

## ECTOPARASITES (MALLOPHAGA, DIPTERA, ACARI) FROM ALASKAN BIRDS

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*Abstract.*—Records are given for 23 species of ectoparasites (7 Mallophaga, 2 Diptera: Hippoboscidae, and 14 Acari) of Alaskan birds. Three Mallophaga, 2 Diptera, and 12 Acari are recorded for the first time from Alaska; 4 Acari are also new to North America. Additional Mallophaga and Acari were determined to 10 different genera.

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This is the seventh in a series of papers reporting on ectoparasites from Alaskan birds and mammals and their nests. Haas et al. (1978, 1979, 1980 [2], *in press*) and Haas and Wilson (1980) have reported on the fleas of some Alaskan mammals and birds. Bird ectoparasites are generally less well known than mammal ectoparasites. Thus, a small number of birds yielded a large number of ectoparasites new for Alaska or noteworthy for North America. Half of the lice and more than half of the feather mites could not be specifically identified. It is reasonable to predict that most of these will be new species from our knowledge of the host relationships of these groups. All ectoparasites identified to species are new to Alaska (and some to North America), unless otherwise indicated under their discussion.

Scientific and common names of North American birds follow the A.O.U. Check-list (1957) and 32nd and 33rd Supplements (1973, 1976). Ectoparasites are deposited in the collection of Wilson; those records uncredited were collections made by Haas.

### MALLOPHAGA

#### Menoponidae

#### *Amyrsidea megalosoma* (Overgaard)

Record.—Lemeta, 32 km E: 10 ♂, 9 ♀, 37 N, *Pedioecetes phasianellus* (L.) (Sharp-tailed Grouse), 10.VI.1975, C. Nielsen.



*A. megalosoma* has been recorded from 4 hosts in 2 families of Galliformes (Emerson, 1972b). The type and true host is *Phasianus colchicus* L. (Ring-necked Pheasant) (Phasianidae); other hosts are North American grouse (Tetraonidae). It occurs on native grouse in at least part of the range of the introduced Ring-necked Pheasant in North America.

These specimens were collected from 1 of 45 confined birds imported from North Dakota, just over two months previously. Numerous lice were observed on the throat and ventral neck surface.

*Amyrsidea* sp.

Records.—All from *Canachites canadensis* (L.) (Spruce Grouse). Circle, 43 km SW: 2 ♀, 3 N, 29.VIII.1978, T. Rumfelt. Manley Hot Springs, 24 km NE: 2 ♀, 1 N, 1.IX.1978, T.R.

Emerson (1972b) listed the Spruce Grouse among several gallinaceous hosts on which *Amyrsidea* might be expected to occur. The females appeared similar to those of *A. megalosoma*; however, males are required for positive identification.

*Gruimenopon canadense* Edwards

Records.—All from *Grus canadensis* (L.) (Sandhill Crane). Delta Junction: 1 ♀, 5.X.1979, R. L. Zarnke. Palmer: 6 ♂, 3 ♀, 22.IX.1979, R. E. Barrett.

Recorded previously from this host from St. Micheal [=St. Michael] (Edwards, 1949).

*Trinoton querquedulae* (Linnaeus)

Record.—Wasilla: 1 ♀, *Anas clypeata* L. (Northern Shoveler), 6.IX.1975, R. Cartier.

A widespread parasite of ducks recorded from 41 species in North America (see Emerson, 1972b, 1972c; Threfall et al., 1979). Other Alaskan records are from Barter Island on *A. acuta* L. (Pintail) (Baker, 1919), Kodiak Island on *A. crecca* L. (Green-winged Teal) (Kellogg, 1899), and St. Paul Island on *A. penelope* L. (European Wigeon) (Ferris, 1923).

Philopteridae

*Brueelia* sp.

Records.—Matanuska Glacier, 1 km N: 1 ♂, 1 N, *Perisoreus canadensis* (L.) (Gray Jay), 27.IX.1978, T. Rumfelt. Palmer, 4 km E: 14 ♂, 57 ♀, 62 N, 2 *Ixoreus naevius* (Gmelin) (Varied Thrush), 2.V.1976, I. Sims.

*Brueelia* is a very large genus badly in need of revision. Emerson (1972a) listed 59 species from North America, including several from Corvidae and Turdidae, but none from the above genera. Ansari (1956) has described *B. glandarii perisoreus* from *P. i. infaustus* (L.) (Siberian Jay) from Lapland.



*Campanulotes bidentatus compar* (Burmeister)

Record.—Anchorage: 1 ♂, *Columba livia* Gmelin (Rock Dove), 26.X.1978, G. Whitehead.

A louse of domestic pigeons but recorded less frequently than the following species.

*Columbicola columbae* (Linnaeus)

Record.—Anchorage: 20 ♂, 23 ♀, 21 N, *Columba livia*, 26.X.1978, G. Whitehead.

The louse most often reported from this host. Tendeiro (1965) listed specimens from Juneau.

*Goniodes corpulentus* Kellogg and Mann

Records.—All from *Canachites canadensis*. Circle, 43 km SW: 3 ♀, 29.VIII.1978, T. Rumfelt. Manley Hot Springs, 24 km NE: 2 ♂, 1 ♀, 1.IX.1978, T.R. Talkeetna, 38.4 km S: 3 N, 17.IX.1978, T.R.; 18.4 km SW: 2 ♀, 1 N, 17.IX.1978, T.R.

Described by Kellogg and Mann (1912) from Norton Sound, western Alaska on this host.

*Penenirmus arcticus* Carriker

Record.—Palmer, 8.8 km SE: 2 ♂, 2 ♀, 10 N, *Picoides tridactylus* (L.) (Northern Three-toed Woodpecker), 27.X.1975.

The genus is of common occurrence on Picidae; the species also occurs on *P. arcticus* (Swainson) (Black-backed Three-toed Woodpecker). It has been recorded from both hosts in North America and from *P. tridactylus* in Siberia (Emerson and Johnson, 1961; Dalglish, 1972).

*Philopterus* sp.

Records.—Matanuska Glacier, 1 km N: 1 N, *Zonotrichia leucophrys* (Forster) (White-crowned Sparrow), 10.VII.1978, T. Rumfelt. Palmer, 4 km E: 1 ♂, 1 ♀, 1 N, 2 *Ixoreus naevius*, 2.V.1976, I. Sims. Talkeetna, 2.4 km S: 1 ♂, 4 ♀, *Catharus ustulatus* (Nuttall) (Swainson's Thrush), 2.V.1976. Wasilla: 2 ♂, 1 ♀, probably *Spizella arborea* (Wilson) (Tree Sparrow), 12.VII.1976.

A large and difficult genus for which there is no recent revision. Emerson (1972a) believed that such a revision would result in many of the North American species becoming synonyms. He did not list *Philopterus* from any of the above host genera but indicated it probably occurred on all species of Passeriformes. The adults from each host appear different.

Baker (1919) recorded *Philopterus subflavescens* (Geoffroy) from *Z. leucophrys* in Alaska; however, according to Clay and Hopkins (1950) the name was not used in a taxonomic sense by Geoffroy and there is no such species.



## DIPTERA

## Hippoboscidae

*Ornithomya anchineuria* Speiser

Record.—Palmer, 3 km W: 1 ♂, probably *Junco hyemalis* (L.) (Dark-eyed Junco), 19.VII.1976.

Maa (1969) distinguished two species of *Ornithomya* in North America, the above species and *bequaerti* which he described as new at the time. The two species previously had been confused as one under several different names in the North American literature (see Bequaert, 1954). As a result of his studies, earlier records need to be reexamined to determine the proper species, host relationships, and distribution. The only extensive report on the species since that of Maa (1969) is by Main and Anderson (1970) who recorded it from 14 families of Passeriformes and one family of Piciformes in Massachusetts.

The specimen differs in the following characters used by Maa (1969) to distinguish this species from *bequaerti*. There are only 3 areas devoid of setulae (bare strips) in cell 1m rather than 4 (at most 2 in *bequaerti*). Also the side-piece of tergite 6 is elongate, narrowed anteriorly and over 2 times as long as wide, the same as for *bequaerti*.

There was a cluster of mite eggs, but no mites, attached to the basal veins on the underside of each wing. Main and Anderson (1970) reported 7 of 235 specimens infested with *Myialges anchora* Trouessart.

The junco also was infested with *O. bequaerti*. This is the first positive report of both species of flies being collected on the same host although Maa (1969) listed one suspected case.

*Ornithomya bequaerti* Maa

Records.—Circle, 35 km SW: 1 ♀, *Canachites canadensis*, 29.VIII.1978, T. Rumfelt. Palmer, 3 km W: 1 ♀, probably *Junco hyemalis*, 19.VII.1976. Wasilla: 2 ♂, *Catharus ustulatus*, 12.VII.1976.

The species was described from Canada and since then has been recorded from Massachusetts (Main and Anderson, 1970). Maa (1969) mentioned having seen a number of specimens from the United States for which he failed to keep the collection data. Small passerine birds, especially Fringillidae are preferred hosts, but there also are records from Strigidae, Picidae, Phasianidae, and Corvidae (Maa, 1969). The Spruce Grouse and Swainson's Thrush are new host records.

Some minor variations from the original description were present in our material. Cell 1m had some small areas lacking setulae adjacent to vein M1 + 2. Also the narrow band of setulae in cell 2m was either lacking or much less extensive than shown in Maa's (1969) figure 17b. The sidepiece of tergite 6 had from 1 to 4 long setae and 5 to 23 short to medium setae. Maa (1969) indicated 2 long setae and about 20 short ones for the species.



Two flies carried three female *Myialges pari* Fain. A fly from Wasilla had a cluster of mite eggs, one with a mite, attached to the basal veins on the underside of each wing. The fly from Palmer had one mite and three eggs and one mite, respectively, under each wing in a similar position. *M. pari* was described from Belgium, from the Great Tit, *Parus major* L. and on several *O. avicularia* L. from the Coal Tit, *Parus ater* L. (type-host), Song Thrush, *Turdus philomelos* Brehm, and Mistle Thrush, *T. viscivorus* L. (Fain, 1966).<sup>1</sup> The only difference between our specimens and the original description is size. The propodosomal and hysterosomal shields are slightly smaller in the Alaskan specimens. The mite previously has not been recorded from this species of fly or from North America.

#### ACARI

##### Parasitiformes

##### Rhinonyssidae

##### *Ptilonyssus perisorei* George

Record.—Copper Center, 10 km N: 3 ♀, *Perisoreus canadensis*, 20.VII.1978, T. Rumfelt.

Previously known only from New Mexico and Utah from the above host (type), Steller's Jay, *Cyanocitta stelleri* (Gmelin) and Scrub Jay, *Aphelocoma coerulescens* (Bosc) (George, 1961; Spicer, 1978).

##### *Ptilonyssus sairae* Castro

Record.—Talkeetna, 19.2 km S: 11 ♀, 2 N, 1 L, *Dendroica coronata* (L.) (Yellow-rumped Warbler), 1.VI.1976.

A New World species recorded from 79 different hosts, including the above, in 9 families of Passeriformes (see Pence and Casto, 1976; Spicer, 1977a, 1977b, 1978).

Pence and Casto (1976) studied in detail a group of closely related species which they called the *Ptilonyssus* "sairae" complex. They concluded *P. sairae* was a highly variable species and synonymized it and several other species.

##### *Ptilonyssus carduelis* Fain

Record.—Wasilla: 3 ♀, *Carduelis flammea* (L.) (Common Redpole), 15.III.1976.

Originally described from the Linnet, *C. cannabina* (L.) (type-host) and Greenfinch, *Chloris chloris* (L.) in Belgium (Fain, 1962). Subsequently recorded from the same 2 hosts plus others in the USSR (Bregetova, 1967) and

<sup>1</sup> Fain (1966) listed *T. ericetorum* Turton, a synonym of *T. philomelos*, instead of *T. viscivorus* in 2 tables summarizing mites and hosts!



*C. chloris* in Australia (introduced) (Domrow, 1969). All hosts are closely related and belong to the Fringillidae: Fringillinae (Passeriformes).

Acariformes  
Trombiculidae

*Neotrombicula pomeranzevi* (Schluger)

Record.—Yakutat, 4.4 km SE: 1 L, probably *Ixoreus naevius*, 21.VI.1979.

Originally recorded from Alaska as *Trombicula* (*Neotrombicula*) *alaskensis* Brennan and Wharton from Swainson's Thrush at Juneau (Brennan and Wharton, 1950). This taxon was subsequently shown to be a synonym of the above species by Sasa and Jameson (1954). It has been recorded from northeastern Asia and northwestern North America; other Alaskan hosts are *Clethrionomys* sp., *Microtus* sp., and *Turdus migratorius* L. (American Robin) (Wharton and Fuller, 1952).

The palpal genual seta on 1 side was nude rather than branched as originally described. This was also the case in several specimens in the USNM collection (Goff, *in litt.*).

Glycyphagidae

*Dermacarus alaskensis* Fain, Philips, and Wilson

Record.—Palmer, 8.8 km SE: 2 H, *Picoides tridactylus*, 27.X.1975.

*D. alaskensis* was recently described from Alaska on the basis of the above hypopi (Fain et al., 1979). It was the first report of the genus from a bird although 2 species, *D. pilatarsus* Fain and Philips and *D. norvegicus* Fain, Philips, and Wilson, have been described from the nests of raptors.

The genus normally is parasitic on mammals, especially rodents, and the occurrence on birds (or in their nests) is the result of contamination by mammals. They may have been prey of the bird or they may have used the nest cavity at some time as a den. Mammals that might occasionally use woodpecker holes, in the area where *D. alaskensis* was collected, are *Myotis lucifugus* (LeConte) (Little Brown Myotis), *Tamiasciurus hudsonicus* (Erxleben) (Red Squirrel), and *Clethrionomys rutilus* Pallas (Northern Red-backed Vole).

Pyroglyphidae

*Euroglyphus longior* (Trouessart)

Record.—Palmer, 8.8 km SE: 1 ♂, *Picoides tridactylus*, 27.X.1975.

This is one of the so-called house dust mites, some species of which are responsible for house dust allergy in man. The group has not been reported previously from Alaska.

*E. longior* has been recorded infrequently from Europe, North America, and Asia (Bronswijk and Sinha, 1971); however, some of these reports were prior to the recognition of *E. osu* Fain and Johnston, a similar species. *E.*



*maynei* (Cooreman), the remaining species in the genus, is generally the third most common pyroglyphid found in house dust and a proven producer of house dust allergen. It has yet to be recorded from North America.

#### Analgidae

##### *Analges* sp.

Records.—Anchorage: 1 N, *Turdus migratorius*, 7.VII.1978, T. Rumfelt; 1 ♂, 4 ♀, 8 N, *Spizella arborea*, 10.IX.1978, J. C. Allen. Baranof Island, Sitka, 19 km NE (Fish Bay): 4 ♂, 7 ♀, 31 N, 3 L, *Leucosticte tephrocotis* (Swainson) (Gray-crowned Rosy Finch), 1.I.1980, L. Johnson. Matanuska Glacier, 1 km N: 5 ♂, 1 ♀, 7 N, *Zonotrichia leucophrys*, 10.VII.1978, T.R. Palmer, 4 km E: 1 ♂, 2 ♀, 2 *Ixoreus naevius*, 2.V.1976, I. Sims. Talkeetna, 2.4 km S: 20 ♂, 35 ♀, 13 N, *Catharus ustulatus*, 2.VI.1976; 19.2 km S: 1 ♀, *Dendroica coronata*, 1.VI.1976. Wasilla: 2 ♀, 2 N, probably *S. arborea*, 12.VII.1976.

Common feather mites of Passeriformes. The genus, like many groups of feather mites, needs revision; the last was by Trouessart in 1887. There are at least 5 species in the above material. Polymorphism occurs in the males and both large and small morphs were present in those from *C. ustulatus* and *L. tephrocotis*.

##### *Megninia* sp.

Records.—All from *Canachites canadensis*. Circle, 43 km SW: 1 ♂, 1 N, 29.VIII.1978, T. Rumfelt. Talkeetna, 39.2 km S: 1 ♂, 5 ♀, 5 N, 11.IX.1978, T.R.; 46.4 km S: 3 ♂, 1 ♀, 5 N, 11.IX.1978, T.R.; 38.4 km S: 1 ♂, 17.IX.1978, T.R.; 18.4 km SW: 1 ♂, 1 ♀, 17.IX.1978, T.R.

Common feather mites of Galliformes. The New World species have received less attention than those in the Old World.

##### *Mesalgoides* sp.

Record.—Anchorage: 4 ♂, 6 ♀, 17 N, *Spizella arborea*, 10.IX.1978, J. C. Allen.

The genus was erected for certain members formerly included in *Mesalges* (see Gaud and Atyeo, 1967). It occurs mostly on Passeriformes but a few species are known from other orders.

#### Avenzoariidae

##### *Pteronyssus monoplax* Cerny

Record.—Palmer, 8.8 km SE: 1 ♂, 4 ♀, 433 N, 1 L, *Picoides tridactylus*, 27.X.1975.

Cerny (1969) described this species from Czechoslovakia and reviewed the history of the name, a former *nomen nudum*. It has been recorded from several European localities and North Africa, and from 5 species of *Picoides*



(=*Dendrocopus*) (Piciformes, Picidae), including the above, and the Black-naped Green Woodpecker, *Picus canus* Gmelin (Vasilev, 1962; Cerny, 1969; Cerny and Schumilo, 1973).

Our specimens do not differ significantly from the original description. In the females, the hysterosomal shield is not uniformly sclerotized and the margin is more irregular than illustrated. In some specimens, anterior heavily sclerotized irregularities appear as small projections or points. The narrow, deep cleft of the posterior margin, described and illustrated by Cerny (1969), is a very lightly sclerotized portion of the shield. Examination of 3 females from the type-series (paratypes?) indicated they also shared these variations. The species is recorded from North America for the first time.

*Pteronyssus* probably *picoides* Cerny

Record.—Palmer, 8.8 km SE: 8 N, *Picoides tridactylus*, 27.X.1975.

There were nymphs of another species of *Pteronyssus* with the material of *P. monoplax*. These may be distinguished from that species by the presence of spiculiform subhumeral setae. In all stages of *P. monoplax* these setae are broadly lanceolate.

*P. brevipes* Berlese and *P. picoides* have been recorded from *P. tridactylus* in the Old World (Cerny and Schumilo, 1973). *P. picoides* has spiculiform subhumeral setae while it is known only that the subhumeral setae of *P. brevipes* are not broadly lanceolate. It is impossible to be certain of the species without adult specimens; however, we suspect they are *P. picoides*. It has not been recorded from the New World.

Dermoglyphidae

*Dermoglyphus* sp.

Record.—Palmer, 8.8 km SE: 1 ♂, 6 ♀, *Picoides tridactylus*, 27.X.1975.

*Dermoglyphus* is found within the feather quills. No special attempt was made to obtain these mites and the specimens were with the other ectoparasites collected from the host. The genus has received little attention from acarologists and has not been reported from Picidae in North America.

Proctophyllodidae

*Proctophyllodes hylocichlae* Atyeo and Braasch

Record.—Talkeetna, 2.4 km S: 2 ♂, 8 ♀, *Catharus ustulatus*, 2.VI.1976.

Previously recorded from *Catharus guttatus* (Pallas) (Hermit Thrush) the type host and *C. ustulatus* from 6 localities in North America (Atyeo and Braasch, 1966).

*Proctophyllodes polyxenus* Atyeo and Braasch

Records.—Anchorage: 1 ♂, 1 ♀, 1 N, *Spizella arborea*, 10.IX.1978, J. C. Allen. Matanuska Glacier, 1 km N: 16 ♀, *Zonotrichia leucophrys*, 10.VII.1978, T. Rumfelt.



Listed by Atyeo and Braasch (1966) from 37 different hosts, including the above, from many localities in North America. Because of the diverse group of hosts (in 6 families) they suspected the material more likely represented a species complex.

*Proctophyllodes quadrisetosus* Atyeo and Braasch

Record.—All from *Dendroica coronata*. Copper Center, 6.1 km S: 1 ♂, 2 ♀, 1 N, 11.V.1978, T. Rumfelt. Talkeetna, 19.2 km S: 1 N, 1.VI.1976.

Previously recorded from this, the type-host, *D. chrysoparia* Sclater and Salvin (Golden-cheeked Warbler), and *D. virens* (Gmelin) (Black-throated Green Warbler) from several localities in North America (Atyeo and Braasch, 1966; Cerny, 1967).

*Proctophyllodes* sp.

Records.—Copper Center, 10 km N: 1 ♀, *Perisoreus canadensis*, 20.VII.1978, T. Rumfelt. Matanuska Glacier, 1 km N: 1 ♀, *P. canadensis*, 27.IX.1978, T.R. Wasilla: 1 ♂, 1 N, *Carduelis flammea*, 15.III.1976.

The specimens (in copulo) from *C. flammea* are in the *pinnatus* species group of Atyeo and Braasch (1966) and the male keys to *P. ludovicianus* Atyeo and Braasch. It is not this species although they share some similarities. *P. glandarinus* (Koch) and *P. pinnatus* (Nitzsch) have been recorded from *Carduelis* (*Acanthis*) in the Old World and the latter species is the one you would expect our specimens to resemble.

Trouessartiidae

*Trouessartia* sp.

Record.—Talkeetna, 2.4 km S: 1 ♂, 3 ♀, 9 N, *Catharus ustulatus*, 2.VI.1976.

Santana (1976) redescribed the 71 valid species of *Trouessartia*, estimating this was but 10–15% of the total species. He listed several species from Turdidae (=Muscicapidae, Turdinae) but none from *Catharus*. The above material should be a new species. To date all but a few species are from Passeriformes: Passeres.

Pterolichidae

*Geranolichus canadensis* Atyeo and Windingstad

Record.—Palmer: 19 ♂, 34 ♀, 14 N, *Grus canadensis*, 22.IX.1979, R. E. Barrett.

This was the most common of four species of feather mites recently described from Sandhill Cranes in Indiana and Wisconsin (see Atyeo and Windingstad, 1979).

Those specimens we mounted differed slightly in some characteristics from the original description. Four of seven females and one of three males had setae *sce* off the propodosomal shield. The same females had the me-



dian portion of the hysterosomal shield terminating just anterior to the setal cluster *d* 3, *d* 4, and *l* 3. Lacunae were slightly more numerous on the hysterosomal shield in both sexes than originally illustrated.

*Pterolichus* sp.

Records.—All from *Canachites canadensis*. Kenai Peninsula, confluence Kenai and Killey Rivers: 2 ♂, 5 ♀, 44 N, 24.IX.1978, T. Rumfelt; 1 ♀, 11 N, 7.X.1978, T.R. Talkeetna, 39.2 km S: 1 ♀, 1 N, 11.IX.1978, T.R.; 38.4 km S: 2 ♂, 8 ♀, 27 N, 17.IX.1978, T.R.; 18.4 km SW: 1 ♂, 2 ♀, 10 N; many ♂ ♀ N, 17.IX.1978, T.R.

Especially common on Galliformes but occurring also on other orders. No comprehensive recent study available.

Freyanidae

*Freyana anatina anatina* (Koch)

Record.—Wasilla: 10 ♂, 9 ♀, *Anas clypeata*, 6.IX.1975, R. Cartier.

*F. anatina* is a widely distributed feather mite restricted to the Anatinae. Dubinin (1953) divided the species into several subspecies restricting each to a few closely related host genera. Males are polymorphic and both size morphs were present in our sample.

There are records from this host in the USSR (Dubinin, 1953), Canada (Buscher, 1965), and Cuba (Cerny, 1967).

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Literature Cited

- American Ornithologists' Union. 1957. Check-list of North American birds. Fifth edition. American Ornithologists' Union, Baltimore, Maryland. 691 pp.
- . 1973. Thirty-second supplement to the American Ornithologists' Union check-list of North American birds. *Auk* 90: 411–419.
- . 1976. Thirty-third supplement to the American Ornithologists' Union check-list of North American birds. *Auk* 93: 875–879.
- Ansari, M. A. R. 1956. A revision of the *Brüelia* (Mallophaga) species infesting the Corvidae. Part I. *Bull. Br. Mus. (Nat. Hist.) Entomol.* 4: 371–406.
- Atyeo, W. T. and N. L. Braasch. 1966. The feather mite genus *Proctophyllodes* (Sarcoptiformes: Proctophyllodidae). *Bull. Univ. Nebr. State Mus.* 5: 1–354.



- Atyeo, W. T. and R. M. Windingstad. 1979. Feather mites of the Greater Sandhill Crane. *J. Parasitol.* 65: 650–658.
- Baker, A. W. 1919. Mallophaga of the Canadian Arctic Expedition, 1913–18. *Rep. Can. Arct. Exped.* 1913–18. 3: 3D–9D.
- Bequaert, J. C. 1954. The Hippoboscidae or louse-flies (Diptera) of mammals and birds. Part II. Taxonomy, evolution and revision of American genera and species. *Entomol. Am.* 34(N.S.): 1–232.
- Bregetova, N. G. 1967. The generic groups of rhinonyssid mites—parasites of birds. III. Genera *Neonyssus* Hirst, 1921 and *Neonyssoides* Hirst, 1923. *Parazitol. Sb.* 23: 124–137.
- Brennan, J. M. and G. W. Wharton. 1950. Studies on North American chiggers. No. 3. The subgenus *Neotrombicula*. *Am. Midl. Nat.* 44: 153–197.
- Bronswijk, J. E. M. H. van and R. N. Sinha. 1971. Pyroglyphid mites (Acari) and house dust allergy. *J. Allergy* 47: 31–52.
- Buscher, H. N. 1965. Ectoparasites from anseriform birds in Manitoba. *Can. J. Zool.* 43: 219–221.
- Cerny, V. 1967. Lista de loc acaros parasitos de aves reportadas de Cuba. *Mus. Felipe Poey, Traba. Divulg.* No. 45, 23 pp.
- . 1969. *Pteronyssus monoplax*, une espèce nouvelle d'acarien plumicole (Avenzoariidae, Sarcoptiformes). *Acarologia* (Paris) 11: 290–294.
- Cerny, V. and R. P. Schumilo. 1973. The feather mite genus *Pteronyssus* (Analgoidea, Avenzoariidae) on European woodpeckers. *Folia Parasitol. (Prague)* 20: 89–95.
- Clay, T. and G. H. E. Hopkins. 1950. The early literature on Mallophaga (Part I). *Bull. Br. Mus. (Nat. Hist.) Entomol.* 1: 223–272.
- Dagleish, R. C. 1972. The *Penenirmus* (Mallophaga: Ischnocera) of the Picidae (Aves: Pici-formes). *J. N.Y. Entomol. Soc.* 80: 83–104.
- Domrow, R. 1969. The nasal mites of Queensland birds (Acari: Dermanyssidae, Ereyenetidae, and Epidermoptidae). *Proc. Linn. Soc. N.S.W.* 93: 297–426.
- Dubinin, V. B. 1953. Fauna SSSR. Arachnida. Feather mites (Analgesoidea). Part II. Families Epidermoptidae and Freyanidae. *Akad. Nauk SSSR* 6(6): 1–411.
- Edwards, R. L. 1949. A new *Gruimenopon* (Mallophaga—Menoponidae). *Psyche* (Camb. Mass.) 56: 116–119.
- Emerson, K. C. 1972a. Checklist of the Mallophaga of North America (North of Mexico) Part I. Suborder Ischnocera. Deseret Test Center, Dugway, Utah. 200 pp.
- . 1972b. Checklist of the Mallophaga of North America (North of Mexico) Part II. Suborder Amblycera. Deseret Test Center, Dugway, Utah. 118 pp.
- . 1972c. Checklist of the Mallophaga of North America (North of Mexico) Part IV. Bird host list. Deseret Test Center, Dugway, Utah. 216 pp.
- Emerson, K. C. and J. C. Johnson, Jr. 1961. The genus *Penenirmus* (Mallophaga) found on North American woodpeckers. *J. Kans. Entomol. Soc.* 34: 34–43.
- Fain, A. 1962. Les Acariens parasites nasicoles des oiseaux de Belgique. 1. Deux espèces nouvelles de Rhinonyssidae (Mesostigmata) avec une liste des espèces connues de Belgique. *Bull. Ann Soc. R. Belge. Entomol.* 98: 252–270.
- . 1965(1966). A review of the family Epidermoptidae Trouessart parasitic on the skin of birds (Acarina: Sarcoptiformes). *Verh. K. Vl. Acad. Wet. Lett. Schone Kunsten Belg. Kl. Wet.* 27(84). Part I, 176 pp.; Part II, 144 pp.
- Fain, A., J. R. Philips, and N. Wilson. 1979. Two new species of the genus *Dermacarus* Haller, 1880 (Acari: Glycyphagidae). *Int. J. Acarol.* 5: 73–76.
- Ferris, G. F. 1923. Mallophaga. North Amer. Fauna No. 46, p. 141.
- Gaud, J. and W. T. Atyeo. 1967. Genres nouveaux de la famille des Analgidae, Trouessart et Megnin. *Acarologia* (Paris) 9: 447–464.



- George, J. E. 1961. The nasal mites of the genus *Ptilonyssus* (Acarina: Rhinonyssidae) occurring in some North American passeriform birds. J. Kans. Entomol. Soc. 34: 105–132.
- Haas, G. E., R. E. Barrett, and N. Wilson. 1978. Siphonaptera from mammals in Alaska. Can. J. Zool. 56: 333–338.
- Haas, G. E., L. Johnson, and N. Wilson. *In press*. Siphonaptera from mammals in Alaska. Supplement II. Southeastern Alaska. J. Entomol. Soc. B.C.
- Haas, G. E., T. Rumfelt, R. E. Barrett, and N. Wilson. 1980. Fleas from some Alaskan birds (Siphonaptera). Pan-Pac. Entomol. 56: 105–106.
- Haas, G. E., T. Rumfelt, L. Johnson, and N. Wilson. 1979. Siphonaptera from mammals in Alaska. Supplement I. Can. J. Zool. 57: 1822–1825.
- Haas, G. E., T. Rumfelt, and N. Wilson. 1980. Fleas (Siphonaptera) from nests and burrows of the Bank Swallow (*Riparia riparia*) in Alaska. Northwest Sci. 54: 210–215.
- Haas, G. E. and N. Wilson. 1979(1980). Fleas (Siphonaptera) from nests of the Cliff Swallow (*Petrochelidon pyrrhonota*) in Alaska. Wasmann J. Biol. 37: 59–63.
- Kellogg, V. L. 1899. Mallophaga from birds of Panama, Baja California, and Alaska. Occas. Pap. Calif. Acad. Sci. 6: 3–52.
- Kellogg, V. L. and W. M. Mann. 1912. A third collection of Mallophaga from Alaskan birds. Entomol. News 23: 12–17.
- Maa, T. C. 1969. Notes on the Hippoboscidae (Diptera). II. Pac. Insects Monogr. 20: 237–260.
- Main, A. J. and K. S. Anderson. 1970. The genera *Ornithoica*, *Ornithomya*, and *Ornithoctona* in Massachusetts (Diptera: Hippoboscidae). Bird-Banding 41: 300–306.
- Pence, D. B. and S. D. Casto. 1976. Studies on the variation and morphology of the *Ptilonyssus* “*sairae*” complex (Acarina: Rhinonyssinae) from North American passeriform birds. J. Med. Entomol. 13: 71–95.
- Santana, F. J. 1976. A review of the genus *Trouessartia* (Analgoidea: Alloptidae). J. Med. Entomol., Suppl. 1, 128 pp.
- Sasa, M. and E. W. Jameson, Jr. 1954. The trombiculid mites of Japan. Proc. Calif. Acad. Sci. (4) 28: 247–321.
- Spicer, G. S. 1977a. Two new nasal mites of the genus *Ptilonyssus* (Mesostigmata: Rhinonyssidae) from Texas. Acarologia (Paris) 18: 594–601.
- . 1977b. New host records for some avian nasal mites (Acari: Rhinonyssinae, Speleognathinae). J. Med. Entomol. 14: 498.
- . 1978. A new species and several new host records of avian nasal mites (Acarina: Rhinonyssinae, Turbinoptinae). J. Parasitol. 64: 891–894.
- Tendeiro, J. 1962(1965). Estudos sobre Malófagos. Revisão monográfica do género *Columbicola* Ewing (Ischnocera, Philopteridae). Mem. Junta Invest. Ultramar, Ser II, No. 32. 460 pp.
- Threfall, W., C. E. Bourgeois, and G. A. Bain. 1979. Mallophaga from some North American Anatidae. Proc. Entomol. Soc. Wash. 81: 327–328.
- Trouessart, E. L. 1886(1887). Diagnoses d'espèces nouvelles de sarcoptides plumicoles (Analgesinae). Bull. Soc. Etud. Sci. Angers. 16: 85–156. (not seen)
- Vasilev, I. D. 1962. Study of the species composition, biology, and ecology of feather Acari (Analgesoidea) on birds from the environments of Petrich and Gotse Delchev. Bulgarian Acad. Sci., Bull. Dep. Biol. Sci., Nat. Centers Disease Petrich and Gotse Delchev Areas, pp. 141–166. (not seen)
- Wharton, G. W. and H. S. Fuller. 1952. A manual of the chiggers. Mem. Entomol. Soc. Wash. No. 4, 185 pp.





Wilson, N and Haas, Glenn E. 1980. "Ectoparasites (Mallophaga, Diptera, Acari) From Alaskan Birds." *Proceedings of the Entomological Society of Washington* 82, 541–552.

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