

ARTICLE IV.—*A List of the Insect Types in the Collections of the Illinois State Natural History Survey and the University of Illinois.* BY THEODORE H. FRISON, Illinois State Natural History Survey.

INTRODUCTION

The ever-increasing requests by technical workers in the field of entomology for information concerning the insect types in the collections of the Illinois State Natural History Survey and the University of Illinois have led to the preparation of this paper. The reasons for such requests are readily apparent to any one acquainted with the problems and difficulties today confronting the scientific investigator in the fields of taxonomy and nomenclature. The enormous number of insects already described, comprising a total far in excess of the number of all other known kinds of animals, is augmented each year by the recognition and description of hundreds of species new to science. This multiplicity of kinds of insects has greatly increased the difficulty of their classification and brought to light many problems whose best solution rests upon a restudy of the actual type specimens—the specimens used by the author of a species in formulating the original description.

Thus it happens that at the present time the types of insects have come to possess a great practical value as well as a historical significance. A complete realization of the value of exacting type-designations and the proper labeling and preservation of the types did not come to most of the earlier entomologists. In fact, it is only within comparatively recent years that much emphasis has been placed upon exacting type-designations, disposition of types, full data concerning locality, date of capture of specimens and the many other facts now commonly added to the original description of a new species.

It was but natural, then, that when the task was undertaken of listing, locating, labeling and isolating the types in the collections here to insure their safety, no uniformity of type designations was found in the material. Various workers can be accredited for the numerous types, some described at an early date and others comparatively recently. To meet this situation the writer undertook the selection of lectotypes wherever this was deemed necessary or advisable. This procedure is in line, although not specifically covered, by that recommendation of the International Rules of Zoological Nomenclature suggesting that "only one specimen be designated and labeled as *type*". Furthermore, it makes paratypic material available for exchange and for loan to specialists, as well as eliminating certain undesirable situations that may arise from the exchanging of cotypes.

The insect collection of the Illinois State Natural History Survey contains the most complete collection of Illinois insects in existence and ranks high among the best general collections in this country. Its possession is a valuable asset to the state and an aid to all lines of research conducted by the Survey. The collection is the result of a wise policy of many years' accumulation and direct collection of insect material. For the benefit of those interested in the historical phase of the insect collection of the Illinois State Natural History Survey a short sketch of its origin and development is given. The State Entomologist's Office of Illinois was established in 1867 with Benjamin Dane Walsh as Acting State Entomologist. William LeBaron, soon after the accidental death of Walsh, was appointed to the position of State Entomologist in 1870 and held this office until 1875. Then Cyrus Thomas succeeded William LeBaron as State Entomologist and continued in office until the appointment of Stephen Alfred Forbes in 1882. The appointment of Stephen Alfred Forbes brought about, in a sense, the merger of the Office of the State Entomologist and the State Laboratory of Natural History, since he was Director of the latter institution. In 1917, the State Entomologist's Office was definitely merged by law with the State Laboratory of Natural History to form the Illinois State Natural History Survey Division of the State Department of Registration and Education, and Stephen Alfred Forbes was appointed as its Chief.

During the period of 1867 to the present time many descriptions of new species have been published in the twenty-nine reports of the State Entomologist's Office, the Bulletin of the State Laboratory of Natural History, and its successor, the Bulletin of the Illinois State Natural History Survey. Concerning these publications I quote from an introduction written for a list of exchange and available publications and published in 1924 by Stephen Alfred Forbes.

"Twenty-nine reports of the State Entomologist were published between 1868 and 1916, the first by Benjamin Dane Walsh, the second to the fifth by William LeBaron, the sixth to the eleventh by Cyrus Thomas, and the twelfth to the twenty-ninth by Stephen Alfred Forbes. Later articles of like object and character to those in these reports are published as bulletins and circulars of the State Natural History Survey.

"The State Laboratory of Natural History began publication of its Bulletin in 1876, the first number of what became Volume 1 of this series being issued as a bulletin of the Illinois Museum of Natural History. All subsequent numbers were issued as bulletins of the above Laboratory until 1917, after which the series was continued as the Bulletin of the Illinois State Natural History Survey. Volumes 1 to 12 have been published under the first of these titles, and 13 and 14, together with Articles 1-3 of Volume 15, under the second.* The State Laboratory of Natural History has also published three volumes and an atlas of final reports on

* Now Volume 16, Article 3.

the ornithology and ichthyology of the state, all reprinted in a second edition, as were also the First, Eighteenth, and Twenty-third reports of the State Entomologist's Office."

The insect collection of the Natural History Survey now contains no material definitely known to have been collected by Benjamin Dane Walsh and only a few specimens from the LeBaron collection. Of the Thomas material, almost nothing now remains except his collection of Aphididae which was acquired in very poor condition as reported by J. J. Davis in *Bull. Ill. State Lab. Nat. Hist., Vol. X, Art. II, 1913, pp. 97-121*. The present collection, then, consists almost entirely of specimens collected since 1883 and to Stephen Alfred Forbes and Charles H. Hart belong the main credit for its development and present importance. In addition to the material acquired by the direct collecting of members of the staff of the Survey and its forerunners, considerable material has been added by the acquisition of several private collections. The most notable of these is the first W. A. Nason collection acquired in 1908. The Survey is also the recipient of much material generously donated by specialists and amateurs and has profited through the medium of exchange.

At the conclusion of the list of types in the insect collection of the Illinois State Natural History Survey, there is added a list of the types in the insect collections belonging to the University of Illinois. These collections are available for study by members of the Survey Staff in keeping with the cooperative policy which also places the facilities and insect collection of the Survey at the service of the University. The Natural History Museum of the University of Illinois possesses the Andreas Bolter and second W. A. Nason collections of insects. Both of these collections were gifts to the University, the former in 1900 and the latter in 1920. The Bolter collection is the only one of the two which contains any types. The Department of Entomology of the University acquired the A. D. MacGillivray collection of Tenthredinoidea in 1924. This is one of the most important collections of sawflies in North America and is exceedingly rich in types. The Bolter and second Nason collections are now housed in the Natural History Museum of the University, and the A. D. MacGillivray collection is with the types of the Natural History Survey.

Some special comments are necessary concerning the contents and preparation of this article. Attention has already been directed to the selection of lectotypes to stand for single types in the case of cotypic series. The designation of lectoallotype has been given to a single specimen of the opposite sex from the lectotype of a cotypic series. The remainder of the cotypic series, after the selection of single types, have been regarded as paratypes. Where the describer of a new species has clearly indicated the selection of a type and an allotype no selections have been necessary. In cases where the describer of a new species based his description upon a unique, that specimen is considered as the type without the presence of such a statement in the literature. Where both sexes

are specifically described in the original description, based in each case upon single specimens, those specimens have been considered as the type and the allotype. No transposition of original designations of type to holotype, or *vice versa*, have been made. They are listed here as given in the original description, since from the standpoint of taxonomy they are the same.

In some instances no single types have been selected from cotypic material. This is because of either the extremely poor condition of the cotypes or because the selection of the lectotype rightfully belongs to some other institution. Where it has been deemed advisable to select a lectotype of a species mounted in balsam on a slide with other specimens of the same or different species, the specimen so selected has been surrounded by a circular cut on the cover glass. A few specimens have been considered as allotypes that furnished the basis for the description of a previously undescribed or unknown sex of a species already known. This is not in conformity with the use of this term as employed by some (where the allotype must be one of the paratypes), but has the sanction of others. The International Rules of Zoological Nomenclature do not specifically cover this point.

The type series of A. A. Girault in the Survey collection require still further comment. Girault, *in litt.*, has occasionally used terms in an entirely different sense from their accepted use at the present time. In this paper his use of cotype is construed to be equivalent to paratype. Specimens listed by him in his original description, but not specifically listed by him as "type" or "cotypes", are considered as paratypes. When more than one specimen in a type series was designated as "type" by Girault, a single specimen has been selected as the lectotype and the remaining specimens as paratypes, depending as in all other cases upon the priority rights of this institution to the single type.

All type specimens listed in this paper have been labeled and isolated from the general reference collection to insure their continued preservation. It is oftentimes the case that some structural part of an insect is mounted in balsam on a slide and the remaining portion on an insect pin or a card-point mount. Note is made of this fact in the labeling of all specimens so mounted so that they are securely linked together.

The abbreviations used for citations to places of original descriptions are those commonly used in entomological publications. The references have been given in full because of the character of this article. The letter-files of the Survey have been critically searched for information regarding the precise dates of publication of the Reports of the State Entomologists. These dates, with one exception, have never been determined previously. Their significance lies in their bearing upon questions of priority as evidenced by a recent paper of P. R. Myers published in the *Proc. Ent. Soc. Wash.*, Vol. 26, No. 9, December, 1924, pp. 222-224. The dates assigned to them are based upon the first definite acknowledgments of these Reports contained in our letter-files or other letters bearing upon their publication or distribution.

The abbreviation "Acc. No." refers to the Accession Catalogue of the Survey and "Hart Acc. No." to a small Accession Catalogue of the late Mr. C. A. Hart. The "Slide No." refers to the Survey collection of slides. The data pertaining to the places and dates of types, as well as full information regarding other matters of importance or interest, are given with each type, allotype, and paratype. Much of this information has never been published and in some cases even the locality of a type has not been heretofore recorded. A few errors in the literature regarding the localities of types, etc., have been corrected. Collectors' names, where known, are given in parentheses following each record. For the sake of completeness and usefulness, notes on synonymy have been added and genotype designations indicated. No new synonymy, however, is here published. The sequence of orders and families of the Natural History Survey and the Bolter collections is arranged in a purely arbitrary manner. The family arrangement of the A. D. MacGillivray collection of Tenthredinoidea is in accord with his published classifications of 1906 and 1916. Generic and specific names in all cases are arranged alphabetically under family and order groupings.

Since most of the species of sawflies described by MacGillivray are represented by types in his collection, Mr. S. A. Rohwer has suggested the desirability of publishing a list of the species the types of which are not in the collection here, place of their description, and their present location if known. This list is published as an appendix to this article. It is probable that several species, the types of which have not been located, are in the MacGillivray collection without identifying labels or a present clue as to their identity.

The following persons have greatly aided in the preparation of this list by furnishing me with references, notes on synonymy, and other information and favors of a varied character: E. T. Cresson, Jr., L. H. Weld, F. C. Baker, C. L. Metcalf, F. H. Benjamin, H. Morrison, C. W. Johnson, J. J. Davis, R. A. Cushman, J. R. Malloch, J. M. Aldrich, A. B. Gahan, and particularly S. A. Rohwer.

Family COREIDAE

torhinta flava Fracker

Ann. Ent. Soc. Amer., Vol. XVI, No. 2, June, 1923, p. 171.
 Holotype.—♂: Brownsville, Texas, December 9, 1910 (C. A. Hart).
 Allotype.—♀: Lake Lomalta, Texas, November 27, 1910 (C. A. Hart)

Family PENTATOMIDAE

uschistus subimpunctatus Malloch

Bull. Ill. State Nat. Hist. Surv., Vol. XIII, Art. VII, June, 1919, p. 191.
 Type.—♀: Anna, Illinois, July 22, 1883. Acc. No. 3791.

hyanta elegans Malloch

Bull. Ill. State Nat. Hist. Surv., Vol. XIII, Art. VII, June, 1919, p. 218.
 Type.—♂: Loma, Texas, July 7, 1908.
 Allotype.—♀: Lake Lomalta, Texas, November 27, 1910.

Family CYDNIDAE

orimelaena agrella McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XIII, Art. VII, June, 1919, p. 216
 Paratypes.—♂ and ♀: Kentucky; Plummers Island, Maryland, May 18
 1913 (W. L. McAtee).

orimelaena harti Malloch

Bull. Ill. State Nat. Hist. Surv., Vol. XIII, Art. VII, June, 1919, p. 215.
 Type.—♂: Makanda, Illinois, by sweeping, June 26, 1909 (C. A. Hart).
 Allotype.—♀: Makanda, Illinois, by sweeping, June 26, 1909 (C. A. Hart)

orimelaena interrupta Malloch

Bull. Ill. State Lab. Nat. Hist., Vol. XIII, Art. VII, June, 1919, p. 214.
 Type.—♂: Brownsville, Texas, November 23, 1911, swept from pastures
 in South Texas Garden (C. A. Hart).
 Paratype.—♂: Brownsville, Texas, November 23, 1911, swept from pas-
 tures in South Texas Garden (C. A. Hart).

orimelaena minutissima Malloch

Bull. Ill. State Nat. Hist. Surv., Vol. XIII, Art. VII, June, 1919, p. 214.
 Type.—♂: Sarita, Texas, on sand hills, December 1, 1911 (C. A. Hart)

orimelaena polita Malloch

Bull. Ill. State Nat. Hist. Surv., Vol. XIII, Art. VII, June, 1919, p. 213.
 Type.—♀: Brownsville, Texas, July 10, 1908 (C. A. Hart).

salgapha aterrima Malloch

Bull. Ill. State Nat. Hist. Surv., Vol. XIII, Art. VII, June, 1919, p. 211.
 Type.—♂: Odin, Illinois, on pink sorrel, May 12, 1902 (E. G. Titus)
 Acc. No. 31440.

Lectoallotype.—♀: White Heath, Illinois, June 18, 1906.

Paratypes.—♂ and ♀: Havana, Illinois, along road to Devil's Hole,
 August 15, 1907; Dongola, Illinois, May 10, 1917; Grand Tower, Illinois,
 June 27, 1906; Northern Illinois; Southern Illinois; Normal, Illinois,
 June 14, 1882; Urbana, Illinois, June 30, 1888 (J. Martin and C. A.
 Hart); Cobden, Illinois, April 12, 1883; two without data. Acc. Nos.
 3057, 14585 and 3198.

ORDER HOMOPTERA

Family CICADIDAE

Tibicen semicincta Davis

Journ. N. Y. Ent. Soc., Vol. XXXIII, No. 1, March, 1925, p. 41.
 Paratype.—♂: Baboquivari Mountains, Pima County, Arizona, June, 1924
 (O. C. Poling).

Family MEMBRACIDAE

Ceresa turbida Goding

Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. XIV, January, 1894, p. 406.
 Paratype.—♂: Colorado (Gillette).
 Now considered as a synonym of *Ceresa basalis* Walker.

Telamona irrorata Goding

Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. XIV, January, 1894, p. 418.
 Cotype.—♂: Galesburg, Illinois (C. W. Stromberg).
 Now listed as *Telamona dubiosa* Van Duzee, *irrorata* being preoccupied.

Family CICADELLIDAE

Cicadula nigrifrons Forbes

Fourteenth Rep. State Ent. Ill., September 2, 1885, p. 67.
 Lectotype.—♂: Anna, Illinois, on corn, July 14, 1884 (S. A. Forbes).
 Acc. No. 4427.
 Lectoallotype.—♀: Anna, Illinois, on corn, July 14, 1884 (S. A. Forbes).
 Acc. No. 4427.

Paratypes.—♂ and ♀: Anna, Illinois, on corn, July 14, 1884 (S. A.
 Forbes); Mt. Carmel, Illinois, on oats, May 28, 1884 (H. Garman).
 Acc. Nos. 4427 and 1793.

This species is now placed in the genus *Thamnotettix* Zetterstedt.

Cicadula quadrilineatus Forbes

Fourteenth Rep. State Ent. Ill., September 2, 1885, p. 68.
 Lectotype.—♂: Marshall, Illinois, from wheat, May 22, 1884. Acc. No.
 1871.

Lectoallotype.—♀: Marshall, Illinois, from wheat, May 22, 1884. Acc.
 No. 1871.

Paratypes.—♂ and ♀: Marshall, Illinois, from wheat, May 22, 1884; West
 Union, Illinois, on wheat, May 24, 1884. Acc. Nos. 1871 and 1888.

Lectotype, Lectoallotype and 14 paratypes mounted on card points, re-
 mainder of type series in alcohol. This species is now considered as a
 synonym of *Cicadula scenotata* (Fallen), the latter having priority.

Dikraneura cockerelli Gillette

Psyche, Vol. VII, Suppl. 1, December, 1895, p. 14.
 Paratypes.—♀: New Mexico (1990).

Dikraneura communis Gillette

Proc. U. S. Nat. Mus., Vol. 20, No. 1138, April 20, 1898, p. 718.
 Paratype.—♂: Urbana, Illinois, May 14, 1889 (J. Marten). Acc. No.
 14873.

This species is now considered as a synonym of *Dikraneura mali* (Pro-
 vancher). In fair condition.

Empoa albopicta Forbes

Thirteenth Rep. State Ent. Ill., May 31, 1884, p. 181.
 Lectotype.—♂: Centralia, Illinois, on apple leaves, August 6, 1883. Acc.
 No. 3706.

Lectoallotype.—♀: Centralia, Illinois, on apple leaves, August 6, 1883.
 Acc. No. 3706.

Paratypes.—♂ and ♀: Centralia, Illinois, on apple leaves, August 6, 1883.
 Acc. No. 3706.

Lectotype, lectoallotype and 8 paratypes mounted on card points, re-
 mainder of paratypes in alcohol. This species is now considered synony-
 mous with *Empoasca mali* (LeBaron), the latter having priority.

Erythroneura abolla var. *lemnica* McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XVI, Art. III, July, 1926, p. 131.
 Holotype.—♀: Urbana, Illinois, Cottonwoods (University Woods), July
 12, 1920 (C. P. Alexander).
 Paratype.—♀: Urbana, Illinois, Brownfield Woods, April 29, 1920.

- oneura comes* var. *palimpsesta* McAtee
Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 43.
Holotype.—♂: Forest City, Illinois, April 3, 1917.
Allotype.—♀: Forest City, Illinois, April 3, 1917.
- oneura comes* var. *pontifex* McAtee
Bull. Ill. State Nat. Hist. Surv., Vol. XVI, Art. III, July, 1926, p. 136.
Holotype.—♀: Dubois, Illinois, May 24, 1917.
- oneura comes* var. *reflecta* McAtee
Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 43.
Paratype.—♀: Centerville (Monticello-Mahomet), Illinois, along Sangamon River, August 16, 1914.
- oneura comes* var. *rufomaculata* McAtee
Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 43.
Holotype.—♀: Clay City, Illinois, August 17, 1911.
Paratype.—♀: Clay City, Illinois, August 17, 1911; Urbana, Illinois, on grape, November 23, 1914; Illinois, No. 1992.
- oneura ligata* var. *pupillata* McAtee
Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 42.
Holotype.—♂: Urbana, Illinois, hibernating, February 21, 1900 (H. O. Woodworth). Acc. No. 25069.
Paratype.—♂: Urbana, Illinois, on window, July 7, 1915; Urbana, Illinois, in moss and bark, March 4, 1888 (C. A. Hart). Hart Acc. No. 152.
- oneura lunata* McAtee
Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 41.
Holotype.—♂: Urbana, Illinois, on tree trunk, November 11, 1915.
Allotype.—♀: White Heath, Illinois, May 7, 1909.
- oneura mallochi* McAtee
Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 41.
Holotype.—♂: Meredosia, Illinois, May 30, 1917.
- oneura mitella* McAtee
Bull. Ill. State Nat. Hist. Surv., Vol. XVI, Art. III, July, 1926, p. 132.
Holotype.—♂: White Heath, Illinois, April 30, 1916.
Allotype.—♀: Urbana, Illinois, November 3, 1916.
Paratypes.—♂ and ♀: White Heath, Illinois, April 30, 1916; Dongola, Illinois, May 10, 1916; Alto Pass, Illinois, May 7, 1917; DuBois, Illinois, May 23 and August 8, 1917.
- oneura oculata* McAtee
Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 39.
Holotype.—♀: Brownsville, Texas, in sweepings from weeds, November 30, 1910 (C. A. Hart).
- oneura repetita* McAtee
Bull. Ill. State Nat. Hist. Surv., Vol. XVI, Art. III, July 1926, p. 131.
Holotype.—♀: Illinois.
- oneura scutelleris* var. *insolita* McAtee
Bull. Ill. State Nat. Hist. Surv., Vol. XVI, Art. III, July, 1926, p. 133.
Holotype.—♀: Muncie, Illinois, along Stony Creek, July 5, 1914.
Allotype.—♂: Dongola, Illinois, August 23, 1916.
- oneura sexpunctata* Malloch
Bull. Brook. Ent. Soc., Vol. XVI, No. 1, February, 1921, p. 25.
Type.—♂: Muncie, Illinois, along Salt Fork, December 13, 1913 (C. A. Hart and J. R. Malloch).
According to McAtee (Bull. Ill. Nat. Hist. Surv., Vol. XV, Art. II, p. 40, April, 1924), this is synonymous with *E. tecta* McAtee.
- Gypona albimarginata* Woodworth
Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. II, October, 1887, p. 31.
Type.—♂: Urbana, Illinois, July 15, 1887 (C. A. Hart). Acc. No. 12915.
Now considered as a synonym of *Gypona scarlatina* var. *umbatipennis* Spangberg.

- Gypona bimaculata* Woodworth
Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. II, October, 1887, p. 32.
Type.—♂: Urbana, Illinois, July 31, 1886 (C. A. Hart). Acc. No. 10726.
The specific name of *woodworthi* was proposed by Van Duzee because *bimaculata* was preoccupied. This species is now considered as a synonym of *Gypona scarlatina* var. *pectoralis* Spangberg.
- Gypona bipunctulata* Woodworth
Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. II, October, 1887, p. 30.
Type.—♀: No data.
Now considered as a synonym of *Gypona melanota* Spangberg.
- Gypona nigra* Woodworth
Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. II, October, 1887, p. 31.
Lectotype.—♂: Champaign, Illinois, on weeds, July 24, 1885. Acc. No. 6814.
Paratype.—♂: Normal, Illinois, on wild plum, August, 1883; one paratype with no data. Acc. No. 3531.
Now considered as a synonym of *Gypona melanota* Spangberg.
- Tettigonia similis* Woodworth
Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. II, October, 1887, p. 25.
Type.—♀: Bloomington, Illinois, May 9, 1884. Acc. No. 1687.
Now considered as a synonym of *Cicadella gothica* (Signoret).
- Typhlocyba antigone* McAtee
Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 35.
Holotype.—♂: White Heath, Illinois, on oak, June 24, 1916.
- Typhlocyba appendiculata* Malloch
Can. Ent., Vol. LII, No. 4, April, 1920, p. 95.
Type.—♂: Elizabethtown, Illinois, July 8, 1917.
Allotype.—♀: Elizabethtown, Illinois, July 8, 1917.
Paratype.—♂: Urbana, Illinois, on oak, July 17, 1916 (J. R. Malloch).
- Typhlocyba athene* McAtee
Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 31.
Holotype.—♂: Urbana, Illinois, on tree-trunk, June 7, 1916 (J. R. Malloch).
- Typhlocyba gillettei* var. *apicata* McAtee
Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 25.
Paratypes.—♂ and ♀: Urbana, Illinois, tree-trunks and forestry, June 7, 9, 17, 1916; White Heath, Illinois, on oak, June 24, 1916; Elizabeth, Illinois, July 7, 1917.
- Typhlocyba gillettei* var. *casta* McAtee
Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 26.
Paratypes.—♂ and ♀: Urbana, Illinois, tree-trunks, June 8-9, October 23, 1916, July 9, 13, 14, 1920; White Heath, Illinois, on oak, June 24, July 5, 1916; Elizabeth, Illinois, July 6, 1917; Algonquin, Illinois, June 10, 1896, October 13, 1895; Crystal Lake, Illinois, July 21, 1916; Monticello, Illinois, along Sangamon River, June 28, 1914.
- Typhlocyba gillettei* var. *saffrana* McAtee
Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 26.
Paratype.—♀: White Heath, Illinois, July 5, 1916.
- Typhlocyba hartii* Gillette
Proc. U. S. Nat. Mus., Vol. 20, April 20, 1898, p. 754.
Paratype.—♀: Urbana, Illinois, swept from rye, May 14, 1889 (J. Marten) Acc. No. 14873.
Now placed in the genus *Erythroneura* Fitch.
- Typhlocyba lancifer* McAtee
Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 19.
Paratype.—♂: Urbana, Illinois, June 4, 1916.

neura comes var. *palimpsesta* McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 43.

otype.—♂: Forest City, Illinois, April 3, 1917.

otype.—♀: Forest City, Illinois, April 3, 1917.

neura comes var. *pontifex* McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XVI, Art. III, July, 1926, p. 136.

otype.—♀: Dubois, Illinois, May 24, 1917.

neura comes var. *reflecta* McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 43.

otype.—♀: Centerville (Monticello-Mahomet), Illinois, along Sangamon River, August 16, 1914.

neura comes var. *rufomaculata* McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 43.

otype.—♀: Clay City, Illinois, August 17, 1911.

otype.—♀: Clay City, Illinois, August 17, 1911; Urbana, Illinois, on grape, November 23, 1914; Illinois, No. 1992.

neura ligata var. *pupillata* McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 42.

otype.—♂: Urbana, Illinois, hibernating, February 21, 1900 (H. O. Woodworth). Acc. No. 25069.

otype.—♂: Urbana, Illinois, on window, July 7, 1915; Urbana, Illinois, in moss and bark, March 4, 1888 (C. A. Hart). Hart Acc. No. 152.

neura lunata McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 41.

otype.—♂: Urbana, Illinois, on tree trunk, November 11, 1915.

otype.—♀: White Heath, Illinois, May 7, 1909.

neura mallochi McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 41.

otype.—♂: Meredosia, Illinois, May 30, 1917.

neura mitella McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XVI, Art. III, July, 1926, p. 132.

otype.—♂: White Heath, Illinois, April 30, 1916.

otype.—♀: Urbana, Illinois, November 3, 1916.

otypes.—♂ and ♀: White Heath, Illinois, April 30, 1916; Dongola, Illinois, May 10, 1916; Alto Pass, Illinois, May 7, 1917; DuBois, Illinois, May 23 and August 8, 1917.

neura oculata McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XV, Art. II, April, 1924, p. 39.

otype.—♀: Brownsville, Texas, in sweepings from weeds, November 30, 1910 (C. A. Hart).

neura repetita McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XVI, Art. III, July 1926, p. 131.

otype.—♀: Illinois.

neura scutelleris var. *insolita* McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XVI, Art. III, July, 1926, p. 133.

otype.—♀: Muncie, Illinois, along Stony Creek, July 5, 1914.

otype.—♂: Dongola, Illinois, August 23, 1916.

neura sexpunctata Malloch

Bull. Brook. Ent. Soc., Vol. XVI, No. 1, February, 1921, p. 25.

otype.—♂: Muncie, Illinois, along Salt Fork, December 13, 1913 (C. A. Hart and J. R. Malloch).

According to McAtee (Bull. Ill. Nat. Hist. Surv., Vol. XV, Art. II, p. 40, April, 1924), this is synonymous with *E. tecta* McAtee.

ona albimarginata Woodworth

Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. II, October, 1887, p. 31.

Type.—♂: Urbana, Illinois, July 15, 1887 (C. A. Hart). Acc. No. 12915.

Now considered as a synonym of *Gypona scarlatina* var. *limbatipennis* Spangberg.

Gypona bimaculata Woodworth

Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. II, October, 1887, p. 32.

Type.—♂: Urbana, Illinois, July 31, 1886 (C. A. Hart). Acc. No. 10726.

The specific name of *woodworthi* was proposed by Van Duzee because *bimaculata* was preoccupied. This species is now considered as a synonym of *Gypona scarlatina* var. *pectoralis* Spangberg.

Gypona bipunctulata Woodworth

Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. II, October, 1887, p. 30.

Type.—♀: No data.

Now considered as a synonym of *Gypona melanota* Spangberg.

Gypona nigra Woodworth

Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. II, October, 1887, p. 31.

Lectotype.—♂: Champaign, Illinois, on weeds, July 24, 1885. Acc. No. 6814.

Paratype.—♂: Normal, Illinois, on wild plum, August, 1883; one paratype with no data. Acc. No. 3531.

Now considered as a synonym of *Gypona melanota* Spangberg.

Tettigonia similis Woodworth

Bull. Ill. State Lab. Nat. Hist., Vol. III, Art. II, October, 1887, p. 25.

Type.—♀: Bloomington, Illinois, May 9, 1884. Acc. No. 1687.

Now considered as a synonym of *Cicadella gothica* (Signoret).

Typhlocyba antigone McAtee

Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 35.

Holotype.—♂: White Heath, Illinois, on oak, June 24, 1916.

Typhlocyba appendiculata Malloch

Can. Ent., Vol. LII, No. 4, April, 1920, p. 95.

Type.—♂: Elizabethtown, Illinois, July 8, 1917.

Allotype.—♀: Elizabethtown, Illinois, July 8, 1917.

Paratype.—♂: Urbana, Illinois, on oak, July 17, 1916 (J. R. Malloch).

Typhlocyba athene McAtee

Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 31.

Holotype.—♂: Urbana, Illinois, on tree-trunk, June 7, 1916 (J. R. Malloch).

Typhlocyba gillettei var. *apicata* McAtee

Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 25.

Paratypes.—♂ and ♀: Urbana, Illinois, tree-trunks and forestry, June 7, 9, 17, 1916; White Heath, Illinois, on oak, June 24, 1916; Elizabeth, Illinois, July 7, 1917.

Typhlocyba gillettei var. *casta* McAtee

Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 26.

Paratypes.—♂ and ♀: Urbana, Illinois, tree-trunks, June 8-9, October 23, 1916, July 9, 13, 14, 1920; White Heath, Illinois, on oak, June 24, July 5, 1916; Elizabeth, Illinois, July 6, 1917; Algonquin, Illinois, June 10, 1896, October 13, 1895; Crystal Lake, Illinois, July 21, 1916; Monticello, Illinois, along Sangamon River, June 28, 1914.

Typhlocyba gillettei var. *saffrana* McAtee

Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 26.

Paratype.—♀: White Heath, Illinois, July 5, 1916.

Typhlocyba hartii Gillette

Proc. U. S. Nat. Mus., Vol. 20, April 20, 1898, p. 754.

Paratype.—♀: Urbana, Illinois, swept from rye, May 14, 1889 (J. Marten) Acc. No. 14873.

Now placed in the genus *Erythroneura* Fitch.

Typhlocyba lancifer McAtee

Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 19.

Paratype.—♂: Urbana, Illinois, June 4, 1916.

- typhlocyba nicarete* McAtee
Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 36.
Holotype.—♂: White Heath, Illinois, on oak, June 24, 1916.
Paratypes.—♂ and ♀: White Heath, Illinois, on oak, June 24, 1916; Urbana, Illinois, forestry, June 17, 1916.
- typhlocyba phryne* McAtee
Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 34.
Holotype.—♀: Urbana, Illinois, July 9, 1920.
- typhlocyba piscator* McAtee
Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 7.
Holotype.—♂: Elizabeth, Illinois, July 8, 1917.
- typhlocyba pomaria* McAtee
Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 29.
Paratypes.—♀: Clayton, Illinois, September 30, 1916; Urbana, Illinois, September 20, 1916; Olney, Illinois, on apple, September 21, 1916.
- typhlocyba rubriocellata* Malloch
Bull. Brook. Ent. Soc. Vol. XV, Nos. 2 and 3, April-June, 1920, p. 48.
Type.—♀: Augerville Grove (Brownfield Woods), Urbana, Illinois, June 20, 1919 (J. R. Malloch).
- typhlocyba rubriocellata* var. *clara* McAtee
Proc. U. S. Nat. Mus., Vol. 68, Art. 18, June 10, 1926, p. 21.
Holotype.—♀: Urbana, Illinois, Cottonwoods (University Woods), on *Aesculus*, July 30, 1920.

Family FULGORIDAE

- rucomorpha bicolor* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 186.
Holotype.—♂: Brownsville, Texas, palm jungle sweepings, November 21, 1911 (C. A. Hart).
Allotype.—♀: Brownsville, Texas, palm jungle sweepings, November 21, 1911 (C. A. Hart).
Paratype.—♀: Brownsville, Texas, palm jungle sweepings, November 21, 1911 (C. A. Hart).
- rucomorpha decorata* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 188.
Holotype.—♂: Brownsville, Texas, palm jungle sweepings, November 21, 1911 (C. A. Hart).
Allotype.—♀: Brownsville, Texas, palm jungle sweepings, November 21, 1911 (C. A. Hart).
Paratype.—♀: Brownsville, Texas, palm jungle sweepings, November 21, 1911 (C. A. Hart).
- rucomorpha vittata* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 185.
Holotype.—♀: Brownsville, Texas, palm jungle sweepings, November 21, 1911 (C. A. Hart).
Paratype.—♀: Brownsville, Texas, palm jungle sweepings, November 21, 1911 (C. A. Hart).
- aklastus harti* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 195.
Holotype.—♂: Grand Tower, Illinois, August 8, 1891 (C. A. Hart and Shiga). Acc. No. 17202.
The locality of this type was erroneously recorded in the original description by Z. P. Metcalf as Alto Pass, Illinois, August 13, 1891.

- Herpis australis* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 196.
Holotype.—♂: Brownsville, Texas, November 4 (G. Dorner).
In the original description the date is November 11. Now considered as a synonym of *Cedusa praeceox* Van Duzee.
- Liburnia alexanderi* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 209.
Paratypes.—♂: Dongola, Illinois, meadow, August 24, 1916; Metropolis, Illinois, August 18, 1891 (C. A. Hart). Acc. No. 17232.
Original description gives Urbana, Illinois, instead of Metropolis for latter record. Now placed in the genus *Delphacodes* Fieber.
- Liburnia fulvidorsum* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 210.
Holotype.—♂: Brownsville, Texas, South Texas Garden, December 19, 1910 (C. A. Hart).
Paratype.—♂: Brownsville, Texas, South Texas Garden, December 19, 1910 (C. A. Hart).
Now placed in the genus *Delphacodes* Fieber. Erroneously recorded in original description as collected on December 10.
- Megamelanus lautus* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 200.
Holotype.—♂: Loma, Texas, sweepings, December 11, 1910 (C. A. Hart).
Allotype.—♀: Loma, Texas, sweepings, December 11, 1910 (C. A. Hart).
Paratype.—♂: Loma, Texas, sweepings, December 11, 1910 (C. A. Hart).
- Microledrida flava* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 183.
Holotype.—♂: Brownsville, Texas, palm jungle sweepings, November 21, 1911 (C. A. Hart).
- Myndus truncatus* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 184.
Holotype.—♂: Elizabeth, Illinois, July 6, 1917.
- Oecleus productus* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 184.
Holotype.—♂: Dongola, Illinois, August 23, 1916.
Paratype.—♂: Metropolis, Illinois, August 19, 1916.
- Oliarus texanus* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 181.
Holotype.—♂: Brownsville, Texas, palm jungle sweepings, November 21, 1911 (C. A. Hart).
Allotype.—♀: Brownsville, Texas, palm jungle sweepings, November 21, 1911 (C. A. Hart).
Paratypes.—♂ and ♀: Brownsville, Texas, in pasture, South Texas Garden, November 23, 1911 (C. A. Hart), December 9, 1911, sweepings (C. A. Hart).
- Oliarus vittatus* Metcalf
Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 181.
Holotype.—♂: Brownsville, Texas, in pasture, South Texas Garden, November 19, 1911 (C. A. Hart).
Allotype.—♀: Brownsville, Texas, in pasture, South Texas Garden, December 8, 1911 (C. A. Hart).

Otiocerus wolffii var. *nubilus* McAtee

Bull. Ill. State Nat. Hist. Sur., Vol. XVI, Art. III, July, 1926, p. 128.
Type.—♀: Metropolis, Illinois, September 3, 1924 (T. H. Frison).

Pissonotus fulvus Metcalf

Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 206.
Holotype.—♂: Paxton, Illinois, July 30, 1916.
Allotype.—♀: Paxton, Illinois, July 30, 1916.

Traxus fulvus Metcalf

Journ. Elisha Mitchell Sc. Soc., Vol. XXXVIII, Nos. 3 and 4, May, 1923, p. 189.
Allotype.—♀: Brownsville, Texas, November 21, 1910 (C. A. Hart).
Paratypes.—♀: Brownsville, Texas, sweepings from weeds, November 24, 1910 (C. A. Hart), palm jungle sweepings, November 21, 1911 (C. A. Hart), November 26, 1910 (C. A. Hart).

Family CHERMIDAE

Calophya pallidula McAtee

Bull. Ill. State Nat. Hist. Surv., Vol. XVI, Art. III, July, 1926, p. 127.
Holotype.—♀: Meredosia, Illinois, May 29, 1917.
Paratype.—♀: Meredosia, Illinois, May 29, 1917.

Trioza pyrifoliae Forbes

Fourteenth Rep. State Ent. Ill., September 2, 1885, p. 98.
Lectotype.—♂: Normal, Illinois, on pear leaves, May 7, 1884. Acc. No. 1624.
Lectoallotype.—♀: Normal, Illinois, on pear leaves, May 7, 1884. Acc. No. 1624.
Paratypes.—♀: Normal, Illinois, on pear leaves, May 7, 1884. Acc. No. 1624.

Family APHIDIDAE

Aphis cucumeris Forbes

Twelfth Rep. State Ent. Ill., November 20, 1883, p. 83.
Type.—♀: Normal, Illinois, on muskmelons, July 19, 1882 (S. A. Forbes). Slide No. 1557.
Wingless. In fair condition. Mounted in balsam.
Now considered to be synonymous with *Aphis gossypii* Glover.

Callipterus caryaefoliae Davis

Ent. News, Vol. XXI, No. 5, May, 1910, p. 198.
Lectotypic slide.—Winged viviparous females: Lake Forest, Illinois, on hickory, June 24, 1909 (J. J. Davis). Acc. No. 43266. Slide No. 1838.
In fair condition. Mounted in balsam.

Callipterus quercifolii Thomas

Eighth Rep. State Ent. Ill., 1879, p. 112.
Cotypes.—♀: Sauk City, Wisconsin, on red oak leaves, June (Bundy). Acc. No. 47317.
Several specimens in alcohol in vial. In poor condition. Stated by Davis (1913) to be synonymous with *Chaitophorus quercicola* Monell.

Callipterus ulmicola Thomas

Eighth Rep. State Ent. Ill., 1879, p. 111.
Cotypes.—♀: Sauk City, Wisconsin, on elm, June (Bundy). Acc. No. 47318.
Several specimens in alcohol in vial. In poor condition. Now considered as synonymous with *Callipterus ulmifolii* Monell (Davis, 1913).

Chaitophorus flavus Forbes

Thirteenth Rep. State Ent. Ill., May 31, 1884, p. 42.
Lectotype.—Winged ♀: Champaign, Illinois, on sorghum, July 25, 1883 (S. A. Forbes). Acc. No. 4968. Slide No. 3152.
Paratypes.—Adults and nymphs: Champaign, Illinois, on sorghum, July 25, 1883 (S. A. Forbes). Acc. No. 4968. Slides No. 3151, 3153—3156.
In poor condition. Lectotype and nineteen paratypes mounted in balsam on six slides, remainder of paratypes in alcohol in two vials. Now placed in the genus *Sipha* Passerini.

Chaitophorus negundinis Thomas

Bull. Ill. State Lab. Nat. Hist., Vol. I, No. 2, June, 1878, p. 10.
Cotypes.—Winged and wingless ♀: Peoria, Illinois, on *Negundo aceroides*, June (Miss E. A. Smith). Slide No. 2775.
In poor condition. Mounted in balsam.

Forda occidentalis Hart

Eighteenth Rep. State Ent. Ill., March 4, 1895, p. 96. (Reprint, 1920, p. 84).
Lectotype.—Wingless viviparous ♀: Champaign, Illinois, in blue-grass sod, attended by *Lasius niger*, April 28, 1894 (McElfresh). Acc. No. 19910.
Paratypes.—Wingless viviparous ♀: Urbana, Illinois, April 4, 1894 (J. Marten); Urbana, Illinois, April 10, 1894, on *Capsella bursa-pastoris*, attended by *Formica fusca gagates* (Surface). Acc. Nos. 19840 and 19807.
Lectotype in alcohol and paratypes in balsam on slide and in alcohol. In very poor condition.

Geocia squamosa Hart

Eighteenth Rep. State Ent. Ill., March 4, 1895, p. 102. (Reprint, 1920, p. 90).
Lectotype.—Wingless viviparous ♀: Champaign, Illinois, on roots of corn, October 20, 1887 (C. M. Weed). Acc. No. 14197. Slide No. 3164.
Paratypes.—♂ (?) and ♀: Normal and Champaign, Illinois, on various grasses and often associated with ants, February to November, 1883 to 1890. Acc. Nos. 1204, 1421, 2203, 3240, 3246, 4583, 5356, 5752, 6528, 7226, 7290, 8164, 10118, 10144, 10154, 10159, 10238, 10983, 12321, 12322, 12486, 12665, 12666, 12667, 12706, 14197, 14358, 16013, 17772, 19758, 19807, 19840, 19911. Slide Nos. 3161-3163, 3165-3169, 3172 and 3173.
In very poor condition. Paratype material in various stages of development mounted in balsam on ten slides and in alcohol in vials.

Idiopterus nephrolepidis Davis

Ann. Ent. Soc. Amer., Vol. II, No. 3, September, 1909, p. 199.
Lectotypic slide.—Winged and wingless viviparous ♀: Chicago, Illinois, May 2, 1908, on sword fern in greenhouse (J. J. Davis). Acc. No. 42533. Slide No. 3117.

The genotype of *Idiopterus* Davis (Monobasic).

Megoura solani Thomas

Eighth Rep. State Ent. Ill., 1879, p. 73.
Type.—Winged ♀: Carbondale, Illinois, on tomato, May 26, 1878 (C. Thomas). Slide 2772.
In poor condition.

Pemphigus fraxinifolii Thomas

Eighth Rep. State Ent. Ill., 1879, p. 146.
Cotypes.—Winged viviparous ♀ and immature forms: Sauk City, Wisconsin, on *Fraxinus quadrangulata* June (Bundy). Slide 2762.
In very poor condition. Several specimens in alcohol in a vial. Now placed in the genus *Prociphilus* Koch.

Pemphigus rubi Thomas

Eighth Rep. State Ent. Ill., 1879, p. 147.
Cotypes.—Winged ♀: Carbondale, Illinois, on raspberry, April 12, 1878 (G. H. French). Slides Nos. 2767 and 2768.
Mounted on balsam on two slides. In poor condition.