

A NEW MALLOPHAGA FROM A LOON.

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THE genus *Craspedonirmus* Thompson, 1940, was erected for the Ischnoceran species of Mallophaga found on the Loons (*Gavia* of American authors, *Colymbus* and Divers of European authors). Even though the genus has been discussed by Kéler, Clay and Meinertzhagen, Uchida, and Timmermann, status of the various species has remained confused. Through the courtesy of Miss Theresa Clay, British Museum (Natural History), Mr. C. F. W. Muesebeck, U.S. National Museum, and Dr. Charles D. Michener, University of Kansas, material was obtained for a study of this genus.

Specimens were examined from all species and subspecies of Loons, as presently listed in the A. O. U. Check-List. The only constant morphological difference found was that the forms found on *Gavia immer* and subspecies possess two long setæ on abdominal sternites III-VII, while the forms found on *Gavia arctica* and subspecies and *Gavia stellatus* possess at least four long setæ on abdominal sternites III-VII. In the structures normally used for separation of species the individual variations are considered too great to be of taxonomic value. Populations from each of these three hosts can possibly be distinguished by size. For this purpose, the head-breadth of females (mounted in balsam) was selected as an index. These measurements for the individuals examined by the author and by Miss Clay are:—

Head-breadth of *Craspedonirmus* sp., female.

Host.	Number of specimens examined.										
	0.58	0.59	0.60	0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68
<i>Gavia immer</i>	—	—	—	—	2	4	1	5	4	6	9
<i>Gavia arctica</i>	—	—	—	—	—	1	3	3	1	—	—
<i>Gavia stellatus</i>	3	—	7	4	3	4	3	1	—	—	—

From this table, it is apparent that a majority of the individuals cannot be distinguished by size alone. Therefore it seems advisable to accept only the two forms previously mentioned.

Craspedonirmus colymbinus (Denny).

Docophorus colymbinus Denny, 1842, Mon. Anopl. Brit. pp. 43 and 80, pl. 8, fig. 8.

The hosts given for this species were *Colymbus septentrionalis*=*Gavia stellata* (Pontoppidan) and *Colymbus arcticus*=*Gavia arctica arctica* (Linnaeus). Miss Clay informs me that the head-breadths of the four

female syntypes are : 0.62, 0.62, 0.65 and 0.67 mm. All four specimens have four or more long setæ on abdominal sternites III–VII, and *colymbinus* is the first name to be used for that form.

Lectotype.—Female in the British Museum (Natural History) Collection, slide no. 624 ; the specimen with breadth of head 0.62 mm. and with sternites V and VII each with five setæ.

Host.—*Colymbus* sp., Britain.

Paratypes.—Three females, slide nos. 625–627, with the same host-data.

Nirmus frontatus Nitzsch, 1866.

In Giebel, Z. ges. NatWiss., xxviii, p. 378.

The hosts given for this species were *Eudytes arcticus*=*Gavia arctica arctica* (Linnaeus) and *Eudytes septentrionalis*=*Gavia stellata* (Pontoppidan). Apparently the types of this species were lost during the last war. The hosts listed in the original description are the same as for *C. colymbinus* (Denny) ; they are assumed to be correct, therefore it should be placed in synonymy of that species.

Docophorus bisetosus Piaget, 1885.

Les Pédiculines, Supplément, p. 17, pl. 2, fig. 6.

Mergus serrator was given as the host. Since this is in error, the host is considered to be *Gavia* sp. The head-breadths of the four female syntypes are : 0.62, 0.62, 0.62 and 0.64 mm., and each has at least four long setæ on abdominal sternites III–VII. Therefore, it is placed in synonymy of *C. colymbinus* (Denny). The host is either *Gavia arctica* or *Gavia stellata*.

Lectotype.—Male in the British Museum (Natural History), slide no. 507b.

Paratypes.—One male, four females, slide nos. 507 *a* and *c*.

Docophorus graviceps Kellogg, 1896.

Proc. Calif. Acad. Sci. (2) vi. p. 82, pl. 3, fig. 3.

Hosts given were *Fulica americana* and *Urinator pacificus*=*Gavia arctica pacifica* (Lawrence). The first-named host is in error. The form found on the latter-named host has four long setæ on abdominal sternites III–VII. This is confirmed by specimens in the Snow Entomological Museum, Kansas University, which are part of the Kellogg Collection and which still have the original labels. The form is placed in synonymy of *C. colymbinus* (Denny).

Docophorus atricolor Kellogg, 1896.

Proc. Calif. Acad. Sci. (2) vi. p. 93, pl. 3, fig. 9.

The hosts listed were *Synthliborhampus antiquus* and *Brachyrhampus marmoratus*, both of which are in error, and the host must be considered to be *Gavia* sp. *Paratypes* in the Snow Entomological Museum have four long setæ on abdominal sternites III–VII. The species is placed in synonymy of *C. colymbinus* (Denny). The host is either *Gavia arctica* or *Gavia stellata*. Since Kellogg, in the same paper, described other

specimens from *Gavia arctica pacifica* (Lawrence), it can be assumed that his material originated from this host, and that the error resulted from straggling after collection.

Craspedonirmus immer, n. sp.

Male.—Head almost as long as wide, trapezoidal in shape. Anterior margin slightly convex. Lateral margins almost straight, expanded posteriorly with broadly rounded temples. Partial clypeal suture, which cuts off the clypeal signature laterally but not posteriorly. Antennæ filiform. Trabeculæ small. Scattered small setæ on the forehead. A distinct transverse suture dorsally just posterior to the base of the antennæ. Three long setæ on each temple.

Prothorax rectangular, less than half as long as wide, much narrower than the head. Prosternal plate with two long setæ. Pterothorax twice as wide as long, posterior margin with three long setæ in each posterolateral angle.

Abdomen long oval-shaped. Pleurites strongly pigmented and overlapping, each with two medium-length setæ. Tergites III–VII each with two long setæ medianly on the posterior margin. Sternites III–VII each with two long setæ medianly on the posterior margins. Spiracles visible. Genitalia not distinguishable from *C. colymbinus* (Denny).

Female.—Slightly larger than male in size. Chaetotaxy, except for terminal abdominal segments, same as in the male.

Type-host.—*Gavia immer immer* (Brünnich).

Type material.—*Holotype* male and *allotype* female in the British Museum (Natural History), slide no. 12629a, collected at Boston, Massachusetts.

Paratypes.—Five females and ten males, slide no. 12629, collected at Boston, Massachusetts; two females, slide no. 14652, collected in North Uist; two females, slide no. 13014, collected in California; and one male and one female, slide no. 1148, collected in Virginia. All in the British Museum (Natural History).

Paratypes in the U. S. National Museum are twenty-three females and two males, collected at Isle Shoals, New Hampshire; two females and one male collected at Memorial Bridge, District of Columbia; and one female and one male collected at Horsham, Pennsylvania.

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