

THE PRESENCE OF MITES AND INSECTS IN THE GUT OF TWO
SPECIES OF CHEWING LICE (*MYRSIDEA* SP. AND
PHILOPTERUS SP., MALLOPHAGA):
ACCIDENT OR PREDATION?

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(With 2 figures)

RESUMO

**A Presença de Ácaros e Insetos no Trato Digestivo de Espécies de Malófagos
(*Myrsidea* sp. e *Philopterus* sp., Mallophaga): acidente ou predação?**

Relata a presença de um colembola no trato digestivo de *Myrsidea s. subcoracis* e fragmentos do corpo e pernas de um ácaro no abdômen de *Philopterus* sp.

Palavras-chave: Insetos, ácaros, Mallophaga, acidente, predação.

ABSTRACT

A collembolan was found in the gut of a *Myrsidea s. subcoracis*. The body and leg pieces of a mite were observed in the abdomen of a *Philopterus* sp.

Key words: Insects, mites, Mallophaga, accident, predation.

Relatively little information is available concerning the life history, behavior and ecology of lice in the order Mallophaga. More information is known about mammal lice (Murray 1957, 1960) than about avian lice and only a few attempts have been made to rear the latter in the laboratory (Sternram 1956, Nelson 1971, Nelson and Murray 1971).

During examination of the louse collection of the Department of Plant Industry (DPI), (P. O. Box 1269, Gainesville, Florida 32602, U.S.A.), we noted that many slide specimens, mounted in Canada balsam,

had intact digestive tracts, that allowed us to observe their contents.

Previous observations on the food habits of avian lice include those of Martin (1934) who observed that *Columbicola columbae* fed only on barbules of the feathers, except in one case in which a first-instar nymph fed on blood experimentally smeared on the fluffy part of a feather. Nelson (1971) observed adults of *Colpocephalum turbinatum* *in vitro* eating their own eggs and nymphs and estimated that up to 80% of the nymphs in one generation may be eaten. Waterston (1926) and Blagoveschtchensky (1959) found egg cases, cast skins and louse parts and mites in crops of lice. Nelson (1972) found a nymph of an acarine, *Syringophilus* sp. in one specimen of *Ricinus marginatus* from *Tyrannus vociferans*. Rothschild and Clay (1952) reported cast skins, mites and other lice in the crops of lice.

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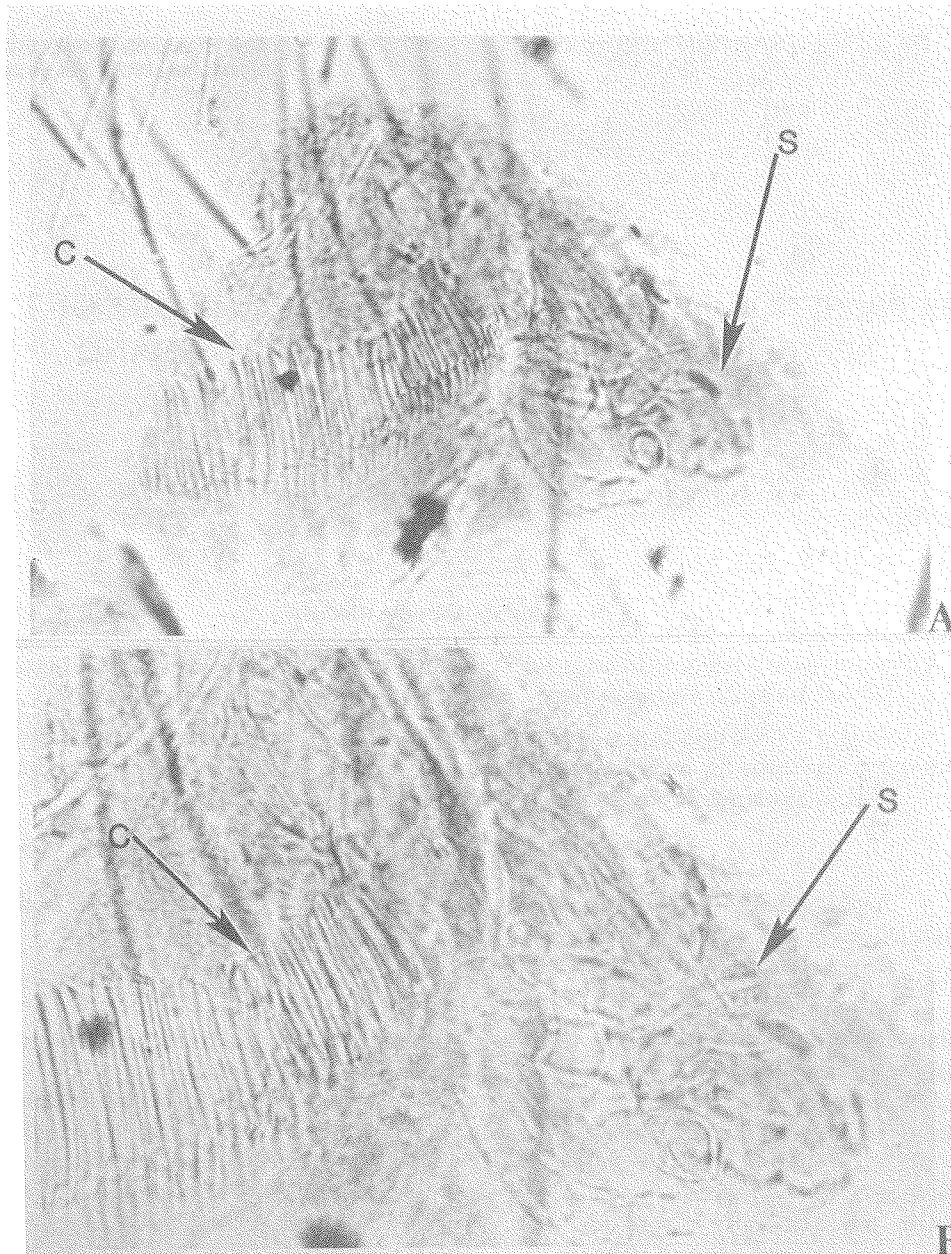


Fig. 1 - A) Springtail (S) caught in a comb-like crop teeth (C) at the hindgut; B) Enlargement of the comb-like crop teeth (C) and of the springtail (S)

We noted one female paratype of *Myrsidea s. subcoracis* Klockenhoff and Schirmers, 1976, with an intact springtail (Order Collembola) caught within the comb-like structure at the end of the hindgut (Fig. 1A, 1B), identified by J. F. Butler. The comb-like structure between the crop or foregut and the midgut has been given different descriptive names such as comb of teeth, crop teeth and comb-like sieve. We are

designating this structure as comb-like crop teeth after Waterhouse (1953). It functions as a sieve in *Amblycera* (Waterhouse 1953), but the teeth are small and sparse in *Ischnocera*. We believe this structure may be used for processing and/or straining food but may also have taxonomic value as the structure seems to vary by species. The specimen (DPI collection slide ZFMK 1975-1146,) was collected on a *Corvus corax subcorax* (*C. corax kretae*)



Fig. 2 - A) Body (B) and leg pieces (L) of a mite in the abdomen of *Philopterus* sp.; B) Enlargement of another piece of leg (L).

(Corvidae) from Konea, Kreta on February 1925.

Another louse (no. 1324, Y. O. collection), a specimen in the genus *Philopterus* had a mite body and leg pieces in the abdomen (Fig. 2A, 2B). The louse was collected on 15 July 1983 off *Manacus manacus* (Pipridae), at the Ubatuba Experimental Station in Ubatuba, São Paulo State, Brazil.

The findings of mite fragments and an intact springtail within the crops of lice may indicate predation as pointed out by Nelson (1971).

The phoretic and parasitic habits of lice, mites and other arthropods place these organisms in close proximity on the host body, thus facilitating the consumption of some of these organisms by lice.

That *Colpocephalum turbinatum*,

Myrsidea subcoracis (Menoponidae) and *Ricinus marginatus* (Ricinidae) might feed on small insects is not surprising as they are all amblycerans, a group in which some of its members are known to feed on blood. An example is *Throchiloecetes* spp. found on hummingbirds (Oniki, pers. obser.). However, the finding of a mite in the crop of a *Philopterus* sp. is unusual as the ischnocerans are known to feed mostly on feathers, scurfs, etc. but rarely on blood.

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