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A FURTHER CONTRIBUTION TO THE HEMIPTEROUS FAUNA OF OHIO.*

HERBERT OSBORN.

A preliminary list of the Hemiptera of Ohio was published in the proceedings of the Academy in 1900 (8th Annual Rept.), and a short supplementary list in the 9th Annual Report.

Since these publications a number of new species have been added and much additional data obtained concerning the distribution of some of the rarer forms hitherto noted.

Some of these are of sufficient interest to merit a record at this time, especially as a final report upon the group is yet impossible. It is hoped that during the next two years sufficient collections may be made in certain quarters of the State to render possible a monograph of the State fauna in this group. Several members of the Academy have kindly assisted in gathering material and I am especially indebted to Mr. Dury, Prof. Wetzstein, Mr. J. G. Sanders, Prof. Hine, Mr. O. H. Swezey and T. W. Ditto for such help. Mr. Swezey has secured a number of the Fulgoridae and Mr. Ditto most of the Aphididae included in this list.

The Coccidae have been studied exhaustively by Mr. Sanders, and he has prepared an annotated descriptive list for the State, so I have not introduced detailed records here. Prof. F. M. Webster and Mr. A. F. Burgess published a list of this family (Bull. U. S. Dept. Agriculture), and this list was republished with certain revisions and additions by Mr. Geo. B. King, *Ent. News*, XIV, page 204.

Collections at Cincinnati, the south-east portion of the State and in Ashtabula County are especially desired.

* Read at the meeting of the Ohio State Academy of Science.

With the previous lists of 321 and 60 species these additions give us a list of 528 species for the State.

CICADIDAE.

Cicada canicularis Harr. One specimen of this species which is now separated from the *tibicen* of Linnaeus. This specimen agrees in size with typical specimens from Maine and is I believe correctly placed here but additional specimens are much desired, The species differs from *tibicen* in being smaller, about 40 mm. long instead of 50 mm., and the opercles of male are broader than long.

MEMBRACIDAE.

Publilia nigradorsum Godg. Columbus.
Ceresa taurina Fh. Ashtabula.
Ceresa brevicornis Fh. Medina (Hine).
Ceresa vitulus Fab. Ironton (Hine).
Stictocephala lutea Walk. Ironton, Vinton, Hanging Rock, Sugar Grove, Newark.

FULGORIDAE.

Chlorochara conica Say. Sandusky (Swezey). Cincinnati (Dury). Columbus (Koebele).
Scolops denticatus Uh. Cincinnati (Dury). Hitherto listed for Bellaire only.
Phylloscelis atra Germ. Alate form, Cincinnati (Dury).
Myndus radialis Osb. On roots of various plants. Columbus.
Myndus fulvus Osb. Sandusky and Castalia.
Myndus viridis Ball. ? One specimen agreeing closely with this species except in male styles and frontal markings, was collected at Sandusky by Mr. Swezey.
Myndus pictifrons Stal. Collected at Vinton by Prof. Hine.
Cixius stigmatus Say. Cincinnati (Dury).
Oliarus humilis Say. Cedar Point, Sandusky. (Swezey) Castalia, Vinton.
Oliarus 5-lineatus Say. Cedar Point.
Kelisia axialis Van D. Quite common at Columbus September and October 1903 and collected by Mr. Koebele and the writer.
Pissonotus aphidiodes Van D. Columbus (Swezey) Koebele?
Pissonotus dorsalis Van D. Columbus (Swezey) June.
Phyllodinus Koebeleii Osb. September and October 1903. (Koebele.)
Phyllodinus fuscus Osb. Columbus.
Liburnia Kilmani Van D. Columbus. Newark. (Swezey.)
Liburnia pellucida Fieb. Wooster (Webster), Ironton, Columbus, Georgesville?
Liburnia lineatipes Van D. Columbus (Swezey).
Liburnia lutulenta Van D. Abundant at Columbus, Cedar Point.
Liburnia oclusa Van D. Columbus (Swezey).
Liburnia Gillettei Van D. Newark (Swezey).
Liburnia Osborni Van D. ? Columbus.
Liburnia incerta Van D. Newark (Swezey).

CERCOPIDAE.

Tomaspis bicincta Say. Cincinnati (Dury).

JASSIDAE.

Phlepsius decorus O. & B. Several specimens collected at Columbus by Mr. Albert Koebele.

Phlepsius majestus O. & B. A specimen seen while collecting but escaped from net. It is a very active flyer and one of the most difficult Jassids to capture.

Thamnotettix lusoria O. & B. Rather plentiful at Columbus in September and October, 1903.

Chlorotettix spatulatus O. & B. Columbus, October, 1903.

Dicraneura communis Gill. Wooster (F. M. W.).

Empoasca obtusa Walsh.

APHIDIDAE.

Phylloxera caryaeren Riley. (Ditto.)

Pemphigus rubi Thos. (Ditto.)

Pemphigus populicaulis Fh. (Ditto.)

Pemphigus populitransversus Riley.

Shizoneura corni Fab. Columbus. (Ditto.)

Shizoneura Rileyi Thos. On elm. (Ditto.)

Phyllaphis fagi L. Weed. (Ditto.)

Lachnus longistigma Monell, on willow, Columbus.

Lachnus platanicola Riley. Columbus.

Cladobius Smithae Monell, on willow, Columbus. (Ditto.)

Cladobius bicolor Oest. Willow: Columbus. (Ditto.)

Cladobius flocculosus Weed. Columbus.

Chaitophorus negundinis Thos. (Ditto.)

Chaitophorus viminalis Monell. (Ditto.)

Callipterus discolor Monell. (Ditto.)

Callipterus bellus Walsh. (Ditto.)

Drepanosiphum acerifolii Thos. (Ditto.)

Aphis cornifoliae Fh. Columbus. (Ditto.)

Aphis maidis Fh. On corn. (Ditto.)

Aphis pomi. Previously listed as *mali*.

Aphis Fitchii. Columbus. (Ditto.)

Aphis rubicola Oestl. Columbus. (Ditto.)

Aphis crataegifoliae Fh. (Ditto.)

Aphis rumicis L. Columbus. (Ditto.)

Aphis prunifoliae Fh.

Aphis maculatae Oestl. (Ditto.)

Aphis marutae Oestl. Columbus. (Ditto.)

Siphocoryne salicis Monell. Columbus. (Ditto.)

Myzus rosarum Walk. (Ditto.)

Rhopalosiphum berberidis Fh. (Ditto.)

Nectarophora cucurbitae Thos. (Ditto.)

Nectarophora pisi. The pea aphid.

Nectarophora circumflexa Buckton. (Ditto.)

COCCIDAE.

<i>Pseudococcus trifolii</i> Forbes.	<i>Saissetia hemisphericum</i> Targ.
“ <i>pseudonipae</i> Ckll.	<i>Pulvinaria innumerabilis</i> Rathv.
<i>Phenacoccus acericola</i> King.	<i>Aspidiotus ostreaformis</i> Curtis.
“ <i>Osbornii</i> Sanders.	“ <i>juglans</i> Comst.
<i>Ericoccus azaleae</i> Comst.	“ <i>glandiliferous</i> Ckll.
<i>Gossyparia spuria</i> (Modect).	“ <i>lataniae</i> Sign.
<i>Kermes galliformis</i> Riley.	“ <i>cyanophylli</i> Sign.
“ <i>pubescens</i> Bogue.	<i>Chrysomphalus aurantii</i> Mask.
“ <i>andrei</i> King.	<i>Aspidiotus comstocki</i> Johns.
“ <i>trinotatus</i> Bogue	“ <i>uvae</i> Comst.
<i>Asterolecanium variolosum</i> (Ratz).	“ <i>ulmi</i> Johns.
<i>Eulecanium caryae</i> Fitch.	“ <i>cydoniae crawii</i> Ckll.
“ <i>Fletcheri</i> Ckll.	<i>Chionaspis americana</i> Johns.
“ <i>Cockerelli</i> Hunter.	“ <i>gleditsiae</i> Sand.
“ <i>Fitchii</i> Sign.	“ <i>carpae</i> Cooley.
“ <i>canadense</i> Ckll.	“ <i>euonymi</i> Comst.
“ <i>Websterii</i> King.	“ <i>ortholobis</i> Comst.
“ <i>tulipifera</i> Cook.	<i>Hemichionaspis aspidistrae</i> Sign.
“ <i>quercitrionis</i> Fitch.	<i>Diaspis boisduvalii</i> Sign.
“ <i>magnoliarum</i> Ckll.	<i>Parlatoria zizyphus</i> (Lucas).
“ <i>querifex</i> Fitch.	<i>Fiorinia fioriniae</i> (Targ.)
“ <i>prunastri</i> Fonsc.	<i>Comstockiella sobalis</i> Comst.
<i>Saissetia depressum</i> Targ.	

HETEROPTERA.

- Canthophorus cinctus*. Cincinnati. Previously listed for Columbus.
- Amnestus pusillus* Uh. Cincinnati. (Dury, Coll.)
- Corimelaena Gillettei* V. D. Ironton.
- Mineus strigipes* Fab. Columbus.
- Podisus maculiventris* Say. *Spinosus* Dall. Generally distributed.
- Brochymena 4-pustulata* Fab.
- Euschistus tristigmus* Say var. Van D.
- Chariesterus antennator* Fab. was noted in various stages on *Euphorbia nutans* the past summer. Have seen specimens in Cincinnati (Dury, Coll.).
- Alydus 5-spinosus* Say. Sandusky (H. O.). Cincinnati (Dury, Coll.).
- Corizus hyalinus*. Found in various stages on *Euphorbia nutans* in September.
- Ischnorynchus didymus* Zett. Vinton (Hine). Columbus.
- Belonochilus numenius* Say. Columbus.
- Ischnodemus falicus* Say. Cedar Point. Sandusky.
- Geocoris limbatus* Stal.
- Cymodema tabida* Stal. Ironton.
- Cymus angustatus* Stal. Columbus.
- Cymus lividus* Stal. Castalia.
- Ligyrocoris constricta* Say. Cincinnati (Dury).
- Ptochiomera nodosa* Say.
- Microtoma carbonaria* Rossi. Columbus.
- Salacia pilosula* Stal.
- Emblethis arenarius* L. Cedar Point.
- Lygaeus Kalmii*. Stal. Cedar Point. Sandusky.
- Aradus aequalis* Say. Collected at Cincinnati by Prof. Hine.

- Aradus ornatus* Say. Collected by Mr. Dury at Cincinnati. This is an especially interesting addition to our list as the species has been unknown since Say's description in 1831, until a few years ago when Bergroth rediscovered it. I have noted it in the Ohio Naturalist, volume IV, page 22.
- Aradus Duryi* Osb. Cincinnati, collected by Mr. Dury.
- Aradus Duzei* Bergroth. Westerville, J. G. Sanders. Cincinnati (Dury).
- Brachyrhynchus lobatus* Say. Cincinnati by Mr. Dury.
- Neuroctenus elongatus* Osb. Cincinnati (Dury).
- Neuroctenus ovatus* Stal. Cincinnati (Dury). Two species. Previously recorded for Mexico and North Carolina.
- Coriscus propinquus* Reut. Columbus.
- Opsicoetus personatus* L. Has been rather frequent in Columbus and Sandusky.
- Pelagonus americanus* Uh. Cedar point. Sandusky.
- Limnaporus rufoscutellatus* Lat. Cedar Point.
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