs. 5–8 are of *C. subhaematopus* n. sp. 5, dorsal-ventral view of terminal abdominal segments, female; 6, dorsal-ventral view of terminal abdominal segments, male; 7, male genitalia; 8, dorsal anterior plate of forehead, male.

Figs. 1, 2, 4, 5, 6, and 8 are drawn to the same scale.

Figs. 9–12 are genital sternal plate of *Craspedorrhynchus* sp., male. 9, *C. americanus* n. sp.; 10, *C. dilatatus* (Rudow, 1869); 11, *C. buteonis* (Packard, 1870); 12, *C. hirsutus* Carriker, 1956.

Figs. 13–16 are dorsal anterior plate of forehead of *Craspedorrhynchus* sp., male. 13, *C. americanus* n. sp.; 14, *C. dilatatus* (Rudow, 1869); 15, *C. buteonis* (Packard, 1870); 16, *C. hirsutus* Carriker, 1956.

Fig. 17 is of *Craspedorrhynchus americanus* n. sp., male genitalia.

Figs. 3, 7, and 9–17 are drawn to the same scale.

LITERATURE CITED

- Carriker, M. A. 1956. Report on a collection of Mallophaga, largely Mexican (Part II). *Florida Ent.*, 39: 21–43, 69–84, 119–131.
- Clay, T. and C. H. E. Hopkins. 1951. The early literature on Mallophaga. Part II. *Bull. Brit. Mus. (N.H.), Ent.*, 2: 1–36.
- Denny, H. 1842. *Monographia Anoplurorum Britanniae*. London. 262pp.
- Giebel, C. G. 1874. *Insecta Epizoa*. Leipzig. 308pp.
- Hopkins, G. H. E. and T. Clay. 1952. A check list of the genera and species of Mallophaga. London. 362pp.
- Keler, S. 1938. Über einige Mallophagen aus Paraguay und Kamerun. *Arb. Morph. Tax. Ent. Berlin-Dahlem*, 5: 228–241.
- Osborn, H. 1896. Insects affecting domestic animals. *U. S. Bur. Ent. Bull.*, 5 (n.s.). 302pp.
- Packard, A. S. 1870. Certain parasitic insects. *Amer. Nat.*, 4: 83–99.
- Rudow, F. 1869. Beitrag zur kenntnis der Mallophagen oder Pelzfresser. Neue exotische arten aus der Familie *Philopterus*. *Dissert., Univ. Leipzig*. 47pp.
- Scopoli, J. A. 1763. *Entomologia Carniolica*. Vindobonae. 385pp.