Molluses and Arthropods from Cardinal Nests at London, Ontario

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Abstract

During 1960, 534 organisms were collected from 32 nests. In order of decreasing numbers they were ants, bark lice, beetles, mites, sowbugs, springtails, spiders, snails, millipedes, harvestmen, hemipterous nymphs, biting midges, a slug, a damsel bug and a wasp. Observations on their distribution among the nests are included.

A report on collections of insects and other invertebrates taken from nests of the cardinal, Richmondena cardinalis (L.), on the campus of the University of Western Ontario in 1955 was presented by Judd (1962). In 1960 a second opportunity was taken to study the creatures collected from thirty-two more nests received from Dr. D. M. Scott and Mr. A. Middleton who were studying the breeding cycle of the cardinal. The methods of collection were those outlined by Judd (1962). Specimens collected from the nests were distributed for identification to the following taxonomists who, unless otherwise noted, are members of the staff of the Entomological Research Institute, Canada Department of Agriculture: W. J. Brown (Coleoptera), N. B. Causey, Fayetteville, Arkansas (Diplopoda), K. Christiansen, Grinnell College, Iowa (Collembola), C. D. Dondale (Araneida, Phalangida), L. A. Kelton (Hemiptera), W. R. M. Mason (Ichneumonidae), C. D. F. Miller (Fornicicidae), E. L. Mockford, Entomology Research Division, U.S. Department of Agriculture, Beltsville, Maryland (Coralentia), R. W. Strandmann, Texas Technological College, Lubbock, Texas (Acarina), H. van der Schalie, University of Michigan, Ann Arbor (Mollusca—snails), J. R. Vockeroth (Diptera). Sowbugs were identified with keys in Van Name (1936) and the slug with keys in Pilbry (1948).

All specimens are deposited in the collection of the Department of Zoology, University of Western Ontario, except those noted as retained (*) in the institutions in which they were identified. Some were mounted on microscope slides which are deposited in the collection of the Department of Zoology and the serial numbers of these slides are noted in the following account. The map illustrating the collecting area (Fig. 1) was traced from a map prepared by Mr. Middleton and the numbers of the nests (61-1, 61-2 etc.) are those used in the study of the breeding cycle. The area included in the investigation was the campus of the university and woods and fields along the Thames River adjacent to the campus. In the investigation of the breeding cycle the series of nests were numbered to show the sequence of building, e.g. nests 61-1 and 61-2 were the first and second nests built by the pair of cardinals designated as No. 61. The three nests built by pair No. 62 were in vines and shrubs surrounding a small, damp swale containing rank vegetation. Thirty-two nests built by ten pairs of birds were examined for the presence of invertebrates. In the following account the dates during which each nest was under observation in the study of the breeding cycle are given and it is also noted what nests contained cowbirds, Molothrus ater, as well as cardinals. Invertebrates were removed from the nests after observations on the breeding cycle had been completed.

Account of Invertebrates Collected

1. Nest 61-1: four feet from the ground in a Mugho Pine. April 20-May 15, included cowbirds.

Coleoptera: Lathridiidae: Stephostethus liratus Lec.—1 beetle
Coleoptera: Lathridiidae: *Melanophthalma* sp.—1 beetle
Coleoptera: Curculionidae: *Gymnetron teter* (Fabr.)—1 weevil

Acarina: Anystidae: 1 mite (*)
Corrodentia: Caeciliidae: *Lachesilla corona* Chap.—1 ♀ (♀)
Corrodentia: 8 nymphs (♀)

3. Nest 61-3: seven feet from the ground in branches of Forsythia and Honeysuckle bushes, June 2-9.
Corrodentia: 2 nymphs (♀)

Phalangiidae: *Phalangium* pectus (Wood)—1 harvestman
Corrodentia: 2 nymphs (♀)

5. Nest 61-5: ten feet from the ground in a Red Cedar, June 17-July 6.
Hymenoptera: Formicidae: *Lasius* sp.—1 ant

Mollusca: Arionidae: *Arion hortensis* Ferussac—1 slug
Diplopoda: Paraentulidae: 1 larva (♀)
Phalangiidae: *Phalangium* pectus (DeGeer)—2 harvestmen
Araneida: Linyphiidae: *Pityophyantes costatus* Hentz—1 ♀
Araneida: Theridiidae: *Enoplognatha ovata* ( Clerck )—2 immature spiders
Coleoptera: Cucujidae: *Telephantes velox* Hald.—1 beetle
Coleoptera: Chrysomelidae: *Altica woodsii* Isely—14 beetles

Phalangiidae: *Phalangium* pectus (DeGeer)—2 harvestmen
Araneida: Linyphiidae: Pitroybyphantes costatus (Hentz)—1 ?
Coleoptera: Lathridiidae: Melanophthalmata sp.—3 beetles
Coleoptera: Elateridae: Melanomus sp.—1 beetle
Coleoptera: Curculionidae: Brachyrhinus rugosriatus Goeze—1 weevil
Coleoptera: Curculionidae: Miccrotragus picirostris Fab.—1 weevil
Hemiptera: Nabidae: Nabis sp.—1 bug

Diplopoda: Paraiulidae: 1 larva
Araneida: Theridiidae: Enoplognatha ovata (Clerck)—1 ?
Acarina: Anystidae: 1 mite (*)
Collembola: Entomobryidae: Entomobrya nivalis (L.)—1 springtail
Corrodentia: Caeciliidae: Lachesilla corona (Chap.)—1 ♂, 1 ♀ (*)
Corrodentia: 22 nymphs (*)

9. Nest 63-2: twelve feet from the ground in a Red Cedar, May 8-June 3, included cowbirds.
Corrodentia: 1 nymph (*)

10. Nest 64-1: four feet from the ground in a Beauty Bush, April 27-May 12.
Diplopoda: Paraiulidae: 1 larva (*)
Isopoda: Oniscidae: Trachoeoniscus rathkei (Brandt)—41 sowbugs
Hymenoptera: Formicidae: Tapinoma sessile (Say)—151 ants, 46 larvae

11. Nest 64-5: nine feet from the ground in vines, June 30-July 4.
Araneida: Dictynidae: Dictyna sublata (Hentz)—1 ♀
Acarina: 1 mite
Corrodentia: 1 nymph (*)

12. Nest 64-6: five and a half feet from the ground in vines on a Sycamore tree, July 11-July 30.
Araneida: Dictynidae: Dictyna sublata (Hentz)—1 immature spider
Collembola: Entomobryidae: Entomobrya asstata Folsom—1 springtail
Corrodentia: 1 nymph (*)
Coleoptera: Lathridiidae: Corticaria sp.—1 beetle
Coleoptera: Chrysomelidae: Diabolia borealis Chev.—1 beetle

13. Nest 64-7: six and a half feet from the ground in vines, August 5-20.
Collembola: Entomobryidae: Entomobrya nivalis (L.)—13 springtails (*)
Coleoptera: Chrysomelidae: Altica woodsi Isely—22 beetles

14. Nest 65-1: three feet from the ground in a Willow tree, April 16- May 4.
Araneida: Theridiidae: Enoplognatha ovata (Clerck)—1 immature spider
Araneida: Clubionidae: Clubiona moesta Banks—1 ?
Araneida: Clubionidae: Clubiona sp.—2 immature spiders
Araneida: Dictynidae: Dictyna sublata (Hentz)—1 immature spider
Coleoptera: Chrysomelidae: Altica woodsi Isely—3 beetles
Coleoptera: Chrysomelidae: Altica chalybea Ill.—1 beetle
Coleoptera: Curculionidae: Gymnetron teter Fabr.—1 weevil

15. Nest 65-2: three feet from the ground in flood debris, May 11.
Gastropoda: Vallonia: Vallonia costata Muller—1 snail
Gastropoda: Cionellidae: Cionella lubrica Muller—5 snails

Gastropoda: Succinea: Succinea ovalis Say—1 snail
Diplopoda: Paraiulidae: 1 larva (*)
Isopoda: Oniscidae: Trachoeoniscus rathkei Brandt—1 sowbug
Coleoptera: Cryptophagidae: Anchicera sp.—1 beetle
17. Nest 65-4: three feet from the ground in a Manitoba Maple, May 25-June 16.
Isopoda: Oniscidae: Tracheoniscus rathkei Brandt—2 sowbugs
Acarina: Erythraeidae: 2 mites (slide No. E24-36)
Hymenoptera: Formicidae: Tapinoma sessile (Say)—15 ants

Gastropoda: Endodontidae: Anguispira alternata Say—3 snails
Diplopoda: Paraiuliidae: 6 larvae (*)
Coleoptera: Chrysomelidae: Altica chalybea Ill.—1 beetle
Hymenoptera: Formicidae: Tapinoma sessile (Say)—41 ants, several pupae

Araneida: Clubionidae: Clubiona sp.—1 immature spider
Araneida: Clubionidae: Trachelas tranquillus (Hentz)—1 ♂ (*)

20. Nest 65-7: five feet from the ground in a willow tree and vines, August 7-15.
Collembola: Entomobryidae: Entomobrya assuta Folsom—8 springtails (*)
Collembola: Entomobryidae: Tomocerus sp.—1 springtail
Coleoptera: Elateridae: Glyphonyx sp.—1 beetle

21. Nest 66-1: four feet from the ground in a Honeysuckle bush, May 24-June 16.
Gastropoda: Endodontidae: Anguispira alternata Say—5 snails

Araneida: Dictynidae: Dictyna sublata (Hentz)—1 ♂
Collembola: Entomobryidae: Entomobrya nivalis (L.)—4 springtails

Coleoptera: Lathridiiidae: Corticaria sp.—1 beetle
Hymenoptera: Ichneumonidae: Hemiteles sp.—1 wasp

24. Nest 610-3: seven feet from the ground in a Pine tree, May 4-May 8.
Collembola: Entomobryidae: Entomobrya assuta Folsom—1 springtail
Diptera: Ceratopogonidae: Monokelea leucepeza (Mg.)—2 ♀ (*)

25. Nest 610-4: seven feet from the ground in a Lilac bush, May 19-May 21.
Araneida: Argiopidae: Araneus sp.—1 immature spider
Corrodentia: 3 nymphs (*)
Coleoptera: Lathridiiidae: Melanophtalma sp.—1 beetle

26. Nest 610-6: three feet from the ground in a bale of fence wire in a shed, May 31-June 25, included cowbirds.
Collembola: Entomobryidae: Willowsia platanii (Nicolet)—1 springtail
Corrodentia: Caeciliidae: Lachesilla corona (Chap.)—3 ♂, 1 ♀ (*)
Corrodentia: 17 nymphs (*)

27. Nest 610-8: ten feet from the ground in a Norway Maple, July 28-August 21.
Acarina: Anystidae: 1 mite (*)

28. Nest 612-1: six feet from the ground in a Balsam Fir, May 16, included cowbirds.
Phalangiida: Phalangiidae: Opilio parietinus (DeGeer)—4 harvestmen
Araneida: Clubionidae: Anyphaena sp.—1 immature spider
Acarina: Anystidae: 1 mite (slide No. E24-40)
Hemiptera: 1 nymph
29. Nest 612-2: ten feet from the ground in a Balsam Fir, June 5.
Coleoptera: Elateridae: Melanotus sp.—1 beetle
Hemiptera: 2 nymphs

30. Nest 613-1: seven feet from the ground in a Red Cedar, May 16.
Gastropoda: Succineidae: Succinea ovalis Say—2 snails
Gastropoda: Endodontidae: Anguissira alternata Say—3 snails
Araneida: Clubionidae: Clubiona obesa Hentz—1 ♀ (*)
Coleoptera: Cryptophagidae: Anchicera ephippiata Zimm.—1 beetle

Araneida: Clubionidae: Anyphaena sp.—1 immature spider
Acarina: Anystidae: 1 mite (*)
Corrodentia: 1 nymph (*)
Coleoptera: Lathridiidae: Melanophthalma sp.—1 beetle

32. Nest 613-3: five feet from the ground in a Honeysuckle bush, June 4.
Araneida: Clubionidae: Clubiona obesa Hentz—1 ♂ (*)

Discussion of Collections

The numbers of invertebrates taken from the nests, in order of decreasing numbers, and the numbers of nests (in brackets) from which they were taken were as follows: 208 ants (4), 65 bark lice (10), 62 beetles (14), 58 mites (7), 44 sowbugs (3), 30 springtails (7), 20 spiders (13), 20 snails (5), 10 millipedes (5), 9 harvestmen (4), 3 hemipterous nymphs (2), 2 biting midges (1), 1 slug (1), 1 damsel bug, Nabis sp. (1), and 1 wasp (1), totalling 534 individuals.

Gastropoda

The only slug collected, Arion hortensis, was in nest 62-2 which was in a tangle of vines at the edge of the swale. Pilsbry (1948) reports that this species thrives in regions of high humidity. Most of the snails were in nests constructed in flood debris or in trees and shrubs at the river’s edge. Pilsbry (1948) reports of three of the species collected that Vallonia costata is among the commonest snails in flood debris, Cionella lubrica is found among damp underleaves in densely shaded places and Succinea ovalis is found on low ground near streams. The snail found most commonly in the nests, Anguissira alternata, as well as being in nests along the river, was in nest 65-5 ten feet from the ground in a tree. Pilsbry (1948) reports of this species that it is one of our commonest snails and is found climbing trees.

Isopoda

Most of the sowbugs, Tracheoniscus ratheki, were found in nests adjacent to the river and close to the ground. This species is one of the commonest sowbugs and is abundant in decaying leaves, rotten wood and refuse (Walker, 1927).

Diplopoda

Larval millipedes were found previously in cardinals’ nests by Judd (1962).

Phalangida

Of the two species of harvestmen found in the nests, Odiellus pictus was previously found in cardinals’ nests by Judd (1962) and Opilio parietinus is described as an indoors form rarely found in the open (Gertsch, 1948).

Araneida

At least nine species of spiders were collected from the nests and one of these, Clubiona obesa, was previously collected from cardinals’ nests by Judd (1962).
These spiders are in five families of diverse habits and were probably using the nests as temporary shelters or as sites for foraging.

**Acarina**

The commonest mite in the nests was the Northern Fowl Mite, *Ornithonyssus sylviarum*. It was found in cardinals’ nests previously by Judd (1962). The other mites in the nests, those in the families Anystidae and Erythraeidae, were probably predators on other mites for Baker and Wharton (1952) record that mites of the family Anystidae are predaceous on mites and insects on tree leaves and branches and those of the family Erythraeidae are predaceous on other mites and insects.

**Collembola**

Four species of springtails were collected. Two of these, *Entomobrya nivalis* and *E. assuta*, have been found previously in cardinals’ nests by Judd (1962) and a third, *Willowsia platani*, has been found in nests of other birds (Hicks, 1959). Springtails of the genus *Tomocerus* have also been reported from nests by Hicks (1959).

**Corrodentia**

Adult bark lice, *Lachesilla corona*, were collected from several nests between May 29 and June 25. This species was also taken from cardinals’ nests previously by Judd (1962). In addition many nymphs of bark lice were found and some of these were likely *L. corona*. The frequent appearance of this species in the collections indicates that it is a habitual inhabitant of birds’ nests and breeds there. Sommerman (1946) records its occurrence in the eastern United States and says of the species of *Lachesilla* in general that they breed in dried leaves and grass and on twigs of trees and in mouldy organic materials such as cereals and straw.

**Coleoptera**

Beetles which have been reported as habitual inhabitants of birds’ nests (Hicks, 1959) and which were found in the cardinals’ nests were those in the families Lathridiidae and Cryptophagidae and included *Stephostethus liratus*, *Melanophthalma* sp., *Corticaria* sp., *Anchicera ephippiata* and *Anchicera* sp. The other beetles found in the nests were probably temporary inhabitants of the nests for they are known to feed in other situations. The cecidomyiid beetle, *Telephonus velox*, lives under stones and bark; and larvae of click beetles, *Melanotus* and *Glyphonyx*, are root feeders (Dillon and Dillon, 1961). The chrysomelids *Altica woodsi* and *A. chalybea* are common pests on grape (Wilcox, 1954), a vine which grows commonly over trees and shrubs where many of the cardinals’ nests were located. *Dibolia borealis* is a miner in plantain and *Pbratora americana canadensis* feeds on willow (Wilcox, 1954). *P. americana* was found previously in cardinals’ nests by Judd (1962). The three weevils found in the nests were *Gymnetron teter* whose host is mullein, *Brachyrhinus rugostriatus* whose larva is a root weevil (Dillon and Dillon, 1961) and *Miccotrogus picoirostris* whose larva is a borer in plants (Blatchley, 1910).

**Hemiptera**

The only adult bug found in the nests was *Nabis* sp. It was possibly a predator on other insects in the nests for bugs of the family Nabidae are predators on plant lice and soft-bodied larvae and nymphs (Blatchley, 1926). A few unidentified nymphs were present in the nests, as was the case in cardinals’ nests previously (Judd, 1962).
Hymenoptera

A single ichneumonid wasp, Hemiteles sp., was found in a nest. A few wasps of other genera of Ichneumonidae have been recorded from nests by Hicks (1959). A single ant of the genus Lasius was found in one nest. The ant found most commonly was Tapinoma sessile, found in three nests. In two of these nests there were many adults and many larvae or pupae. It is thus apparent that T. sessile may habitually produce colonies in birds' nests. A colony of T. sessile was previously found in a cardinal's nest by Judd (1962).

Diptera

Two biting midges, Monoboea leucopoda, were found in one nest. This species has been recorded from several localities in the northeastern United States (Wirth, 1953). Hicks (1959) and Judd (1962) record several biting midges, mainly Culicoides spp., from birds' nests but do not include M. leucopoda.

References


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