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A Generic Synopsis of the Nearctic Cecidomyiidi (Diptera: Cecidomyiidae: Cecidomyiinae)

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ABSTRACT

A key is presented to the 64 Nearctic genera of the supertribe Cecidomyiidi (Cecidomyiidae: Cecidomyiinae) and a diagnosis is made for each genus. The 384 included species are listed under their respective genera. Sixteen new genera and 6 new species are described: *ANCYLODIPLOSIS*, *APAGODIPLOSIS*, *APHODIPLOSIS*, *BLAESODIPLOSIS*, *CARTODIPLOSIS*, *CORYLODIPLOSIS*, *C. molliterga*, *GLENODIPLOSIS*, *G.*

callipus, *GONGRODIPLOSIS*, *OLPODIPLOSIS*, *PILODIPLOSIS*, *PITYDIPLOSIS*, *PLATYDIPLOSIS*, *P. nigricauda*, *PLECTRODIPLOSIS*, *P. fascipennis*, *TANADIPLOSIS*, *THAUMADIPLOSIS*, *T. magnicauda*, *TROPIDIPLOSIS*, and *T. pectinata*. Many new combinations and new synonyms are established. An index to the genera and species is included.

The impetus for presentation of this synopsis of the Nearctic genera of Cecidomyiidi was provided by the forthcoming manual of the Nearctic Diptera being arranged by the Diptera Section of the Entomology Research Institute of the Canada Department of Agriculture. The key to the genera of Cecidomyiidae that I am preparing for that manual would be of limited use if I did not separately undertake to describe several new genera, point out generic synonyms, and relate the Nearctic fauna to those of other parts of the world. Of the 64 genera treated here, 16 are described as new and 10 are reported for the first time from North America. About 50% of the Nearctic species are placed under new combinations. Most of these had been carried under misidentified or omnibus genera.

The supertribe Cecidomyiidi includes more species than any of the other 3 supertribes of Cecidomyiinae or the other 2 subfamilies. It contains saprophages, mycophages, gall makers, and all the predaceous cecidomyiids. The adults are characterized thus: the male antennal flagellomeres (numbering 12, except 10 in *Coccidomyia* and 13 or more in *Planetella*) are usually binodal but are otherwise cylindrical as in the females; each male flagellomere usually has 2 or 3 rarely interconnected circumfila, each consisting of many loops; R_5 is more than $\frac{2}{3}$ the wing length and is never in close juxtaposition with C; the second tarsomere of each leg is much longer than the first; the male genitalia lack tergum IX, a ventral plate, and claspettes; the female sternum VII is not appreciably longer than sternum VI; and the cerci of the ovipositor are one-segmented and not fused mesally (except in *Taxodiomyia*).

Although a tribal classification has been used to segregate a few genera of *Cecidomyiidi*, it is neither satisfactory nor all inclusive, and it is not used here. Those genera that are obviously related are so noted in the appropriate places.

The key to genera as given is presumably the same as will be in the Diptera manual, but it will be illustrated in the latter, and thus it will be more helpful to novices. Several genera key to 2 or more places

either because the sexes are keyed separately or because they contain 2 character states which are nevertheless convenient for separating other genera. Females of most genera can be keyed.

The genera are arranged alphabetically in this synopsis. Under each generic heading is a synonymy, a morphological diagnosis, an indication of the biology and affinities, any new extraterritorial synonyms, and a list of Nearctic species. I have seen types of all the Nearctic species with the exception of some of the unplaced species listed below.

This synopsis covers all those taxa from line 10, p. 276, to line 9, p. 291, inclusive (except *Cystodiplosis* Kieffer & Jörgensen), in Foote (1965). In addition, it includes *Caryomyia* Felt, *Coccidomyia* Felt, *Mayetiola electra* (Felt), *M. fraxini* (Felt), *M. latipes* Felt, *M. socialis* Felt, *M. thalictri* (Felt), *M. violicola* (Coquillett), *Oligotrophus vernalis* Felt, *Rhopalomyia enceliae* Felt, and all those species listed under "Unplaced species of Cecidomyiidae" on p. 291-5 (Foote 1965) that do not definitely belong to one of the other 3 supertribes of Cecidomyiinae. Some of the included species are transferred elsewhere or are generically unassignable for various reasons, and they are merely listed in one of the following categories:

I. Cecidomyiidi which probably can be recognized from their original descriptions when eventually reared from their typical habitat, i.e., willow galls. The types are lost.

atricornis Walsh 1864:628 (*Cecidomyia*)
atrocularis Walsh 1864:626 (*Cecidomyia*)
cossae Shimer 1869:395 (*Cecidomyia*)
decemmaculata Walsh 1864:631 (*Cecidomyia*)

II. Cecidomyiinae, possibly Cecidomyiidi, the adults of which are unknown. These were originally described from galls, and in some cases from larvae also. The type larvae are not extant and, to date I have not collected typical galls.

castaneae Stebbins 1910:17 (*Cecidomyia*)
celastri Stebbins 1910:41 (*Cecidomyia*)
crataegibedeguar Osten Sacken 1878:6 (*Cecidomyia*); originally as *crataegi bedeguar* Walsh 1869:79
bedeguar, emendation

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- eupatoriflorae* Beutenmüller 1907a:391 (*Cecidomyia*)
grossulariae Fitch 1855:880 (*Cecidomyia*)
hageni Aldrich 1905:162 (*Cecidomyia*)
muscosa Stebbins 1910:35 (*Cecidomyia*)
pubibunda Osten Sacken 1862:202 (*Cecidomyia*)
reniformis Stebbins 1910:36 (*Cecidomyia*)
squamulicola Stebbins 1910:16 (*Cecidomyia*)
stebbinsae Gagné 1972b: 324 (*Cecidomyia*; new name for *irregularis* Stebbins, preoccupied Bremi 1847)
irregularis Stebbins 1910:9 (*Cecidomyia*)
tuba Stebbins 1910:46 (*Cecidomyia*)
verbesinae Beutenmüller 1907a:391 (*Cecidomyia*)

III. Species formerly assigned to the Cecidomyiidi, here considered unidentifiable or removed either to other supertribes of Cecidomyiinae or to the Hymenoptera.

- cucumeris* Lintner 1888:725 (*Cecidomyia*). Nomen dubium (Gagné 1971:177)
eugeniae Felt 1913b:175 (*Cystodiplosis*). Junior synonym *Stephomyia eugeniae* Tavares (*Cecidomyiinae*: Asphondyliidi) (Gagné 1968a:18)
ornata Say 1824:357 (*Cecidomyia*). Incertae sedis, type lost
poculum Osten Sacken 1862:201 (*Cecidomyia*). Type-galls formed by Hymenoptera
quercina Felt 1911c:467 (*Youngomyia*). Type-gall formed by Hymenoptera
salicisverruca Osten Sacken 1878:7 (*Cecidomyia*; originally as *salicis verruca* Walsh 1864:606). Unplaced Cecidomyiinae:Oligotrophidi
verruca, emendation
tergata Fitch 1845:264 (*Cecidomyia*). Incertae sedis, type lost
umbellicola Osten Sacken 1878:7 (*Cecidomyia*; originally as *sambuci umbellicola* Osten Sacken 1870:52). New combination, in *Schizomyia* (*Cecidomyiinae*: Asphondyliidi)

A few notes are in order on some of the terminology used in the key and synopsis. The "postvertical peak," when present, is a setose dorsal protuberance situated immediately behind the eyes. Male antennal circumfila when not gynecoid (i.e., consisting of 2 transverse circumfila connected by 2 longitudinal strands), are numbered from the base as I, II, and III. In most cases in which only 2 circumfila are present ("bifilar" as opposed to "trifilar"), it is circumfilum II that is missing. The abdominal terga II-VI usually each have a "caudal row" or rows of setae along the posterior margin and a "lateral group" of setae on each side near midlength. The remainder of the terga may be covered with scales. Lastly, I now use "cerci" for what I once called "tergum X" of the male genitalia (both terms are still correct, but the cerci are all that are left and the word is shorter) and "dorsal lamella (e)" of the ovipositor.

In naming each of the 16 new genera, I have used the suffix "diplosis" (= "double," a reference to the binodal male flagellomeres), often used by earlier authors for genera of Cecidomyiidi. Not only does

this practice denote membership within the supertribe but it facilitates naming the genera. Because of this suffix, the gender of the new generic names is

Key to adults of Nearctic genera of Cecidomyi

1. Tarsal claws toothed, at least on forelegs; Tarsal claws simple
2. Tarsal claws bent at or beyond midlength; long as empodia
3. Tarsal claws bent near basal third, longer than empodia
4. Antenna with 10 uninodal flagellomeres; plus 2-segmented, occasionally with a minute 3rd segment *Coccidomyia*
 Antenna with 12 flagellomeres, each binodal in male; palpus at least 3-segmented ..
5. One or 2 loops of at least circumfilum I, each male flagellomere 2-3 times longer than adjacent loops; female with nonprotrusible ovipositor and without modified setae on cerci *Aphidoletes* Kieffer
 Loops of each circumfilum of approximately same length; female with either long, protrusible ovipositor or with modified setae on cerci
6. Male sternum X deeply bilobed, basimere without mesal lobe, telomere tapering gradually from wide base to narrow apex; ovipositor long, protrusible
7. Male sternum X entire, basimere usually with mesobasal lobe, telomere elongate, of approximately same width throughout; ovipositor short
8. Tarsal claws strongly dilated beyond bend; female cerci elongate, cylindrical
9. Tarsal claws not appreciably dilated beyond bend; female cerci ovoid, bilaterally flattened
10. Postvertical peak absent; male flagellomeres with short necks and internodes; male telomere longitudinally striated; female cerci with dense, short setae mesoventrally
11. Postvertical peak present; male flagellomeres with long internodes and necks; male telomeres not striated; female cerci without dense, short setae, but with 2-3 setae longer and stronger than remainder
- 8(2). Abdominal terga and sterna II-VI transversely divided between the caudal and lateral groups of setae
9. Abdominal terga and sterna entire
10. Male basimere with setose, apicoventral lobe; telomere long-attenuate
- 10(8). Male basimere with naked mesal lobe of complicated structure; telomere wide, of various shapes
11. Abdominal terga and sterna very short and broad, straplike; R_s straight, joining C near wing apex
11. Abdominal terga quadrate, sterna squarish; R_s usually curved to join C posteriorly of wing apex
11. Palpus 3-segmented; male sternum X deeply emarginate

- Palpus 4-segmented; male sternum X not emarginate *Diadiplosis* Felt
- 12(10). Male genitalia compact; telomere short, tapering gradually from base to narrow apex, setulose throughout, sternum X approximately as long as aedeagus, either entire or triangularly emarginate; ovipositor elongate, protrusible *Resselhella* Seitner
Male genitalia otherwise; ovipositor not greatly protrusible 13
13. Only male known; flagellomeres bifilar, the nodes subequal in size; basimere with sclerotized mesobasal spur
..... *Plectrodiplosis* Gagné, n. gen.
Male flagellomeres trifilar, distal nodes longer than basal; basimere without sclerotized spur 14
14. One or 2 loops of circumfilum I on each male flagellomere much longer than adjacent loops; circumfilum II reduced to a closely appressed band *Bremia* Rondani
Loops of male circumfila regular 15
15. Tarsal claws all toothed 16
Only foretarsal claws toothed 18
16. Only male known; basimere unlobed; sternum X deeply bilobed. *Pitydiplosis* Gagné, n. gen.
Male basimere with large mesobasal lobe on basimere; sternum X entire 17
17. Female only; antennal circumfila irregular, with short and long loops; dense cercal setae clavate, pointed apically
..... *Homobremia* Kieffer
Female antennal circumfila regular, with short loops; dense cercal setae with fine, tapered setae *Youngomyia* Felt
- 18(15). Aedeagus blackened, often divided from base. 19
Aedeagus not blackened, entire 20
19. Male sternum X bilobed, setose; basimere unlobed *Ancylodiplosis* Gagné, n. gen.
Male sternum X entire, asetose; basimere with mesal lobe *Coquilletomyia* Felt
- 20(18). Postvertical peak absent; male basimere cylindrical *Pitydiplosis* Gagné, n. gen.
Postvertical peak present; male basimere enlarged mesobasally into at least a squared lobe 21
21. Male genitalia with large, interparameral squamae and long, acute basimeral lobe
..... *Glenodiplosis* Gagné, n. gen.
Male genitalia without interparameral squamae and with squared basimeral lobe 22
22. Male cerci triangular; ovipositor short, the cerci short-ovoid
..... *Mycodiplosis* Rübsaamen (in part)
Male cerci quadrate or secondarily bilobed; ovipositor usually elongate, the cerci elongate-ovoid. *Clinodiplosis* Kieffer (in part)
- 23(1). Tarsal claws bent at basal third or bowed evenly from base to apex, in either case longer than empodia 24
Tarsal claws bent beyond midlength, approximately same length as or shorter than empodia 34
24. Tarsal claws bowed, not strongly bent at basal third; antennal flagellomeres I and II usually not connate 25
Tarsal claws strongly bent at basal third; flagellomeres I and II connate 28
25. Antenna with 13 or more flagellomeres; thorax usually produced anteriorly of head
..... *Planetella* Westwood (in part)
Antenna with 12 flagellomeres; thorax not produced anteriorly of head 26
26. Abdominal terga II-VI divided laterally between caudal and lateral setae; male cerci quadrate apically
..... *Parallelodiplosis* Rübsaamen (in part)
Abdominal terga II-VI entire; male cerci rounded apically 27
27. Very setose, more than 80 dorsocentral setae on thorax; ovipositor short, cerci separate
..... *Sequoiomyia* Möhn
Not as setose, less than 40 dorsocentral setae on thorax; ovipositor long, protrusible, the cerci fused together. *Taxodiomyia* Gagné
- 28(24). Abdominal terga II-VI transversely divided between the caudal and lateral groups of setae 29
Abdominal terga II-VI entire 30
29. Abdominal sterna II-VI transversely divided; telomere of male genitalia variously modified, not tapering evenly from base to apex
..... *Karschomyia* Felt (in part)
Abdominal sterna entire; telomere of male genitalia elongate, tapering from base to apex. *Parallelodiplosis* Rübsaamen (in part)
- 30(28). R_5 vein much shorter than wing; male sternum X entire, wider than aedeagus
..... *Silvestrina* Kieffer
 R_5 as long as wing; male sternum X bilobed or narrower than aedeagus 31
31. Male sternum X attenuate to pointed apex, no wider than aedeagus; male cerci triangular; female antennal flagellomeres with barely distinct necks
..... *Aphodiplosis* Gagné, n. gen.
Male sternum X not appreciably narrowed apically; male cerci quadrate or rounded; female flagellomeres with long necks 32
32. Male cerci quadrate or secondarily bilobed; ovipositor elongate, the cerci elongate-ovoid
..... *Clinodiplosis* Kieffer (in part)
Male cerci rounded apically; ovipositor barely protrusible, the cerci large, ovoid 33
33. Abdominal terga and sterna sclerotized only on caudal fourth, naked except for caudal rows of setae. *Cartodiplosis* Gagné, n. gen.
Abdominal terga and sterna completely sclerotized, setae and scales widely distributed
..... *Mycodiplosis* Rübsaamen (in part)
- 34(23). Male genitalia: basimere stout, unlobed; telomere usually robust, tapering evenly and gradually from wider base to apex, setulose throughout; cerci, sternum X and aedeagus of approximately same length, the last usually tapering gradually from base to narrow apex. Ovipositor protrusible, usually longer than half remainder of abdomen and/or cerci in close juxtaposition, more or less dorsoventrally flattened, and/or apparently modified for piercing 35
Male genitalia: basimere and telomere variously shaped, the latter usually elongate-attenuate, setulose only basally; cerci, sternum X, and aedeagus of differing relative lengths, the last variously shaped, usually very long. Ovipositor very short or not protrusible, the cerci large, separate 48

- Palpus 4-segmented; male sternum X not emarginate *Diadiplosis* Felt
- 12(10). Male genitalia compact: telomere short, tapering gradually from base to narrow apex, setulose throughout, sternum X approximately as long as aedeagus, either entire or triangularly emarginate; ovipositor elongate, protrusible *Resseliella* Seitner
- Male genitalia otherwise; ovipositor not greatly protrusible 13
13. Only male known; flagellomeres bifilar, the nodes subequal in size; basimere with sclerotized mesobasal spur *Plectrodiplosis* Gagné, n. gen.
- Male flagellomeres trifilar, distal nodes longer than basal; basimere without sclerotized spur 14
14. One or 2 loops of circumfilum I on each male flagellomere much longer than adjacent loops; circumfilum II reduced to a closely appressed band *Bremia* Rondani
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15. Tarsal claws all toothed 16
- Only foretarsal claws toothed 18
16. Only male known; basimere unlobed; sternum X deeply bilobed. *Pitydiplosis* Gagné, n. gen.
- Male basimere with large mesobasal lobe on basimere; sternum X entire 17
17. Female only; antennal circumfila irregular, with short and long loops; dense cercal setae clavate, pointed apically *Homobremia* Kieffer
- Female antennal circumfila regular, with short loops; dense cercal setae with fine, tapered setae *Youngomyia* Felt
- 18(15). Aedeagus blackened, often divided from base. 19
- Aedeagus not blackened, entire 20
19. Male sternum X bilobed, setose; basimere unlobed *Ancylodiplosis* Gagné, n. gen.
- Male sternum X entire, asetose; basimere with mesal lobe *Coquillettomyia* Felt
- 20(18). Postvertical peak absent; male basimere cylindrical *Pitydiplosis* Gagné, n. gen.
- Postvertical peak present; male basimere enlarged mesobasally into at least a squared lobe 21
21. Male genitalia with large, interparameral squamae and long, acute basimeral lobe *Glenodiplosis* Gagné, n. gen.
- Male genitalia without interparameral squamae and with squared basimeral lobe 22
22. Male cerci triangular; ovipositor short, the cerci short-ovoid *Mycodiplosis* Rübsaamen (in part)
- Male cerci quadrate or secondarily bilobed; ovipositor usually elongate, the cerci elongate-ovoid. *Climodiplosis* Kieffer (in part)
- 23(1). Tarsal claws bent at basal third or bowed evenly from base to apex, in either case longer than empodia 24
- Tarsal claws bent beyond midlength, approximately same length as or shorter than empodia 34
24. Tarsal claws bowed, not strongly bent at basal third; antennal flagellomeres I and II usually not connate 25
- Tarsal claws strongly bent at basal third; flagellomeres I and II connate 28
25. Antenna with 13 or more flagellomeres; thorax usually produced anteriorly of head *Planetella* Westwood (in part)
- Antenna with 12 flagellomeres; thorax not produced anteriorly of head 26
26. Abdominal terga II-VI divided laterally between caudal and lateral setae; male cerci quadrate apically *Parallelodiplosis* Rübsaamen (in part)
- Abdominal terga II-VI entire; male cerci rounded apically 27
27. Very setose, more than 80 dorsocentral setae on thorax; ovipositor short, cerci separate *Sequoiomyia* Möhn
- Not as setose, less than 40 dorsocentral setae on thorax; ovipositor long, protrusible, the cerci fused together. *Taxodiomyia* Gagné
- 28(24). Abdominal terga II-VI transversely divided between the caudal and lateral groups of setae 29
- Abdominal terga II-VI entire 30
29. Abdominal sterna II-VI transversely divided; telomere of male genitalia variously modified, not tapering evenly from base to apex *Karschomyia* Felt (in part)
- Abdominal sterna entire; telomere of male genitalia elongate, tapering from base to apex. *Parallelodiplosis* Rübsaamen (in part)
- 30(28). R₆ vein much shorter than wing; male sternum X entire, wider than aedeagus *Silvestrina* Kieffer
- R₆ as long as wing; male sternum X bilobed or narrower than aedeagus 31
31. Male sternum X attenuate to pointed apex, no wider than aedeagus; male cerci triangular; female antennal flagellomeres with barely distinct necks *Aphodiplosis* Gagné, n. gen.
- Male sternum X not appreciably narrowed apically; male cerci quadrate or rounded; female flagellomeres with long necks 32
32. Male cerci quadrate or secondarily bilobed; ovipositor elongate, the cerci elongate-ovoid *Climodiplosis* Kieffer (in part)
- Male cerci rounded apically; ovipositor barely protrusible, the cerci large, ovoid 33
33. Abdominal terga and sterna sclerotized only on caudal fourth, naked except for caudal rows of setae. *Cartodiplosis* Gagné, n. gen.
- Abdominal terga and sterna completely sclerotized, setae and scales widely distributed *Mycodiplosis* Rübsaamen (in part)
- 34(23). Male genitalia: basimere stout, unlobed; telomere usually robust, tapering evenly and gradually from wider base to apex, setulose throughout; cerci, sternum X and aedeagus of approximately same length, the last usually tapering gradually from base to narrow apex. Ovipositor protrusible, usually longer than half remainder of abdomen and/or cerci in close juxtaposition, more or less dorsoventrally flattened, and/or apparently modified for piercing 35
- Male genitalia: basimere and telomere variously shaped, the latter usually elongate-attenuate, setulose only basally; cerci, sternum X, and aedeagus of differing relative lengths, the last variously shaped, usually very long. Ovipositor very short or not protrusible, the cerci large, separate 48

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diplosis Kieffer
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- 60. Tarsal claws shorter than empodia61
Tarsal claws approximately as long as empodia65
- 61. Palpus 1- to 2-segmented; aedeagus much longer than sternum X
.....*Pinyonia* Gagné (in part)
Palpus 3- to 4-segmented; aedeagus approximately as long as sternum X or shorter...62
- 62. C unbroken at juncture with R_s; terga II-VI without lateral setae63
C broken at juncture with R_s; terga II-VI with lateral setae64
- 63. Eye facets rounded; basimere of male genitalia with mesal lobe; aedeagus small, narrow, much shorter than sternum X
.....*Apagodiplosis* Gagné, n. gen.
Eye facets hexagonoid; basimere unlobed; aedeagus stout, at least as long as sternum X*Caryomyia* Felt (in part)
- 64(62). Antennal flagellomeres I and II connate; aedeagus considerably longer than sternum X*Putoniella* Kieffer (in part)
Antennal flagellomeres I and II not connate; aedeagus stout, approximately as long as sternum X.....*Cecidomyia* Meigen (in part)
- 65(60). Palpus 1- to 3-segmented 66
Palpus 4-segmented68
- 66. C unbroken at juncture with R_s; abdominal terga naked except for caudal and lateral setae.....*Blaesodiplosis* Gagné, n. gen.
C broken at juncture with R_s; abdominal terga with scales67
- 67. R_s not evident; ovipositor protrusible
.....*Pilodiplosis* Gagné, n. gen. (in part)
R_s evident; ovipositor not protrusible
.....*Putoniella* Kieffer (in part)
- 68(65). Antenna with 13 flagellomeres, the last tiny but distinctly separated from penultimate...
.....*Planetella* Westwood (in part)
Antenna with 12 flagellomeres69
- 69. R_s not evident; male sternum X not surrounding aedeagus, concave apically; male telomere shorter than basimere; ovipositor short to elongate, protrusible
.....*Macrodiplousis* Kieffer
R_s strong; male sternum X modified into 2 orbicular lobes that surround aedeagus; male telomere longer than basimere; ovipositor not protrusible.....*Obolodiplosis* Felt
- 70(59). Tarsal claws bent at approximately 90°, and dilated beyond the bend71
Tarsal claws only strongly curved, not dilated beyond midlength73
- 71. Male antennal flagellomeres bicircumfilar; nodes of female flagellomeres constricted near midlength; C of male bulging outward anteriorly of Sc.....*Ametrodiplosis* Rübsaamen
Male flagellomeres tricircumfilar; nodes of female flagellomeres not constricted near midlength; C normal anteriorly of Sc72
- 72. Sternum X of male genitalia simple, rounded apically, or deeply lobed, the lobes long, pointed apically, and splayed
.....*Hyperdiplousis* Felt
Sternum X narrow apically, triangularly emarginate*Giardomyia* Felt
- 73(70). Hind tarsus greatly enlarged, approximately

- 4 times midtarsus diameter
.....*Gongrodiplosis* Gagné, n. gen.
- Tarsi all of same diameter74
- 74. Basimere of male genitalia stout, telomere bilaterally flattened, aedeagus blackened ...
.....*Platydiplousis* Gagné, n. gen.
Basimere elongate, telomere cylindrical, aedeagus not blackened75
- 75. Abdominal terga II-VI divided laterally between caudal and lateral setae
.....*Parallelodiplosis* Rübsaamen (in part)
Abdominal terga II-VI entire76
- 76. Male antennal flagellomeres trifilar or gynecoid, uninodal, binodal, or, occasionally, the basal antennal flagellomeres binodal, the distal uninodal; basimere of male genitalia without mesobasal lobe; telomeres articulated dorsoventrally (females keyed elsewhere)*Prodiplousis* Felt
Male flagellomeres binodal and bifilar; male basimere with obtuse mesobasal lobes; telomere articulated mesolaterally77
- 77. Abdominal terga sclerotized only apically, lateral setae and scales absent; telomere of male genitalia clavate, largest near apex
.....*Cordylodiplosis* Gagné, n. gen.
Abdominal terga sclerotized throughout, both lateral setae and scales present; telomere largest near base, tapering to apex
.....*Sitodiplosis* Kieffer

Adiplosis Felt

Adiplosis Felt 1908:405. Type-species, *Cecidomyia toxicodendri* Felt (original designation).

This genus is very close to *Lestodiplosis* (q.v.) and separated from it only because the eyes are divided laterally and the palpus is 3-segmented. The divided eyes might indicate that *Adiplosis* has some affinity to *Trisopsis*, but that character may have arisen independently several times.

Adiplosis is monotypic, the one species known from a specimen caught in New York. Its taxonomic affinities indicate that the larvae are predaceous.

Nearctic species.—*toxicodendri* (Felt), 1907c:137 (*Cecidomyia*)

Ametrodiplosis Rübsaamen

Ametrodiplosis Rübsaamen 1910:289. Type-species, *Clinodiplosis thalicticola* Rübsaamen (monotypic).

Anthodiplosis Kieffer 1912b:1. Type-species, *Clinodiplosis rudimentalis* Kieffer (original designation). NEW SYNONYM.

The male flagellomeres are bifilar and binodal, at least basally; in some species the apical flagellomeres are uninodal. The circumfila have very short loops. C bulges outwardly along Sc in the male wing. Our species has the claw bent at about 90° beyond midlength and dilated beyond the bend. The male genitalia and female characters are remarkably like that of some *Clinodiplosis*.

This genus contains 1 Nearctic species and 4 Palearctic. They are all associated with seed heads of various plants; our species was reared from seeds of a sedge in Massachusetts.

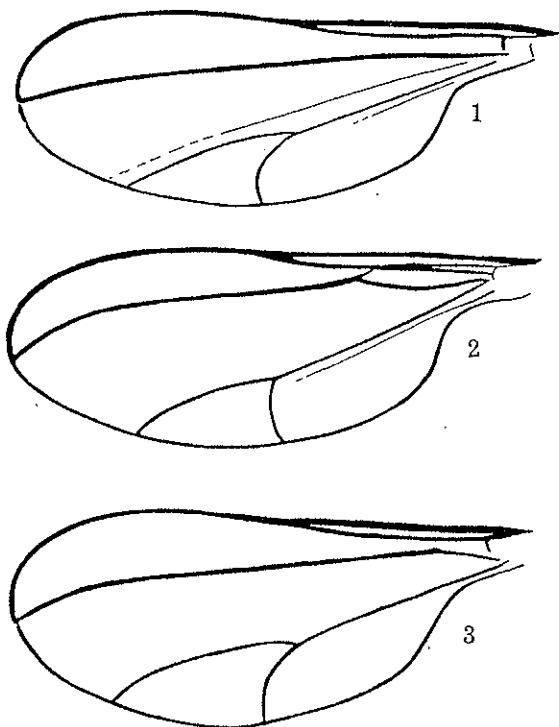


FIG. 1-3, wings: 1, *Pilodiplosis helianthibulla*; 2, *Blaesodiplosis crataegifolia*; 3, *Olpodiplosis helianthi*.

Nearctic species.—*dulichii* (Felt) 1912c:241 (*Thecodiplosis*). NEW COMBINATION.

Ancylodiplosis Gagné, new genus

Type-species, *Coquillettomyia bryanti* Felt.

Male.—Postvertical peak long. Eyes broadly joined at vertex, eye facets hexagonoid. Antennal flagellomeres regular, tricircumflar, binodal, the distal nodes constricted mesally. Palpus 4-segmented. Wing: R_5 curved, joining C posteriad of wing apex; Rs not evident. Tarsal claws bent near basal third, longer than empodium, the foreclaw toothed, the others simple. Abdominal terga II-VII with both caudal and lateral setae and covered with scales. Genitalia (Fig. 4-5): basimere short, stout, unlobed; telomere long, narrow, attenuate; sternum X deeply bilobed, the lobes setose; aedeagus with 2 hooklike, sclerotized, pigmented extensions.

Female.—Antennal flagellomeres regular. Abdominal terga II-VII as in male; tergum IX naked; sterna III-VII unsclerotized and setose on basal third; ovipositor not protrusible, the cerci short, rounded, densely covered with short, pointed setae.

Immature stages unknown.

The aedeagus, with its hooklike extensions, superficially resembles that of *Coquillettomyia* but sternum X is setose and deeply bilobed. The female differs from that of *Coquillettomyia* in the partially unsclerotized abdominal sterna, the naked tergum IX, and the

modified cercal setae. "Ancylo" (= "hook") refers to the hooklike extensions of the aedeagus.

Nearctic species.—*bryanti* (Felt) 1913e:144 (*Coquillettomyia*). NEW COMBINATION.

cincta (Felt) 1918a:165 (*Lobodiplosis*). NEW SYNONYM, NEW COMBINATION.

Apagodiplosis Gagné, new genus

Type-species, *Oligotrophus papyriferae* Gagné.

Male.—Postvertical peak absent. Eyes connate at vertex, eye facets rounded. Antennal flagellomeres uninodal, tricircumflar, circumflar loops very short. Frons soft, with 2-5 setae. Palpus 3-segmented. Wing: R_5 curved, joining C posteriad of wing apex; C not broken at juncture with R_5 ; Rs not evident. Claws simple, curved beyond midlength, shorter than empodia. Abdominal terga II-VII entire, not strongly sclerotized, without setae and scales cephalad of caudal row of setae; caudal setal row of tergum V entire; sterna II-VIII with both caudal and basal setae. Genitalia: basimere stout with mesal lobe; telomere broad, more or less dorsoventrally flattened and setulose throughout; tergum X with pencil-shaped sclerotized area mesad and cephalad of tip of cerci; sternum more or less bilobed, the lobes rounded; aedeagus much shorter than sternum X, narrow.

Female.—Antennal flagellomeres uninodal, circumflar regular. Ovipositor short, distal half abruptly narrowed, pencil-shaped sclerotized area present dorsally on caudal $\frac{2}{3}$; cerci ovoid.

Pupa.—Antennal horns not greatly produced, each with a short point. Pronotal setae short. Thoracic spiracles sclerotized, elongate. Frons with pair of short setae anterior of clypeus. Abdomen covered with uniformly tiny, unpigmented, pointed setulae.

Larva.—Spatula very short, weakly sclerotized, bifid apically. Postventral papillae asetose. Two pairs of terminal papillae wartlike, asetose, the 2 outer with short setae. Integument covered dorsally and ventrally with short spinules.

Apagodiplosis resembles *Caryomyia* in many of its characters such as the soft abdomen, terga with lateral setae, and the pencil-shaped sclerotized structure cephalad of the cerci. On the other hand, the male of *Apagodiplosis* has a lobed basimere and very short aedeagus, the pupa has uniformly tiny setae on the abdominal terga, and the larva has 8 terminal papillae, 4 setose and 4 blunt-corniform. "Apago" ("soft," "flabby") refers to the weakly sclerotized adult abdomen.

Nearctic species.—*papyriferae* (Gagné) 1967a:1 (*Oligotrophus*). NEW COMBINATION.

Aphidoletes Kieffer

Aphidoletes Kieffer 1904b:385. Type-species, *Breviabietis* Kieffer (Felt 1911e:53).

Phaenobremia Kieffer 1912b:1. Type-species, *Aphidoletes urticae* Kieffer (original designation).

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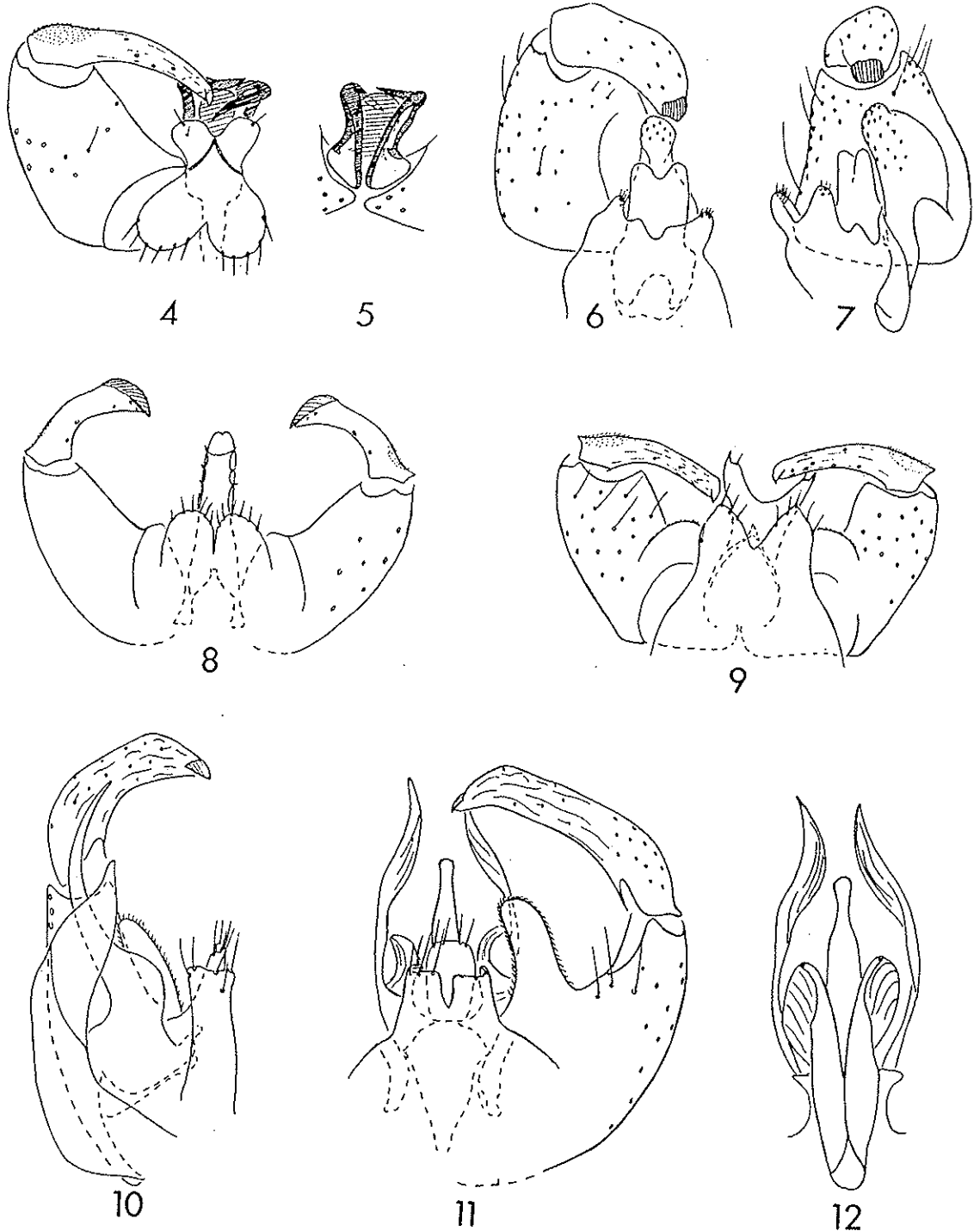


FIG. 4-12, male genitalia: 4, *Ancylopediplosis bryanti* (dorsal; cerci not in natural position); 5, same aedeagus (ventral); 6, *Blaesodiplosis crataegifolia* (dorsal); 7, same (mesal); 8, *Cordylodiplosis molliterga* (dorsal); 9, *Cartodiplosis nyssaecola* (dorsal); 10, *Glenodiplosis callipus* (mesal); 11, same (dorsal); 12, same interparameral squamae and aedeagus (dorsal).

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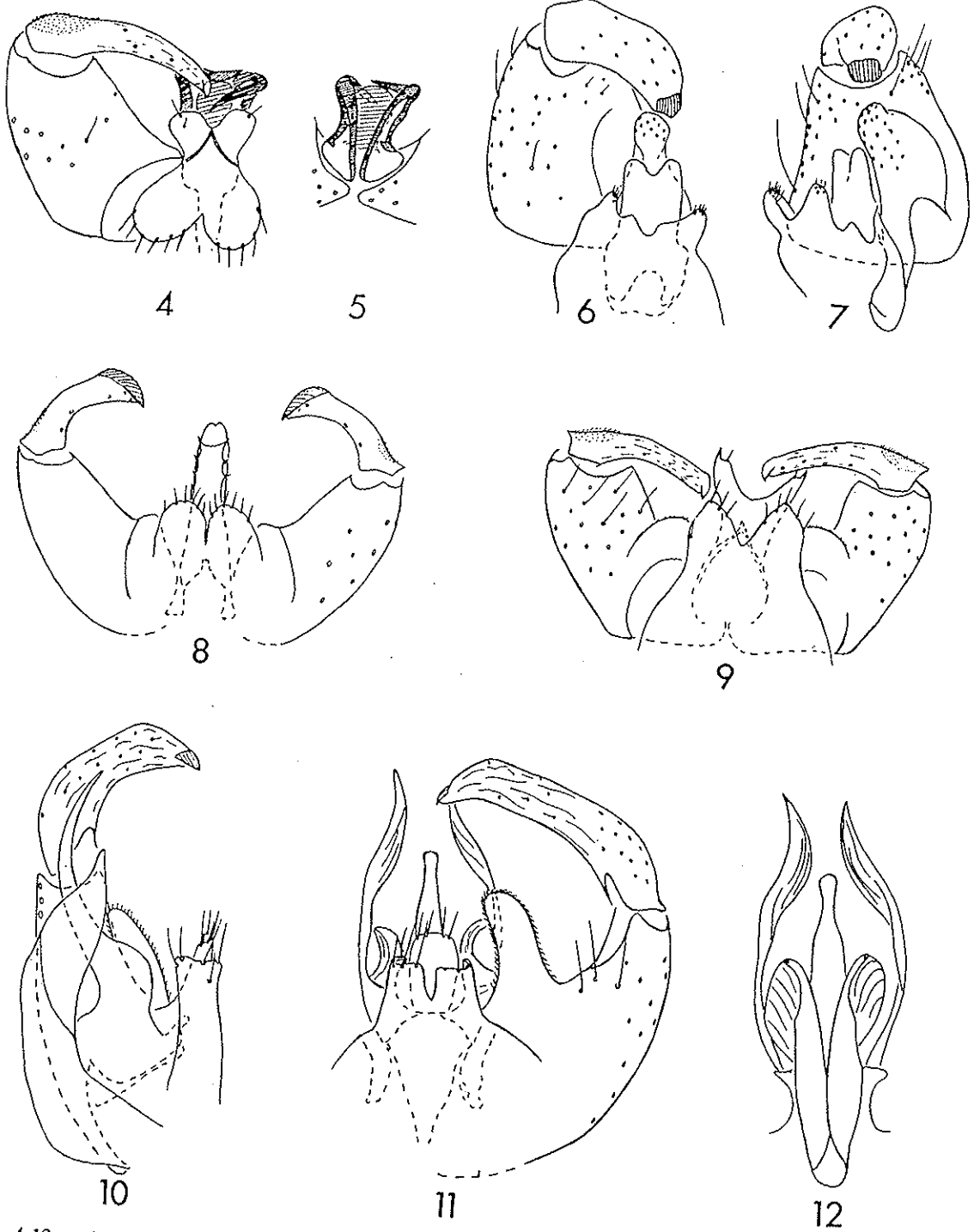


FIG. 4-12, male genitalia: 4, *Ancylopediplosis bryanti* (dorsal; cerci not in natural position); 5, same aedeagus (ventral); 6, *Blaesodiplosis crataegifolia* (dorsal); 7, same (mesal); 8, *Cordylodiplosis molliterga* (dorsal); 9, *Cartodiplosis nyssaecola* (dorsal); 10, *Glenodiplosis callipus* (mesal); 11, same (dorsal); 12, same interparameral squamae and aedeagus (dorsal).

toothed. At least circumfilum I of the male flagellomeres has a very elongate loop that is longer than the flagellomere. Sternum X of the male genitalia is setulose but asetose apically. The female cerci are without modified setae and the ovipositor is nonprotrusible. The larva is spatulate and the 8 terminal papillar setae of uniform length in 2 groups of 4. As with some other predaceous cecidomyiids there are ventral pseudopods, and the hind ventral papillae are setose.

This genus consists of 3 or 4 Holarctic species (one of them purposely introduced to North America but possibly native) which are predaceous on aphidoids. See Gagné (1971) for a review of the Nearctic species.

Nearctic species.—aphidimyza (Rondani) 1847:443
(*Cecidomya* [sic])

- rosivora* (Coquillett) 1900a:46 (*Diplosis*)
- hamamelidis* (Felt) 1907b:29 (*Bremia*)
- basalis* Felt 1908b:397
- borealis* Felt 1908b:397
- flavidus* Felt 1908b:397
- fulvus* Felt 1908b:397
- marginatus* Felt 1908b:397
- marinus* Felt 1908b:397
- meridionalis* Felt 1908b:397
- doutti* (Pritchard) 1961:100 (*Phaenobremia*)
- thompsoni* Möhn 1954:462
- urticariae* (Kieffer) 1895a:9 (*Bremia*)
- recurvatus* Felt 1908b:397

Aphodiplosis Gagné, new genus

Type-species, *Climodiplosis triangularis* Felt.

Male.—Postvertical peak long. Eyes broadly connate at vertex, eye facets hexagonoid. Antennal flagellomeres binodal, trifilar, circumfilar loops regular, not long. Palpus 4-segmented. Wing: R_5 strongly curved, reaching C posteriad of wing apex; C broken at juncture with R_5 . Rs faint. Claws simple, strongly bent near basal third, longer than empodia. Abdominal terga II–VI entire, rectangular, with caudal and lateral setae and many scales; tergum VII sparsely setose and without scales. Genitalia: basimere with obtuse mesobasal lobe, cylindrical beyond; telomere elongate, setulose only basally; cerci short, triangular; sternum longer than cerci, shorter and narrower than aedeagus, rounded apically; aedeagus elongate, narrow, cylindrical.

Female.—Antennal flagellomeres uninodal, short, short-necked, the circumfila low. Ovipositor attenuate, short-protrusible, the cerci elongate-ovoid, covered with long setae.

Larva.—Antenna about twice as long as wide. Spatula clove-shaped. Postventral abdominal papillae asetose. Dorsal papillae with long soft setae. Terminal papillae forming 2 groups of 4, 1 papilla at each corner of a square; the 2 cephalomesal papillae mammiform, the remainder with long, soft setae.

The male genitalia of *Aphodiplosis* superficially resemble those of the Palaearctic *Monobremia* Kieffer

except that the basimere of the latter has long, ac mesobasal lobes. The antennal circumfila of *Ap. diplosis* are short and regular, the claws are simple bent near the basal third, and longer than the empodia. The ovipositor is attenuate-protrusible and the cerci are elongate-ovoid. The larva has fairly short antennae, unhaired postventral papillae, and 1 pair of terminal papillae that is mammiform. This genus contains 1 tiny, widespread Nearctic species that has repeatedly been reared from cowdung.

"Aphodos" means "dung," the habitat of the included species.

Nearctic species.—triangularis (Felt) 1908b:4
(*Climodiplosis*). NEW COMBINATION.

Arthrocnodax Rübsaamen

Arthrocnodax Rübsaamen 1895b:189. Type-species, *A. vitis* Rübsaamen (Coquillett, 1910:510).

The adult head and claws of *Arthrocnodax* resemble *Lestodiplosis*, but the male genitalia and larva are unique. The male sternum X is wide, weakly bilobed apically, and is only slightly wider than the large aedeagus. The basimere is lobed mesobasally. The female cerci are very elongate and narrow, with 2 long and strong apical cerci. R_5 is very short. The larva has a very long head capsule and dorsal anal pleural setae, 3 pseudopods on abdominal segment I–VII, and 1 pair of terminal setae which are situated on elongate papillae. The type-species has spatula.

A. rhoinus is very close to and may be synonymous with the type-species. The genus occurs at least in Europe and North America; species from the Orient and the Neotropics must be re-evaluated. *Asyomyia* Marikovskij (1953) is a synonym. NEW SYNONYM.

Nearctic species.—americanus (Felt) 1911a:12
(*Endaphis*). NEW COMBINATION.

annulatus (Felt) 1907b:17 (*Rhabdophaga*). NEW COMBINATION.

rhoinus Felt 1908b:404

sambucifolius Felt 1908b:404. NEW SYNONYM

Blaesodiplosis Gagné, new genus

Type-species, *Hormomyia crataegifolia* Felt.

Male.—Postvertical peak absent. Eyes not connate at vertex, eye facets rounded. Antennal flagellomeres binodal, tricircumfilar, the circumfilar loops regular but their bases irregularly disposed. Frons with 0 to 2 setae. Palpus 1- to 3-segmented. Wing (Fig. 2): R_5 curved, joining C posteriad of wing apex; C not broken at juncture with R_5 ; R_5 bent at juncture with Rs; wing membrane almost devoid of scales. Claws simple, curved beyond midlength, as long as empodia. Abdominal terga II–VII complete, with caudal and lateral setae. Genitalia (Fig. 6–7): basimere stout, unlobed; telomere long, robust, setose and setulose throughout, the apical tooth wide; sternum X shallowly bilobed, lobes rounded, approximately as long as cerci; aedeagus robust, somewhat

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Female.—Antennal flagellomeres uninodal but trircumfilar; circumfilar loops short, unconnected. Ovipositor not protrusible, cerci rounded, the lower lamella wider than long, slightly bilobed.

Pupa.—Antennal horns each with 2 short, mammiform points. Pronotal setae short. Thoracic spiracles sclerotized, large. Frons naked. Abdomen entirely covered with uniformly tiny, unpigmented, pointed setulae.

Larva.—Spatula clove-shaped. Postventral papillae aetose; other papillae with short setae. Terminal papillae uniform, setose. Integument smooth except for ventral creeping pads.

Blaesodiplosis is distinctive in many ways, but notably in the trircumfilar female flagellomeres, the reduced mouthparts and almost aetose frons, the bent R₅ at the juncture with Rs, and the unbroken costa. "Blaeso" (means bent) refers to the bend in R₅. The 3 species listed here form leaf galls on shad-bush and hawthorn.

Nearctic species.—*canadensis* (Felt) 1908b:388

(*Hormomyia*). NEW COMBINATION

crataegifolia (Felt) 1907c:160 (*Hormomyia*).

NEW COMBINATION

venae (Stebbins) 1910:39 (*Cecidomyia*). NEW

COMBINATION

venae (Stebbins) of Felt 1914b:120 (in part)
(as *venitalis*, p. 122; *Lobopteromyia*)

Bremia Rondani

Diplosis, subgenus *Bremia* Rondani 1860:289. Type-species, *Cecidomyia decorata* Loew (original designation).

Circumfila I and III of each male flagellomere have 1 or 2 very long loops but circumfilum II is reduced to a band that closely girdles the flagellomeres. The tarsal claws are strongly bent near their basal third, are longer than the empodia; the foreclaws are toothed, the others simple. The male basimere usually has a prominent mesobasal lobe and sternum X is long and tapers to a narrow rounded apex. Known females have a non-protrusible ovipositor with long cerci, these with many, mesoventral, blunt-tipped setae. *Bremia* species have a long, curved R₅ and extremely long legs, which separate them from most predaceous genera which share some of the characters listed here.

Bremia is cosmopolitan, but nothing specific is known of its biology.

Nearctic species.—*americana* (Felt) 1914c:130 (*Toxomyia*). NEW COMBINATION

borealis Felt 1914c:130

caricis (Felt) 1907b:32 (*Mycodiplosis*)

filicis Felt 1907b:29

montana Felt 1914c:131

podophylli Felt 1907b:29 (as *podophyllae*)

sylvestris Felt 1920:289

tristis Felt 1914c:131

Cartodiplosis Gagné, new genus

Type-species, *Cecidomyia nyssaecola* Beutenmüller.

Male.—Postvertical peak long. Eyes large, broadly joined at vertex, facets hexagonoid. Antennal flagellomeres binodal, trircumfilar, loops of circumfilum I very unequal in length. Palpus 4-segmented. Wing: R₅ barely curved, joining C near wing apex; C broken at juncture with R₅. Claws simple, curved near basal third, longer than empodia. Abdominal terga II-VI and sterna II-VIII sclerotized only along caudal setal rows, aetose elsewhere; tergum VII unsclerotized, aetose. Genitalia (Fig. 8): basimere short, stout, with quadrate mesobasal lobe; telomere long, narrow, setulose only basally; sternum X deeply divided, the lobes narrow, splayed, each terminated by a spine; aedeagus short, triangular, as wide as long.

Female.—Antennal flagellomeres long-necked, circumfilar with long loops. Abdominal terga II-VII and sterna II-VIII sclerotized only along caudal setal rows. Ovipositor short, barely protrusible, tergum IX naked, cerci large, rounded, densely covered ventromesally with large bases of tiny, pointed setae.

Cartodiplosis is probably predaceous as it has the long-looped, irregular, antennal circumfilar, and the dense ventromesal setae of the female cerci found in predaceous genera. The characters separating this genus from the other genera are the unique male genitalia and the partial sclerotization and setation of the abdominal terga and sterna. "Carto" (means short) refers to the short aedeagus.

Nearctic species.—*nyssaecola* (Beutenmüller) 1907a:387 (*Cecidomyia*). NEW COMBINATION.

Caryomyia Felt

Caryomyia Felt 1909a:292. Type-species, *Cecidomyia tubicola* Osten Sacken (original designation).

The abdominal terga are weakly sclerotized and lack lateral setae. The male genitalia are stout, compact, and the cerci, sternum X, and stout aedeagus are approximately subequal in length. There is a pencil-shaped sclerotized area between and cephalad of the male cerci. The ovipositor is short and soft, except for an elongate, sclerotized dorsal area. The cerci are short and rounded. The legs are very short and have simple claws that are bent beyond midlength and are shorter than the empodia. The wing is very wide and C is not broken at its juncture with R₅.

Caryomyia is known only from eastern North America. All the species have been reared from leaf galls of hickory. *C. cynipsea* is only tentatively placed here.

Nearctic species.—*antennata* Felt 1909a:292

arcuaria (Felt) 1908b:388 (*Hormomyia*)

caryae (Osten Sacken) 1862:191 (*Diplosis*).

RESTORED COMBINATION

caryae (Felt) 1907b:47 (*Dirhiza*). RESTORED

SYNONYM and COMBINATION

caryaecola (Osten Sacken) 1862:192 (*Cecidomyia*). RESTORED COMBINATION

- consobrina* Felt 1909:292
cynipsea (Osten Sacken) 1862:193 (*Cecidomyia*)
holotricha (Osten Sacken) 1862:193 (*Cecidomyia*)
inanis Felt 1909a:292
persicoides (Osten Sacken) 1862:193 (*Cecidomyia*)
sanguinolenta (Osten Sacken) 1862:192 (*Cecidomyia*)
similis Felt 1909a:292
thompsoni (Felt) 1908b:388 (*Hormomyia*)
tubicola (Osten Sacken) 1862:192 (*Cecidomyia*)

Cecidomyia Meigen

Itonida Meigen 1800:19. Type-species, *Tipula pini* De Geer (Coquillett 1910:556). Suppressed by I.C.Z.N. 1963:339.

Cecidomyia Meigen 1803:261. Type-species, *Tipula pini* De Geer (monotypic).

Cecidomyia, subgenus *Diplosis* Loew 1850:20. Type-species, *Tipula pini* De Geer (Rondani 1860:289).

Retinodiplosis Kieffer 1912b:1. Type-species, *Diplosis resinicola* Osten Sacken (original designation).

The male telomere is very short in relation to the stout basimere. Sternum X is entire to deeply bilobed and of approximately the same length as the cerci and short, stout, aedeagus. The ovipositor is elongate, soft, and its cerci are elongate-ovoid. The antennal flagellomeres I and II are not connate as are those of most other Cecidomyiidi. The tarsal claws are usually about half the length of the empodia and curved beyond midlength. In the larva, the spiracles of the 8th abdominal segment project posteriad of the anal segment.

Cecidomyia is Holarctic at least. All the species live in resin masses of conifers; in North America, they are restricted to pines. The Nearctic species were reviewed by Vockeroth (1960), with whom I agree that the European *Stelechodiplosis* Möhn (1955b) should be considered a synonym of *Cecidomyia*.

Nearctic species.—*accola* Vockeroth 1960:76

banksianae Vockeroth 1960:73

candidipes Foote 1965:287

albitarsis (Felt) 1918b:383 (*Retinodiplosis*; preoccupied Meigen 1830)

palustris (Felt) 1915c:408 (*Retinodiplosis*)

piniinopis Osten Sacken 1862:196

inopis, emendation

reeksi Vockeroth 1960:70

resinicola (Osten Sacken) 1871:345 (*Diplosis*)

resinicoloides Williams 1909:2

Clinodiplosis Kieffer

Clinodiplosis Kieffer 1895b:cclxxx. Type-species, *Diplosis cilicrus* Kieffer (original designation).

The male genitalia of *Clinodiplosis* are composed of a large basimere with a squared mesobasal lobe, an elongate telomere, quadrate cerci which may be secondarily bifid, a long sternum X usually deeply lobed, but occasionally weakly so or not at all, and a long tapered aedeagus which is longer than the sternum. Most species have the claws strongly bent

near the basal third and longer than the empodia, but some are rounded beyond the midlength and are apparently as long as the empodia. This difference does not appear very important inasmuch as the genitalia of all the species show a close resemblance. Further, *Clinodiplosis* species are usually tiny, the male flagellomeres are regularly trinodal and tricircumflar, the palpus is 4-segmented, the eyes are large, and a long postvertical peak is always present. The ovipositor is not greatly protrusible and the cerci are large rounded, without modified setae. In the larva the 2 pairs of terminal papillae are corniform; the 4 pair has short setae, the other long.

Clinodiplosis is a large, cosmopolitan genus. In general, the species feed on saprophytic fungi, although some have been implicated as gall formers, especially in the Neotropics.

Nearctic species (all except *araneosa* and *examinis* are new combinations or restored combinations.

aestiva (Felt) 1908b:402 (*Mycodiplosis*)

agraria (Felt) 1908b:413 (*Cecidomyia*)

apicis (Kieffer) 1913a:213 (*Cecidomyia*)

apicalis (Felt) 1908b:413 (*Cecidomyia*; preoccupied Walker 1856)

apocyni (Felt) 1908b:414 (*Cecidomyia*)

araneosa Felt 1912b:154

canadensis (Felt) 1911c:453,466 (*Itonida*)

captiva (Felt) 1908b:401 (*Mycodiplosis*)

carolina (Felt) 1911d:549 (*Mycodiplosis*)

cattleyae (Molliard) 1903:165 (*Cecidomyia*)

cattleyae Felt 1908b:412

cincta (Felt) 1918a:203 (*Mycodiplosis*)

clarkeae (Felt) 1911c:472 (*Parallelodiplosis*)

contracta (Felt) 1908b:401 (*Mycodiplosis*)

corticis (Felt) 1915c:407 (*Parallelodiplosis*)

corylifolia (Felt) 1907d:20 (*Mycodiplosis*)

cyanococci (Felt) 1907b:32 (*Mycodiplosis*)

examinis Felt 1913a:306

fibulata (Felt) 1908b:401 (*Mycodiplosis*)

fulva (Felt) 1918a:153 (*Dicrodiplosis*)

gillettei (Felt) 1911c:549 (*Dicrodiplosis*)

graminis (Fitch) 1861:832 (*Cecidomyia*)

cerealis (Fitch) 1845:263 (*Cecidomyia*; preoccupied Sauter 1817)

holotricha (Felt) 1908b:401 (*Mycodiplosis*)

infirmata (Felt) 1908b:413 (*Cecidomyia*)

intermedia (Felt) 1920:290 (*Mycodiplosis*)

lappa (Stebbins) 1910:35 (*Cecidomyia*)

lenis (Felt) 1920:290 (*Mycodiplosis*)

longicornis (Felt) 1918a:156 (*Dicrodiplosis*)

meibomiifoliae (Beutenmüller) 1907b:306 (*Cecidomyia*)

modesta (Felt) 1908b:402 (*Mycodiplosis*)

obscura (Felt) 1908b:402 (*Mycodiplosis*)

paucifili (Felt) 1908b:413 (*Cecidomyia*)

phlox (Greene) 1941:547 (*Hyperdiplosis*)

populi (Felt) 1908b:394 (*Dicrodiplosis*)

pratensis Felt 1908b:412

rhododendri (Felt) 1939b:42 (*Giardomyia*)

robusta (Felt) 1908b:401 (*Mycodiplosis*)

rubida (Felt) 1918a:158 (*Dicrodiplosis*)

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iplosis) losis) iplosis) lomymia) cidomyia; pre-

odiplosis) myia) odiplosis) myia) sis)

rodiplosis) myia) odiplosis) myia) sis) crodiplosis) 907b:306 (Ceci-

diplosis) diplosis) lomymia) rdiplosis) iplosis)

ardomyia) diplosis) liplosis)

- rubisolita* Felt 1908b:412
- sanguinea* (Felt) 1908b:413 (*Cecidomyia*)
- setariae* (Felt) 1907d:22 (*Cecidomyia*)
- spiraeaeiflorae* (Felt) 1907d:23 (*Cecidomyia*)
- spiraeina* (Felt) 1911c:472 (*Itonida*)
- tenuitas* (Felt) 1908b:401 (*Mycodiplosis*)
- terrestris* (Felt) 1908b:413 (*Cecidomyia*)
- tsugae* (Felt) 1907b:34 (*Mycodiplosis*)
- uliginosa* (Felt) 1914c:133 (*Itonida*)
- variabilis* (Felt) 1908b:402 (*Mycodiplosis*)
- venitalis* (Felt) 1914b:121 (*Dicrodiplosis*)
- verbenae* (Beutenmüller) 1907b:306 (*Cecidomyia*)
- urtifolia* (Felt) 1908b:414 (*Cecidomyia*)

Coccidomyia Felt

Coccidomyia Felt 1911e:48. Type-species, *pennsylvanica* Felt (original designation).

The antenna of *Coccidomyia* has only 10 flagellomeres which are gynecoid in the male. The palpus is 2 to 3 segmented and very short. The tarsal claws are strongly curved beyond midlength and toothed on the forelegs, simple on the mid and hindlegs.

This genus was formerly placed within the Oligotrophidi because of the 10-segmented, uninodal, flagellomeres. The male flagellomeres are obviously gynecoid, however, and the genitalia lack the claspettes necessary to include this genus within the Oligotrophidi.

Coccidomyia is known from a single species found associated with and presumably predaceous on a scale insect on beech in Pennsylvania.

Nearctic species.—*pennsylvanica* Felt 1911e:45.

Contarinia Rondani

Cecidomyia subg. *Contarinia* Rondani 1860:289. Type-species, *Tipula loti* De Geer (original designation).

Stenodiplosis Reuter 1895:9. Type-species, *geniculati* Reuter (Kieffer 1896c:92). NEW SYNONYM.

Atylodiplosis Rübsaamen 1910:342. Type-species, *Diplosis acetosellae* Rübsaamen. (Rübsaamen & Hedicke 1926:261.) NEW SYNONYM.

Tinconaria Gagné, 1967b:155. Type-species, *albescens* Gagné (original designation). NEW SYNONYM.

Contarinia is broadly characterized by the male and female genitalia and the larval terminal papillae. The basimere of the first is short, unlobed, the telomere usually elongate and tapering gradually from base to apex, sternum X is deeply bilobed, streamlined, and as long as the cerci and the aedeagus which tapers to a narrow apex. The ovipositor is very long and tapered, its cerci are tiny, dorsoventrally flattened, mesally appressed, and narrowed apically. The terminal segment of the larva has 6 papillae with short setae and 2 that are large, stublike, asetose. The claws are simple, rounded beyond midlength, and as long as the empodia or shorter. The postvertical peak may be present or absent. The male flagellomeres may be gynecoid, bifilar, or trifilar, and the palpi 1- to 4-segmented.

Stenodiplosis has in the past been segregated from

Contarinia only because of the 3-segmented palpus, a character of no generic importance in itself. Two better, more diagnostic characters, which separate all the grass seed midges, including *sorghicola*, from all other *Contarinia*, are the absence of lateral setae from the adult abdominal terga, and the loss of the pair of stubby papillae on the terminal segment of the larva. To separate *Stenodiplosis* from *Contarinia*, however, would make the latter paraphyletic; it would also give the economically important *sorghicola* a new combination, but that is definitely the lesser sin. The Nearctic grass seed midges are: *albescens*, *bromicola*, *geniculati*, *hallicola*, *sorghicola*, and *wattsii*.

Contarinia is cosmopolitan and is the largest genus of Cecidomyiidi. All the species are host-specific. *Contarinia* occurs on a wide array of plants and although it is possible to arrange some species into natural groups according to hosts, I believe further splitting into genera is not feasible or practical. I have a revision of this genus in preparation.

European genera I consider synonymous with *Contarinia* are *Syndiplosis* Rübsaamen (1910) and *Nava-sodiplosis* Tavares (1920). NEW SYNONYMS.

Nearctic species.—*agrimoniae* Felt 1907d:21

albescens (Gagné) 1967b:155 (*Tinconaria*).

NEW COMBINATION

albotarsus (Felt) 1907b:36 (*Cecidomyia*). NEW

COMBINATION

ampelophila Felt 1907b:35

balsamifera Felt 1907b:34

bromicola (Marikovskij & Agafonova) 1961:272

(*Stenodiplosis*). NEW COMBINATION

canadensis Felt 1908b:394

catalpae (Comstock) 1881:266 (*Diplosis*). NEW

COMBINATION

cerasiphila (Felt) 1911d:554 (*Cecidomyia*).

NEW COMBINATION

cerasiserotinae (Osten Sacken) 1871:346 (*Ceci-*

domyia). NEW COMBINATION

serotinae, emendation

citrina (Osten Sacken) 1878:6 (*Cecidomyia*)

citricola, error, Thompson 1915:58

clematidis Felt 1908b:393

cockerelli (Felt) 1918b:381 (*Thecodiplosis*)

coloradensis Felt 1912c:240

constricta Condrashoff 1961:126

cuniculator Condrashoff 1961:128

divaricata Felt 1908b:392

enceliae (Felt) 1916b:183 (*Rhopalomyia*). NEW

COMBINATION

flavolinea Felt 1908b:392

fraxini (Felt) 1915e:206 (*Phytophaga*). NEW

COMBINATION

geniculati (Reuter) 1895:10 (*Stenodiplosis*).

NEW COMBINATION

gossypii Felt 1908a:210. Not Nearctic.

hallicola Gagné 1966b:319

hudsonici Felt 1908b:393. RESTORED COMBINATION

johnsoni Felt 1909b:15

johnsoni Slingerland & Johnson 1904:72; un-

available, genus not given

- juniperina* Felt 1939a:159
maculosa Felt 1908b:393
negundifolia Felt 1908b:394
negundinis (Gillette) 1890:392 (*Cecidomyia*).
 NEW COMBINATION
nucicola (Osten Sacken) 1878:6 (*Cecidomyia*;
 originally as *caryae-nucicola* Osten Sacken
 1870:53). NEW COMBINATION
obesa Felt 1918a:110
opuntiae (Felt) 1910:10 (*Cecidomyia*). NEW
 COMBINATION
oregonensis Foote 1956:54
parthenicola (Cockerell) 1900:201 (*Diplosis*).
 NEW COMBINATION
perfoliata Felt 1908b:391
peritomatis (Cockerell) 1913:280 (*Cecidomyia*).
 NEW COMBINATION
pseudotsugae Condrashoff 1961:124
pyrivora (Riley) 1886:287 (*Cecidomyia*)
racemi (Stebbins) 1910:39 (*Cecidomyia*). NEW
 COMBINATION
rumicis (Loew) 1850:34 (*Cecidomyia*)
sambucifolia Felt 1907b:35 (as *sambucifoliae*)
schulzi Gagné 1972a:279
setigera (Lintner) 1897:168 (*Diplosis*)
sorghicola (Coquillett) 1899:82 (*Diplosis*)
spiraena Felt 1911c:473
tecomae (Felt) 1906:127 (*Bremia*). NEW COM-
 BINATION
texana (Felt) 1921:204 (*Itonida*). NEW COM-
 BINATION
thalictri (Felt) 1907b:27 (*Oligotrophus*). NEW
 COMBINATION
trifolii Felt 1907b:35
truncata Felt 1908b:393
vaccinii Felt in Driggers 1926:85
vernalis (Felt) 1908b:368 (*Oligotrophus*). NEW
 COMBINATION
verrucicola (Osten Sacken) 1875:201 (*Cecido-*
myia). NEW COMBINATION
viatica Felt 1908b:393
virginiana (Felt) 1906:130 (*Cecidomyia*)
viridiflava Felt 1908b:392
washingtonensis Johnson 1963:94
waltzi Gagné 1966b:319
zauschneriae (Felt) 1912b:152 (*Thecodiplosis*)

Coquillettomyia Felt

Coquillettomyia Felt 1908b:398. Type-species, *Mycodiplosis lobata* Felt (original designation).

Sternum X of the male genitalia is longer than the cerci, asetose, parallel sided, and rounded apically. The aedeagus is blackened and bifid from the base to form 2 "hooks." Tergum IX of the female is setose, the ovipositor is nonprotrusible, and the cercal setae are uniform. Tarsal claws are bent at the basal third and only the foreclaws are toothed. R_5 is strongly curved to join C posteriad of the wing apex. For a larval description, see Möhn 1955b, not 1955a in which *Mycodiplosis poriae* Rübsaamen is erroneously placed in *Coquillettomyia*.

The biology of the Nearctic species is unknown, but European species live on the ground among decaying leaves. On available evidence, *Coquillettomyia* does not seem to be related to *Mycodiplosis* but an affinity has been assumed by authors since the misidentification in Möhn (1955a). *Pelodiplosis* Möhn (1955b), *Picrodiplosis* Möhn (1955b), and *Almatomyia* Marikovskij (1953), are synonyms of *Coquillettomyia*. NEW SYNONYMS.

Nearctic species.—*dentata* Felt 1908b:398
lobata (Felt) 1907b:31 (*Mycodiplosis*)
texana Felt 1908b:398

Cordylodiplosis Gagné, new genus

Type-species, *Cordylodiplosis molliterga*, n. sp.

Male.—Postvertical peak long. Eye broadly joined at vertex, eye facets hexagonoid. Antennal flagellomeres binodal, bicircumfilar, regular. Palpus 3-segmented. Wing: R_5 curved, reaching C posteriad of wing apex; R_s evident. Tarsal claws simple, curved beyond midlength, as long as empodia. Abdominal terga and sterna sclerotized only apically, each with only caudal setae. Genitalia (Fig. 9): basimere long with small rather square mesobasal lobe; distimere narrowest near middle, widest near apex, apical tooth long in relation to telomere length; sternum X much longer than cerci, more or less parallel sided, concave apically, with 3 pairs of apicolateral setae; aedeagus slightly larger and wider than sternum X, rounded apically.

Female and immature stages unknown.

The genitalia of *Cordylodiplosis* are distinctive, but neither the genitalia nor the other characters show anything to point out affinities. Oddly enough the shape of the telomere superficially resembles that of some of *Phaenolanthia*, a genus which belongs in another supertribe. "Cordylo" (means "clublike") refers to the shape of the telomere.

Cordylodiplosis molliterga Gagné, new species

Male.—Wing length, 1.2 mm. Antennal flagellomere III: nodes subequal, shorter than internode and neck, circumfilar loops regular, long, but not quite reaching the node distad. Genitalia as in Fig. 9.

Holotype.—Male, Miami, Fla., 1-14-1972, J. C. Buff, black-light trap, U.S.N.M. Type no. 72359.

Dentifibula Felt

Dentifibula Felt 1908b:385, 389. Type-species, *Cecidomyia viburni* Felt (original designation).

As do many other predaceous genera, this one keys near *Lestodiplosis* because of the short R_5 , the un-toothed claws bent beyond midlength and the undivided sternum X of the male genitalia. The flagellomeres, however, are bifilar, the basimere has a ventroapical projection, and the telomere is tapered to a narrow neck before widening again apically.

The one Nearctic species was reared from a scale

is unknown, and among *dequilletomyia diplosis* but since the mis-*diplosis* Möhn and *Almatoms* of Coquil-

8
sis)

genus

n. sp.

broadly joined tennal flagello- Palpus 3-seg- C posteriad of simple, curved ia. Abdominal ally, each with 9): basimere sal lobe; disti- ar apex, apical th; sternum X parallel sided, colateral setae; an sternum X,

n. distinctive, but haracters show ily enough the embles that of belongs in an- "clublike") re-

, new species

ntennal flagello- n internode and ; but not quite is in Fig. 9. -14-1972, J. C. e no. 72359.

pecies, *Cecidomyia*

ra, this one keys ort R₅, the un- th and the un- alia. The flagel- imere has a ven- re is tapered to apically. red from a scale

insect in Illinois and caught on the wing elsewhere. There are 2 other known species; one from India, and one from Ceylon.

Nearctic species.—*viburni* (Felt) 1907c:132 (*Contarinia*)
caryae (Felt) 1907c:132 (*Contarinia*). NEW SYNONYM
cocci Felt 1908b:389. NEW SYNONYM

Diadiplosis Felt

Diadiplosis Felt 1911e:54. Type-species, *cocci* Felt (original designation).
Olesicoccus Borgmeier 1931:186. Type-species, *costalimai* Borgmeier (original designation) = *Mycodiplosis coccidivora* Felt. NEW SYNONYM.
Nipponodiplosis Harris 1968:458. Type-species, *Diadiplosis hirticornis* Felt (original designation). NEW SYNONYM.

The abdominal terga and sterna are short and wide, straplike. The tarsal claws are toothed at least on the forelegs and are bent near the basal third. The antennal circumfila are many looped and the male flagellomeres are foreshortened, although binodal.

Diadiplosis is closely allied to *Kalodiplosis*, from which it differs in the shorter basimere and aedeagus, and the entire sternum X. Further, our *Diadiplosis* have 4-segmented palpi.

This genus is almost pantropical. Its species prey on coccoids. For a revision of all included species, see Harris (1968).

Nearctic species.—*coccidivora* (Felt) 1911d:549 (*Mycodiplosis*). NEW COMBINATION
costalimai (Borgmeier) 1931:186 (*Olesicoccus*). NEW COMBINATION
koebeleri (Felt) 1932:167 (*Silvestrina*). NEW COMBINATION
pulvinariae (Felt) 1912f:175 (*Mycodiplosis*). NEW COMBINATION
moznettei (Felt) 1922b:46 (*Mycodiplosis*). NEW COMBINATION

Dicrodiplosis Kieffer

Dicrodiplosis Kieffer 1895c: cxciv. Type-species, *fasciata* Kieffer (original designation).
Dicrodiplosis, error.
Peridiplosis Felt 1918a:160. Type-species, *Cecidomyia quercina* Felt (original designation). NEW SYNONYM.

The male basimere has a variously shaped meso-basal lobe, the telomere is long-attenuate and articulated dorsoventrally, and the sternum X is entire and very setose. The tarsal claws are toothed, curved beyond midlength, and as long as the empodia. The postvertical peak is absent. Male antennal flagellomeres have short necks and internodes. The ovipositor is nonprotrusible, and the cerci are covered mesoventrally with dense, short setae.

This genus is predaceous on coccoids and other insects. It is known from North America, Europe, Africa, Ceylon, and Hawaii. See Harris (1968) for further details and descriptions. *Xiphodiplosis* Felt

(1915d) from Ceylon is a synonym of *Dicrodiplosis*, NEW SYNONYM.

Nearctic species.—*quercina* (Felt) 1907b:41 (*Cecidomyia*). NEW COMBINATION
antennata Felt 1912c:243
californica Felt 1912c:244

Epidiplosis Felt

Epidiplosis Felt 1908b:406. Type-species, *sayi* Felt (original designation).

Except for the peculiar male parameres and aedeagus and the presence of only caudal tergal setae, *Epidiplosis* resembles *Lestodiplosis* in the small body size, the untoothed claws that are curved beyond midlength, the short rounded, undivided sternum X of the genitalia, and head characters. The female and immature stages are unknown.

The only known Nearctic specimen was caught on a window, but Nijveldt (1965) described a species of *Epidiplosis* that is predaceous on coccids in Israel. Mamaev (1969) reported this genus from Russia also.

Nearctic species.—*E. sayi* Felt 1908b:406.

Feltiella Rübssaamen

Feltiella Rübssaamen 1910:285. Type-species, *tetranychii* Rübssaamen (original designation, as n. gen., n. sp.).

Feltiella resembles *Lestodiplosis* in the short R₅, the rounded claws which are as long as the empodia, and the general shape of the genitalia. It differs therefrom in that the foreclaws, at least, are toothed, and the male sternum X is usually somewhat longer than the cerci. Also, the ovipositor is nonprotrusible and tergum IX is setose, the setae continuing onto the cerci, these with long setae, a few of them stronger than those surrounding, but none short and blunt-tipped.

Feltiella is at least Holarctic and contains mite predators. Some possibly feed on other insects.

Nearctic species.—*acarivora* (Felt) 1907a:242 (*Cecidomyia*). NEW COMBINATION

acerifolia (Felt) 1907b:31 (*Mycodiplosis*)

americana Felt 1916a:33

borealis (Felt) 1907b:17 (*Rhabdophaga*). NEW COMBINATION

carolina (Felt) 1913d:488 (*Arthrocnodax*).

NEW COMBINATION

davisi Felt 1915c:406

ithacae Felt 1926b:141

macgregori (Felt) 1915b:149 (*Mycodiplosis*).

NEW COMBINATION

minuta (Felt) 1907b:31 (*Mycodiplosis*)

occidentalis (Felt) 1912e:402 (*Arthrocnodax*).

NEW COMBINATION

pini (Felt) 1907b:31 (*Mycodiplosis*)

reducta (Felt) 1908b:400 (*Mycodiplosis*). NEW COMBINATION

COMBINATION

spinosa (Felt) 1911d:550 (*Mycodiplosis*)

venatoria Felt 1907c:195

Giardomyia Felt

Giardomyia Felt 1908b:405. Type-species, *Cecidomyia photophila* Felt (original designation).

Giardomyia is a category of convenience, a segregate of *Clinodiplosis*. The species included here have in common the shape of the claws which are bent at about 90° beyond midlength and dilated somewhat beyond the bend, and the shallowly and triangularly bilobed male sternum X. The aedeagus of the type-species has awl-shaped processes laterally.

Besides the Nearctic area, species are known from England and Hawaii. The biology is unknown, but they are probably mycophagous.

Nearctic species.—*emarginata* (Felt) 1907b:38 (*Cecidomyia*). NEW COMBINATION

fragariae (Felt) 1907b:37 (*Cecidomyia*). NEW SYNONYM, NEW COMBINATION

hudsonica Felt 1908b:406

montana Felt 1908b:406. NEW SYNONYM

ruricola (Felt) 1908b:413 (*Cecidomyia*). NEW SYNONYM, NEW COMBINATION

menthae Felt 1908b:405

phosphila (Felt) 1907b:37 (*Cecidomyia*; subsequently emended as *photophila*)

emarginata Felt 1908b:405. NEW SYNONYM

noveboracensis Felt 1908b:405. NEW SYNONYM

extensa (Felt) 1908b:412 (*Clinodiplosis*). NEW SYNONYM, NEW COMBINATION

piperitae (Felt) 1907d:22 (*Cecidomyia*). NEW COMBINATION

Glenodiplosis Gagné, new genus

Type-species, *Glenodiplosis callipus*, n. sp.

Male.—Postvertical peak long. Eyes broadly connate at vertex, the eye facets hexagonoid. Antennal flagellomeres binodal, distal node constricted near middle, trircumfilar, circumfilar loops long, regular. Palpus 4-segmented, the segments elongate. Wing: R_5 curved, joining C posteriorly of wing apex; C broken at juncture with R_5 ; R_s evident. Claws toothed only on foreleg, strongly bent near basal third, longer than empodia. Abdominal terga II–VI entire, lateral setae present; tergum VII with caudal setal row interrupted mesally. Genitalia (Fig. 10–12): basimere stout basally, narrowing beyond long mesal lobe; telomere long, setulose on basal half, striated beyond; cerci quadrate, enclosing sternum X; the latter slightly longer than cerci; quadrate, entire, setose apically; aedeagus very long, surrounded by interparameral squamae.

Female.—Antennal flagellomeres uninodal, long necked, circumfilar regular. Ovipositor not protrusible, tergum IX naked, cerci elongate-ovoid, each with several setae longer and stronger than remainder. Immature stages unknown.

Glenodiplosis is probably closest to *Coquillettomyia* which it resembles in most nongenital characters. The genitalia are very distinctive, not only because of the large, bizarre, interparameral squamae, but

also because of the quadrate cerci and sternum X which latter is setose laterally.

"Gleno" means "wonder" or "a marvel."

Glenodiplosis callipus Gagné, new species

Wing length, 1.8–1.9 mm. Distal node of male flagellomeres darker than basal; flagellomere I female antenna darker than remainder. Wing with fuscous scales and membrane except for 3 comma shaped lighter areas on posterior section of wing one in cell Cu , 2 in cell Cu_1 . Femora with posterior fringe of long setae; foretarsomere I and basal fourth of II with anterior row of erect scales; forefemur brown basally, yellow distally, foretibia yellow, foretarsomere I brown, II white but brown on distal fourth, III white except brown on distal fourth, IV white, V white except brown on distal half; midtibia all brown except tarsomeres III–V as with foreleg hindleg as for foreleg, except femur and tibia brown the distal fourth of the latter white. Male genitalia as in Fig. 10–12.

The name "callipus" means "beautiful legs."

Holotype.—Male, Holmes Run, Falls Church, V. VI-18-1961, W. W. Wirth, light trap, U.S.N. Type no. 72362. Paratypes, 8 ♂, 15 ♀, same data as holotype except collected between V-31 and V-6-1961 and VI-15 and IX-25-1960.

Gongrodiplosis Gagné, new genus

Type-species, *Phytophaga latipes* Felt.

Male.—Postvertical peak present. Eyes broadly joined at vertex. Antennal flagellomeres gynecocephalic, distal node approximately $\frac{1}{2}$ length nodes. Palpus 4-segmented. Wing: R_5 long, curved, reaching C posteriorly of wing apex. Metatarsus greatly enlarged, up to diameter of other tarsi. Tarsal claws simple, curved beyond midlength, approximately as long as empodia. Abdominal terga II–VI each with a single row of caudal setae and a few lateral setae. Genitalia (Fig. 15): basimere of moderate size, more elongate than stout, unlobed; distimere ? (lost); sternum X shallowly as long as cerci, bilobed; aedeagus long, curved distally beyond midlength, pointed apically.

Female and immature stages unknown.

Gongrodiplosis is distinctive, although evidence is rare, being represented by one poor specimen which was caught by sweeping. The greatly enlarged metatarsus is unique, as is the shape of the aedeagus. "Gongro" (means swelling) refers to the enlarged metatarsus.

Nearctic species.—*latipes* (Felt) 1908b:370 (*Phytophaga*). NEW COMBINATION

Halodiplosis Kieffer

Halodiplosis Kieffer in Howard 1912:78. Type-species, *salsolae* Kieffer (as n.gen., n. sp.).

Onodiplosis Felt 1916b:175. Type-species, *sarcobati* (original designation). NEW SYNONYM.

The distal half of the ovipositor is densely covered with long hair and the cerci are tiny and as wide

nd sternum X,

el."

ew species

node of male flagellomere I of ... er. Wing with ... for 3 comma- ... ection of wing, ... a with posterior ... and basal fourth ... ales; forefemur ... ia yellow, fore- ... brown on distal ... listal fourth, IV ... tal half; midleg ... as with foreleg; ... and tibia brown, ... Male genitalia

ful legs."

lls Church, Va., ... trap, U.S.N.M. ... 5 ♀, same data ... V-31 and VII-

n genus

. Eyes broadly ... omers gynecoid, ... s. Palpus 4-seg- ... -ching C posteriad ... rged, up to 4X ... s simple, curved ... long as empodia. ... a single row of

Genitalia (Fig- ... re elongate than ... sternum X short, ... long, curved dor- ... lly.

own. ... though evidently ... or specimen that ... ly enlarged meta- ... of the aedeagus. ... to the enlarged

08b:370 (Phyto-

er ... :78. Type-species,

cies, *sarcobati* Felt ... YM.

s densely covered ... y and as wide as

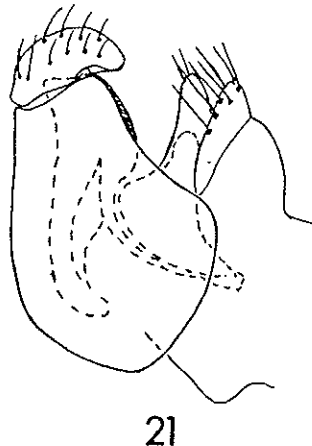
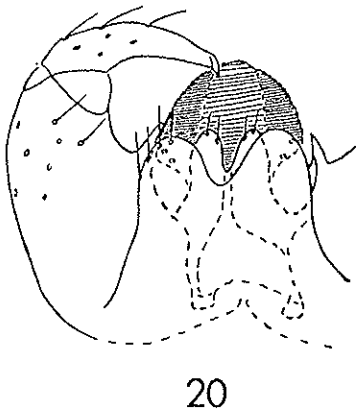
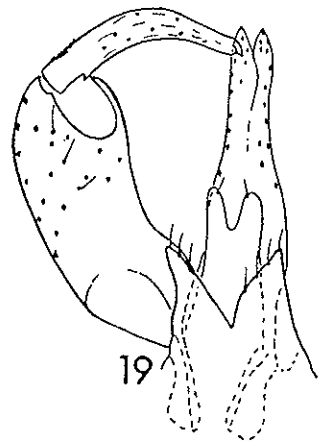
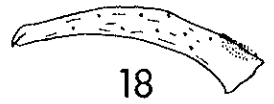
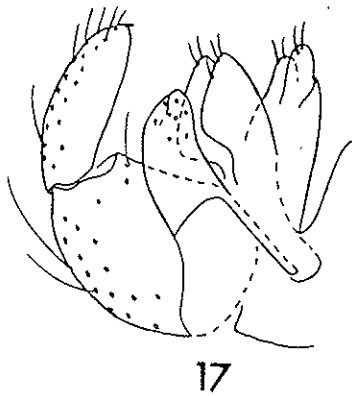
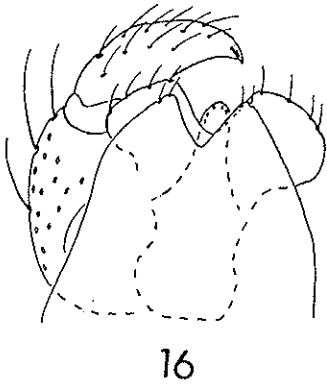
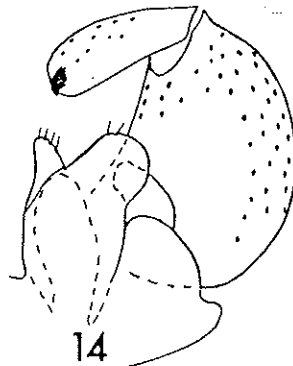
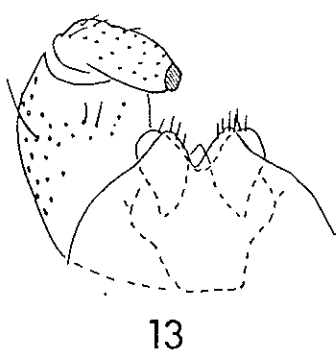


FIG. 13-22, male genitalia: 13, *Olpodiplosis helianthi* (dorsal); 14, same (mesal); 15, *Gongrodiplosis latipes*, aedeagus and sternum X (mesal); 16, *Pilodiplosis helianthibulla* (dorsal); 17, same (mesal); 18, *Pitydiplosis packardi*, telomere (dorsal); 19, same, telomere not horizontal (dorsal); 20, *Platydiplosis nigricauda* (dorsal); 21, same (lateral); 22, same, aedeagus and telomere (caudal).

long. The male genitalia approach those of *Contarinia*. The male flagellomeres of our species are trifilar, those of the Palearctic species are bifilar. Flagellomeres I and II are connate. The palpus is 1-seg-

mented and the tarsal claws are slightly shorter than the empodia.

There are one described species and several more undescribed from the North American desert, one

from Africa, and many from the U.S.S.R. All are gall formers on Chenopodiaceae.

I consider the following genera from central Asia to be synonymous with *Halodiplosis*: *Asiodiplosis* Marikovskij (1953), *Haloxylaphaga* Marikovskij (1955), *Monarthropselaphus* Marikovskij (1957), and *Tyloceromyia* Marikovskij (1956). NEW SYNONYMS.

Nearctic species.—*sarcobati* (Felt) 1916b:176 (*Onodiplosis*). NEW COMBINATION

Harmandia Kieffer

Harmandia Kieffer 1896a:5. Type-species, *Cecidomyia tremulae* Winnertz (original designation); = *Harmandia loewi* (Rübsaamen).

This genus lacks a postvertical peak, has compact antennal flagellomeres with short internodes and necks, and toothed claws which are curved beyond midlength. The aedeagus is cylindrical, much longer than the triangularly emarginate sternum X, and the telomere is short and robust. The ovipositor is long and protrusible. The larva is described in Möhn (1955a).

This genus is known from 4 North American and several European species, all of which are associated with leaf galls of *Populus* spp.

Nearctic species.—*helena* (Felt) 1912e:245 (*Dicrodiplosis*). NEW COMBINATION

hudsoni (Felt) 1907b:39 (*Cecidomyia*). NEW COMBINATION

reflexa (Felt) 1913e:146 (*Itonida*). NEW COMBINATION

reginae (Felt) 1921:196 (*Itonida*). NEW COMBINATION

Homobremia Kieffer

Homobremia Kieffer 1912b:1. Type-species, *Bremia emarginata* Kieffer (original designation).

The ovipositor is nonprotrusible, the cerci are large and densely covered apically with short, clavate, apically pointed setae. The female flagellomeres are elongate, long-necked, and the circumfila are irregular with both short and long loops. The tarsal claws are bent near the basal third, are all toothed and longer than the empodia.

H. insolens is tentatively referred here because the female cerci fit Kieffer's description and the characteristic shape of their setae do not appear to be found elsewhere. Kieffer (1904b, 1913a) did not describe the antennal circumfila of the female antenna which are notably irregular in *insolens*. Kieffer's types of *emarginata* from France are presumed lost.

Nearctic species.—*insolens* (Felt) 1920:288 (*Dicrodiplosis*). NEW COMBINATION

Hyperdiplosis Felt

Hyperdiplosis Felt 1908b:405. Type-species, *Cecidomyia lobata* Felt (original designation).

Hyperdiplosis, used here as a category of convenience, comprises a few probably unrelated species

which are segregated from *Clinodiplosis* (q.v.) because they have in common a few characters: the claws are as long as the empodia and bent at right angles beyond midlength, the aedeagus is unusually shaped for *Clinodiplosis*, and in 3 of the 4 Nearctic species the male sternum X is deeply bifid, with the lobes long, apically pointed and splayed. The available females and larvae resemble those of *Clinodiplosis*.

The Nearctic species appear to be general feeders, perhaps mycophagous: *spiraeafloreae* has been reared from buds of various plants and *recurvata* from both a decayed nectarine and pine cones.

Nearctic species.—*bryanti* Felt (1913e:147

lobata Felt 1907b:39

recurvata (Felt) 1907b:38 (*Cecidomyia*)

americana (Felt) 1908b:413 (*Cecidomyia*).

NEW SYNONYM, NEW COMBINATION

(*Hyperdiplosis americana* Felt 1911f from Panama is here renamed *H. gracilis* Gagné, new name)

fungicola Felt 1911d:552. NEW SYNONYM

tritici (Felt) 1912d:289 (*Itonida*). NEW COMBINATION

trititicola (Kieffer) 1913a:220 (*Cecidomyia*; unjustified new name for *tritici* Felt)

triticoides (Barnes) 1956:28 (*Cecidomyia*; unjustified new name for *tritici* Felt)

Kalodiplosis Felt

Kalodiplosis Felt 1915a:229. Type-species, *Dichrodiplosis [sic] multifila* Felt (original designation).

The abdomen of *Kalodiplosis* is ovoid and the terga are short and wide. The tarsal claws are bent near the basal third and are all toothed, at least in our species. Sternum X of the male genitalia is deeply emarginate.

This genus is closely allied to *Diadiplosis* from which it differs chiefly in the deeply emarginate sternum X of the male genitalia. I consider the following genera to be synonyms of *Kalodiplosis*: *Cleodiplosis* Felt (1922), *Ghesquierinia* Barnes (1939), *Golanudiplosis* Grover & Prasad (1968), and *Vincetodiplosis* Harris (1968). NEW SYNONYMS.

There are 11 known species of *Kalodiplosis*, chiefly tropical, and all predaceous on other arthropods, mainly coccoids. See Harris (1968) for a revision of the coccoid predators.

Nearctic species.—*floridana* Felt 1915a:230

Karschomyia Felt

Karschomyia Felt 1908b:398. Type-species, *Mycodiplosis viburni* Felt (original designation).

Metadiplosis Felt 1908b:406. Type-species, *spinosa* Felt (original designation). NEW SYNONYM.

Karschomyia differs from *Lobodiplosis* only in the structure of the male genitalia. Unlike *Lobodiplosis*, the mesal surface of the male basimere is modified into various asetulose projections and the telomeres are bilaterally flattened and dorsoventrally extended into various bizarre shapes. Species discrimination is

based on the shape of the male genitalia. *Metadiplosis* was previously separated from *Karschomyia* on the basis of the simple foreclaws, a character which appears to be relatively unimportant; the complicated male genitalia have the same general structure.

This genus is known from North America, Europe, the U.S.S.R., and India. The hosts of our species are unknown, but a Palearctic species was reared from beneath the bark of decaying maples.

I consider the Palearctic *Plesiobremia* Kieffer (1912b) and *Hiastatus* Marikovskij (1956) to be synonyms of *Karschomyia*. NEW SYNONYMS.

Nearctic species.—*caulicola* (Coquillett) 1895:401 (*Diplosis*). NEW COMBINATION
spinosa (Felt) 1908b:406 (*Metadiplosis*). NEW COMBINATION
viburni (Felt) 1907b:34 (*Mycodiplosis*)

Lestodiplosis Kieffer

Lestodiplosis Kieffer 1894:84. Type-species, *Cecidomyia pictipennis* Perris (Kieffer 1895b:ccclxxx).

Lestodiplosis has always included species with, among other things, a triangular mesobasal lobe on the male basimere, but I am enlarging the definition to include those without a lobe. Adults of all these species have a short R_5 , simple claws that are rounded beyond midlength and are as long as the empodia, an unlobed, rounded male sternum X, as long as the cerci, and short, blunt, mesoventral setae on the female cerci. The larva has a dorsal anus, 6 long terminal papillae, pseudopods, and no spatula.

All the species included here are predaceous, some wide ranging in both area and host preference, others apparently fairly restricted. The genus is cosmopolitan.

Trisopsis, *Adiplosis*, and *Odontodiplosis* are segregated from *Lestodiplosis* chiefly because their eyes are separated laterally. A revision of *Lestodiplosis* must take those genera into account, because the 3-eyed condition evidently evolved several times.

European genera which I consider synonymous with *Lestodiplosis* are *Chiliodiplosis* Möhn (1955c), *Phonodiplosis* Möhn (1955c), *Theatodiplosis* Tavares (1922) and *Tjanshaniella* Marikovskij (1953). NEW SYNONYMS.

Nearctic species.—*acerina* (Felt) 1907b:40 (*Cecidomyia*). NEW COMBINATION
apocyniflorae Felt 1908b:409
asclepiae Felt 1908b:409
asteris (Felt) 1907b:45 (*Cecidomyia*)
basalis Felt 1908b:408
caliptera (Fitch) 1845:262 (*Cecidomyia*). NEW COMBINATION
carolinae (Felt) 1907b:43 (*Cecidomyia*)
cerasi Felt 1908b:407
cincta Felt 1908b:408
cinctipes (Felt) 1914d:113 (*Parallelodiplosis*).

NEW COMBINATION
clematisthorae Felt 1908b:409
crataegifolia Felt 1908b:408
eupatorii (Felt) 1907b:44 (*Cecidomyia*)

fenestra (Felt) 1908b:404 (*Arthrocnodax*).

NEW COMBINATION
filicis (Felt) 1907b:40 (*Cecidomyia*). NEW COMBINATION

fitchii (Felt) 1912d:288 (*Prodiplosis*). NEW COMBINATION

flavomarginata (Felt) 1907b:42 (*Cecidomyia*)

florida Felt 1908b:409

floridana Johannsen 1945:8

fraxinifolia Felt 1908b:408

globosa Felt 1908b:409

grassator (Fyles) 1883:237 (*Diplosis*)

licoriae (Felt) 1907b:41 (*Cecidomyia*)

hopkinsi (Felt) 1911d:554 (*Cecidomyia*). NEW COMBINATION

irenae Gagné 1972b:325

fraxini (Felt) 1907b:42 (*Cecidomyia*; preoccupied in *Cecidomyia*, Bremi 1847). NEW COMBINATION

iridipennis Johnson 1929:216

juniperina (Felt) 1907b:44 (*Cecidomyia*)

maculipennis Greene 1941:550

novangliae Felt 1933:114

platanifolia Felt 1908b:410

populifolia Felt 1908b:408

pugionis (Felt) 1911d:557 (*Itomida*). NEW COMBINATION

rudbeckiae (Beutenmüller) 1907a:388 (*Cecidomyia*)

rufa (Felt) 1908b:403 (*Arthrocnodax*). NEW COMBINATION

rugosa (Felt) 1907b:45 (*Cecidomyia*)

rumicis Felt 1908b:410

satiata Felt 1920:292

scrophulariae (Felt) 1907d:22 (*Cecidomyia*)

septemmaculata (Walsh) 1864:630 (*Cecidomyia*; as *septem-maculata*)

solidaginis Felt 1908b:409

spiraeafolia Felt 1908b:410

sylvestris (Felt) 1907b:47 (*Cecidomyia*). NEW COMBINATION

taxiconis Foote 1956:56

triangularis (Felt) 1907b:42 (*Cecidomyia*)

tsugae (Felt) 1907b:43 (*Cecidomyia*)

verbenifolia Felt 1908b:408

yuccae Felt 1908b:408

Lobodiplosis Felt

Lobodiplosis Felt 1908b:397. Type-species, *Mycodiplosis acerina* Felt (original designation).

The most diagnostic character of *Lobodiplosis*, and one which it shares exclusively with *Karschomyia*, is the complete transverse division of the abdominal terga and sterna II-VI. In addition, the tarsal claws are bent at the basal third, only the foreclaws are toothed, and the empodia are shorter than the claws. R_5 is strongly curved to C posteriad of the wing apex. The female has a nonprotrusible ovipositor with small cerci. Species discrimination is based entirely on the male genitalia which are very distinctive. In each case the basimere has a ventroapical setose lobe.

Lobodiplosis differs from *Karschomyia* only in the structure of the male genitalia. Pupae and larvae of *Lobodiplosis* are unknown.

Lobodiplosis is known from North America, the West Indies, and U.S.S.R. *L. triangularis* is associated with pine cones and pine bark.

Nearctic species.—*acerina* (Felt) 1907b:33 (*Mycodiplosis*)
borealis Felt 1920:289
insolens (Felt) 1920:291 (*Cecidomyia*). NEW COMBINATION
quercina (Felt) 1907b:33 (*Mycodiplosis*)
speciosa Felt 1913e:143
triangularis Felt 1918a:163

Loboapteromyia Felt

Loboapteromyia Felt 1908b:385. Type-species, *Contarinia filicis* Felt (original designation).

The male genitalia could pass for those of a *Contarinia*, but the ovipositor is odd: the distal half narrows abruptly at its base and is of approximately the same diameter throughout; it is very setose, and the cerci are small, each about as wide as long. The wing is very wide at the anal angle. Otherwise, the adult characters are as in *Contarinia*.

The immature stages are unknown.

Loboapteromyia is monotypic and known only from 2 localities in New York. It is noteworthy that 6 of the 8 holotypes or type-series of the synonyms were swept on the same day, May 16, 1906, in Karner, N.Y., from fern (2 nominal species), skunk cabbage (2), carex (1), and basswood (1), indicating that they were caught in the same well-shaded swampy habitat.

Nearctic species.—*filicis* (Felt) 1907b:35 (*Contarinia*)
consobrina (Felt) 1907c:161 (*Contarinia*). NEW SYNONYM
tiliae (Felt) 1907c:161 (*Contarinia*). NEW SYNONYM
abdominalis Felt 1908b:390. NEW SYNONYM
apicalis Felt 1908b:390. NEW SYNONYM
caricis Felt 1908b:390. NEW SYNONYM
foetidi Felt 1908b:390. NEW SYNONYM
symplocarpi Felt 1908b:390. NEW SYNONYM

Macrodiplosis Kieffer

Macrodiplosis Kieffer 1895c:xciv. Type-species, *Diplosis dryobia* Löw (original designation).

The male genitalia are compact, short; sternum X is weakly bilobed, about as long as the cerci; the aedeagus is longer than sternum X and tapers gradually from its base to its rounded apex. The ovipositor is protrusible and short or long. The tarsal claws are simple, rounded beyond midlength, and as long as the empodia.

The larva and, in some characters, the adult, suggest *Harmandia*, the most apparent difference being the less sclerotized and setose adult abdomen of *Macrodiplosis*. Also, sternum X of the male genitalia is

very deeply bilobed and the various parts of the latter are much longer in *Harmandia*.

Macrodiplosis is Holarctic. Its species cause ve folds and leaf rolls on oak.

Nearctic species (all the following are new combinations).—*antennata* (Felt) 1908b:414 (*Cecidomyia claytoniae* (Felt) 1907b:36 (*Cecidomyia*)
electra (Felt) 1908b:369 (*Mayetiola*)
erubescens (Osten Sacken) 1862:200 (*Cecidomyia*)
foliara (Russell & Hooker) 1908:350 (*Cecidomyia*). NEW SYNONYM
flavoscuta (Felt) 1907b:41 (*Cecidomyia*)
majalis (Osten Sacken) 1878:6 (*Cecidomyia*)
niveipila (Osten Sacken) 1862:199 (*Cecidomyia putrida* (Felt) 1912c:246 (*Itonida*)
quercusoruca (Felt) 1925:61 (*Cecidomyia*; a *q-oruca*)
venae (Felt) 1914b:120 (in part) (as *venitalis*, p. 122)

Monarthropalpus Rübssaamen

Monarthropalpus Rübssaamen 1892:381. Type-species: *Cecidomyia buxi* Laboulbène (monotypic).

This genus is distinguished by the combination of very long antennal flagellomeres, a 1-segmented palpus, and a unique ovipositor: it is cultriform, glabrous, and strongly sclerotized.

Monarthropalpus is known from one Holarctic species which causes a leaf gall on boxwood.

Nearctic species.—*buxi* (Laboulbène) 1873:321 (*Cecidomyia*).

Mycodiplosis Rübssaamen

Mycodiplosis Rübssaamen 1895a:186. Type-species, *Cecidomyia coniophaga* Winnertz (original designation, new synonym of *Cecidomyia thoracica* Fitch 1845).
Isodiplosis Rübssaamen 1912:97. Type-species, *involuta* Rübssaamen 1912 (original designation, new synonym of *Cecidomyia inimica* Fitch 1861). New synonym.

Male flagellomeres are binodal, trifilar, regular; female flagellomeres have long necks which are usually setulose basally. R_5 is long, curved, joining C posteriad of wing apex. The male basimere is angular mesobasally, the telomere is elongate and attenuate; sternum X is elongate, deeply bilobed (except in *fungiperda*); the aedeagus is long, narrow, and usually surpasses sternum X in length. In the female the ovipositor is not protrusible, tergum IX is naked, and the cerci are large, very setose, with 2-3 of the setae larger than those surrounding.

Mycodiplosis species suck the contents of rust spores. Some species are at least Holarctic and have a wide host range.

Isodiplosis was heretofore restricted by the simple foreclaws which I do not consider of generic importance. *Mycodiplosis fungiperda* has an undivided, rounded sternum X and is thus an exception to the typically deeply bilobed sternum X. It resembles and may be synonymous with *Mycodiplosis poriae* Rübssaamen (1912), which larva is apparently similar to

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other *Mycodiplosis* species (Möhm 1955a). *Toxomyia* Felt (1911b) from the West Indies is a closely related genus.
Nearctic species.—emarginata Felt 1907b:33. RE-STORED COMBINATION
explicata (Felt) 1908b:413 (*Cecidomyia*). NEW COMBINATION
fungiperda Felt 1915c:407
inimica Fitch 1861:830 (*Cecidomyia*). NEW COMBINATION
angulata (Felt) 1907b:39 (*Cecidomyia*). NEW SYNONYM
urticae (Felt) 1907b:40 (*Cecidomyia*). NEW SYNONYM
socialis (Felt) 1908b:369 (*Mayetiola*). NEW SYNONYM, NEW COMBINATION
aphidivora (Felt) 1912c:245 (*Itonida*). NEW SYNONYM, NEW COMBINATION
pucciniae (Pritchard) 1948:29 (*Clinodiplosis*). NEW COMBINATION
rotundata Felt 1908b:401
thoracica (Fitch) 1845:264 (*Cecidomyia*). NEW COMBINATION
cerasifolia (Felt) 1907d:21 (*Cecidomyia*). NEW SYNONYM
impatiens Felt 1908b:401. NEW SYNONYM
populifolia Felt 1908b:400. NEW SYNONYM
cucurbitae Felt 1911d:550. NEW SYNONYM
cucurbitae (Felt) 1911d:555 (*Itonida*). NEW SYNONYM, NEW COMBINATION

Obolodiplosis Felt

Obolodiplosis Felt 1908b:410. Type-species, *Cecidomyia orbiculata* Felt (original designation) = *robiniae* (Haldeman).

This genus has a 4-segmented palpus, simple claws that are rounded beyond midlength and as long as empodia, a strong Rs vein and bowed R reaching C posteriad of wing apex, and a nonprotrusible ovipositor. The male genitalia are distinctive: sternum X is produced into 2 lobes which flank the aedeagus, and the telomere is bowed and longer than the basimere.

Obolodiplosis is known from one northeastern United States species that rolls the leaves of black locust.

Nearctic species.—robiniae (Haldeman) 1847:193 (*Cecidomyia*)
orbiculata (Felt) 1907b:37 (*Cecidomyia*)

Odontodiplosis Felt

Odontodiplosis Felt 1908b:404. Type-species, *Cecidomyia karnerensis* Felt (original designation).

This genus has, like *Trisopsis* and *Adiplosis*, "three eyes," but between the aedeagus and sternum is a projection shaped like a cockscomb. Other characters of the head and genitalia, and the claws and wings, are as in *Lestodiplosis* (q.v.).

Odontodiplosis is at least Holarctic in distribution. Part of *Trisopsis* of Mamaev (1969) belongs here. *Odontodiplosis* species are presumably predaceous.

Nearctic species.—americana Felt 1908b:404
karnerensis (Felt) 1907c:141 (*Cecidomyia*)
montana Felt 1908b:404

Olpodiplosis Gagné, new genus

Type-species, *Diplosis helianthi* Brodie.

Male.—Postvertical peak absent. Eyes very large, broadly joined at vertex, facets hexagonoid. Antennal flagellomeres binodal, trircumflar: circumfla interconnected, their bases irregularly disposed. Frons with many setae. Palpus 1- to 2-segmented. Wing (Fig. 3): R₅ curved, reaching C posteriad of wing apex; C broken at juncture with R₅; Rs not evident, but slight crook present in R₅ near imaginary Rs. Claws simple, curved near midlength, as long as empodia. Abdominal terga II-VII with caudal and lateral setae; sternum VIII well-developed, strongly setose. Genitalia (Fig. 13-14): basimere large, stout; telomere robust, widest near apex, setose and setulose throughout, apical tooth, short, wide; sternum X as long as cerci, deeply lobed, lobes broadly rounded; aedeagus short, tapering to apex.

Female.—Antennal flagellomeres with ramifying circumfla. Ovipositor long, protrusible, cerci very tiny, dorsoventrally flattened, juxtaposed mesally, apparently modified for piercing plant tissue.

Pupa.—Antennal horns short, rounded. Pronotal setae short. Thoracic spiracles, short, unsclerotized. Frons with a pair of long setae, their bases directly above clypeus. Abdomen entirely covered with uniformly tiny, unpigmented, pointed setulae.

Larva.—Spatula absent. Abdomen with asetose postvertical papillae, the 6 dorsal papillae with very long setae, and the 8 terminal papillae all setose, the setae longest on the outermost pair. Terminal segment bifid beyond the terminal papillae, the projections pointed, warty.

Although *Olpodiplosis* definitely belongs to the Cecidomyiidi, some resemblances to the Asphondyliidi should not go unnoted, viz. the shape of the head and nature of the eyes and eye facets, the more or less ramifying antennal circumfla, the shape of sternum VII or the female, which is slightly longer than tergum VII, and the tiny cerci of the ovipositor. In the shape of the male genitalia, the irregular antennal circumfla and the primitive abdominal sclerites, this genus resembles most closely *Pilodiplosis* and *Blaesodiplosis*. *Olpodiplosis* differs from them chiefly in adult head and pupal and larval characters. "Olpe" (means "bottle," "flask") refers to the flask-shaped bud galls formed on *Helianthus* by *O. helianthi*.

Nearctic species.—helianthi (Brodie) 1894:44 (*Diplosis*). NEW COMBINATION

Paradiplosis Felt

Paradiplosis Felt 1908b:410. Type-species, *Cecidomyia obesa* Felt (original designation).

All the parts of the male genitalia are short and wide. The telomere is barely as wide as long, and has a very wide tooth. The ovipositor is long, its cerci are rounded and as broad as long. The male

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flagellomeres are binodal, tricircumflar, and regular. The simple claws are shorter than the empodia.

Paradiplosis is known from a species originally caught on hemlock in New York but recently associated with white spruce cones in New Brunswick.

Nearctic species.—obesa (Felt) 1907b:38 (*Cecidomyia*)

Parallelodiplosis Rübssaamen

Parallelodiplosis Rübssaamen 1910:287. Type-species, *Diplosis galliperda* Löw (monotypic).

The male genitalia show a resemblance to those of *Clinodiplosis* with the quadrate mesobasal lobe of the basimere, the quadrate cerci, and the long sternum. The last mentioned, however, is convex or, at most, slightly concave apically. The most distinguishing character is the deep lateral division of terga II–VI between the caudal and lateral setae. The claws are usually bent close to the base and curved again apically, and are as long as or longer than the empodia.

Parallelodiplosis is at least Holarctic in distribution and comprises some species which are inquiline associated with other gall makers.

Nearctic species.—abdominalis (Felt) 1921:207 (*Itonida*). NEW COMBINATION

caryae (Felt) 1907b:28 (*Oligotrophus*; preoccupied Felt 1907b). NEW COMBINATION

acernaea (Felt) 1907b:46 (*Cecidomyia*)

aprilis (Felt) 1912c:247 (*Itonida*)

carpinicola (Kieffer) 1913a:214 (*Cecidomyia*)

carpini (Felt) 1907b:38 (*Cecidomyia*; preoccupied Löw 1874)

caryae (Felt) 1907b:45 (*Cecidomyia*)

florida (Felt) 1908b:411 (*Clinodiplosis*)

hartmaniae (Felt) 1921:201 (*Itonida*)

montana (Felt) 1908b:412 (*Clinodiplosis*)

nixonii (Felt) 1908b:414 (*Cecidomyia*). NEW

COMBINATION

ramuli (Felt) 1907c:164 (*Cecidomyia*). NEW

COMBINATION

rubrascuta (Felt) 1907b:46 (*Cecidomyia*)

sarae Gagné 1972b:322

coryli (Felt) 1907b:46 (*Cecidomyia*; preoccupied Kalténbach 1859)

spirae (Felt) 1909a:293 (*Clinodiplosis*)

subtruncata (Felt) 1907b:44 (*Cecidomyia*)

tolhurstae (Felt) 1908b:414 (*Cecidomyia*). NEW COMBINATION

Pectinodiplosis Felt

Pectinodiplosis Felt 1918a:132. Type-species, *Contarinia erratica* Felt (original designation).

This monotypic genus has very distinctive genitalia. It keys near *Lestodiplosis*, because the claws are un-toothed and rounded beyond midlength and the male sternum X is unlobed and subequal to the cerci, but the flagellomeres are biflar. R_5 is fairly long and curved. Only the male is known.

The only known specimen was reared from co-

coons of *Hemerocampa leucostigma* (J. E. Smith) (Lepidoptera: Lymantriidae) from the Washington, D. C., vicinity (Pergande, unpublished notes).

Nearctic species.—erratica (Felt) 1908b:391 (*Contarinia*)

Pilodiplosis Gagné, new genus

Type-species, *Cecidomyia helianthibulla* Walsh.

Male.—Postvertical peak absent. Eyes broadly joined at vertex, eye facets rounded. Antennal flagellomeres binodal, tricircumflar, regular. Frons with many setae. Palpus 3-segmented. Wing (Fig. 1): R_5 slightly curved, joining C posteriorly of wing apex; C broken at juncture with R_5 ; Rs not evident; membrane entirely covered with scales. Claws simple, curved beyond midlength, as long as empodia. Abdominal terga II–VII with caudal and lateral setae; sternum VIII sclerotized in caudal half only, setose apically. Genitalia (Fig. 16–17): basimere short, stout; telomere large, tapering near apex, setose and setulose throughout, the tooth small, narrow; sternum X as long as cerci, deeply bilobed, the lobes large, rounded, expanded laterally; aedeagus short, stout, somewhat bilaterally flattened.

Female.—Antennal flagellomeres with ramifying circumfla. Ovipositor short but protrusible; cerci short, triangular in lateral view.

Pupa.—Antennal horns with short apical point. Pronotal setae very long, as long as head. Thoracic spiracles short, unsclerotized. Pair of facial setae present at base of clypeus, these very long, reaching almost to antennal horns. Abdominal terga I–VII each with sclerotized area or basal third, the latter covered with setulae which increase in size caudally; terga covered elsewhere with tiny unpigmented setulae of uniform length.

Larva.—Spatula rounded apically, short. Abdominal segments I–VI with creeping pads. Integument covered with verrucae. Terminal papillae not evident on available specimens, the setae presumably very short if present.

The male genitalia show a superficial resemblance to *Olpodiplosis* and *Blaesodiplosis*, but the other adult characters and the pupa and larva appear quite different. "Pilo" (means ball) refers to the spherical leaf gall on *Helianthus* formed by *P. helianthibulla*.

Nearctic species.—helianthibulla (Walsh) 1866:228 (*Cecidomyia*, as *helianthi-bulla*). NEW COMBINATION

bulla (Felt) 1914a:286 (*Hormomyia*). RESTORED SYNONYM, NEW COMBINATION

Pinyonia Gagné

Pinyonia Gagné 1970:153. Type-species, *edulicola* Gagné (original designation).

This genus shows some affinity to *Contarinia* in the biflar flagellomeres, the shape of the simple claws and the cerci of the ovipositor. It is distinctive primarily because of the very long aedeagus relative to the sternum X but also in the short 1- or 2-seg-

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mented palpus, the quadrate telomere, and the aspatu-
late, apapillose larva.

Pinyonia is known from one species reared from a
distinctive pinyon pine needle gall in Colorado.

Nearctic species—*edulicola* Gagné 1970:153.

Pitydiplosis Gagné, new genus

Type-species, *Mycodiplosis packardi* Felt.

Male.—Postvertical peak absent. Eyes large,
broadly connate at vertex, the facets rounded. Antennal
flagellomeres binodal, distal node constricted
near middle; tricuspid, circumfila regular. Palpus
4-segmented. Wing: R_5 bowed posteriad of Sc
basad of strong R_s , long, curved distally, joining C
posteriad of wing apex; C broken at juncture with
 R_5 . Claws toothed, bent near basal third, longer than
empodia. Abdominal terga entire, quadrate, with lateral
setae; caudal setal row of tergum VII inter-
rupted mesally. Genitalia (Fig. 18-19): basimere
long, cylindrical; telomere strongly attenuate, setulose
only basally; cerci triangular; sternum X slightly
longer than cerci but much shorter than aedeagus,
deeply bilobed; aedeagus as long as basimere, with
many sensorial pits.

Female and immature stages unknown.

This genus is based on a single specimen which,
because of its distinctive genitalia, cannot be placed
elsewhere.

P. packardi was collected in association with both
the pitch mass borer and *Cecidomyia candidipes* on
pine.

"Pity" means "pine" with which *packardi* was
associated.

Nearctic species.—*packardi* (Felt) 1918b:382 (*Mycodiplosis*). NEW COMBINATION.

Planetella Westwood

Planetes Walker 1836:178. Type-species, *extrema* Walker
(original designation); preoccupied Macleay 1825.

Planetella Westwood 1840:126. New name for *Planetes*
Walker. Type-species, *Planetes extrema* Walker (au-
thors).

Cecidomyia, subgenus *Hormomyia* Loew 1850:20. Type-
species, *crassipes* Loew (Coquillett 1910:553). RESTORED
SYNONYMY.

Dyodiplosis Rübbsaamen 1910:287. Type-species, *Hormomyia arenariae* Rübbsaamen (monotypic). NEW SYNONYMY.

Trishormomyia Kieffer 1912b:2. Type-species, *Hormomyia strobli* Kieffer (original designation). RESTORED
SYNONYMY.

Planetella is comprised mainly of large species that
have the thorax produced anteriorly over the head.
The antenna are 13-segmented (the last usually
smaller than the penultimate, but the two are dis-
tinctly separated) to 25-segmented; flagellomeres I
and II are not connate; all the flagellomeres, whether
male or female, may be uninodal or binodal, bi-, tri-,
or poly-circumfila, these either separated or inter-
connected. The palpus is 1- to 4-segmented with cor-
responding labellar development. The eyes may be

connate vertically or very widely separated. The tar-
sals claws are simple, bowed or broadly rounded be-
yond midlength, and usually longer than the empodia.
The larvae all have 10 dorsal papillae per abdominal
segment.

Some character states, which are static in most
genera of Cecidomyiidi, are very plastic in *Planetella*,
which has led to the establishment of 14 genera for
the separation of Palearctic species. Although Felt
(1921) used several of those names, none except
Planetella is strictly available for the Nearctic spe-
cies. I have a revision of the Nearctic species in
preparation.

The genus as treated here is Holarctic: all the
European species and all the Nearctic species of
which some biology is known have been associated
with sedges. I consider the following European gen-
era to be synonyms of *Planetella*: *Pseudhormomyia*
Kieffer (1898), *Dichrona* Rübbsaamen (1899), *Dis-
hormomyia* Kieffer (1912b), *Taphodiplosis* Kieffer
(1912b), *Proshormomyia* Kieffer (1913a), *Jaapiola*
Rübbsaamen (1914), *Diplolaboncus* Rübbsaamen (1917),
Paurosphondylus Rübbsaamen (1917). NEW SYNONYMY.

Nearctic species (all of the following are new com-
binations).—*alexanderi* (Felt) 1921:220 (*Hormomyia*)

americana (Felt) 1907b:28 (*Hormomyia*)
atlantica (Felt) 1908b:387 (*Hormomyia*)
caudata (Felt) 1916b:172 (*Hormomyia*)
cincta (Felt) 1921:216 (*Hormomyia*)
clarkeae (Felt) 1908a:388 (*Hormomyia*)
consobrina (Felt) 1907d:18 (*Hormomyia*)
davisi (Felt) 1921:208 (*Dyodiplosis*)
dilatata (Felt) 1921:226 (*Trishormomyia*)
fenestra (Felt) 1915a:231 (*Hormomyia*)
fulva (Felt) 1926a:208 (*Hormomyia*)
incisa (Felt) 1921:226 (*Trishormomyia*)
johnsoni (Felt) 1907d:18 (*Hormomyia*)
maxima (Felt) 1921:216 (*Hormomyia*)
modesta (Felt) 1913e:145 (*Hormomyia*)
montana (Felt) 1921:217 (*Hormomyia*)
needhami (Felt) 1907c:160 (*Hormomyia*)
palustris (Felt) 1907d:19 (*Hormomyia*)
proteana (Felt) 1914d:113 (*Hormomyia*)
pudica (Felt) 1913e:146 (*Hormomyia*)
saturni (Felt) 1914c:133 (*Hormomyia*)
shawi (Felt) 1913e:145 (*Hormomyia*)

Platydiplosis Gagné, new genus

Type-species, *Platydiplosis nigricauda* Gagné, n. sp.

Male.—Postvertical peak long. Eyes broadly joined
at vertex, eye facets rounded. Antennal flagellomeres
binodal, trifilar, regular. Palpus 4-segmented. Wing:
 R_5 curved, reaching C posteriad of wing apex; R_s
evident. Tarsal claws simple curved beyond mid-
length, as long as empodia. Abdominal terga II-VI
each with a single row of caudal setae and several
lateral setae. Genitalia (Fig. 20-22): basimere stout,
with narrow mesal lobes; telomere bilaterally flat-
tened, quadrate in lateral view, tooth wide; sternum
X approximately as long as cerci, deeply bilobed,

lobes broad, rounded; aedeagus, large, stout, sclerotized and blackened.

Female and immature stages unknown.

The male genitalia of *Platydiplosis* show some resemblance to *Coquilletomyia* because of the stout, lobed basimere and sclerotized aedeagus. The claws, however, are simple, rounded beyond midlength, and as long as the empodia, the aedeagus is not bifid, and sternum X is bilobed. In addition, the greatly flattened, wide telomere is unique. "Platy" (means "flat") refers to the bilaterally flattened telomeres.

Platydiplosis nigricauda Gagné, new species

Male.—Wing length, 1.4 mm. Genitalia as in Fig. 20-22.

Holotype.—Male, Seneca St. Pk, Montgomery Co., Md., VIII-15-1971, W. W. Wirth, malaise trap, U.S.N.M., Type no. 72360.

Plectrodiplosis Gagné, new genus

Type-species, *Plectrodiplosis fascipennis*, n. sp.

Male.—Postvertical peak long. Eyes broadly connate at vertex, eye facets hexagonoid. Antennal flagellomeres binodal, bicircumflar; dorsal circumflar loops slightly longer than others. Palpus 4-segmented. Wing: R_5 curved, joining C posteriad of wing apex; C broken at juncture with R_5 ; Rs very weak, close to arculus. Claws all toothed, strongly bent near basal third, longer than empodia. Abdominal terga II-VII entire, lateral setae present, continuous with caudal setae; tergum VII with 2-3 uninterrupted caudal rows of setae. Genitalia (Fig. 24-25): basimere short, stout, with sclerotized, spur-like, mesal projection; telomere of moderate length, approximately cylindrical, setose and setulose throughout; cerci triangular; sternum X deeply bilobed, the

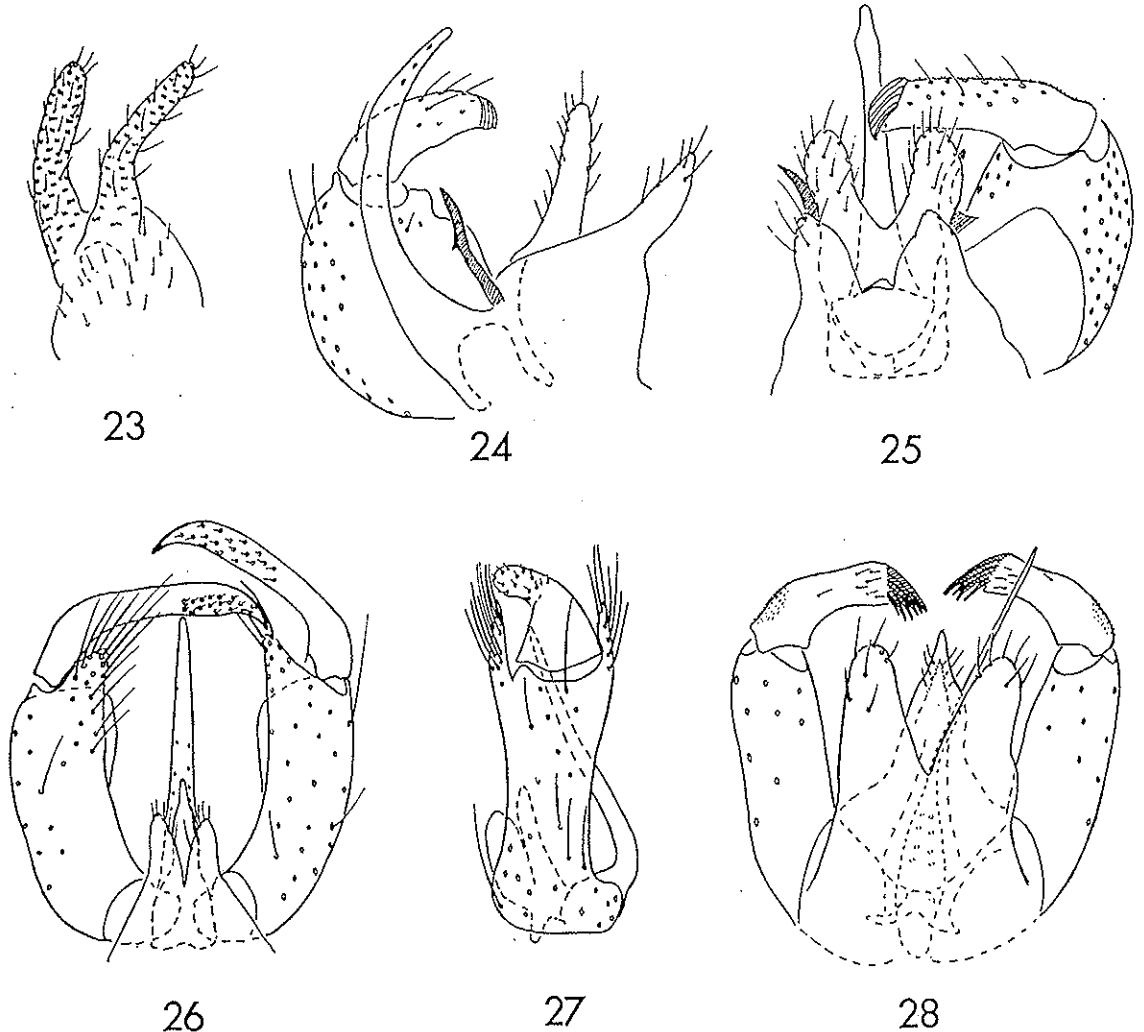


FIG. 23, female cerci, *Tanaodiplosis androgynus* (dorsal). FIG. 24-28, male genitalia: 24, *Plectrodiplosis fascipennis* (mesal); 25, same (dorsal); 26, *Thaumadiplosis magnicauda* (dorsal); 27, same, (lateral); 28, *Tropidiplosis pectinata* (dorsal).

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lobes long, setose throughout; aedeagus elongate, somewhat recurved dorsally.

Female and immature stages unknown.

The affinities of this genus are not obvious. It is the only one with the combination of toothed claws and bifilar flagellomeres. Further, the genitalia are unlike any seen elsewhere, with the long, very setose sternal lobes and the basimera spur in combination with the setose and setulose telomere.

"Plectro" (means "spur") refers to the mesal projection of the basimere.

Plectrodiplosis fascipennis Gagné, new species

Male.—Wing length, 2.3 mm. Nodes of flagellomeres subequal in size, internodes about as long as nodes, neck slightly longer. Wing membrane light and covered with white scales apically and in a band across midlength, membrane clouded and scales brown elsewhere. Basal three-fourths of tarsomere III on all legs covered with white scales; elsewhere, legs covered entirely with brown scales. Male genitalia as in Fig. 24-25.

"Fascipennis" means "banded wing"

Holotype.—Male, Plummer's Island, Montgomery Co., Md., VII-25-1914, R. C. Shannon, U.S.N.M. Type no. 72364.

Prodiplosis Felt

Prodiplosis Felt 1908b:403. Type-species, *Cecidomyia floricola* Felt (original designation).

The basimere and telomere of the male genitalia are articulated in a dorsoventral plane, and the latter is asetulose and usually slender but short. Sternum X is deeply emarginate, its lobes triangular. The aedeagus is longer than sternum X, strongly curved, its apex pointed dorsally, and it usually is covered ventrally by a hoodlike structure. The male flagellomeres are usually irregular, being gynecoid, bifilar, or trifilar, with sometimes the basal flagellomeres binodal and the distal uninodal.

Although the male is very distinctive, the female and larvae are apparently indistinguishable from *Con-tarinia*. There is very much diversity in habits and in the general structure of the male genitalia of the species listed here and several as yet undescribed. In general they occur in rolled leaves or developing buds of a wide variety of plants. The species appear to be host-specific.

Prodiplosis is so far only Nearctic, if the European *Phyllodiplosis* Kieffer (1912b) is not a synonym.

Nearctic species.—*citrulli* (Felt) 1935a:79 (*Itonida*).

NEW COMBINATION

floricola (Felt) 1907d:21 (*Cecidomyia*)

morrissi Gagné 1966a:1155

myricae (Beutenmüller) 1907b:306 (*Cecido-myia*). NEW COMBINATION

vaccinii (Osten Sacken) 1862:196 (*Cecido-myia*). NEW COMBINATION

gaylussacii (Felt) 1925:55 (*Cecidomyia*; unjust. new name for *vaccinii* Osten Sacken).

violicola (Coquillett) 1900h:50 (*Diplosis*).
NEW COMBINATION

Putoniella Kieffer

Putoniella Kieffer 1896a:4. Type-species, *Diplosis marsupialis* Loew (original designation).

The male genitalia are robust: the basimere is large, unlobed, the telomere setose, setulose throughout, sternum X is deeply bilobed, the lobes long and rounded apically, the aedeagus is much longer than sternum X, narrow beyond sternum X, and covered with sensillae. The ovipositor is short, nonprotrusible. The male flagellomeres are binodal, triricircumfilar, the circumfilar loops short. The palpus is 3-segmented. (All the above from Harris (1966).) The tarsal claws are simple, curved beyond the middle, and slightly shorter than the empodia. The larva is spatulate with the terminal papillae in 2 groups, 3 pairs with cone-shaped sensilla, the 4th pair with setae.

Putoniella is Holarctic. It is known in Europe from the type-species and in the United States from an unnamed species from Georgia, possibly *marsupialis*, both of which form leaf galls on plum trees. Adults have not been reared from our larvae.

Nearctic species.—*Putoniella* sp., possibly *marsupialis* (Loew).

Resseliella Seitner

Resseliella Seitner 1906:174. Type-species, *piccae* Seitner (original designation).

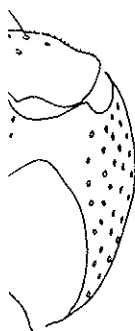
Thomasia Rüb-saamen 1910:288 (preocc. Poche 1908). Type-species, *Diplosis oculiperda* Rüb-saamen (monotypic). NEW SYNONYM.

Thomasiniana Strand 1927:66 (new name for *Thomasia* Rüb-saamen). Type-species, *Diplosis oculiperda* Rüb-saamen (aut.). NEW SYNONYM.

The male basimere and telomere are short, compact, and sternum X is concave to triangularly emarginate, subequal to or slightly shorter than the aedeagus. The ovipositor is long, protrusible, the cerci are soft, rounded. The tarsal claws are strongly bent near the basal third, are longer than the empodia, and either only the foreclaws or all the claws are toothed. The larva is spatulate, its terminal segment bifid. Two of the 8 terminal papillae are asetose, large, and conical and form the apex of the caudal extensions; the 6 others bear short setae.

This genus is very diverse in its habitats. Some species form galls on such hosts as pine, dogwood, and yellow poplar, while others are apparently mycophagous. Most cannot be separated by the male genitalia although other characters such as color pattern are very helpful.

Resseliella is at least Holarctic in distribution. I consider the following European genera to be synonymous: *Profeltiella* Kieffer (1912b) and *Wichmanniella* Möhn (1955d). *New synonymy*.



Diplosis fasci-
28, *Tropidi-*

Nearctic species (all the following are new combinations).—*aurata* (Felt) 1908b:402 (*Mycodiplosis*)
californica (Felt) 1914c:132 (*Thomasia*)
cinctella (Kieffer) (1913a:214 (*Cecidomyia*)
cincta (Felt) 1911d:558 (*Itonida*; preoccupied in *Cecidomyia* by Felt 1907)
clavula (Beutenmüller) 1892:269 (*Cecidomyia*)
alternata (Felt) 1907b:30 (*Mycodiplosis*)
conicola (Foote) 1956:54 (*Mycodiplosis*)
coryli (Felt) 1907b:32 (*Mycodiplosis*)
coryloides (Foote) 1956:55 (*Mycodiplosis*)
hudsoni (Felt) 1907b:33 (*Mycodiplosis*)
liriodendri (Osten Sacken) 1862:202 (*Cecidomyia*)
macculus (Loew) in Osten Sacken 1862:187 (*Diplosis*)
perplexa (Felt) 1908b:402 (*Mycodiplosis*)
pinifoliae (Felt) 1936b:7 (*Itonida*)
radicis (Felt) 1936a:232 (*Mycodiplosis*)
silvana (Felt) 1908b:402 (*Mycodiplosis*)
tulipiferae (Osten Sacken) 1862:202 (*Cecidomyia*)

Sequoiomyia Möhn

Sequoiomyia Möhn 1960:515. Type-species, *kraeuseli* Möhn (original designation).

The tarsal claws are bowed instead of strongly curved or bent. They are simple and longer than the empodia. The male genitalia are compact, robust, very setose, the telomeres attenuate but strongly bowed, sternum X concave apically, approximately as long as the cerci and narrow aedeagus. The ovipositor is short, protrusible; the cerci are long, ovoid, very setose.

Sequoiomyia is known from a Miocene fossil from *Sequoia* seeds and from a Nearctic species found in seeds of bald cypress.

Nearctic species.—*taxodii* (Felt) 1916c:415 (*Retinodiplosis*).

Silvestrina Kieffer

Silvestrina Kieffer 1912a:173. Type-species, *Arthrocnodax silvestrii* Kieffer (original designation).

The untoothed claws, which are longer than the empodia and bent near the basal third, set *Silvestrina* apart from most other predaceous genera. Further, the male genitalia are odd with their short telomeres. Other characters, the short R_5 , the short, blunt-tipped ventroapical setae of the female cerci, and the head characters in general, resemble those of *Lestodiplosis*. The larva is undescribed.

The type species from South Africa and Brazil was associated with coccoids; our species has been associated with coccoids, beetles, mites, dried and decaying vegetable matter, and fungus; an undescribed species, probably *S. cincta*, was recently reported from Japan (Yukawa, 1971). The type-species may be synonymous with *cincta*.

Nearctic species.—*cincta* (Felt) 1907b:47 (*Cecidomyia*). NEW COMBINATION

apiphila (Felt) 1907d:20 (*Arthrocnodax*).
 NEW SYNONYM, NEW COMBINATION
macrofila (Felt) 1907d:21 (*Cecidomyia*). NEW SYNONYM, NEW COMBINATION

Sitodiplosis Kieffer

Sitodiplosis Kieffer 1913b:49. Type-species, *Cecidomyia mosellana* Géhin (original designation).

Although *Sitodiplosis* greatly resembles *Clinodiplosis*, particularly in the shape of the genitalia, the flagellomeres are bifilar, and the claws are rounded beyond midlength and are as long as the empodia. The larvae have the general characteristics of *Clinodiplosis*.

This genus is monotypic. *S. mosellana* feeds on the developing grains of wheat in Europe and North America. It is probably an immigrant here.

Nearctic species.—*mosellana* (Géhin) 1857:21 (*Cecidomyia*).

Tanaodiplosis Gagné, new genus

Type-species, *Dicrodiplosis androgynes* Felt.

Apparent hermaphrodite. Postvertical peak not evident. Eyes broadly joined at vertex, eye facets apparently all rounded. Antennae android, flagellomeres binodal, tricircumflar, regular. Palpus 4-segmented. Wing: narrow; R_5 weakly curved, reaching C just posterior of wing apex; R_s not evident. Tarsal claws all toothed, curved beyond midlength, strongly dilated from bend to pointed apex, and subequal in length to empodia. Abdominal terga II-VII rectangular, each with caudal and lateral setae. Ovipositor short, soft, tergum IX with scattered setae, cerci (Fig. 23) very elongate, cylindrical, rounded apically, with uniform, evenly distributed setae.

Immature stages and male genitalia unknown.

I would usually consider it poor form to describe a genus on one hermaphrodite but the claws and cerci of this species are distinctive and cannot be placed anywhere else. The claws, at least those of the forelegs, are toothed and dilated on the distal half and the cerci are extremely long. "Tanaos" ("outstretched, elongate") refers to the shape of the cerci.

Nearctic species.—*androgynes* (Felt) 1908b:394 (*Dicrodiplosis*). NEW COMBINATION.

Taxodiomyia Gagné

Taxodiomyia Gagné 1968b:271. Type-species, *Cecidomyia cupressiananassa* Osten Sacken (original designation).

The long, protrusible ovipositor is unique among the *Cecidomyiidi* because the cerci are fused mesally. The compact male genitalia approximate those of *Sequoiomyia* except that they are much less setose. The tarsal claws are bowed, simple and longer than the empodia. The male flagellomeres are bi- or trifilar.

Taxodiomyia is known from 2 Nearctic species that form leaf and branchlet galls on bald cypress.

Nearctic species.—*cupressi* (Schweinitz) 1822:92 (*Merulius*, a fungus)

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taxodii (Felt) 1911d:556 (*Itonida*)
anthici (Felt) 1913c:278 (*Itonida*)
cupressiananassa (Osten Sacken) 1878:3 (*Ceci-*
domyia)
ananassa, *ananassae*, *anassassi*, emendations

Thaumadiplosis Gagné, new genus

Type-species, *Thaumadiplosis magnicauda* Gagné, n. sp.

Male.—Postvertical peak short. Eyes broadly joined at vertex, eye facets rounded. Antennal flagellomeres binodal, bifilar, regular. Palpus 4-segmented. Wing: R_5 strongly curved to join C posteriad of wing apex. Tarsal claws simple, curved beyond midlength. Empodia as long as claws. Abdominal terga II–VII membranous, each with 2 caudolateral setae per side. Genitalia (Fig. 26–27): cerci and sternum X subequal, the latter entire, pointed apically; aedeagus much longer than sternum X, longer than basimere; basimere about as long as half remainder of abdomen, projecting apicoventrally and apicordorsally, the projections with strong setae; telomere glabrous, except for large-based, short-haired sensilla, pointed apically.

Female and immature stages unknown.

This genus resembles *Tropidiplosis* in many respects, e.g. the bifilar flagellomeres, the shape of the claws, and the membranous abdominal terga, but the genitalia are quite distinct. "Thauma" means "a marvel."

Thaumadiplosis magnicauda Gagné, new species

Male.—Wing length 1.15 mm. Antennal flagellomere nodes subequal, their circumflar loops regular, of moderate length. Wing with R_s evident, Cu forked. Genitalia as in Fig. 26–27.

Holotype.—Male, Bethesda, Md., V-26-1968, G. Steyskal, caught by sweeping, U.S.N.M. Type no. 72361. Paratype, male, same data as holotype except VI-1-1968.

Thecodiplosis Kieffer

Thecodiplosis Kieffer 1895c: cxciv. Type-species, *Cecidomyia brachyntera* Schwägrichen (original designation).

The genitalia are as for *Contarinia* except that the lobes of the male sternum X are wider and the ovipositor is softer and not as strongly tapered. The claws are shorter than the empodia, C is not broken at its juncture with R_5 and the palpus is 3-segmented. The pair of stubby terminal papillae of the larva are larger and closer to one another than in *Contarinia*.

Thecodiplosis is only a segregate of *Contarinia* and its generic status will have to be reevaluated. It is Holarctic and its species all form needle galls on pine.

Nearctic species.—*brachynteroides* (Osten Sacken) 1862:198 (*Cecidomyia*). NEW COMBINATION

piniradiatae (Snow & Mills) 1900:491 (*Dip-*
losis)

piniresinosae Kearby in Kearby & Benjamin 1963:414
pinirigidae (Packard) 1878:527 (*Diplosis*). NEW COMBINATION *rigidae*, emendation

Thripsobremia Barnes

Thripsobremia Barnes 1930:331. Type-species, *liothripis* (monotypic).

The male genitalia of *Thripsobremia* resemble *Lestodiplosis* except for the elongate, pointed sternum X [contrary to Barnes' (1930) assertion that it is deeply bilobed]. The male flagellomeres suggest those of *Bremia* because the loops of circumfila I and III are of varying length, some very long, and circumfilum II is ringlike.

The only Nearctic species was reared from oak galls made by Cynipidae (Hymenoptera) in Virginia. The only other species, *T. liothripis* Barnes, is predaceous on a thrips in Trinidad.

Nearctic species.—*quercifolia* (Felt) 1908b:391 (*The-*
codiplosis). NEW COMBINATION.

Trisopsis Kieffer

Trisopsis Kieffer 1912a:171. Type-species, *oleae* Kieffer (original designation).

This genus is probably not monophyletic. The species listed here and the exotic species all have laterally divided eyes. *Trisopsis*, as well as *Adiplosis* and *Odontodiplosis*, should be revised with *Lestodiplosis*, as all the other characters except the three eyes fit that genus, and the "3-eyed" condition apparently evolved separately several times.

All the species listed here have 4-segmented palpi and no cockscomb projection between the aedeagus and sternum X.

Trisopsis is cosmopolitan and is predaceous on various other arthropods.

Nearctic species.—*hibisci* Felt, 1935b:76

incisus (Felt) 1907b:43 (*Cecidomyia*). NEW COMBINATION

obscurus (Felt) 1908b:404 (*Arthrocnodax*). NEW COMBINATION

quercina (Felt) 1907c:137 (*Cecidomyia*). NEW COMBINATION

Tropidiplosis Gagné, new genus

Type-species, *Tropidiplosis pectinata* Gagné, n. sp.

Male.—Postvertical peak very short. Eyes broadly connate at vertex but divided laterally to form 3 eyes; eye facets rounded. Antennal flagellomeres binodal, bifilar, the circumflar loops short. Palpus 3-segmented. Wing: R_5 curved, joining C posteriad of wing apex; C broken at juncture with R_5 ; R_s faint. Claws simple, rounded beyond midlength, as long as empodia. Abdominal terga II–VI with only single mesally interrupted row of caudal setae; remainder of terga membranous, without setae or scales. Genitalia (Fig. 28): basimere elongate, cylindrical; telomere short with large, pectinate tooth; cerci elongate,

rounded apically; sternum X as long as cerci, keel-shaped, the setae ventral; aedeagus elongate, attenuate, strongly recurved dorsally.

Female and immature stages unknown.

Tropidiplosis resembles somewhat *Thaumadiplosis* in the antennae, claws, wing, and the general lack of setae on the abdominal terga. The 2 genera differ principally in the shape of the genitalia. Other distinguishing features of *Tropidiplosis* are the laterally divided eyes and the 3-segmented palpus.

"Tropis" (means "keel") refers to the shape of sternum X of the male genitalia.

Tropidiplosis pectinata Gagné, new species

Wing length, 1.26 mm. Antennal circumflar loops shorter than nodes. Male genitalia as in Fig. 28.

Holotype.—Male, Detroit Lakes, Minn. [no date], A. E. Pritchard, U.S.N.M. Type no. 72365.

Youngomyia Felt

Youngomyia Felt 1908b:398. Type-species, *Dicrodiplosis podophylli* Felt (original designation).

The genitalia are unique. The male genitalia have a thickly spinose sternum X and long, bowed telomere; the female genitalia have very large cerci covered with short blunt-tipped setae. All the claws are toothed, bent at the basal third, and are longer than the empodia. The male flagellomeres are very long, the distal nodes each constricted near midlength. The immature stages are unknown.

Youngomyia is a Nearctic monotypic genus. It has been reared from galls of *Schizomyia umbellicola* (Osten Sacken) on elderberry and from hymenopterous leaf galls on oak, and is probably predaceous.

Nearctic species.—*podophylli* (Felt) 1907b:30 (*Dicrodiplosis*; as *podophyllae*)

rubida Felt 1908b:399. NEW SYNONYM

vernoniae Felt 1911d:552. NEW SYNONYM

pennsylvanica Felt 1912a:106. NEW SYNONYM

producta Felt 1918a:150. NEW SYNONYM

Zeuxidiplosis Kieffer

Zeuxidiplosis Kieffer 1904a:349. Type-species, *Thecodiplosis giardiana* Kieffer (original designation) = *giardi* Kieffer.

Adults of this genus differ little from *Contarinia*: the male telomere is large and widest near midlength; the ovipositor is protrusible but short, the cerci triangular in profile, and only about twice as long as their basal width. The larva has only 6 terminal papillae, having apparently lost the stubby pair of *Contarinia*, and the terminal segment is elongate and bifurcate caudally.

Zeuxidiplosis is monotypic. *Z. giardi* is originally from Europe, but has been introduced to North America and elsewhere for the control of St. Johns wort.

Nearctic species.—*giardi* (Kieffer) 1896:383 (*Diplosis*)

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872	<i>Pilodiplosis</i> Gagné	876	<i>rubrascuta</i> (Felt), <i>Parallelodiplosis</i>	876
869	<i>pini</i> (Felt), <i>Feltiella</i>	869	<i>rudbeckiae</i> (Beutenmüller), <i>Lestodiplosis</i>	873
866	<i>pinifoliae</i> (Felt), <i>Resseliella</i>	880	<i>rufa</i> (Felt), <i>Lestodiplosis</i>	873
877	<i>pininopsis</i> Osten Sacken, <i>Cecidomyia</i>	866	<i>rugosa</i> (Felt), <i>Lestodiplosis</i>	873
868	<i>piniradiatae</i> (Snow & Mills), <i>Thecodiplosis</i>	881	<i>rumicis</i> (Loew), <i>Contarinia</i>	868
874	<i>piniresinosae</i> Kearby, <i>Thecodiplosis</i>	881	<i>rumicis</i> Felt, <i>Lestodiplosis</i>	873
872	<i>pinirigidiae</i> (Packard), <i>Thecodiplosis</i>	881	<i>ruricola</i> (Felt), <i>Giardomyia</i>	870
865	<i>Pinyonia</i> Gagné	876	<i>salicisverruca</i> Osten Sacken, <i>Cecidomyia</i>	858
870	<i>piperitae</i> (Felt), <i>Giardomyia</i>	870	<i>sambucifolia</i> Felt, <i>Contarinia</i>	868
875	<i>Pitydiplosis</i> Gagné	877	<i>sambucifolius</i> Felt, <i>Arthrocnodax</i>	864
876	<i>Planetella</i> Westwood	877	<i>sanguinea</i> (Felt), <i>Clinodiplosis</i>	867
877	<i>Planetes</i> Walker	877	<i>sanguinolenta</i> (Osten Sacken), <i>Caryomyia</i>	866
879	<i>platanifolia</i> Felt, <i>Lestodiplosis</i>	873	<i>sarae</i> Gagné, <i>Parallelodiplosis</i>	876
880	<i>Platydiplosis</i> Gagné	877	<i>sarcobati</i> (Felt), <i>Halodiplosis</i>	870
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858	<i>Plesiobremia</i> Kieffer	873	<i>saturni</i> (Felt), <i>Planetella</i>	877
874	<i>podoculum</i> Osten Sacken, <i>Cecidomyia</i>	858	<i>saxii</i> Felt, <i>Epidiplosis</i>	869
879	<i>podophylli</i> Felt, <i>Bremia</i>	865	<i>schulzi</i> Gagné, <i>Contarinia</i>	868
867	<i>podophylli</i> (Felt), <i>Youngomyia</i>	882	<i>scrophulariae</i> (Felt), <i>Lestodiplosis</i>	873
877	<i>populi</i> (Felt), <i>Clinodiplosis</i>	866	<i>septemmaculata</i> (Felt), <i>Lestodiplosis</i>	873
868	<i>populifolia</i> Felt, <i>Lestodiplosis</i>	873	<i>Sequoiomyia</i> Möhn	880

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REFERENCES CITED

- Aldrich, J. M. 1905. A catalogue of the North American Diptera. Smithsonian Misc. Coll. 46 (2 [=publ. 1444]); 1-680.
- Barnes, H. F. 1930. A new thrips-eating gall midge *Thripsobremia liothripis*, gen. et sp. n. (Cecidomyiidae). Bull. Entomol. Res. 21: 331-2.
1939. Gall midges (Cecidomyiidae) associated with coffee. Rev. Zool. Bot. Afr. 32: 324-36.
1956. Gall Midges of Economic Importance, Vol. VII, Gall Midges of Cereal Crops. Crosby Lockwood & Son, Ltd., London. 261 p.
- Beutenmüller, W. 1892. Catalogue of gall-producing insects found within fifty miles of New York City, with descriptions of their galls, and some new species. Bull. Amer. Mus. Nat. Hist. 4: 245-78. 8 pl.
- 1907a. New species of gall-producing Cecidomyiidae. Ibid. 23: 385-400. 5 pl.
- 1907b. Descriptions of new species of Cecidomyiidae. Can. Entomol. 39: 305-7.
- Borgmeier, T. 1931. Eine neue zoophage Itoniden-gattung aus S. Paulo (Diptera, Itonididae). Rev. Entomol. 1: 184-91.
- Brodie, W. 1894. Canadian galls and their occupants. Biol. Rev. Ontario 1: 13-15, 44-46, 73-75, 109-11.
- Cockerell, T. D. 1900. *Diplosis parthenicola* n. sp. Entomologist 33: 201.
1913. A new gall on *Peritoma serrulatum*. J. Econ. Entomol. 6: 279-80.
- Comstock, J. H. 1881. Report of the entomologist. [USDA] Comnr. Agric. Rep. 1880: 253-373.

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75, 109-11.
cola n. sp.
J. Econ.
tomologist,
373.

- Condrashoff, S. F. 1961. Three new species of *Contarinia* Rond. (Diptera: Cecidomyiidae) in Douglas-fir needles. *Can. Entomol.* 93: 123-30.
- Coquillett, D. W. 1895. Two dipterous insects injurious to flowers. *Insect Life* 7: 399-402.
1899. A cecidomyiid injurious to seeds of sorghum. USDA Div. Entomol., Bull. (1898), n. ser. 18: 81-82.
- 1900a. Two new cecidomyiids destructive to buds of roses. *Ibid.* n. ser. 22: 44-48.
- 1900b. A new violet pest (*Diplosis violicola* n. sp.). *Ibid.* n. ser. 22: 48-51.
1910. The type-species of the North American genera of Diptera. *U.S. Nat. Mus. Proc.* 37: 499-647.
- Driggers, B. F. 1926. The blueberry tip worm (*Contarinia vaccinii* Felt), a new species of midge attacking cultivated blueberries. *J. N.Y. Entomol. Soc.* 34: 82-85.
- Felt, E. P. 1906. Studies in Cecidomyiidae. *N.Y. State Mus. Bull.* 104: 116-32.
- ✓ 1907a. *Cecidomyia acarivora* n. sp. *Entomol. News* 18: 242.
- 1907b. New species of Cecidomyiidae. 53 p. Albany, N.Y. [A preprint of Felt 1907c.]
- 1907c. Appendix: New species of Cecidomyiidae. *N.Y. State Mus. Bull.* 110: 97-165.
- 1907d. New species of Cecidomyiidae II. 23 p. Albany, N.Y. [A preprint of Felt 1908b, in part.]
- ✓ 1908a. *Contarinia gossypii* n. sp. *Entomol. News* 19: 210-1.
- 1908b. Appendix D. *N.Y. State Mus. Bull.* 124: 286-422.
- 1909a. Additional rearings in Cecidomyiidae. *J. Econ. Entomol.* 2: 286-93.
- 1909b. Injurious insects. *N.Y. State Mus. Bull.* 134: 13-40.
1910. Two new Cecidomyiidae. *Entomol. News.* 21: 10-12.
- 1911a. *Endaphis* Kieff. in the Americas (Dipt.). *Ibid.* 22: 128-9.
- 1911b. Four new gall midges (Dipt.). *Entomol. News* 22: 301-5.
- 1911c. Hosts and galls of American gall midges. *J. Econ. Entomol.* 4: 451-75.
- 1911d. New species of gall midges. *Ibid.* 4: 476-84, 546-59.
- 1911e. A generic synopsis of the Itonidae. *J. N.Y. Entomol. Soc.* 19: 31-62.
- 1911f. Three new gall midges (Dipt.). *Ibid.* 19: 190-3.
- 1912a. New Itonididae (Dipt.). *Ibid.* 20: 102-7.
- 1912b. New gall midges or Itonidae (Dipt.). *Ibid.* 20: 146-56.
- 1912c. Studies in Itonididae. *Ibid.* 20: 236-48.
- 1912d. Observations on the identity of the wheat midge. *J. Econ. Entomol.* 5: 286-9.
- 1912e. *Arthrocnodax occidentalis* n. sp. (Dipt.). *Ibid.* 5: 402.
- ? 1912f. New West Indian gall midges (Dipt.). *Entomol. News* 23: 173-7.
- 1913a. Three new gall midges (Diptera). *Can. Entomol.* 45: 304-8.
- ? 1913b. *Cystodiplosis eugeniae* n. sp. (Dipt.). *Entomol. News* 24: 175-6.
- 1913c. *Itonida anthici* n. sp. (Dipt.). *J. Econ. Entomol.* 6: 278-9.
- 1913d. *Arthrocnodax carolina* n. sp. *Ibid.* 6: 488-9.
- 1913e. The gall midge fauna of New England. *Psyche* 20: 133-47.
- 1914a. *Hormomyia bulla* n. sp. *Can. Entomol.* 46: 286-7.
- 1914b. New gall midges (Itonididae). *Insector Inscitiae Menstruus* 2: 117-23.
- 1914c. Descriptions of gall midges. *J. N.Y. Entomol. Soc.* 22: 124-34.
- 1914d. Additions to the gall midge fauna of New England. *Psyche* 21: 109-14.
- 1915a. New North American gall midges. *Can. Entomol.* 47: 226-32.
- 1915b. *Mycodiplosis macgregori* n. sp. *J. Econ. Entomol.* 8: 149.
- 1915c. New gall midges. *Ibid.* 8: 405-9.
- 1915d. New Asian gall midges. *J. N.Y. Entomol. Soc.* 23: 173-84.
- 1915e. Appendix: A study of gall midges. III. *N.Y. State Mus. Bull.* (1916) 180: 127-288, pl. 2, 4-19.
- 1916a. New gall midges. *Can. Entomol.* 48: 29-33.
- 1916b. New western gall midges. *J. N.Y. Entomol. Soc.* 24: 175-96.
- 1916c. New North American gall midges (Dipt.). *Entomol. News* 27: 412-7.
- 1918a. Appendix: A study of gall midges. VI. *N.Y. State Mus. Bull.* (1917) 202: 76-205.
- 1918b. New gall midges (Dipt.). *J. Econ. Entomol.* 11: 380-4.
1920. New gall midges or Itonididae from the Adirondacks. *J. N.Y. Entomol. Soc.* (1919) 27: 277-92.
1921. Appendix: A study of gall midges. VII. *N.Y. State Mus. Bull.* (1920) 231/232: 81-240.
- 1922a. A new cecidomyiid parasite of the white fly. *Proc. U.S. Nat. Mus.* 61(23): 1-2.
- 1922b. *Mycodiplosis moznettei* n. sp. *Florida Entomol.* 5: 46.
1925. Key to gall midges. (A resumé of studies I-VII. Itonididae). *N.Y. State Mus. Bull.* 257, 1-239, 8 pl.
- 1926a. New gall midges from New England. *Hist. Occas. Pap. Boston Soc. Nat. Hist.* 5: 207-8.
- 1926b. A new predaceous midge on roses (Dipt.: Cecidomyiidae). *Entomol. News* 37: 141.
1932. A new predaceous midge for California. *Pan-Pac. Entomol.* 8: 167-8.
1933. A new *Lestodiplosis*. *Psyche* 40: 113-4.
- 1935a. A new melon gall midge. *Bull. Brooklyn Entomol. Soc.* 30: 79-80.
- ✓ 1935b. *Trisopsis* in the United States (Dipt., Itonididae or Cecidomyiidae). *Entomol. News* 46: 75-77.
- 1936a. Two new cockle burr midges (Diptera: Cecidomyiidae). *Ibid.* 47: 231-3.
- 1936b. New midges on pine and grass. *J. N.Y. Entomol. Soc.* 44: 7-9.
- ✓ 1939a. A new juniper midge (Diptera: Cecidomyiidae). *Entomol. News* 50: 159-60.
- 1939b. A new gall midge on Rhododendron. *J. N.Y. Entomol. Soc.* 47: 41-42.
- Fitch, A. 1845. Insects injurious to vegetation, no. 3. The wheat fly. *Amer. Quart. J. Agric. Sci.* 2: 233-64, 1 pl.
1855. Report on the noxious, beneficial and other insects of the State of New York. *Trans. N.Y. State Agric. Soc.* (1854) 14: 705-880.
1861. Sixth report on the noxious and other insects of the State of New York. *Ibid.* (1860) 20: 745-868.
- Foote, R. H. 1956. Gall midges associated with cones of western forest trees (Diptera: Itonididae). *J. Wash. Acad. Sci.* 46: 48-57.
1965. Family Cecidomyiidae. In Stone et al., *A Catalog of the Diptera of America North of Mexico*. Agric. Handbook 267, iv + 1696 p. Washington, D.C.
- Fyles, T. W. 1883. Description of a dipterous parasite of *Phylloxera vastatrix*. *Can. Entomol.* (1882) 14: 237-9.
- Gagné, R. J. 1966a. A new species of *Prodiptosis* (Diptera: Cecidomyiidae) found in leaf curls on *Populus deltoides*. *Ann. Entomol. Soc. Amer.* 59: 1154-7.
- 1966b. The Nearctic species of *Contarinia* which infest grasses (Diptera: Cecidomyiidae). *Proc. Entomol. Soc. Wash.* 68: 318-20.
- ✓ 1967a. The genus *Oligotrophus* Latreille (Diptera: Cecidomyiidae) in North America and a new species injurious to *Betula papyrifera* Marsh. *Entomol. News* 78: 129-34.
- 1967b. *Timconaria albescentis*, a new North American genus and species of Cecidomyiidae found in seeds of *Triodia albescens* Vasey (Diptera). *Proc. Entomol. Soc. Wash.* 69: 155-7.
- 1968a. Fasc. 23. Family Cecidomyiidae, 62 p. In A

- Catalogue of the Diptera of the Americas South of the United States. Sao Paulo, Brazil.
- ✓1968b. Revision of the gall midges of Bald Cypress (Diptera: Cecidomyiidae). *Entomol. News* 79: 269-74.
1970. A new genus and new species of Cecidomyiidae on Pinyon Pine (Diptera). *Ibid.* 81: 153-6.
1971. The genus *Aphidoletes* Kieffer (Diptera: Cecidomyiidae) in North America. *Ibid.* 82: 177-81.
- 1972a. A new species of *Contarinia* (Diptera: Cecidomyiidae) from *Helianthus annuus* L. (Compositae) in North America. *Ibid.* 83 (Dec.; publ. July): 279-81.
- 1972b. New synonymy and homonymy in Cecidomyiidae (Diptera). *Proc. Wash. Entomol. Soc.* 74: 321-6.
- Géhin, J. J. B. 1857. Notes pour servir à l'histoire des insectes nuisibles à l'Agriculture dans le Département de la Moselle, no. 2: Insectes qui attaquent les blés. 38 p. Metz.
- Gillette, C. P. 1890. A new cecidomyiid infesting box elder (*Negundo aceroides*). *Psyche* 5: 392-3.
- Greene, C. T. 1941. Two new species of cecidomyiid flies from phlox. *Proc. U.S. Nat. Mus.* 90: 547-51.
- Grover, P. and S. N. Prasad. 1968. *Golanudiplosis japonicus*—a new midge attacking comstock mealybug in Japan (Diptera: Itonididae). *Beitr. Entomol.* 18: 213-20.
- Haldeman, S. S. 1847. Description of several new and interesting animals. *Amer. J. Agric. & Sci.* 6: 191-4.
- Harris, K. M. 1968. A systematic revision and biological review of the cecidomyiid predators (Diptera: Cecidomyiidae) on world Coccoidea (Hemiptera: Homoptera). *Trans. R. Entomol. Soc. Lond.* 119: 401-94.
1966. Gall midge genera of economic importance (Diptera: Cecidomyiidae). Part I: Introduction and subfamily Cecidomyiinae; supertribe Cecidomyiidi. *Trans. R. Entomol. Soc. Lond.* 118: 313-58.
- Howard, C. 1912. Les Zoocécidies du nord de l'Afrique. *Ann. Soc. Entomol. Fr.* 81: 1-236 + 2 pl.
- International Commission on Zoological Nomenclature. 1963. Opinion 678. The suppression under the Plenary Powers of the pamphlet published by Meigen, 1800. *Bull. Zool. Nomencl.* 20: 339-42.
- Johannsen, O. A. 1945. Two new species of Cecidomyiidae from Florida. *Fla. Entomol.* 28: 8-10.
- Johnson, C. W. 1929. A new cecidomyiid of the genus *Lestodiplosis*. *Psyche* (1928) 35: 216.
- Johnson, N. E. 1963. *Contarinia washingtonensis* (Diptera: Cecidomyiidae), new species infesting the cones of Douglas-fir. *Ann. Entomol. Soc. Amer.* 56: 94-103.
- Kearby, W. H. and D. M. Benjamin. 1963. A new species of *Thecodiplosis* (Diptera: cecidomyiidae) on red pine in Wisconsin. *Can. Entomol.* 95: 414-7.
- Kieffer, J. J. 1894. Description de quelques larves du Cécidomyes. *Feuille Jeunes Natur.* 24: 83-88, 119-21, 147-52, 185-9.
- 1895a. Observations sur les ornements des antennes des cécidomyies. *Ibid.* 26: 7-10.
- 1895b. Genres nouveaux dans le groupe des *Diplosis* (Dipt.). *Ann. Soc. Entomol. Fr.* (1894) 63 (Bull.): cclxxx.
- 1895c. Nouvelles observations sur le groupe des *Diplosis* et description de cinq genres nouveaux (Dipt.). *Ibid.* 64 (Bull.): cxcii-cxciv.
- 1896a. Quatre nouveaux genres du groupe *Diplosis*. *Misc. Entomol.* 4: 4-5.
- 1896b. Observations sur les *Diplosis*, et diagnoses de cinq espèces nouvelles (Dipt.). *Bull. Soc. Entomol. Fr.* 1896: 382-4.
- 1896c. Neue Mittheilungen über Gallmücken. *Wien. Entomol.* 15: 85-105.
1898. Synopse des Cécidomyies d'Europe et d'Algérie décrites jusqu'à ce jour. *Bull. Soc. Hist. Nat. Metz* 20 [=ser. 2,8]: 1-64.
- 1904a. Étude sur les Cécidomyies gallicoles. *Ann. Soc. Sci. Bruxelles* 28 (Mém.): 329-50.
- 1904b. Nouvelles Cécidomyies xylophiles. *Ibid.* 28 (Mém.): 367-410.
- 1912a. Description de quatre nouveaux insectes exotiques. *Boll. Lab. Zool. Portici* 6: 171-5.
- 1912b. Neue Gallmücken-Gattungen. 2 p. Bitsch, France.
- 1913a. Diptera. Fam. Cecidomyiidae. *Genera Insectorum. Fasc. 152.* 346 p., 15 pls.
- 1913b. Glanures diptérologiques. *Bull. Soc. Hist. Nat. Metz* 28 [=ser. 3,4]: 45-55.
- Laboulbène, A. 1873. Métamorphoses de la Cécidomyie du buis, *Cecidomyia (Diplosis) buxi*. *Ann. Soc. Entomol. Fr.* (5)3: 313-26, 1 pl.
- Lintner, J. A. 1888. The melon plant louse. *Cultivator and Country Gentleman* 53: 725.
1897. Reports on the injurious and other insects of the State of New York. *Rep. II* (1895): 85-326, 16 p. Albany, N. Y. "1896."
- Loew, H. 1850. Dipterologische Beiträge. Vierter Theil. K. Friedrich-Wilhelms-Gymnasiums zu Posen, Öffentl. Prüf. d. Schüler 1850: 1-40, 1 pl.
- Mamaev, B. M. 1969. Fam. Cecidomyiidae. In *Identification of Insects of the European Part of the U.S.S.R.* V(1). *Akad. Nauk U.S.S.R. Leningrad.* 804 p.
- Marikovskij, P. I. 1953. New genera and species of gall midges (Diptera, Cecidomyiidae) from south-eastern Kazakhstan. [Translation.] *Izv. Akad. Kaz. SSR. Ser. Biol. Nauk* 1953: 128-38.
1955. New gall midges (Diptera, Itonididae), from *Haloxylon*. II. [Translated]. *Entomol. Obozr.* 34: 298-312.
1956. New gall midges (Diptera, Itonididae) of the U.S.S.R. [translated]. *Entomol. Obozr.* 35: 184-95.
1957. New gall-midges (Diptera, Itonididae) reared from *Salsola rigida* Pall. in the Karakum Desert. *Entomol. Obozr.* 36: 935-43.
- Marikovskij, P. I., and Z. Ya. Agafonova. 1961. A new species of gall midge (Diptera, Itonididae) injurious to brome grass and certain characters of its biology. *Entomol. Obozr.* 40: 272-4.
- Meigen, J. W. 1800. Nouvelle classification des mouches à deux ailes (Diptera L.) d'après un plan tout nouveau. 40 p. Paris.
1803. Versuch einer neuen Gattungseintheilung des europäischen zweiflügeligen Insekten. *Mag. Insektenk.* 2: 259-81.
- Möhn, E. 1954. Eine neue zoophage Gallmücken—Art an Tannenläusen. *Z. Angew. Entomol.* 36: 462-8.
- 1955a. Beiträge zur systematik des larven der Itonididae (=Cecidomyiidae, Diptera) I. Teil: Porricondylinae and Itonidinae Mitteleuropas. *Zoologica (Stuttg.)* 105 (1 and 2): 1-247 + 30 pl.
- 1955b. Neue freilebende Gallmücken-Gattungen. *Dtsch. Entomol. Z.* 2: 127-51.
- 1955c. Neue zoophage Gallmücken-Gattungen (Diptera: Itonididae). *Beitr. Entomol.* 5: 415-25.
- 1955d. Eine neue Gallmücken-Gattung aus Harzwunden an Tanne. *Z. Angew. Entomol.* 38: 97-102.
1960. Eine neue Gallmücke aus der niederrheinischen Braunkohle, *Sequoiomyia krausei* n.g., n. sp. (Diptera, Itonididae). *Senckenb. Iethaea* 41: 513-22.
- Molliard, M. 1903. La galle du *Cecidomyia cattleyae* n. sp. *Marcellia* (1902) 1: 165-70, pl. 2.
- Nijveldt, W. 1965. A new coccid-eating gall midge from Israel. *Entomol. Ber. (Amst.)* 25: 41-43.
- Osten Sacken, C. R. 1862. V. On the North American Cecidomyiidae, p. 173-205, 2 pl. In H. Loew, *Monographs of the Diptera of North America*. Part I. *Smithson. Misc. Collect.* 6 (I[=publ. 141]): 1-221, 2 pl.
1870. Biological notes on Diptera. (Article 2nd.) *Trans. Amer. Entomol. Soc.* 3: 51-54.
1871. Biological notes on Diptera. (Article 3rd.) *Ibid.* 3: 345-7.

1875. Three new galls of Cecidomyiidae. *Can. Entomol.* 7: 201-2.
1878. Catalogue of the described Diptera of North America. [Ed. 2]. *Smithson. Misc. Collect.* 16(2[=publ. 270]): 1-276.
- Packard, A. S. 1878. Insects affecting the cranberry, with remarks on other injurious insects. *Annu. Rep. U. S. Geol. and Geogr. Survey of the Terr.* (1876) 10: 521-31.
- Pritchard, A. E. 1948. *Clinodiplosis pucciniae*, a new gall midge feeding on a rust (Diptera: Itonididae). *Pan-Pac. Entomol.* 24: 29-30.
1961. *Phaenobremia doulti*, a new gall midge predator of aphids in California (Diptera: Cecidomyiidae). *Proc. Entomol. Soc. Wash.* 63: 100-1.
- Reuter, E. 1895. Zwei neue Cecidomyinen. *Acta Soc. Fauna Flora Fenn.* 11(8): 1-15, 2 pl.
- Riley, C. V. 1886. Report of the entomologist. [USDA] *Commr. Agric. Rep.* 1885: 207-343, 9 pl.
- Rondani, C. 1847. Osservazioni sopra parecchie specie di Esapodi Efidicidi e sui loro nemici. *Nuovi Ann. Sci. Natur.* (2) 8: 337-51, 432-48.
1860. Stirpis cecidomyiarum. Genera revisa. Nota undecima, pro dipterologia italica. *Atti. Soc. Ital. Sci. Nat.* (1859-1860) 2: 286-94, 1 pl.
- Rübsaamen, E. H. 1892. Die Gallmücken des Königl. Museums für Naturkunde zu Berlin. *Berlin Entomol. Z.* 37: 321-411, pl. 7-18.
- 1895a. Cecidomyidenstudien. *Entomol. Nachr.* 21: 177-94.
- 1895b. Ueber Cecidomyiden. *Wien. Entomol. Z.* 14: 181-93, 1 pl.
1899. Ueber der Lebensweise der Cecidomyiden. *Biol. Centr.* 19: 529-49.
1910. Ueber deutsche Gallmücken und Gallen. *Z. Wiss. Insektenbiol.* 6: 125-32, 199-204, 283-9, 336-42, 415-25.
1912. Ueber deutsche Gallmücken und Gallen. *Ibid.* 8: 48-51, 97-102, 157-62, 214-8, 284-9, 354-7, 376-9.
1914. Cecidomyidenstudien. III. *Marcellia* 13: 88-114.
1917. Cecidomyidenstudien. VI. *Ges. Naturforsch. Freunde Berlin, Sitzungsber.* 1917: 36-99.
- Rübsaamen E. H. and H. Hedicke. 1926-39. Die Zoocecidien, durch tiere erzeugte Pflanzengallen Deutschlands und ihre Bewohner. Band II: Die Cecidomyiden (Gallmücken) und ihre Cecidien (5 Lieferungen). *Zoologica* 77: 1-350, 42 pl.
- Russell, H. M. and C. W. Hooker. 1908. A new cecidomyiid on oak. *Entomol. News* 19: 349-52, pl. 14.
- Say, T. 1824. Appendix. Part I.—Natural History. I. *Zoology. E. Class Insecta*, p. 268-378. *In* W. H. Keating, Major Long's Second Expedition, vol. 2, 459 p., pl. 6-15. Philadelphia.
- Schweinitz, L. D. de. 1822. IV. Synopsis fungorum Carolinae superioris, secundum observationes. *Naturforsch. Ges. Leipzig, Schr.* 1: 28-131, pl. 1-2.
- Seitner, M. 1906. *Resseliella piccae*, die Tannensamen-Gallmücke. *Verhandl. Zool.-bot. Ges. Wien.* 56: 174-86.
- Shimer, H. 1869. A summer's study of hickory galls, with descriptions of supposed new insects bred therefrom. *Trans. Amer. Entomol. Soc.* 2: 386-98.
- Slingerland, M. V. and F. Johnson. 1904. Two grape pests. *N. Y. Agric. Exp. Stn. (Cornell) Bull.* 224: 65-73.
- Snow, W. A. and H. Mills. 1900. The destructive *Diplosis* of the Monterey pine. *Entomol. News* 11: 489-94, 1 pl.
- Stebbins, F. A. 1910. Insect galls of Springfield, Massachusetts, and vicinity. *Springfield [Mass.] Mus. Nat. Hist. Bull.* 2: 1-64, 32 pl.
- Strand, E. 1927. Animaux divers (à l'exclusion des Arachnides, Lépidoptères) nommés jusqu'en 1926 dans les travaux de M. le professeur Embrik Strand. *Arch. Naturgesch.* (1925) Abt. A, 91: 62-66.
- Tavares, J. S. 1920. Espécies novas de Cynipides e Cecidomyias da Península Ibérica e descripção de algumas já conhecidas. *Broteria* 18: 43-79, 2 pl.
1922. Espécies novas de Cynipides e Cecidomyias de Península Ibérica e descripção de algumas já conhecidas. *Ibid.* 20: 97-155.
- Thompson, M. T. 1915. An illustrated catalogue of American insect galls. 116 p., 21 pl. Nassau, N. Y.
- Vockeroth, J. R. 1960. Taxonomy of the genus *cecidomyia* (Diptera: Cecidomyiidae) with special reference to the species occurring on *Pinus banksiana* Lamb. *Can. Entomol.* 92: 65-79.
- Walker, F. 1836. Notes on Diptera. *Entomol. Mag.* 3: 178-82.
- Walsh, B. D. 1864. On the insects, coleopterous, hymenopterous and dipterous, inhabiting galls of certain species of willow. Part I. Diptera. *Proc. Entomol. Soc. Phila.* 3: 543-644.
1866. On the insects, coleopterous, hymenopterous and dipterous, inhabiting galls of certain species of willow. Part 2nd and last. *Ibid.* (1866-1867) 6: 223-88.
1869. Mr. Couper's thorn leaf gall. *Can. Entomol.* 1: 79-80.
- Westwood, J. O. 1840. Order XIII Diptera Aristotle, p. 125-8. *In* J. O. Westwood, an introduction to the modern classification of insects. Synopsis of the genera of British insects. 158 p. London.
- Williams, F. X. 1909. The Monterey pine resin midge—*Cecidomyia resinicoloides* n. sp. *Entomol. News* 20: 1-8, 1 pl.
- Yukawa, J. 1971. A revision of the Japanese gall midges (Diptera: Cecidomyiidae). *Mem. Fac. Agr. Kagoshima Univ.* 8(1): 1-203.

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ANNALS OF THE ENTOMOLOGICAL SOCIETY OF AMERICA