

Order MALLOPHAGA.

This order contains the "biting lice," infesting warm-blooded animals generally, but so commonly found on birds that the term "bird-lice" has come to be generally used for them. They do not suck blood, the mouth parts being formed for biting only, but live among the hair and feathers of their hosts, subsisting upon what they can scrape from the surface. While they do not actually puncture the skin or feed on living tissue, they gnaw the soft material at the base of hair and feathers, eat the particles of dry scurf, the clotted blood at the edge of a scratch or other wound, and create a more or less constant irritation, which is likely to result in a loss of hair or plumage and a consequent mangy appearance. I have seen ill kept dairy cattle with patches bare of hair from this cause. In shape these parasites are flattened, elongate oval, with a large obtuse head, and often bulging eye prominences. The eggs are attached to hair or feathers, and the young resemble the adults in general appearance, there being no obvious transformations. Practically all birds, wild as well as domesticated, are infested, and in this list Prof. Herbert Osborn, of the Ohio State University, who has been good enough to aid me in its preparation, has indicated all the species whose host is known to occur in New Jersey; for where the host occurs the parasite is almost sure to be found when sought.

The list as it stands contains just one hundred species. It is probable that a few of these will never be found, either because the birds themselves are very occasional visitors, e. g., the Pelicans, or because the distribution of the parasite is really a very limited one. On the other hand, only a small proportion of our wild birds have been closely examined, and it is at least probable that a large percentage of those from which no parasites are yet reported will be found to be infested. So I believe that the list will be increased rather than lessened as the result of future work.

Remedial measures for domesticated birds are plenty of dust, with which they may thoroughly powder themselves, and the free use of white-wash and crude petroleum in chicken and other fowl-houses. Horses and cattle may be thoroughly brushed occasionally with a stiff brush dipped from time to time in crude petroleum. Kerosene must not be used, because it is likely to take out the hair. Where its application is convenient on small birds, carbolated vaseline can be employed to good advantage. On other animals carbolated soaps, miscible oils and other materials of that character may be used, and, in general, the amount of success is in proportion to the determination and persistence of the person making the application.

Family PHILOPTERIDÆ.

The antennæ are filiform, five-jointed, exposed; the tarsi have two claws, and all the species are parasitic on birds.

DOCOPHORUS Nitzsch.

- SARMONISSONIA*
D. lari Denny. Found on several species of gulls occurring along the Jersey shore and bays.
- SARMONISSONIA*
D. melanocephalus Burm. Occurs on gulls and terns of various species in North and South America and Europe.
- ANITOCUS*
D. icterodes Nitzsch. Common on ducks and geese, domesticated and wild.
- ANITOCUS*
D. cygni Denny. The little red swan louse; common throughout Europe and eastern North America.
- SARMONISSONIA*
D. fusiformis Denny. Occurs on the Sandpipers; "Tringa" sp.
- CUMMINGSIELLA*
D. testudinarius Denny. Taken on Bartrams Sandpiper; also known as "Upland," "Field" or "Grass" Plover.
- CRASPEDORHYNCHUS*
D. platystomus Nitzsch. Infests hawks and eagles generally.
- CRASPEDORHYNCHUS*
D. buteonis Pack. Found on the red-shouldered hawk and on one of the king-birds, "Tyrannus atra."
- CRASPEDORHYNCHUS*
D. halioti Osb. Found on the bald eagle.
- STRIGIPHILUS*
D. cursor Nitzsch. Occurs on owls of various kinds.
- STRIGIPHILUS*
D. bubonis Osb. Infests the great horned owl.
- STRIGIPHILUS*
D. ceblebrachys Nitzsch. Parasitic on the snowy owl.
- CUCCULIPECUS*
D. coccygi Osb. Taken from the yellow-billed cuckoo.
- PENINIRMUS*
D. superciliosus Nitzsch. Infests the hairy woodpecker.
- PHILOPTERUS*
D. fusco-ventralis Osb. Occurs on the wood pewee.
- PHILOPTERUS*
D. corvi Osb. Makes life miserable for the common crow.
- INCLIPTRON*
D. transpositus Kellogg. Found on the cowbird.
- PHILOPTERUS*
D. agelaii Osb. Infests the red-winged blackbird.
- PHILOPTERUS*
D. quiscali Osb. A parasite of the crow blackbird.
- PHILOPTERUS*
D. compar Piaget. On the American or red cross-bill.
- PHILOPTERUS*
D. communis Nitzsch. A general parasite on larks, blackbirds and many other Passerines.

NIRMUS Nitzsch.

- QUADRACEPS*
N. lineolatus Nitzsch. Taken on various gulls in Europe and America.
- QUADRACEPS*
N. furvus Nitzsch. Occurs on "Phalaropus," and also recorded from Plovers.
- PILEUS QUADRACEPS*
N. piceus Nitzsch. On the American Avocet or "Blue-stocking."
- QUADRACEPS*
N. signatus Piaget. A companion of the preceding on the same hosts.
- RETUNDICEPS*
N. cordatus Osb. Recorded from the Hudsonian Godwit or ring-tailed Marlin.
- QUADRACEPS*
N. orarius Kellogg. A parasite of the Golden Plover.
- BRUELLIA*
N. boophilus Kellogg. Infests the "Killdeer."
- BRUELLIA*
N. abruptus Osb. Infests the common "Bob White."

- DEGEERIELLA*
N. fuscus Nitzsch. A common parasite of eagles, hawks and falcons.
- DEGEERIELLA*
N. discocephalus Nitzsch. Another parasite of the bald eagle.
- CUCCULIPECUS*
N. fenestratus Nitzsch. Infests the black-billed cuckoo.
- PICKOLA*
N. candidus Nitzsch. Parasitic on the hairy and red-bellied woodpecker and on the "Flicker"
- PENINIRMUS*
N. tyrannus Osb. Infests kingbirds.
- BRUELLIA*
N. rotundatus Osb. Parasitic on the common crow.
- DEGEERIELLA*
N. secundarius Osb. With the preceding on the same host.
- BRUELLIA*
N. ornatissimus Giebel. On the red-winged blackbird.
- BRUELLIA*
N. illustris Kellogg. With the preceding on the same host.
- BRUELLIA*
N. picturatus Osborn. A parasite of the meadow lark.
- BRUELLIA*
N. cyclothorax Nitzsch. Infests the English sparrow.
- BRUELLIA*
N. pallidus Osb. From the rose-breasted grosbeak.
- BRUELLIA*
N. gracilis Nitzsch. A parasite of the Purple Martin.
- PICKOLA*
N. brachythorax Giebel. Found on cedar-bird and other wax-wings.
- STURNIDOCUS*
N. orpheus Osb. A parasite of the catbird.
- STURNIDOCUS*
N. simplex Kellogg. Infests the robin.

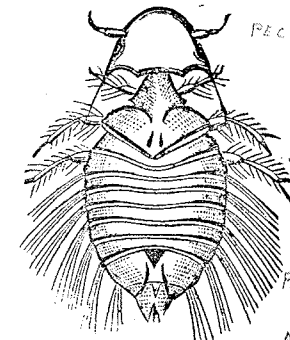


Fig. 6.—Turkey-louse, *Goniodes stylifer*.

LIPEURUS Nitzsch.

- PECTINOPYGUS*
L. longicornis Piaget. Occurs on the double-crested Cormorant.
- PECTINOPYGUS*
L. forficulatus Nitzsch. Found on Pelicans. Two species of Pelicans are listed as occurring in New Jersey, and specimens of one of the species are in the State Museum; but they are rare visitors, and it is stretching matters a little to record this as a New Jersey insect.
- PECTINOPYGUS*
L. bifasciatus Piaget. The same remarks apply to this species.
- ANATICOLA*
L. squalidus Nitzsch. The common duck-louse; occurs on both wild and domesticated forms.
- ANATICOLA*
L. jejunos Nitzsch. Found on geese; wild and domesticated.
- ARDEICOLA*
L. leucopygas Nitzsch. Occurs on Herons and Bitterns.
- FULVICOSSULA*
L. botauri Osb. On the American Bittern or marsh hen.
- FULVICOSSULA*
L. luridus Nitzsch. Infests the American Coot or mud hen.
- RHYNONIRMUS*
L. picturatus Kellogg. Occurs with the preceding.
- OTIDOCUS*
L. infuscatus Osb. Found on woodcock and upland plover.
- OTIDOCUS*
L. dissimilis Piaget. Another parasite of the "Bob White."
- XYLIPEURUS*
L. polytrapezius Nitzsch. The turkey louse.
- LIPEURUS CAPENIS*
L. variabilis Nitzsch. Common on domestic fowls.
- CUCCULIPECUS*
L. heterographus Nitzsch. Occurs with the preceding.
- COLONICOLA*
L. baculus Nitzsch. Found on domestic pigeons.

ORNITHOBIUS Denny.

- O. goniopleurus Denny. Infests the Canada goose.
- O. cygni Linn. The white swan louse.

ONCOPHORUS Rudow.

- O. minutus Nitzsch. On the American Coot or mud hen.

CAMPANULITES
GONIOCOTES Burm.

- G. compar Nitzsch. Another pigeon parasite.

GONIOIDES Nitzsch.

- G. dispar Nitzsch. A parasite of quail.
- CHELOPSTIS
G. stylifer Nitzsch. Another turkey louse.
- COLOCERAS
G. damicornis Nitzsch. Infests the common pigeon.
- PAVONIS (LINN.) 1758
G. faicicornis Nitzsch. Common on pea-fowl.

Family TRICHODECTIDÆ.

Like the preceding family, but the antennæ are 3-jointed, the tarsi have only one claw, and all the species infest mammals.

TRICHODECTES Nitzsch.

- T. scalaris Nitzsch. Common on domestic cattle.
- T. parumpilosus Piaget. Biting louse of the horse.

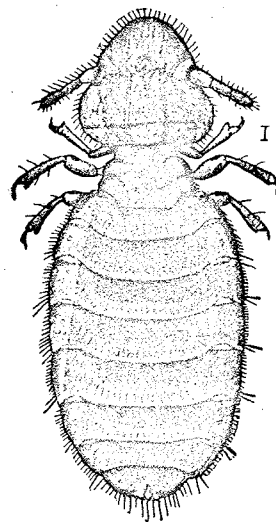


Fig. 7.—Cow-louse, *Trichodectes scalaris*.

- T. retusus Nitzsch. Recorded from weasel.
- T. mephitidis Osb. Occurs on the common skunk.

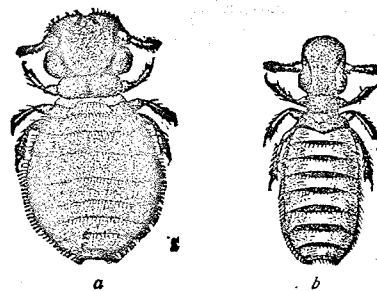


Fig. 8.—Dog-louse (a) and sheep-louse (b), *Trichodectes latus* and *sphaerocephalus*.

- T. climax Nitzsch. Infests the domestic goat.
- T. sphaerocephalus Nitzsch. Found on domestic sheep.
- T. subrostratus Nitzsch. Infests the house cat.

Family LIOTHEIDÆ.

The antennæ are 4-jointed, with an enlarged club at tip, concealed; tarsi with two claws, and all the species infesting birds.

PHYSOSTOMUM Nitzsch.

- RICINUS
P. lineatum Osb. Infests the ruby-throated humming bird.
- "
P. angulatum Kellogg. On the king bird or "bee Martin."
- "
P. frenatum Nitzsch. Taken in New Jersey from the golden-crowned Kinglet.

TRINOTON Nitzsch.

- OK
T. luridum Nitzsch. Another of the duck parasites.
- T. lituratum Nitzsch. Found on wild ducks and geese.

NITZSCHIA Denny.

- DENNYUS
N. pulcaris Nitzsch. Louse of the chimney swallow.

COLPOCEPHALUM Nitzsch.

- ACTORNITHOPHILUS
C. lari Pack. Found on the great black-backed gull.
- "
C. fuscipes Piaget. Also a parasite of gulls.
- "
C. ochraceum Nitzsch. Found on the pectoral sandpiper.
- OK
C. flavescens Nitzsch. Louse of the swallow-tailed kite.
- KURODAIA
C. subpachygaster Piaget. Infests the great horned owl.
- ACTORNITHOPHILUS
C. pustulosum Piaget. Parasite on the belted king-fisher.

MENOPON Nitzsch.

- PSUDOMENOPON
M. tridens Nitzsch. Yet another parasite of the mud hen; probably infesting also other allied birds.
- PIAGETIELLA
M. consanguineum Piaget. A third species found on pelicans, and probably not a good Jerseyite.
- AUSTROMENOPON
M. crocatum Nitzsch. Taken on American woodcock and ring-tailed Merlin.
- PALLENS CLAY 1909
M. pallescens Nitzsch. Yet another parasite of the Bob White.
- MALLINAE (LWY) 1908
M. pallidum Nitzsch. Also found on the domestic fowl.
- MENACANTHUS
MYRSIDEA
M. biserialim Piaget. Occurs with the preceding.
- MENACANTHUS
MYRSIDEA
M. interruptus Osb. Parasitic on the common crow.
- MENACANTHUS
MYRSIDEA
M. expansum Osb. Infests the bobolink.
- "
M. crassipes Piaget. Found on the Baltimore Oriole.
- "
M. dissimile Kellogg. Found on the purple Martin.
- "
M. rusticum Giebel. A companion of the preceding on the same host.

Family GYROPIDÆ.

Similar to the preceding; but the tarsi have only a single claw and the species occur on mammals only.

GYROPUS Nitzsch.

G. ovalis Nitzsch. Occurs on the Guinea pig.

G. gracilis Nitzsch. Occurs with the preceding. Of course, these species are not really natives of the State, but the host animals are sometimes raised as pets and for other purposes and the parasites follow them, as do those of other domesticated animals.