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STEPHEN A. FORBES, PH.D., LL.D.,
DIRECTOR

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THE CYRUS THOMAS COLLECTION OF APHIDIDAE, AND A TABULATION OF SPECIES MENTIONED AND DESCRIBED IN HIS PUBLICATIONS

BY

JOHN J. DAVIS, B. S.

ARTICLE II.—*The Cyrus Thomas Collection of Aphididæ, and a Tabulation of Species mentioned and described in his Publications.* By JOHN J. DAVIS, B.S.

Many inquiries, from specialists on the *Aphididæ*, and others, regarding the disposition and condition of the Thomas collection of *Aphididæ* have been received, and the following data, most of which are based on a study of this collection, seem worthy of publication.

There are seventy-three slides and one hundred seventy-six vials in this collection, all of which are in the custody of the Illinois State Laboratory of Natural History. With few exceptions they are without data other than numbers, the key to which is unknown. The contents of many of the vials are dried up and the others are as a rule in very poor condition, and the writer has not thought it worth the time necessary to determine any of the species excepting those bearing data other than the numbers.

I am able to present these notes through the kindness of Dr. S. A. Forbes, who has given me full access to the collection. I am also under obligation to Mr. J. T. Monell, who kindly read and criticised the manuscript.

The three important contributions by Dr. Thomas on the *Aphididæ* are the following.

1877. Notes on the Plant-lice found in the United States. Trans. Ill. State Hort. Soc., 1876 (Vol. 10, n. s.), pp. 137-212. 4 figs.

Chiefly a compiled paper, giving most of the older American descriptions. No new species are described, but the name *Eriosoma Rileyi* is proposed for *E. ulmi* Riley, which name is preoccupied. At the close of the paper the plants mentioned are listed with the aphids infesting each, as also the aphids mentioned with their plant hosts, and two synoptical tables are added, one giving Passerini's arrangement of the *Aphididæ*.

1878. A list of the Species of the Tribe *Aphidini*, Family *Aphidæ*, found in the United States, which have been heretofore named, with Descriptions of some New Species. Bull. Ill. State Lab. Nat. Hist., Vol. I, No. 2, Art. I, pp. 3-16. Printed in December, 1877, and separates distributed in January, 1878.

Lists fifty-eight species of *Aphididæ*, eighteen of which are described as new.

1880. Eighth Report of the State Entomologist on the Noxious and Beneficial Insects of Illinois. Trans. Dept. Agr. Ill., 1878, Vol. 16, Appendix. 212+X pp., 47 figs.

On pages 46-172, author lists and gives descriptions of 149 species which occur or are supposed to occur in the United States, seventeen of which are described as new. As a supplement to his report he gives from the Riley-Monell paper (Bull. U. S. Geol. Surv. Terr., Vol. V, No. 1, 1879, pp. 1-32), as he says, "the descriptions of the new species, and such observations and criticisms on their [the authors'] notes as I think are required."

Slides

In the following annotated list of slides the complete label on each slide is indicated by quotation marks.

"27" and "Pea May 28, '78." *Macrosiphum pisi* Kalt. Winged and wingless females on slide. Very probably the specimens from which he drew up his description of *pisi,* which he says were collected at Carbondale in May.

"32" and *"Aphis viburni."* One winged female mounted in balsam. This is evidently not *Aphis viburnicola* Gil., nor does it appear to be the European *A. viburni* Scop., which probably does not occur in this country. It seems to be the same species which I have found abundant on *Viburnum* in the Chicago parks, and which Mr. Monell has collected in St. Louis, Mo. It is probably a new species.

"35". This is probably *Chaitophorus quercicola* Monl. (=*Callipterus quercifolii* Thos.). Only the wings and a portion of the thorax remain.

"58". *Colopha ulmicola* Fitch.

"76" and "Plum Carb[ondale, Ill.] Apr. 20, '78". The specimen, a single winged individual, is not in very good condition. It may be the species which Thomas referred to *Aphis pruni* Koch (Eighth Report, p. 87), since he says of that: "appeared early in the season on one of my plum trees [Carbondale, Ill.] but soon disappeared." The single preserved specimen, however, differs from Thomas's rather anomalous description of *pruni* in that the antennæ do not reach to the base of the cornicles. The species is apparently not *Aphis prunifoliæ* Fitch, which may or may not be identical with *A. pruni* Koch.

"80". *Pemphigus populicaulis* Fitch. See also under vial 80, page 103.

"81." *Aphis prunifoliæ* Fitch. See also under vial 81, page 103.

"82". *Phorodon humuli* Schr. See also under vial 82, page 104.

"83". *Pemphigus fraxinifolii* Riley. Probably Thomas's types. Poor specimens. See also under vial 83, page 104.

"84". *Macrosiphum viticola* Thos. See also under vial 84, page 104.

"86". *Callipterus punctatus* Monl. See discussion under vial 86, page 104. One specimen has venation rather heavy and the

dusky patches at the ends of veins are quite conspicuous; in the other specimen the wing veins are narrow and the distal patches much less conspicuous.

"87". Probably *Myzus ribis* Linn. Specimen in too poor condition for positive determination. See under vial 87, page 104.

"88". *Drepanaphis acerifoliæ* Thos. Two winged specimens in rather poor condition. These may be the types. See also data under vial 88, page 104.

"89". *Callipterus ulmifolii* Monl. These specimens and those in vial 89 (see page 104) are doubtless the types of *Callipterus ulmicola* Thos., which is a synonym of *C. ulmifolii* Monl.

"90". *Macrosiphum heucheræ* Thos. See under vial 90, page 105.

"91" Poor specimens. Appear to be *Aphis apocyni* Koch. See vial 91, page 105.

"92". *Chaitophorus quercicola* Monl. These specimens and those in vial 92 (see page 105) are doubtless the types of Thomas's *Callipterus quercifolii,* which proves to be a synonym of *Chaitophorus quercicola* Monl.

"93". On this slide is one winged specimen of *Myzus persicæ* Sulz. and one wingless adult and one immature specimen of *Macrosiphum tulipæ* Monl. Camera lucida drawings of the cornicle and cauda of the adult wingless *tulipæ* are given as Figure 21, Plate VII. See discussion under vial 93, page 105.

"94". *Macrosiphum rudbeckiæ* Fitch. One wingless specimen and one poor winged one with antennæ gone. See vial 94, page 106.

"95" and "Raspberry Apr. 12, '78". (Two slides, a winged specimen on each slide.) *Pemphigus rubi* Thos. Doubtless the types, which Thomas says were collected on raspberry at Carbondale, Ill., April, 1878. The accompanying figures (Pl. VI, Figs. 1–4) are camera lucida drawings made from these specimens. Only two hind wings give any idea of the venation: the one shown in Figure 4, and another, which, although wrinkled up, shows the three veins to arise from a common point. Antennal sensoria as follows: III, 6; IV, 2; V, 1. Average lengths of antennal segments: I, 0.0489; II, 0.07; III, 0.1793; IV, 0.0815; V, 0.0815; VI, 0.1222,—total, 0.5834 mm.

"98". *Trama erigeronensis* Thos. Probably types; all immature. See vial 98, page 106.

"106" and "Th P Nov. 30 root". Discoidal vein with one branch, antennæ 6-segmented, the 3d and 6th segments subequal in length. Other characters indistinct because of the poor condition of the specimens. They are probably *Schizoneura paniccola* Thos., and may be the types, which were said to have been collected by Th. Pergande on grass roots in November.

"4x Aphid on Foxtail grass". *Aphis* sp.; immature specimens. This is *A. setariæ* Thos. according to Monell.

"Aphis on Cephalanthus Aug. 5/76 a". *Aphis cephalanthi* Thos. The last two mentioned are on the same slide, and are mounts from Mr. J. T. Monell.

"Tomato occidentalis May 26, '78". This is the species described by Thomas as *Megoura solani* (now referred to the genus *Rhopalosiphum*), and quite likely it is the type, which he says was collected on tomato in May. Measurements taken from this specimen are as follows.

I	II	III*	IV	V	VI Base	VI Filament
0.0978	0.0652	0.3260 0.4075	0.3586 0.4075	0.2934 0.3260	0.1304	0.5216 mm.

Right antennal segment III with 8 sensoria in a row, the left segment with 6 or 7. The third discoidal branches at a little more than half the distance from the base to the tip of the wing. Length of cornicles, 0.3586 and 0.3749 mm., respectively; and the greatest width, 0.1304 and 0.1222 mm. Length of cauda, 0.1304 mm.

This is not *Myzus persicæ* Sulz. (=*Rhopalosiphum dianthi*) as has been considered by some authors.

Camera lucida drawings from the Thomas specimen, of the head, antenna, cornicle, and cauda, are shown in Figures 5–8, Plate VI.

"*Pemphigus acerifoliæ* Monell S[ept.?] 24, '78". In very poor condition.

"Pine Carb[ondale, Ill.] Apr. 20, 1878". A single winged viviparous female in balsam. This is *Mindarus abietinus* Koch, and is probably the type of *Schizoneura pinicola* Thos., which

*The measurements for III may not be exactly accurate as it is quite slanting on the slide and consequently difficult to measure.

Thomas says was collected April 20, 1878, at Carbondale, Ill., the description of the winged form being made from a single individual. Additional descriptive notes, based on this slide but not given by Thomas, are as follows:

Antennal segment III bears 13–15 short transverse sensoria; IV, V, and base of VI each with a single sensoria at distal end, the last two segments slightly imbricate. Measurements follow.

	I	II	III	IV	V	VI	Total
Right antenna	0.057	0.0652	0.3586	0.1956	0.2037	0.2119	1.0920 mm.
Left antenna	0.057	0.0733	0.3749	0.1793	0.1956	0.2037	1.0838 mm.

Length of body (somewhat shriveled).....1.127 mm.
Length of wing .....2.685 mm.
Width of wing .....0.824 mm.

(Camera lucida drawings of the fore and hind wings, and antenna, made from this specimen are shown in Plate VI, Figs. 9–11.)

"Chaitophorus negundinis". In rather poor condition. This may be the type.

"J. Monell, Lonicera, June 24, '78". One each of the winged, wingless, and immature forms, mounted in balsam. This is doubtless the species which Thomas refers to as *Chaitophorus loniceræ* Monell MSS. After examining these and the type specimens—Monell's 66x (="*Aphis loniceræ* July 17, 1877, St. Louis, Mo.") and 148x (="Lonicera aphid June 16, 1878, St. Louis")—kindly loaned me by Mr. Monell, I considered the form more closely allied to the genus *Chaitophorus*, as Thomas had placed it, but doubtless the old slides are misleading, as appears from the correspondence here quoted. Professor Oestlund, in a letter of February 19, 1910, says: *"Aphis loniceræ* is an anomalous species that is neither a typical *Aphis* nor *Chaitophorus*, but undoubtedly fits better in *Aphis* than in *Chaitophorus*. If you had observed the species in the field you would not connect it in the least with *Chaitophorus*. In case I should characterize it from my experience with it in the field, I would say that it is an *Aphis* that is trying to be a *Pemphigus*. At present I have not settled its true position in the family to my mind and do not know if we will be able to do so before its life history becomes better known. But Monell's description, though short, is so well done that we need

have no doubt of what he refers to. I prefer, therefore, to accept Monell's position of it until the genus *Aphis* can be cleared up. * * * *Aphis loniceræ* appears to be a rare form; I have only twice encountered it. * * * Some fresh balsam mounts made in 1898 and now pretty well shrunken show the cauda conical and rather stout; the anal plate a very low cone. The cornicles are very low, in fact almost on a level with the body on the outer side but distinctly raised above on the inner side. Joint 3 of the antennæ have some 40—45 circular, scattered sensoria; and the fourth often with one or two". Mr. Monell's conclusions communicated to me are practically the same; and he says further: "looks to the naked eye like *Siphocoryne xylostii*, perhaps more powdered, and was very common the year I took it. I remember that I was sure of *loniceræ* not being a *Chaitophorus* when I saw it. In these poor specimens [referring to 60x and 148x] it is hard to form an opinion". The cauda, which was visible only in Monell's 148x specimen, is shown in Figure 14, Plate VII. The antennæ on both the slides loaned me by Monell were too transparent to count sensoria, but the antennæ of the winged female on the Thomas slide showed 56 and 60 respectively on segment III; several on segment IV (but only the tip of the segment was visible); a large sensorium at the distal end of V; and a large one, with several small sensoria surrounding it, at end of base of VI. The third discoidal branches at three eighths the distance from the tip to point where second branches. The head, antenna, cauda, and anal plate are shown in Figures 12–15, Plate VII.

Measurements taken (in mm.) are as follows.

Description	Antennæ							Body	
	I	II	III	IV	V	VI		Length	Width
						Base	Filament		
Monell's 148x: Wingless viviparous female	0.0815	0.0815	0.8476 0.8639					2.577	1.039
Thomas coll. specimen: Winged viviparous female			0.8639 0.8965	0.5379 0.5216	0.3912 0.4238	0.1630 0.1467	0.4727 0.4727		
Thomas coll. specimen: Wingless viviparous female			0.9617	0.6257	0.4401			1.8616	0.9666
Monell's 148x: Wingless viviparous female			0.8313 0.8802	0.6012 0.5931	0.4564 0.4564	0.1630 0.1793	0.5216 0.5216	2.2554	1.0740
Monell's 66x: Wingless viviparous female			0.6094	0.3830	0.3260	0.1304	0.3586	2.1480	1.0392

Wings: average length, 3.5 mm.; width, 1.36 mm.

"Monell, wild plum. June 8". *Myzus persicæ* Sulz.

Vials

"11, Pink. Plant and Bark-lice. Cobden, Illinois, March 15, 1877." The plant-lice are *Myzus persicæ.*

"27" and "136". *Callipterus bellus* Walsh.

"Myzus cerasi". Dried up and indeterminable.

"36". *Colopha ulmicola* and its galls.

"80" and "No. 12 Poplar, Sauk City, Wis." *Pemphigus populicaulis* Fitch.

"81" and "No. 4 On Plum. Sauk City, Wis." Dry specimens in vial. This is the species characterized by Thomas as *Aphis pruni* Koch. Although in poor condition they are recognized as *A. prunifoliæ* Fitch.

"82" and "No. 2 Sauk City, Wis. On Plum". *Phorodon humuli* Schr.

"83" and "No. 11 On ash, Sauk City, Wis." *Pemphigus* sp. The specimens are in a macerated condition and it is impossible to make a positive specific determination. They are probably *P. fraxinifolii* Thos., and may be the types, which Thomas says were collected on ash at Sauk City, Wis.

"84" and "No. 7 Grape Sauk City, Wis. On Grape." *Macrosiphum viticola* Thos. In rather poor condition. (See foot-note, page 108.)

"85" and "No. 14 On Choke Cherry, Sauk City, Wis." *Aphis cerasifoliæ* Fitch. Probably the specimens from which he made the description given in the Eighth Report. In rather poor but nevertheless determinable condition.

"86" and "No. 13, On Oak, Sauk City, Wis." Specimens in poor condition and none with the antennæ entire. This may be the species referred to by Thomas as *Myzocallis bella* Walsh, specimens of which he says were collected on oak at Sauk City, Wis. Thomas's description of *bella* can not apply to the species Walsh described under that name, and, as has already been noted by Monell and Oestlund, it would seem that Thomas was dealing with *Callipterus discolor,* since he says (p. 106, 8th Report) of the wings, "veins dark brown, slightly margined with brown, which expands at the points where they reach the margin," and of the stigma (p. 107) "pale in the middle, but is crossed obliquely at each end by a brown band." This latter character may be referred to a darker area at each end of the stigma as well as at the end of each wing vein. The species under the above label is evidently *Callipterus punctatus* Monl.

"87" and "No. 3 on *Ribes aureum* S. City, Wis." *Myzus* sp. Only wingless specimens, most of which are immature, and all in a more or less macerated condition, making specific determination impossible.

"88". and "No. 5 *Acer rubrum* Sauk City." *Drepanaphis acerifoliæ* Thos.

"89" and "No. 8 Sauk City, Wis. On Elm." *Callipterus ulmifolii* Monl. (=*C. ulmicola* Thos.). Number of specimens, and all in poor condition, but some of the important characters, such as the abdominal tubercles and wings, are clearly distinguish-

able. They are probably the types of Thomas's *C. ulmicola,* which were collected on elm at Sauk City, Wis.

"90" and "No. 1 Sauk City, Wis. On *Heuchera hispida." Macrosiphum heucherœ* Thos. Many specimens dry in vial, all in very poor condition. They and specimens on slide 90 (see page 99) are doubtless the types, which Thomas says were collected at Sauk City, Wis., on *H. hispida.* The accompanying notes and drawings have been made from the vial and slide specimens.

Only one of the winged individuals in the dry vial bore as many as four antennal segments, and these are shown in Figure 17, Plate VII. Segment III bears about fifty irregularly placed circular sensoria; IV, twenty-five or thirty. On the slide one winged specimen bears one antenna with segment VI broken off. Sensoria on III and IV as noted for the vial specimens. Segment V bears a number of irregularly placed sensoria, but it is impossible to determine the exact number. One detached antenna was found which is from an adult wingless or immature individual, probably the former (Pl. VII, Fig. 20). Antennæ on moderate frontal tubercles (Fig. 16). Proportion of wings and legs to body typical of the genus *Macrosiphum.* Cornicles and cauda are as given in Figure 18, but owing to the specimens being dry both are somewhat shriveled. Camera lucida drawing of the wing is shown in Figure 19. The wing veins are darkish and conspicuous, and the second discoidal branches at a distance varying from two-fifths to nearly three-fourths the distance from the tip to where the third branches.

"91" and "No. 7. Dogbane, Sauk City, Wis." The specimens are in too poor condition for determination, but are possibly the species referred to by Thomas under the name *Aphis apocyni.*

"92" and "No. 15 Sauk City, Wis. On Oak leaves." A few specimens in poor condition. The wing veins show very faint brownish margins, the faintness probably being due to the length of time in alcohol. They agree in every detail with the description of *Callipterus quercifolii* Thomas, and doubtless they are the types of that species. As is shown in another paper, this as well as *Chaitophorus spinosus* Oestlund are synonyms of *Chaitophorus quercicola* Monl.

"93" and "No. 6 On Tulip Sauk City, Wis." Vial contains a number of specimens in poor condition. Antennæ all broken off.

There are two species in this vial: one is a large *Macrosiphum* with long cauda and cornicles, which I take to be Monell's *M. tulipæ;* the other species is a *Rhopalosiphum,* and is doubtless the species Thomas characterized as *R. tulipæ,* which, so far as can be made out from the poor specimens, agrees with his description. They are probably the types, which were collected by Dr. Bundy, from whom he received his Sauk City specimens. The size, wing venation, sensoria on antennal segment III (the remaining segments not found in vial), cornicles, cauda, and black blotch on the dorsum of the abdomen, which is still faintly visible, all agree with *Myzus persicæ* Sulz. (=*Rhopalosiphum dianthi* Schr.), which species I believe it to be.

"94" and "No. 10 Sauk City, Wis. *Rudbeckia hirta."* A small conglomerate mass in the bottom of the vial, and consequently undeterminable. See slide 94, page 99.

"98." *Trama erigeronensis* Thos. All immature. See slide 98, page 99.

"Melon c July 1, '97." Dry in vial. *Aphis* sp. Probably *A. gossypii,* but in too poor condition for determination.

The data of the following table, with one indicated exception, concern the species of *Aphididæ* of which descriptions are given by Thomas in the Eighth Report of the State Entomologist of Illinois (exclusive of the supplement), and but for the above single exception and the changes in nomenclature are drawn from this report. For the rest, the headings and the following key to the meaning of the superior letters used, will make the table clear.

a=Foot-note reference.

b=No report of collection of the species since it was originally described.

c=A European species mentioned as possibly occurring here, but never reported. Probably does not occur in America.

d=A European species reported once as having been taken here, but not again reported. Original determination is questioned.

e=A European species mentioned and description quoted, but nothing said as to occurrence in this country. Probably not found in America.

f=Not again reported in literature; but what are supposed to be the types are preserved, and notes on them may be found in this paper.

g=No locality given by Thomas in connection with the original description in the State Laboratory Bulletin, but he says it was first observed at Ft. Dodge, Iowa, and subsequently received from Peoria, Illinois, and St. Louis, Missouri.

h=Pagination refers to the State Laboratory Bulletin mentioned at the beginning of the paper, the species not being mentioned in the Eighth Report.

i=Listed by Thomas as of uncertain position.

t=Type locality, when placed before a locality name; type food-plant, when placed before the name of a plant or plants.

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
47	*Siphonophora acerifoliæ* Thos.	*Drepanaphis acerifoliæ* Thos.	[1]Fort Dodge, Ia.[E]	Sept. 1, 2	[1]Soft maple (*Acer dasycarpum*)	
49	*Siphonophora rudbeckiæ* Fitch.	*Macrosiphum rudbeckiæ* Fitch	Illinois		Goldenrod (*Solidago* sp.), ragweed (*Ambrosia trifida*), and *Rudbeckia laciniata*	
50	*Siphonophora ambrosiæ* Thos.	*Macrosiphum ambrosiæ* Thos.	[1]Sioux City, Ia.	Sept. 1, '77	[1]*Ambrosia psilostachya*	May be identical with *M. rudbeckiæ*.
50	*Siphonophora rosæ* Reaum.	*Macrosiphum rosæ* Reaum.			Rose	Quotes European writers.
51	*Siphonophora avenæ* Fab.	*Macrosiphum granarium* Kirb. and *Aphis avenæ* Fab.	Illinois	1866, winter of '75, fall of '76, spring of '78	Wheat	Quotes Curtis, Buckton, Goureau, and Fitch.
55	*Siphonophora viticola* Thos.	*Macrosiphum viticola* Thos.[a]	[1]Irvington, Ill., and [Carbondale, Ill.][a]	June and July	[1]Grape	
56	*Siphonophora setariæ* Thos.	*Aphis setariæ* Thos.	[1]Carbondale, Ill.	August	[1]Bottle or foxtail grass (*Setaria glauca*), and [1]cockscomb grass (*Panicum crus-galli*)	
56	*Siphonophora euphorbiæ* Thos.	*Macrosiphum euphorbiæ* Thos.	[1]Sioux City, Ia.	Sept. 1, '77	[1]*Euphorbia maculata*	
57	*Siphonophora euphorbicola* Thos.	*Macrosiphum euphorbiæ* Thos.	[1]Sioux City, Ia.	Sept. 1, '77	[1]*Euphorbia marginata*	

[a]The species described by Shimer as *illinoisensis* is probably identical with Thomas's *viticola*, in which case the species will be known as *Macrosiphum illinoisensis* Shimer. (See Journ. Econom. Ent., Vol. 3, No. 6, Dec. 1910, p. 485.

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Location of collection	Dates of collection	Food plants	Remarks
58	*Siphonophora asclepiadis?* Fitch	?	Fort Dodge, Ia.	Sept. 1	Milkweed (*Asclepias cornuti*)	Quotes Fitch in part. Appears to have confused two species
58	*Siphonophora erigeronensis* Thos.	*Macrosiphum erigeronensis* Thos.	[t]Carbondale, Ill.	August	[t]Flea-bane (*Erigeron canadensis*)	
59	*Siphonophora coreopsidis* Thos.	*Aphis coreopsidis* Thos.	[t]St. Louis, Mo.	October	[t]Spanish needles (*Coreopsis aristosa*)	
60	*Siphonophora lactucæ* Linn.?	*Macrosiphum lactucæ* Schr.?	Carbondale, Ill.	May	Garden lettuce	Quotes Walker, Koch, Passerini and Buckton
62	*Siphonophora polygoni* Walk.	*Phorodon galeopsidis* Kalt.?	United States	Early summer	Knotweed (*Polygonum persicaria*)	Quotes English writers
63	*Siphonophora? salicicola* Thos.	*Aphis salicicola* Thos.	[t]Peoria, Ill.	June	[t]Willow	
63	*Siphonophora verbenæ* Thos.	*Macrosiphum verbenæ* Thos.	[t]Carbondale, Ill.	November	[t]Verbena	
64	*Siphonophora rubi* Kalt.	*Macrosiphum rubi* Kalt.		Summer	Blackberry	Quotes Buckton
64	*Siphonophora pisi* Kalt.	*Macrosiphum pisi* Kalt.	Carbondale, Ill.	May	Pea	
65	*Siphonophora gerardiæ* n. sp.	*Macrosiphum gerardiæ* Thos.[b]	[t]Carbondale, Ill.	September	[t]*Gerardia tenuifolia*	
66	*Siphonophora heucheræ* n. sp.	*Macrosiphum heucheræ* Thos.[f]	[t]Sauk City, Wis.	June	[t]Alum-root (*Heuchera hispida*)	

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
67	*Siphonophora cucurbitæ* n. sp.	*Macrosiphum cucurbitæ* Thos.	[t]Carbondale, Ill.	May	[t]Squash	
68	*Siphonophora tanaceti* Linn.	*Macrosiphum tanacetti* Linn.[e]			Tansy (*Tanacetum vulgare*)	
68	*Siphonophora fragariæ* Koch.	*Macrosiphum fragariæ*, var. *immaculata* Riley?			Strawberry	Quotes Koch
68	*Siphonophora menthæ* Buck.	*Macrosiphum menthæ* Buck.[e]			Garden mint (*Mentha viridis*) and broom (*Sarothamnus scoparius*)	Quotes Buckton
69	*Siphonophora absinthii* Linn.	*Macrosiphum absinthii* Linn.[e]				Quotes Buckton
70	*Phorodon humuli* Schr.	*Phorodon humuli* Schr.			Hop	Quotes Fitch
72	*P. humuli*, var. *mahaleb* Fonsc.	*Myzus mahaleb* Fonsc.			Sloe and plum	Quotes Buckton
72	*Phorodon scrophulariæ* n. sp.	*Phorodon scrophulariæ* Thos.	[t]Carbondale, Ill.	Apr. 13, 1878	[t]*Scrophularia nodosa*	
73	*Megoura solani* n. sp.	*Rhopalosiphum solanti* Thos.[b]	[t]Carbondale, Ill.	May	[t]Tomato	
75	*Myzus cerasi* Fab.	*Myzus cerasi* Fab.	Illinois		Cherry (*Cerasus vulgaris*) and plum	
76	*Myzus persicæ* Sulz.	*Myzus persicæ* Sulz.			Peach and nectarine	Quotes Buckton
76	*Myzus ribis* Linn.	*Myzus ribis* Linn.			Red currant (*Ribes rubrum*) and gooseberry (*Ribes grossularia*)	Quotes Buckton and Koch

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
78	*Drepanosiphum acerina* Walk.	*Drepanosiphum acerinum* Walk.[c]				Quotes Buckton
79	*Drepanosiphum? quercifolii* Walsh	*Aphis quercifoliæ* Walsh[b]			Oak	Quotes Walsh
80	*Rhopalosiphum dianthi* Schr.	*Myzus persicæ* Sulz.	Carbondale, Ill.	March	German ivy and carnation pink	
80	*Rhopalosiphum tulipæ* n. sp.	*Myzus persicæ* Sulz.	[Sauk City, Wis.]		Tulip (*Tulipa gesneriana*)	
81	*Rhopalosiphum berberidis?* Kalt.	*Rhopalosiphum berberidis* Kalt.			Barberry	Quotes Fitch and Koch
82	*Hyalopterus pruni* Fabr.	*Hyalopterus arundinis* Fab.				
83	*Hyalopterus aquilegæ* Koch.	*Hyalopterus aquilegiæ-flavus* Kit.[c]				
84	*Siphocoryne pastinaceæ* Linn.	*Hyadaphis pastinaceæ* Linn.			Parsnip (*Paslinacea sativa*)	Quoted
85	*Aphis mali* Fab.	*Aphis pomi* De G.	Illinois		Apple	Quotes Fitch
86	*Aphis malifoliæ* Fitch	*Aphis pomi* De G.	Mercer Co., Ill.		Apple	
87	*Aphis pruni* Koch	*Aphis pruni* Koch?	[Carbondale, Ill.]		Plum	
88	*Aphis rumicis* Linn.	*Aphis rumicis* Linn.			Quotes long list of hosts	

Page in 8th rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
89	*Aphis circæzandis* Fitch	*Aphis circæzandis* Fitch[b]			*Galium circæzans*	Quotes Fitch
89	*Aphis maidis* Fitch	*Aphis maidis* Fitch and *A. maidi-radicis* Forbes	Illinois	May–July	Corn roots Corn leaves	Quoted in part
91	*Aphis brassicæ* Linn.	*Aphis brassicæ* Linn.			Cabbage	
93	*Aphis cerasifoliæ* Fitch	*Aphis cerasifoliæ* Fitch	Sauk City, Wis.	June	Choke Cherry (*Prunus virginiana*)	Quotes Fitch
94	*Aphis apocyni* Koch	*Aphis apocyni* Koch	Sauk City, Wis.	June	Dogbane (*Apocynum cannabinum*)	Quotes Koch
95	*Aphis nerii?* Fonsc.	*Aphis nerii* Fonsc.			Oleander (*Nerium oleander*)	
95	*Aphis diospyri* n.sp.	*Aphis diospyri* Thos.[b]	[t]Carbondale, Ill.	June	[t]Persimmon (*Diospyros virginiana*)	
96	*Aphis viburni* Fab.	*Aphis* sp.	Carbondale, Ill.	June–July	Snow-ball (*Viburnum opulus*)	
97	*Aphis vernoniæ* Thos.	*Aphis vernoniæ* Thos.	[t]Carbondale, Ill. [t]Fort Dodge, Ia.	June Sept. 1	[t]Ironweed (*Vernonia fasciculata*)	
97	*Aphis cephalanthi* Thos.	*Aphis cephalanthi* Thos.	[t]Carbondale, Ill.	July	[t]Button-bush (*Cephalanthus occidentalis*)	
98	*Aphis impatientis* Thos.	*Aphis impatientis* Thos.	[t]Carbondale, Ill.	August	[t]Touch-me-not (*Impatiens fulva*)	
99	*Aphis symphoricarpi* Thos.	*Aphis symphoricarpi* Thos.	[t]Fort Dodge, Ia.	Sept. 1	[t]Snowberry (*Symphoricarpus vulgaris*)	

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
99	*Aphis middletonii* sp. nov.	*Aphis middletonii* Thos.	Illinois (?)	November	[t]Ironweed roots and [t]aster roots	
100	*Aphis carduella* Walsh	*Aphis carduella* Walsh.			Thistle (*Cirsium allissimum*)	Quotes Walsh
100	*Aphis sambuci* Linn.	*Aphis sambucifoliæ* Fitch				Quotes Fitch
101	*Aphis cornifoliæ* Fitch	*Aphis cornifoliæ* Fitch			Dogwood (*Cornus paniculata*)	Quotes Fitch
101	*Aphis cratægifoliæ* Fitch	*Aphis cratægifoliæ* Fitch			Thorn (*Cratægus punctata*)	Quotes Fitch
101	*Aphis medicaginis* Koch	*Aphis medicaginis* Koch	St. Louis, Mo. (?)		*Leguminosæ*	Quotes Koch
102	*Aphis amygdali* Blanch.[e]	*Aphis persicæ* Boyer			Almond and peach	Quoted
102	*Aphis populifoliæ* Fitch	*Aphis populifoliæ* Fitch			Poplar (*Populus grandidentata*)	Quotes Fitch
102	*Aphis pinicolens* Fitch	*Chaitophorus? piniciolens* Fitch[b]			Pine	Quotes Fitch
103	*Chaitophorus negundinis* Thos.	*Chaitophorus negundinis* Thos.	[t]Peoria, Ill.	June	[t]Box elder (*Negundo aceroides*)	
103	*Chaitophorus populicola* Thos.	*Chaitophorus populicola* Thos.	[t]Carbondale, Ill. [t]Dubuque, Ia.	July September	[t]Poplar (*Populus angulata*)	
104	*Chaitophorus lonicera* Monl. (MSS.)	*Aphis loniceræ* Monl.	St. Louis, Mo.		Honeysuckle (*Lonicera*)	

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
105	*Chaitophorus viminalis* Monl.	*Chaitophorus viminalis* Monl.			Willow	
105	*Chaitophorus salicicola* Monl.	*Melanoxantherium smithiæ* Monl.				
105	*Chailophorus candicans* (?)*				Balm of Gilead	
106	*Myzocallis bella* Walsh	*Callipterus bellus* Walsh	Carbondale, Ill. Sauk City, Wis.	May 22, 1878 June	Bur oak (*Quercus macrocarpa*) and oak (*Quercus* sp.)	
108	*Myzocallis hypeici* n. sp.	*Aphis hyperici* Monl.	[1]Carbondale, Ill.	April	[1]St. John's wort (*Hypericum prolificum*)	
110	*Callipterus betulæ*? Koch	*Callipterus betulæcolens* Fitch				Quotes Walsh and Fitch
111	*Callipterus ulmicola* n. sp.	*Callipterus ulmifolii* Monl.	[1]Sauk City, Wis.	June	[1]Elm (*Ulmus americana*)	
112	*Callipterus quercifolii* n. sp.	*Chaitophorus quercicola* Monl.	[1]Sauk City, Wis.	June	[1]Red oak (*Quercus rubra*)	
114	*Callipterus castaneæ* Fitch	*Callipterus castaneæ* Fitch[b]		Aug.–Sept.	Chestnut	Quotes Fitch
115	*Lachnus salicicola* Uhl.	*Melanoxantherium salicti* Harr.		October	Willow	
116	*Lachnus dentatus* LeB.	*Lachnus dentatus* LeB.		Oct.–Nov.	Gray willow	Quotes LeBaron
116	*Lachnus caryæ* Harr.	*Longistigma caryæ* Harr.			Pignut hickory (*Carya porcina*)	Quotes Harris

*Nomen nudum.

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
117	*Lachnus strobi* Fitch	*Lachnus strobi* Fitch			White pine	Quotes Fitch
117	*Lachnus laricifex* Fitch	*Lachnus laricifex* Fitch		May	American larch or tamarack	Quotes Fitch
117	*Lachnus abietis* Fitch	*Lachnus abietis* Fitch			*Abies nigra*	Quotes Fitch
118	*Lachnus alnifoliæ* Fitch	*Lachnus alnifoliæ* Fitch			Alder	Quotes Fitch
118	*Lachnus quercifoliæ* Fitch	*Chaitophorus* sp.*	Carbondale, Ill.	Aug.	White oak	Quotes Fitch's description of *quercifoliæ*
119	*Lachnus salicelis* Fitch	*Lachnus salicelis* Fitch[b]			Willow	
119	*Lachnus ulmi* Linn.	*Schizoneura ulmi* Linn.				
119	*Lachnus populi* Linn.	*Chaitophorus populi* Linn.[a]				
119	*Lachnus longistigma* Monl.	*Longistigma longistigma* Monl.	St. Louis, Mo.		Linden	Quotes Monell
120	*Phyllaphis fagi* Linn.	*Phyllaphis fagi* Linn.				
121	*Sipha rubifolii* n. sp.	*Cerosipha rubifolii* Thos.			[c]Blackberry	
122	*Sipha maydis* Pass.	*Sipha maidis* Pass.[c]			Indian corn and sorghum	Quoted

* The species Thomas describes is apparently not Fitch's *quercifoliæ*, but a species which the writer has described in manuscript as a new species of *Chaitophorus*.

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
126	*Schizoneura lanigera* Hausm.	*Schizoneura lanigera* Hausm.	Europe and America		Apple	Quotes various authors
136	*Schizoneura rileyi* Thos.	*Schizoneura rileyi* Thos.	Illinois		Elm	Quotes Riley
137	*Schizoneura pinicola* n. sp.	*Mindarus abielinus* Koch	[1]Carbondale, Ill	Apr. 20, 1878	[1]White pine	
138	*Schizoneura panicola* Thos.	*Schizoneura panicola* Thos.	[1]St. Louis, Mo.	November	[1]Panic-grass (*Panicum glabrum*)	
139	*Schizoneura querci* Fitch	*Phyllaphis querci* Fitch?	Illinois		Oak	Quotes Fitch
139	*Schizoneura tessellata* Fitch	*Pemphigus tessellatus* Fitch			Alder (*Alnus rubra*)	Quotes Fitch
139	*Schizoneura imbricator* Fitch	*Pemphigus imbricator* Fitch			Beech	Quotes Fitch
140	*Schizoneura fagi* Linn	*Phyllaphis fagi* Linn.				
140	*Schizoneura strobi* Fitch	*Lachnus strobi* Fitch			Pine	Quotes Fitch
140	*Schizoneura ulmi* Linn.	*Schizoneura rileyi* Thos.(=*americana* Riley)			Elm	
141	*Schizoneura? fungicola* Walsh	*Schizoneura cornicola* Walsh				Quotes Walsh
141	*Schizoneura caryæ* Fitch	*Schizoneura caryæ* Fitch[b]	Illinois		Walnut	Quotes Fitch

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
141	*Schizoneura cornicola* Walsh	*Schizoneura cornicola* Walsh		September	Dogwood	Quotes Walsh
142	*Glyphina ulmicola* Fitch	*Colopha ulmicola* Fitch			White elm	
144	*Glyphina eragrostidis* Middl.	*Colopha ulmicola* Fitch		Sept. 1, 1877	Grasses: (*Panicum* spp., *Eragrostis poæoides* var. *megastachya*)	
146	*Pemphigus fraxinifolii* n. sp.	*Pemphigus fraxinifolii* Riley	[1]Sauk City, Wis.	June	[1]Ash (*Fraxinus quadrangulata*)	
147	*Pemphigus rubi* n. sp.	*Pemphigus rubi* Thos.[1]	[1]Carbondale, Ill.	Apr., 1878	[1]Raspberry (*Rubus occidentalis*)	
149	*Pemphigus populicaulis* Fitch	*Pemphigus populicaulis* Fitch	Sauk City, Wis.	May	Cottonwood (*Populus monilifera*) and aspen (*P. tremuloides*)	
150	*Pemphigus? formicarius* Walsh	*Pemphigus formicarius* Walsh[b]		Oct. 11		Found in ants' nest. Quotes Walsh
150	*Pemphigus? formicetorum* Walsh	*Pemphigus formicetorum* Walsh[b]		May, June		Found in ants' nest. Quotes Walsh
151	*Pemphigus pseudobyrsa* Walsh	*Pemphigus pseudobyrsa* Walsh[b]			Cottonwood (*Populus angulata*)	Quotes Walsh
151	*Pemphigus vagabundus* Walsh	*Mordwilkjo oestlundi* Ckll.		September	Cottonwoods and balsam-poplar	Quotes Walsh in part
152	*Pemphigus rhois* Fitch	*Pemphigus rhois* Fitch		September	Sumac	

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
153	*Pemphigus ulmifusus* Walsh	*Pemphigus ulmifusus* W. & R.			Red elm	
153	*Pemphigus popularia* Fitch	*Pemphigus popularius* Fitch[b]			Balsam-poplar	Quotes Fitch
153	*Pemphigus populiglobuli* Fitch	*Pemphigus populiglobuli* Fitch[b]		July	Balsam-poplar	Quotes Fitch
154	*Pemphigus populivenæ* Fitch	*Pemphigus populivenæ* Fitch[b]			Balsam-poplar	Quotes Fitch
156	*Chermes pinifoliæ* Fitch	*Chermes pinifoliæ* Fitch			Pine	Quotes Fitch
156	*Chermes laricifoliæ* Fitch	*Chermes laricifoliæ* Fitch[b]			American larch	Quotes Fitch
156	*Chermes (abietico-lens?)*	*Chermes pinifoliæ* Fitch			Spruce	Quotes Packard
158	*Phylloxeravitifoliæ* Fitch	*Phylloxera vitifoliæ* Fitch			Grape	Largely quoted
160	*Phylloxera caryæ-caulis* Fitch	*Phylloxera caryæ-caulis* Fitch			Hickory	Quotes Fitch
161	*Phylloxera caryæ-foliæ* Fitch	*Phylloxera caryæ-foliæ* Fitch			Shag-bark hickory (*Carya alba*)	Quotes Fitch
162	*Phylloxera caryæ-venæ* Fitch	*Phylloxera caryæ-venæ* Fitch			Hickory	Quotes Fitch
163	*Phylloxera caryæ-globosa* Shim.	*Phylloxera globosum* Shim.[b]				Quotes Shimer

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
163	*Phylloxera rileyi* Licht.	*Phylloxera rileyi* Riley			White, swamp-white, and iron oaks (*Quercus alba*, *bicolor*, and *obtusiloba*)	Quotes Riley
163	*Phylloxera caryæ-semen* Walsh	*Phylloxera caryæ-semen* Walsh			Pignut hickory (*Carya glabra*)	Quotes Riley
164	*Phylloxera caryæ-globuli* Walsh	*Phylloxera caryæ-globuli* Walsh			*Carya glabra* and *C. alba*	Quotes Riley
164	*Phylloxera spinosa* Shim.	*Phylloxera caryæ-caulis* Fitch			Bitternut hickory (*Carya amara*)	Quotes Riley
164	*Phylloxera caryæ-septa* Shim.	*Phylloxera caryæ-septum* Shim.			*Carya alba*	Quotes Riley
164	*Phylloxera forcata* Shim.	*Phylloxera foveata* Shim.				Quotes Riley
164	*Phylloxera depressa* Shim.	*Phylloxera depressa* Shim.			*Carya alba*	Quotes Riley
164	*Phylloxera cornica* Shim.	*Phylloxera conica* Shim.				Quotes Riley
164	*Phylloxera caryæ-gummosa* Riley	*Phylloxera caryæ-gummosa* Riley			*Carya alba*	Quotes Riley
164	*Phylloxera caryæ-ren* Riley	*Phylloxera caryæ-ren* Riley			*Carya alba*	Quotes Riley
164	*Phylloxera caryæ-fallax* Walsh	*Phylloxera caryæ-fallax* Riley			*Carya alba*	Quotes Riley
164	*Phylloxera castaneæ* Hald.	*Phylloxera castaneæ* Hald.				Quotes Riley

Page in 8th Rep.	Scientific name as given by Thomas in Eighth Report	Present name of the species referred to by Thomas	Localities of collection	Dates of collection	Food plants	Remarks
165	*Rhizobius lactucæ* Fitch	*Rhizobius lactucæ* Fitch			Lettuce roots	Quotes Fitch
166	*Rhizobius poæ* n. sp.	*Rhizobius? poæ* Thos.[b]	[t]Carbondale, Ill.	November	[t]Grass roots (*Poa annua?*)	
15[h]	*Rhizobius eleusinis* n. sp.	*Rhizobius eleusinis* Thos.[b]	[t]Carbondale, Ill.	September	[t]*Eleusine indica*, roots	
168	*Tychea erigeronensis* n. sp.	*Trama erigeronensis* Thos.	[t]Champaign, Ill.	Oct. 25, 1878	[t]Endive roots (*Cichorium*) and Erigeron roots (*Erigeron canadense*)	
169	*Tychea panici* Thos.	*Tychea panici* Thos.[h]	[t]St. Louis, Mo.	October	[t]Panic-grass roots (*Panicum glabrum*)	
170	*Aphis caryella* Fitch[i]	*Monellia caryella* Fitch			Hickory	Quotes Fitch
171	*Aphis punctatella* Fitch[i]	*Monellia caryella* Fitch				Quotes Fitch
171	*Aphis maculella* Fitch[i]	*Monellia maculella* Fitch?				Quotes Fitch
171	*Aphis fumipennella* Fitch[i]	*Monellia caryella* Fitch				Quotes Fitch
171	*Aphis marginella* Fitch[i]	*Monellia marginella* Fitch?				Quotes Fitch
172	*Callipterus mucidus* Fitch	*Callipterus mucidus* Fitch				Quotes Fitch

EXPLANATION OF PLATES*

Plate VI

Pemphigus rubi Thos.

Winged viviparous female
- Fig. 1. Head.
- Fig. 2. Antenna.
- Fig. 3. Fore wing.
- Fig. 4. Hind wing.

Rhopalosiphum solani Thos.

Winged viviparous female
- Fig. 5. Head.
- Fig. 6. Antenna.
- Fig. 7. Cauda.
- Fig. 8. Cornicle.

Mindarus abietinus Koch (*Schizoneura pinicola* Thos.)

Winged viviparous female
- Fig. 9. Fore wing.
- Fig. 10. Hind wing.
- Fig. 11. Antenna.

Plate VII

Aphis loniceræ Monl.

Winged viviparous female
- Fig. 12. Head.
- Fig. 13. Antenna (portion between *a a* obscure).
- Fig. 14. Cauda.
- Fig 15. Anal plate.

Macrosiphum heucheræ Thos.

Winged viviparous female
- Fig. 16. Head.
- Fig. 17. Basal portion of antenna.
- Fig. 18. Cornicle and cauda.
- Fig. 19. Wing.

Mature? wingless viviparous female.
- Fig. 20. Antenna.

Macrosiphum tulipæ Monl.

Wingless viviparous female
- Fig. 21. Cornicle and cauda, and tip of cornicle enlarged.

*All camera lucida drawings except Figure 18, which is a reconstructed drawing, all of the caudæ on the slide being shriveled.

PLATE VI

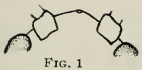

FIG. 1

FIG. 2

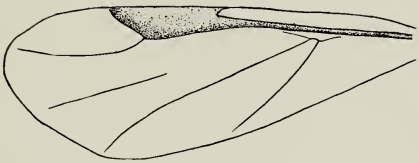

FIG. 3

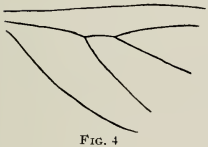

FIG. 4

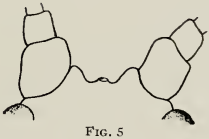

FIG. 5

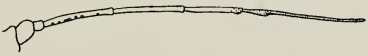

FIG. 6

FIG. 8

FIG. 7

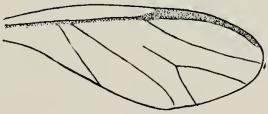

FIG. 9

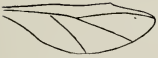

FIG. 10

FIG. 11

PLATE VII

FIG. 14

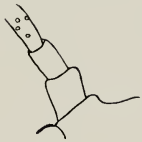

FIG. 12

FIG. 15

FIG. 17

FIG. 13

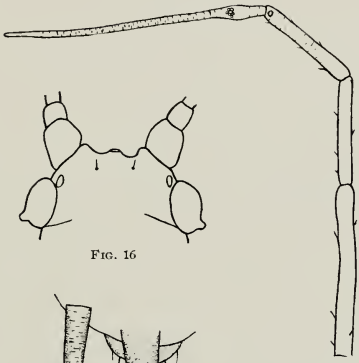

FIG. 16

FIG. 20

FIG. 18

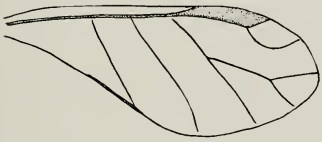

FIG. 19

FIG. 21