

INSECTS
of
NORTH CAROLINA

THIRD SUPPLEMENT

By

DAVID L. WRAY, Ph.D.



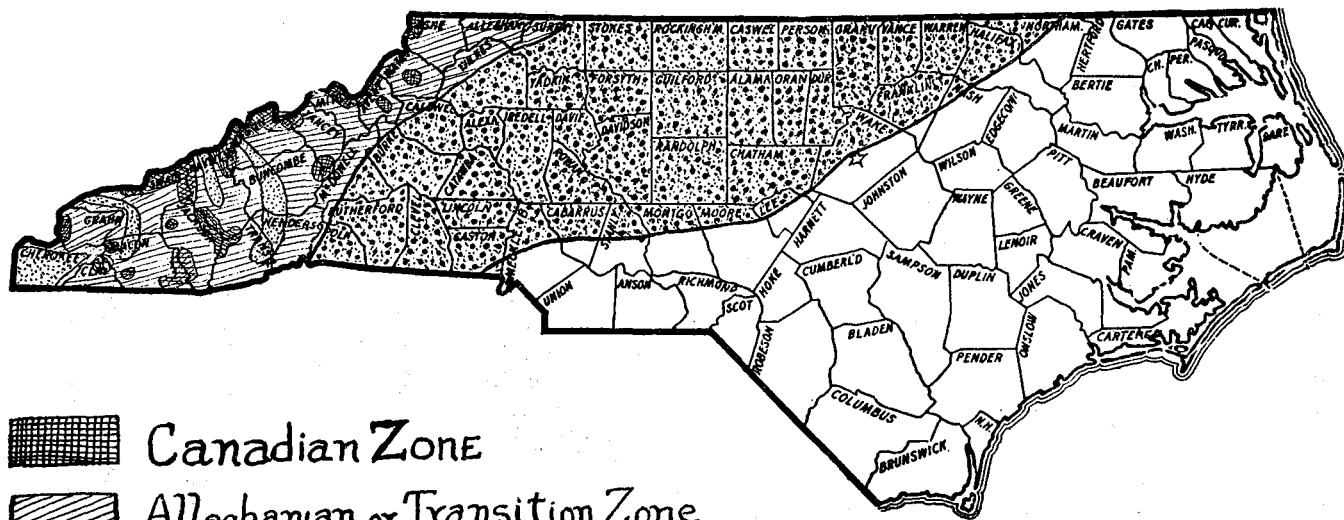
RALEIGH, N. C.




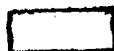
JUNE, 1967

NORTH CAROLINA DEPARTMENT OF AGRICULTURE
JAMES A. GRAHAM, Commissioner

DIVISION OF ENTOMOLOGY
GEORGE D. JONES, Director

NORTH CAROLINA INSECT SURVEY



-  Canadian Zone
-  Alleghanian or Transition Zone
-  Carolinian or Upper Austral Zone
-  Austroriparian or Lower Austral Zone

MAP OF NORTH CAROLINA SHOWING LIFE ZONES.

595.7

B772i

Sup. 3

Net. Hist. Survey

THIRD SUPPLEMENT TO THE INSECTS OF NORTH CAROLINA

INTRODUCTION

When the North Carolina Department of Agriculture was founded in 1877 most of the agricultural workers of necessity had to be versed in about all phases of agriculture and science. Since the number of employees was small each one had to handle subjects in the agricultural and science areas. Hence, before 1890 entomological as well as general agricultural information was obtained chiefly from the United States Department of Agriculture in Washington and other established institutions and given out to the farmers and public by general agricultural workers. In 1890 Gerald McCarthy was appointed as Botanist, Entomologist, and Biologist. This was probably the beginning of a more scientific approach to controlling the many common agricultural insect pests of that time. One of his first publications was entitled "Some Injurious Insects", 1891. This gave some excellent illustrations and information of the life history of various pests and also methods used then to control them. Another publication of note was entitled "Our Common Insects of North Carolina", 1894.

In 1900 Franklin Sherman, Jr. was appointed full time State Entomologist and immediately began to start a collection of insects of North Carolina as a necessary tool to handle the many insect pest problems throughout the State. A few years later he saw the need and started an Insect Survey of the State to gather information about all kinds of insects that occur in the State. Through his efforts much valuable information was accumulated and C. S. Brimley was added to the staff to carry on this work. In 1938 all of this information was published in book form by C. S. Brimley entitled "Insects of North Carolina". The First Supplement to this volume by the same author appeared in 1942. Then to bring up to date information gathered since then Supplement Two was published in 1950 by D. L. Wray.

Since the latter date records and data, as well as specimens added to the collection, have accumulated materially so it seems advisable to publish a Third Supplement to the above volume. Moreover, inasmuch as the First Supplement is now out of print and Supplement Two is about exhausted it was decided to integrate the information contained in the two supplements into

3/7/94 WAX

GRF

Supplement Three in order to make all this information available for entomological and scientific workers.

This list will chiefly show the new additions, or records for species recorded or found within North Carolina for the first time. However, it will not show the large volume of distributional records and data of species already shown in published lists. This information is recorded in our card catalogues for future reference.

Only additions are made to the larger groups and few corrections and eliminations. Nomenclature changes will need to be made on the larger volume at a future time. However, in certain groups corrections as well as new additions have been made, viz; Thysanura, Collembola, Orthoptera, Trichoptera, Diplopoda, and Chilopoda.

It is endeavored herein to give recognition and credit to all those who have contributed in any way whatsoever to our State Insect Collection by the contribution of specimens, or to the Insect Survey by giving us State records of various species. We sincerely appreciate both specimens and records from anyone who may have the opportunity to collect within the State.

Below is given a list of the different orders with the number of species recorded to date:

Coleoptera or Beetles	3336
Diptera or Two-winged Flies	2595
Hymenoptera or Wasp-like Insects	2463
Lepidoptera or Butterflies and Moths	1428
Homoptera or Cicadas, Leafhoppers, and Aphids	759
Hemiptera (Heteroptera) or True Bugs	568
Orthoptera, Grasshoppers, Roaches, etc.	258
Mallophaga or Bird Lice	164
Odonata, Dragonflies and Damselflies	148
Trichoptera or Caddisflies	161
Ephemera or Mayflies	121
Collembola or Springtails	169
Neuroptera, Antlions, Lacewings, etc.	68
Thysanoptera or Thrips	68
Plecoptera or Stone flies	94
Corrodentia or Psocids (barklice)	37
Mecoptera, or Scorpionflies	27
Siphonaptera or Fleas	14
Strepsiptera, or Twisted-wing Insects	11
Anoplura or Sucking Lice	11
Dermaptera or Earwigs	7
Thysanura or Silverfish, etc.	7
Isoptera or Termites	5
Zoraptera	1
Total number of Species of Insects	12,520

Near-Insects or Forms allied to Insects:

Class

Arachnida, Spiders, Mites, Pseudoscorpions, Tardigrada, etc.	846
Diplopoda, Millipedes	74
Chilopoda, Centipedes	69
Myrientomata	2
Symphyla	1
Pauropoda	7
Crustacea (part) Crayfish, Sowbugs, etc.	21
Total number of Near-Insects, etc.	1020

Thus we have a net increase of 1426 species of insects and 203 of near insects since June 1950, a total of 1629, making a grand total for North Carolina of insects and near insects of 13,539 on December 31, 1967. As suggested in 1950, I still feel that our greatest future increase will come from workers on very minute forms and smaller orders or groups which have been somewhat neglected for a long time. Our total number will be greatly increased when intensive collecting is done in certain habitats, when newer methods are used, better trapping is provided, and when a closer application of seasonal distribution is used. All of these factors will materially further this work.

LIST OF ADDITIONS, WITH SOME ELIMINATIONS AND CORRECTIONS

As noted before, the following entries comprise all records contained in SUPPLEMENTS ONE and TWO of "The Insects of North Carolina" published in 1938, as well as the new additions since 1950. New additions are marked with a star (*) before the name of an Order, Family, or Genus and Species, and indicates these names did not appear in the above named publications.

Class INSECTA

Order THYSANURA, The Bristle-tails

Family MACHILIDAE

Machilis variabilis Say. Raleigh, March, November, December; Beaver Creek (Ashe County), July; Blowing Rock, September; Spruce, May; Durham; under dead leaves in woods.

Bezzia setulosa Lw. Durham, in Duke Forest. Ramsey, Jour. E.M. Sci. Soc. July, 1941, p. 95.

Family TENDIPEIDAE

**Symbiocladius equitans* (Claassen). Great Smoky Mts., Big Creek, Haywood Co., June 15, 1966 (coll. Sinclair); fide S. S. Roback, Ent. News, vol. 77, 1966, p. 254.

Family CHIRONOMIDAE, The Midges

Chironomus brunneipennis Joh. Raleigh, June.

Chironomus longipes Steg. Raleigh, June, R. W. Leiby.

Chironomus testaceus Twms. Raleigh, type locality, April, May, August, Wilmington, Aug.

**Chironomus staegei* (Lunbeck). North Carolina; fide Alan Stone, et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 166.

**Stenochironomus taeniapennis* (Coquillett). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. USDA, 1965, p. 177.

**Metriocnemus knabi* (Coquillette). North Carolina; fide Alan Stone, et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 161.

(Determinations by H. K. Townes Jr.)

Family CECIDOMYIIDAE

Caryomyia carayae O.S. Raleigh, galls on hickory leaves, July 24, 1946, J. A. Harris.

Caryomyia tubicola O.S. Raleigh, on hickory, July 24, 1946, JAH.

Mycodiplosis alternata Felt. Dunn, Sept. 24, 1946, JAH, galls on dogwood stems.

Cordylomyia sylvestris Felt. Davidson River, Sept. 23, 1906, (type locality— one female monotype of *sylvestris*).

Monardia lignivora Felt. Davidson River, Sept. 21, 1906, 6 males and 18 females, Felt; reared from fungus affected heartwood of pine, lectotype and paralectotypes, in USNM, fide E. Pritchard, Ento. Americana, vol. XXVII, April, 1947, p. 56.

Peromyia photophila Felt (= *Joannisia carolinae* Felt). Davidson River, Sept. 23, 1906. (Lectotype and paralectotype of *carolinae* Felt, fide E. Pritchard, loc. cit.).

**Cecidomyia pinirigidae* Packard. Martin County, June 4, 1964, galls heavily infesting pitch pine (*Pinus rigida*) in nursery, J. F. Greene, det. R. H. Foote USNM; also at Hamilton on pines.

**Dasyneura gleditschiae* (O. S.). Honey Locust Pod Gall. Goldsboro, May 5, 1959, on honey locust leaflets, W. A. Whitmer, det. by R. H. Foote, USNM.

**Asphondylia monacha* (O.S.). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, 1965, p. 268.

Family MYCETOPHILIDAE, The Fungus Gnats

Miss Elizabeth Fisher of the Academy of Natural Sciences of Philadelphia has very kindly looked over practically all our specimens of this family and the following additions and corrections are mainly due to her work.

Symmerus tristis Lw. Linville Falls, June, C. P. Alexander (Shaw, Bull. Bkln. Ent. Soc., 36, 23, Feb., 1941.

Asindulum flavum Winn. Fort Fisher, April, reared by B. B. Fulton.

- **Asindulum winnertzi* (Tarwid). North Carolina; fide Alan Stone, et al, l.c. Cat. Diptera America, Handb. No. 276, 1965, USDA, p. 199.
- Ceroplatus* (*Cerotelion*) *johannseni* Fisher. Raleigh, type locality, April, May; Black Mountain, Dietz; Southport, Fulton. This was listed in the "Insects of North Carolina" as *Cerotelion bellulus*.
- Platyura discoloria longiseta* Fisher. Raleigh, June 9, 1940, D. L. Wray.
- Platyura discoloria* Mg. Linville Falls, June, CPA. (Shaw l.c.).
- Platyura fultoni* Fisher. Glenville, type locality, June, BBF.
- Platyura mimula* Joh. Raleigh, May 30, 1939, DLW.
- Platyura melasoma* Lw. Our specimens determined as n. sp.
- Platyura mendica* Lw. Also n. sp.
- Platyura*, n. sp. Miss Fisher gives us a third n. sp. from Raleigh in May.
- Platyura miriamae* Shaw. Linville Falls, June, CPA. (Shaw, Am. Mid. Nat., 26 (1), 168-173, July, 1941).
- Platyura mitchellensis* Shaw. Bald Knob, June (Shaw, l.c.).
- Macrocera hirsuta* Lw. Glenville, BBF.
- Macrocera hyalipennis* Shaw. Clingman's Dome, June, CPA, Shaw, l.c.
- Neoempheria macularis* Joh. Raleigh, June, Mrs. Wilson.
- Mycomyia imitans* Joh. Indian Gap and Bald Knob, June, Shaw, l.c., 24.
- Mycomyia littoralis* Say. Bald Knob, June. (Shaw, l.c. 24).
- Mycomyia obliqua* Say. Raleigh, June, DLW.
- Mycomyia sphagnicola* Shaw. Andrews Bald, June, CPA (Shaw, l.c. 171).
- Mycomyia sublittoralis* Shaw. Linville Falls, June (Shaw, l.c., 172).
- Mycomyia turritella* Fisher. Raleigh, June. The specimen listed as *M. brevivittata* Coq. is this.
- **Mycomyia frequens* (Johannsen). North Carolina; fide Alan Stone, et al l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 220.
- **Mycomyia dentata* Fisher. Great Smoky Mts., Newfound Gap, 5000-5200 feet, September 1, 1 male; fide E. I. Coher, Ent. Americana, vol. 38, 1958, pp. 111-112.
- **Mycomyia alternata* Fisher. Great Smoky Mts., Newfound Gap, 5000-5200 feet, September 2, 1930, NB, 1 male; fide EIC, l.c. vol. 38, 1958, p. 114.
- **Mycomyia triacantha* Shaw. Mt. Mitchell, 5000 feet, May 29, 1946, JFH, 1 male; fide EIC, l.c. vol. 38, 1958, p. 115.
- **Paleoplathyura johnsoni* Johannsen. Great Smoky Mts.; fide F. R. Shaw, Trans. American Ent. Soc. vol. 78, 1952, p. 22.
- **Neuratelia insignifica* (Shaw). North Carolina; fide Alan Stone, et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 224.
- Neuratelia scitula* Joh. Glenville, reared by B. B. Fulton in June.
- Neuratelia scituloides* Shaw. Clingman's Dome, June (Shaw, l.c.).
- Boletina cincta* Joh. Raleigh, June, DLW.
- Boletina notescens* Joh. Bald Knob, June.
- Leia dryas* Joh. Raleigh, September.
- Leia cincta* Coq. Ours is *L. bivittata* also listed.
- **Leia winthemi* (Lehmann). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 228.
- **Phthinia catawbiensis* (Shaw). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 225.
- Pothinia carolina* Fisher. Raleigh, type locality, April, BBF.
- Allodia* sp. Raleigh, April.
- Dynatosoma placida* Joh. Raleigh, June.
- Dynatosoma* n. sp. near *bifasciata* Wlk. Pineola, June.
- Mycetophila fungorum* De G. Name replaces *M. punctata* Mg.

- **Mycetophila alea* (Laffoon). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 210.
 - **Mycetophila browningi* (Laffoon). North Carolina; fide Alan Stone et al, Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 210.
 - **Mycetophila clavata* (Van Duzee). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 210.
 - **Mycetophila exstincta* (Loew). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 211.
 - **Mycetophila ichneumonea* (Say). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 212.
 - **Mycetophila impellens* (Johannsen). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 212.
 - **Mycetophila limata* (Laffoon). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 212.
 - **Mycetophila pinquis* (Loew). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 213.
 - **Mycetophila recta* (Johannsen). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 213.
 - **Mycetophila signatoides* (Dziedzicki). North Carolina; fide Alan Stone, et al, l.c. Cat. No. 276, USDA, 1965, p. 213.
 - **Epicyta scatophora* (Perris). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 209.
 - **Brachyzepea divergens* (Johannsen). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 205.
 - **Rondaniella sororcula* (Loew). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 228.
 - **Keroplatus carbonarius* (Bosc.). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 200.
 - **Acnemia flaveola* (Coquillett). North Carolina; fide Alan Stone, et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 222.
 - **Leptomorphus subcaeruleus subcaeruleus* (Coquillett). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 223.
 - **Orfelia semirufa* (Meigen). North Carolina; fide Alan Stone, et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 203.
 - **Diadocidia borealis* (Coquillett). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 198.
- Delopsis anomala* Joh. Raleigh, May.

Family SCIARIIDAE

(The genera *Zygoneura*, *Sciara* and *Neosciara*, placed in the *Mycetophilidae* in the *Insects of North Carolina* belong here.)

Sciara sciophila Lw. Raleigh, May, July.

- **Bradysia coprophila* (Lint.). Raleigh, July 20, 1962, reared from larvae obtained from seed germinating mats, DLW; det. Alan Stone.
- **Bradysia reynoldsi* (Metz). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 234.

Family BIBIONIDAE

Bibio carolinus Hardy. New name for *B.* after McA. preoccupied, all records for *B. rufithorax* belong here except Winnabow, April.

Philea (*Dilophus*) *oklahomensis* Hardy. Raleigh, June.

- **Dilophus occipitalis* (Coquillett). North Carolina; fide Alan Stone et al, l.c. Cat. Diptera America, Handb. No. 276, USDA, 1965, p. 195.