



Revision of Holarctic Teleiodini (Lepidoptera: Gelechiidae)

SANGMI LEE^{1,2} & RICHARD L. BROWN¹

¹Mississippi Entomological Museum, Box 9775, Mississippi State, MS 39762

²Corresponding author. E-mail: microlepi@hotmail.com

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Abstract

The 25 genera of Teleiodini (Lepidoptera: Gelechiidae) occurring in the Holarctic Region are revised. A new genus and new species, *Arcutelphusa talladega*, are described from Alabama and Mississippi, United States. *Evippe* Chambers (1873a) is synonymized with *Agnippe* Chambers (1872a), *Hapalosaris* Meyrick (1917) is synonymized with *Coleotechnites* Chambers (1880b), and *Laris* Omelko (1988) is synonymized with *Parastenolechia* Kanazawa (1985). *Telphusa* is restricted to three species, and *Teleiodes* is restricted to four species. A key to genera and a checklist of species, which includes 28 new combinations, are provided. Each generic treatment includes descriptions of imagos, including venation and genitalia, and immature stages so far as known, larval hosts, diversity and distribution, and illustrations of selected species.

Key words: Lepidoptera, Gelechiidae, Teleiodini, new genus, new species, Palearctic, Nearctic, Holarctic genera, Alabama, Mississippi

Introduction

The Gelechiidae (Lepidoptera: Gelechioidea) are one of the largest families of microlepidoptera and include more than 4,600 described species in the world referred to about 500 genera in four subfamilies, of which Gelechiinae is the largest (Hodges 1999b). About 1,500 species occur in the Palearctic Region (Piskunov 1990), and about 690 species occur in the Nearctic Region, although only 30% of the species in the latter are estimated to be described (Hodges 1983, 1999b). A large number of species are also present in the Oriental, Neotropical, Afrotropical, and Australian Regions (Becker 1984; Common 1990; Janse 1958–1963; Heppner 1991; Nielsen and Common 1991; Park 1992; Vári and Kroon 1986).

Gelechiidae are similar to other gelechioid families in having a basally scaled proboscis and strongly upcurved labial palpus. Gelechiidae differ from other gelechioid families by having a combination of the following characters: 1) hindwing subrectangular to trapezoidal with sinuous or concave termen and prominent apex, 2) forewing lanceolate to elongate–ovate with CuP absent, 3) retinaculum of the wing–coupling mechanism situated on the radial vein of the forewing in the female, 4) labial palpus long, reaching vertex of head, second segment often with ventral brush, third segment subequal in length with second, acute, rarely with dorsal brush of rough scales, 5) male gnathos forming a pair of lateral, articulated, symmetrical sclerites and usually with an articulated, mesial hook (Hodges 1986, 1999b).

Teleiodini, one of seven tribes in Gelechiinae, include about 160 species in 24 genera in the Holarctic Region, of which 63 species in 19 genera occur in the Palearctic Region (Elsner 1995 [1996]; Huemer and Karsholt 1999), and 94 species in 14 genera occur in the Nearctic Region (Hodges 1983). Additional species assigned to eight genera occur in the Neotropical Region, but all of these genera occur in the Holarctic Region (Becker 1984). Species of Teleiodini in the Afrotropical Region have been assigned to only two genera that occur in the Holarctic Region. The Australian and Oriental Regions lack genera that have been reported as members of Teleiodini. Additional genera unique to these latter areas probably will be defined as the fauna of Gelechiidae becomes better known.

Huemer and Karsholt (1999) recently reviewed the European Teleiodini and defined this tribe by the following characters: 1) small patches of raised scales on the forewing, 2) gnathos with tendency toward reduction, without culcitula (a membranous, spiny cushion at the base of the gnathos in Gelechiini and Gnorimoschemini), 3) phallus fused with the vinculum, and 4) female with apophyses anteriores longer than those in species of *Gelechia*. Most genera in Teleiodini lack distinctive external features, and many species lack contrasting colors and patterns. Thus, examination of genital characters is important for diagnoses. The Teleiodini have not been studied in the Nearctic Region, and the definition of genera and assignment of species have been uncertain.

Most known larvae of Teleiodini feed in folded or rolled leaves that are webbed together, some feed as leaf or needle miners, and others feed in buds, flowers, stems, seeds, and cones (Huemer and Karsholt 1999). The tribe includes some forest pest species. *Coleotechnites milleri* (Busck), the lodgepole needle miner, has a long history of serious damage to mature lodgepole pine and other hosts on the western slopes of the Sierra Nevada mountains in California (Furniss and Carolin 1977). *Exoteleia pinifoliella* (Chambers), the pine needle miner, feeds on jack, pitch, and shortleaf pines in eastern North America (Baker 1972).

This work revises the Teleiodini and defines the included genera based on traditional characters of wing pattern, genitalia, and wing venation as well as two new characters of the descaled whole body, the form of the clypeus and sitophore. A new genus and new species from Alabama and Mississippi are described. Phylogenetic relationships of genera based on morphological and molecular data will be presented in a separate publication (Lee and Brown in press).

Historical review

The first species of Gelechiidae were assigned to *Phalaena* (*Tinea*) by Linnaeus (1758) and *Tinea* by [Denis and Schiffermüller] (1775), Fabricius (1775), and other early workers. Subsequent descriptions of genera in the early 19th century included those of Billberg (1820) (*Athrips*), Hübner ([1825]) (*Aristotelia*, *Brachmia*, *Chrysoesthia*, *Chionodes*, *Dichomeris*, *Gelechia*, *Hypatima*, *Mesophleps*, *Nothris*, and *Sophronia*), Haworth (1828) (*Chelaria*, now a junior synonym of *Hypatima*, and *Recurvaria*), Curtis (1827) (*Anacampsis*), Treitschke (1833) (*Lita*, now *Prolita* Leraut), and Zeller (1839) (*Megacraspedus*, *Anarsia*, and *Metzneria*).

Stainton (1854) named the family Gelechidae [*sic*] to include *Gelechia* and 24 other genera occurring in Great Britain based on their possession of recurved labial palpus and broad posterior wings. The combined councils of the Oxford University Entomological Society and the Cambridge Entomological Society emended Stainton's family name to Gelechiidae in *An Accentuated List of the British Lepidoptera, with Hints on the Derivation of the Names*, 1858.

Of the 25 genera originally included in Gelechiidae by Stainton, only five of them remain in the family: *Gelechia*, *Chelaria*, *Anarsia*, *Nothris*, and *Sophronia*. The remaining genera have been transferred to other families. Of the 102 species assigned by Stainton to these five genera, 95 were assigned to *Gelechia*. Heinemann (1870) tried to make *Gelechia* a more natural group by erecting separate genera for species with slight modifications of wing structure and palpal characters. However, the definition of *Gelechia* continued to be difficult because of the absence of striking differences in the characters used by Heinemann; consequently, a large number of unrelated species were left in the genus. Chambers (1872c) and Spuler (1910) also recognized that *Gelechia* was an unnatural genus and that some species assigned to *Gelechia* should be placed in other genera.

The use of genitalia for defining taxa, beginning with Pierce and Metcalfe (1935) and continued by Busck (1939), resulted in a more natural classification for many species. Pierce and Metcalfe restricted British *Gelechia* to eight species out of the 31 included by Meyrick (1925). Busck (1939) combined characters of genitalia with those of wing venation and labial palpi to resurrect genera placed in synonymy with *Gelechia* by Meyrick (1925) and to describe seven new genera for North American and European species previously assigned to *Gelechia*. Gozmány (1955) examined the Hungarian *Gelechia*, and dispersed some 40 species among ten genera. Janse (1949–1954, 1958–1963) revised the South African Gelechiidae and reduced the number of species in *Gelechia* from 62 to 10, transferring the rest to existing or new genera. Sattler (1960) included 23 named genera in his revision of the European Gelechiidae, restricting *Gelechia* to 18 species.

Various family-group names are available for taxa associated with Gelechiidae, including those of Bruand ([1851]) (Anacampsididae), Bruand (1859) (Litidae), Meyrick (1914) (Physoptilidae), Hampson (1918) (Dichomeridae), Meyrick (1926) (Anomologidae), Le Marchand (1947) (Apatetrinae, Aristoteliinae, Chelariinae,

and Lecithoceridae), Povolný (1964) (Gnorimoschemini), Piskunov (1973) (Teleiodini), Piskunov (1975) (Metzneriini), Amsel (1977) (Anarsiidae), and Povolný (1979) (Isophrictini). Different workers have ranked these names as tribes, subfamilies, or families.

Meyrick (1925) proposed the first suprageneric classification of the Gelechiidae, dividing the family into nine genus-groups based primarily on wing venation. Sattler (1973) attributed Meyrick's genus-group names to nine subfamilies of Gelechiidae and three other families of Gelechioidea. Hodges (1983) recognized six subfamilies in America north of Mexico, and these subsequently were reduced to three subfamilies (Gelechiinae, Dichomeridinae, and Pexicopiinae) defined by the form of the abdominal support structure on the second sternum (Hodges 1986). The European checklist of Lepidoptera by Karsholt and Riedl (1996) followed the subfamily classification of Hodges, but seven tribes were recognized in the Gelechiinae: Apatetrini, Anomologini, Teleiodini, Gelechiini, Gnorimoschemini, Anacampsini, and Chelariini. Recently, Hodges (1999b) added the subfamily Physoptilinae, which occurs in the Oriental and Australian Regions. Although Hodges (1999b) did not recognize tribes of Gelechiinae, he noted that there were several different male genital types typified by eight genera (*Anarsia*, *Aristotelia*, *Chionodes*, *Gelechia*, *Gnorimoschema*, *Hypatima*, *Isophrictis*, and *Recurvaria*).

Teleiodini was named by Piskunov (1973) to include a group of genera that Sattler (1960) had placed in the "Teleia" genus group based on the presence of raised scale tufts on the forewing and characters of male and female genitalia. Sattler proposed *Teleiodes* as a new name to replace *Teleia* Heinemann, 1870, a junior homonym of *Teleia* Hübner, [1825], and he also included the following genera in this group: *Adrasteia* Chambers, a junior synonym of *Telphusa* Chambers, *Xenolechia* Meyrick, *Pseudotelphusa* Janse, and *Teleiopsis* Sattler. Huemer and Karsholt (1999) provided a comprehensive review of the Teleiodini of Europe and described five new species, synonymized 13 species, and introduced 15 new combinations.

Materials and methods

Material examined. This study was based on examination of 5,527 specimens of pinned adult moths representing 23 genera of Teleiodini, including a new genus (Appendix 1). Specimens were examined from the following institutions:

AMNH	American Museum of Natural History, New York, USA
ANSP	Academy of Natural Sciences, Philadelphia, USA
CNC	Canadian National Collection, Agriculture and Agri-Food Canada, Ottawa, Canada
FLMNH	Florida Museum of Natural History, Gainesville, Florida, USA (formerly FSCA, Florida State Collection of Arthropods)
MEM	Mississippi Entomological Museum, Mississippi State University, Mississippi, USA
MZH	Finnish Museum of Natural History, Helsinki, Finland
UCB	Essig Museum of Entomology, University of California, Berkeley, California, USA
USNM	United States National Museum of Natural History, Smithsonian Institution, Washington, DC, USA

Type species of 15 of the 24 Holarctic genera were examined, including all five genera restricted to the Nearctic Region, four of 10 genera restricted to the Palearctic Region, and six of nine genera occurring in both regions. Identities of the type species for the remaining genera were based on descriptions and illustrations of the imago and genitalia by Elsner (1995 [1996]), Huemer and Karsholt (1999), Janse (1958), Kanazawa (1985), Meyrick (1913), Omelko (1988), and Sattler (1960). In addition to type species, representative species of all genera of Teleiodini were examined except *Chorivalva* and *Teleiodes* (*sensu stricto*) (Appendix 1). Ima-

gos, male genitalia, and female genitalia are illustrated for representative species of all genera occurring in the Nearctic Region and for selected genera occurring in the Palearctic Region.

Preparation of genitalia, wing venation, and whole body slide mounts

A total of 145 slide mounts of male genitalia, representing 54 species in 23 genera, 95 mounts of female genitalia, representing 45 species in 23 genera, and 96 mounts of wing venation, representing 46 species in 23 genera were prepared. These include genitalia and venation from 95 whole body mounts, representing 41 species in 23 genera (Table 1).

Dissection and slide mounting methods for genitalia followed Clarke (1941) and Robinson (1976), except the preparations were stained with eosin and chlorazol black and mounted in Euparal. In addition, the “unrolling technique” (Huemer 1987; Pitkin 1986) was used in which the vinculum was rolled to one side after its connection with the pedunculus was severed. Wing venation slides were made with the same method used for genitalia, except the denuded wing was stained in eosin overnight. Slide mounts of whole bodies were made following the method of Lee and Brown (2006). These mounts involved separating the head, thoracic segments, all appendages, and genitalia with all parts (except one pair of wings) cleaned of scales, stained, and mounted on two slides, with the second slide having one pair of intact wings dry-mounted and the second pair of wings cleaned, stained, and mounted in Euparal.

Data management

Data for all examined specimens were entered into an EXCEL spreadsheet. Specimens in the Mississippi Entomological Museum were given a unique number prefaced by “MEM,” and their label data were imported into BIOTA 2 (Colwell 2004) from EXCEL. Specimens selected for dissections and slide mounts were labeled with a unique preparation number, and these numbers with identities of specimens, sex, selected specimen data, and collection repository were written in permanent ink in a dissection log and entered into the database of examined specimens.

Examination of characters

Characters of the genitalia, wings, and whole body were examined with a stereo-microscope (Leica MZ 125) and compound microscope (Olympus BH-2 BHT). Measurements were made with an ocular micrometer. The relative width of the forewing is given as a ratio of the greatest length to the greatest width, as measured with wing venation slides. Drawings of genitalia and other body parts were made from slide-mounted specimens with the aid of the Bausch and Lomb microscope slide projector or with a drawing tube attached to a stereo-microscope (Leica MZ16). Confocal laser scanning microscopes (Leica TCS NT and Zeiss LSM 510) were used for studying and imaging selected morphological features.

Terminology and nomenclature

Terminology for genitalia follows Klots (1970) except for terms defined for Gelechiidae by Hodges (1999a, 1999b). Phallus is used rather than aedeagus in agreement with Kristensen (2003). Huemer and Karsholt (1999) refer to the split valva of Teleiodini as the costal and saccular parts, with the saccular part also termed valvella (*sensu* Elsner, 1996). Ponomarenko (2005) proposed the term glandiductor for the costal part of the valva. As the homology is uncertain about the divided parts of the valva, these are referred to as the costal and saccular parts in this revision. We use sex scale, as defined by Brown and Miller (1983) and used by Hodges (1999a) and others, for specialized scales present in only one sex (usually the male) because functionality as scent producers or disseminators has not been documented.

The original orthography of species names is followed. This is consistent with a resolution adopted by the European Society of Lepidopterists (SEL) at its General Meeting in June 2002 and discussed by Sommerer (2002).

TABLE 1. Whole body mounts.

Genus species	Male	Female
<i>Agnippe crinella</i> Keifer	0	1
<i>Agnippe prunifoliella</i> (Chambers)	2	2
<i>Altenia perspersella</i> (Wocke)	2	2
<i>Arcutelphusa talladega</i> sp. nov.	1	0
<i>Argyrolacia bifida</i> Keifer	1	0
<i>Arogalea cristifasciella</i> (Chambers)	2	3
<i>Carpatolechia belangerella</i> (Chambers)	0	1
<i>Carpatolechia daehania</i> (Park)	1	0
<i>Carpatolechia deogyusanae</i> (Park)	1	0
<i>Carpatolechia digitilobella</i> (Park)	1	0
<i>Carpatolechia fugitivella</i> (Zeller)	0	1
<i>Carpatolechia longivalvella</i> (Park)	0	1
<i>Carpatolechia</i> sp.1	1	0
<i>Coleotechnites florum</i> (Freeman)	1	1
<i>Coleotechnites obliquistrigella</i> (Chambers)	1	1
<i>Exoteleia dodecella</i> (Linnaeus)	0	1
<i>Exoteleia pinifoliella</i> (Chambers)	3	3
<i>Glauce</i> sp.1	2	2
<i>Istrianis myricariella</i> (Frey)	1	0
<i>Neotelphusa querciella</i> (Chambers)	3	1
<i>Parachronistis albiceps</i> Zeller	2	0
<i>Parastenolechia nigrinotella</i> (Zeller)	0	1
<i>Pseudotelphusa basifasciella</i> (Zeller)	1	1
<i>Pseudotelphusa fuscopunctella</i> (Clemens)	1	1
<i>Pseudotelphusa incana</i> Hodges	1	0
<i>Pseudotelphusa istrella</i> (Mann)	1	0
<i>Pseudotelphusa palliderosacella</i> (Chambers)	2	1
<i>Pseudotelphusa quercinigracella</i> (Chambers)	1	1
<i>Pseudotelphusa</i> sp.1	1	1
<i>Recurvaria leucatella</i> Clerck	1	0
<i>Recurvaria nanella</i> (Denis and Schiffermüller)	1	0
<i>Schistophila laurocistella</i> Chrétien	1	1
<i>Sinoe robiniella</i> (Fitch)	2	1
<i>Stenolechia bathrodyas</i> Meyrick	0	1
<i>Stenolechia gemmella</i> Linnaeus	1	0
<i>Stenolechiodes macrolepiellus</i> Huemer and Karsholt	0	1
<i>Streyella anguinella</i> (Herrich-Schäffer)	1	0
<i>Teleiopsis diffinis</i> Haworth	1	1
<i>Telphusa longifasciella</i> (Chambers)	2	1
<i>Telphusa sedulitella</i> (Busck)	1	1
<i>Xenolechia ontariensis</i> Keifer	1	2
<i>Xenolechia querciphaga</i> Keifer	0	1

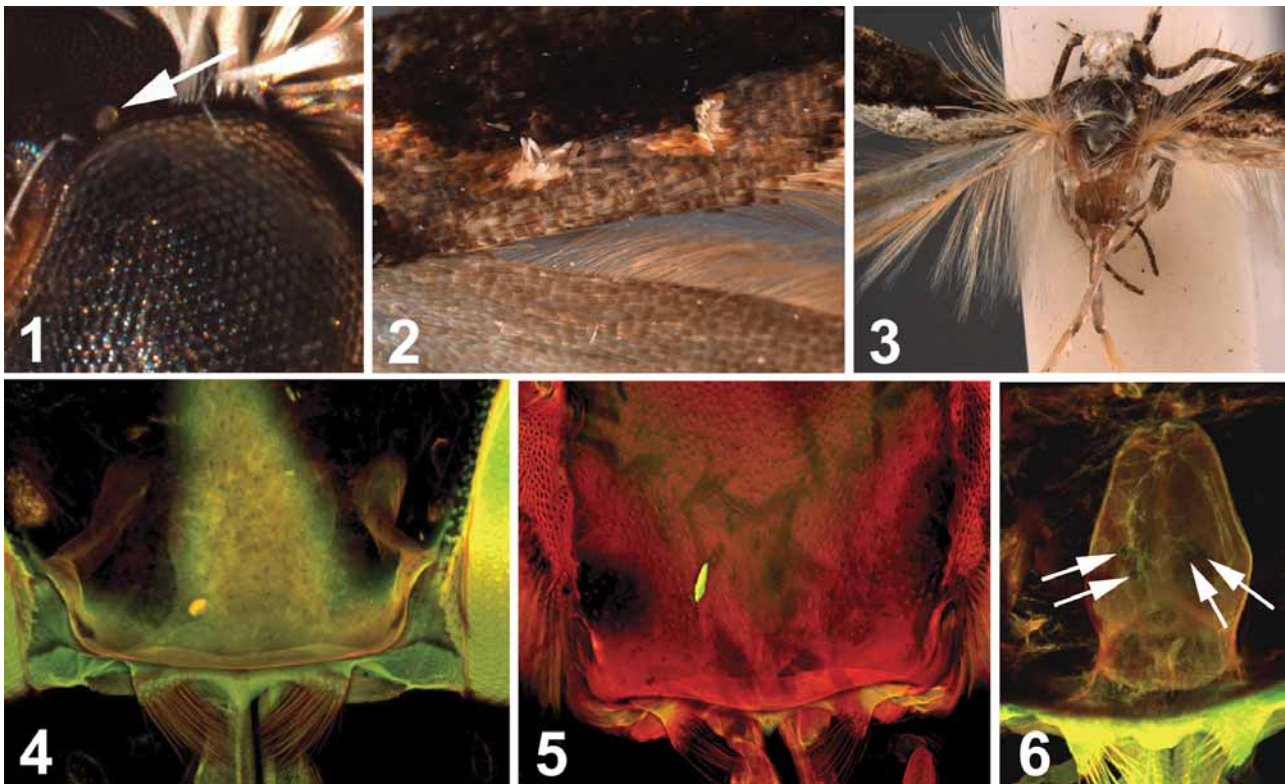
Taxonomy

Tribe Teleiodini

Teleiodini Piskunov, 1973: 184.

Type genus: *Teleiodes* Sattler, 1960.

Description. Imago. Ocellus present (Fig. 1) or absent. Forewing with small patches of raised scales (Fig. 2) (except *Glauce* and *Agnippe*). Male genitalia with gnathos variably shaped (Figs. 25–26) and tending toward reduction, phallus fused with ventral part of the genital capsule, e.g., vinculum or saccus, valva with bulbous base, divided into costal and saccular parts except *Glauce*, costal part with internal duct (Fig. 30b). Females with apophyses anteriores longer than apophyses posteriores, signum usually consisting of a rhomboid base with serrate margins and a pair of transverse ridges, rhomboid base wide or narrow, sometimes with obtuse angles rounded, squared, or indented.

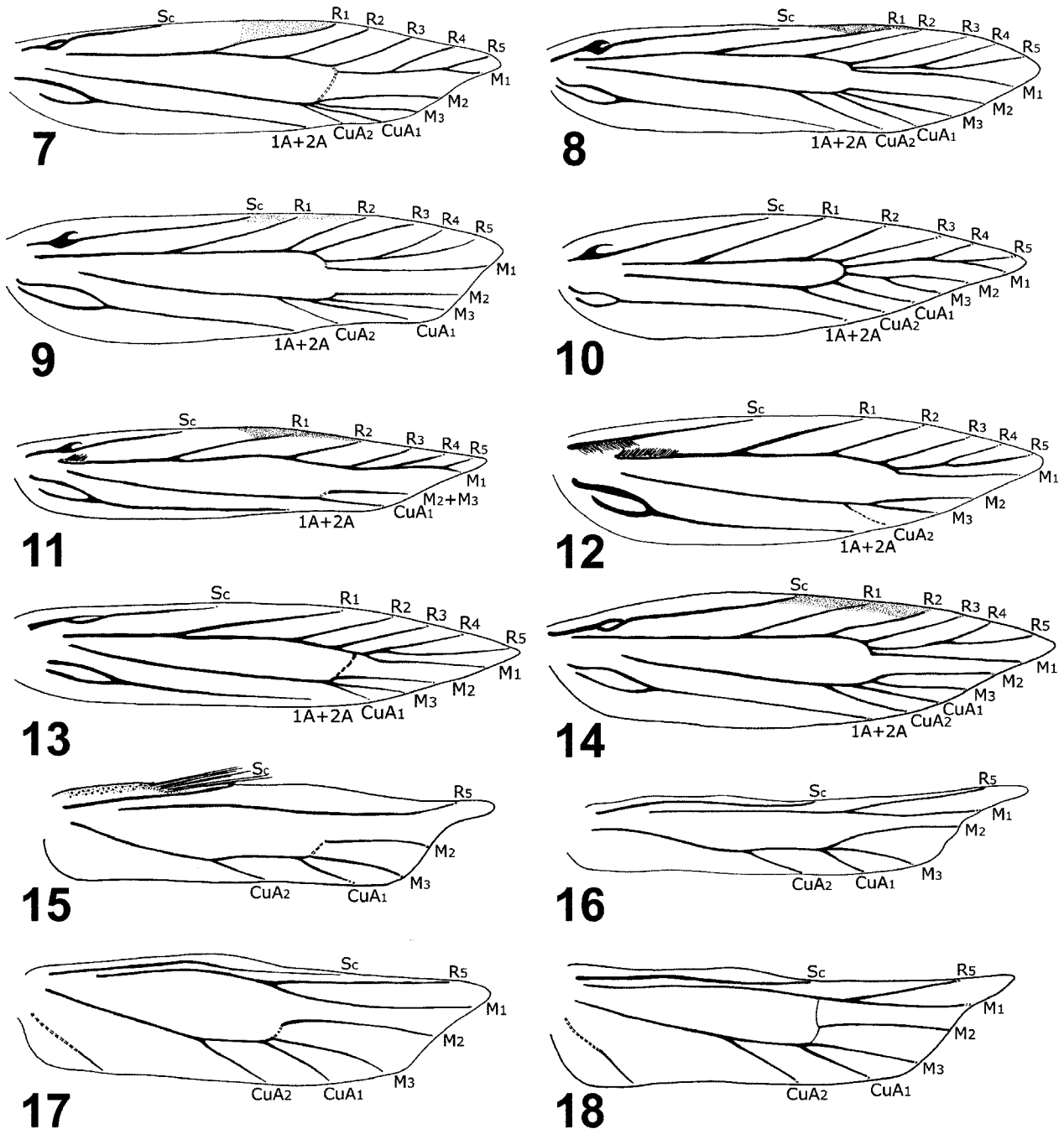


FIGURES 1–6. Characters of the head and thorax. 1, Lateral ocellus (arrow) of *Exoteleia anomala*. 2, Forewing of *Telphusa sedulitella* with scale tufts. 3, Male hindwing of *Coleotechnites florum* with hair pencil on anal area. 4–5, Clypeus. 4, *Istrianis myricariella*. 5, *Neotelphusa querciella*. 6, Posterior area of sitophore with four campaniform sensilla (arrows) in *Stenolechiodes macrolepiellus*.

Larva. Head flattened and prothoracic shield with median sulcus. Prolegs often with fuscous annulus; crochets in a complete circle of 18–28 hooks, unevenly biordinal; pinacula weakly sclerotized, small. Anal fork present. SD1 of abdominal segment VIII in front of spiracle (Braun 1930; Freeman 1967; Keifer 1932, 1936; McLeod 1966; Meyrick 1895; Opler 1974; Stainton 1865; Stevens *et al.* 1978).

Pupa. Maxillary palpi present, not concealed; forewings not reaching beyond caudal margin of the 8th abdominal segment; and antennae adjacent to each other for most of length beyond apex of proboscis. Three groups of genera can be defined based on characters of known pupae: Group I) *Exoteleia*; Group II) *Coleotechnites*, *Recurvaria*, *Stenolechia*, *Parastenolechia*, and *Parachronistis*; and Group III) *Teleiodes*, *Teleiopsis*,

Carpatolechia, *Pseudotelphusa*, and *Altenia*. Group I (*Exoteleia*) with proboscis not reaching the end of the pro- or mesothoracic legs. Groups II and III with proboscis exceeding the ends of the pro- and mesothoracic legs. Group II with prothoracic legs adjacent to oculi and maxillary palpi separated from genae. Group III with prothoracic legs separated from oculi and maxillary palpi touching or adjacent to the genae. Group III with pupae less than 6 mm in length, abdomen usually lacking setae, and pronotum with the midline length at least 1/3 the greatest length of pronotum (Mosher 1916; Patočka and Turčáni 2005).



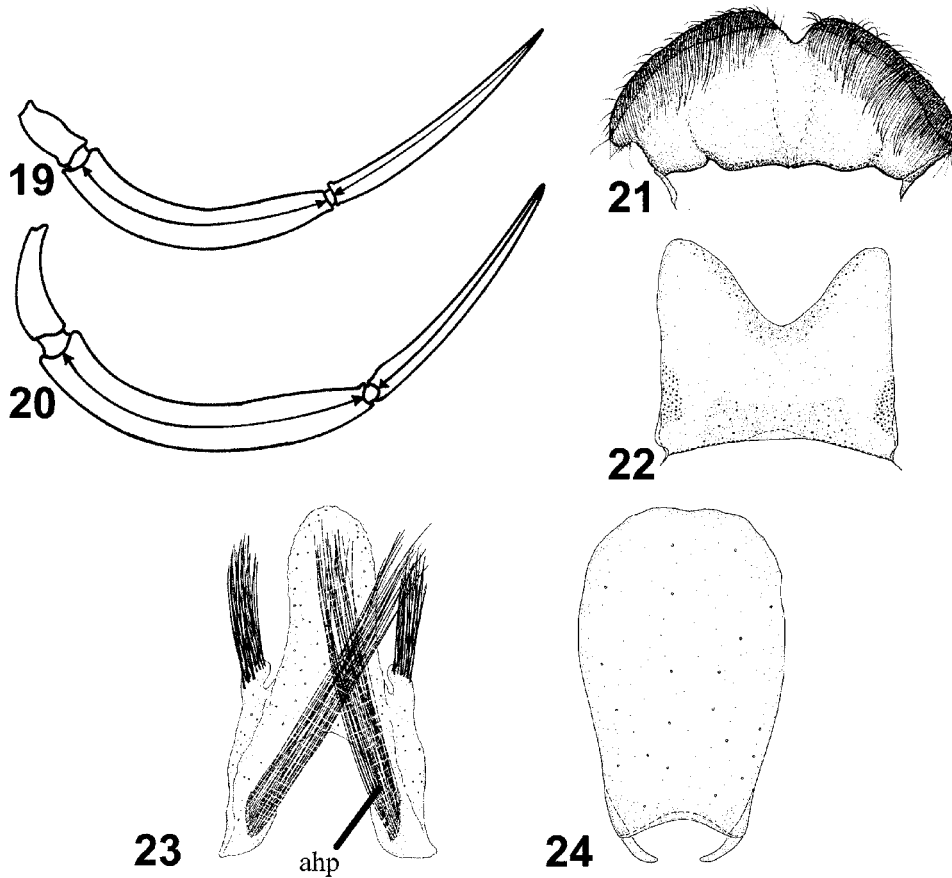
FIGURES 7–18. Wing venation. 7–14, Forewing. 7, *Sinoe robiniella*. ps = pterostigma. 8, *Carpatolechia* sp.1. 9, *Arogalea cristifasciella*. 10, *Agnippe* sp.1. 11, *Stenolechia gemmella*. 12, *Parastenolechia nigrinotella*. 13, *Parachronistis albiceps*. 14, *Arcutelphusa talladega*, **sp. nov.**, 15–18, Hindwing. 15, *Agnippe* sp.1. 16, *Sinoe robiniella*. 17, *Arogalea cristifasciella*. 18, *Arcutelphusa talladega*, **sp. nov.**

Key to Genera of Teleiodini of Asia (A), Europe (E), and North America (NA)

1	Ocellus absent	2
-	Ocellus present (Fig. 1).....	17
2	Forewing with subbasal fascia angled outwardly from posterior margin to midwing (Fig. 56)	3
-	Forewing with subbasal fascia not angled from posterior margin to midwing	4
3	Forewing R_5 and M_1 stalked (Fig. 7), phallus with cornuti (NA).....	<i>Sinoe</i>
-	Forewing R_5 and M_1 separate, phallus without cornuti (E)	<i>Istrianis</i>
4	Males.....	5
-	Females	11
5	Hindwing with costal or anal hair pencil (Figs. 3, 16)	6
-	Hindwing without hair pencil	9
6	Hindwing with a hair pencil at 1/3 length of costa and another at base of anal area (NA, E, A).....	<i>Stenolechia</i>
-	Hindwing with hair pencil at either 1/3 length of costa or base of anal area.....	7
7	Hindwing with hair pencil at 1/3 length of costa.....	8
-	Hindwing with hair pencil at base of anal area (NA, E).....	<i>Coleotechnites</i>
8	Forewing with M_2 and M_3 separate (Fig. 9); abdomen with hair pencil between terga II and III (E).....	<i>Stenolechiodes</i>
-	Forewing with M_2 and M_3 connate (Fig. 12); abdomen without hair pencil between terga II and III (E, A)	<i>Parastenolechia</i>
9	Abdominal tergum VIII without hair pencil	10
-	Abdominal tergum VIII with hair pencil (E)	<i>Schistophila</i>
10	One pair of hair pencils on anterior area (NA)	<i>Argyrolacia</i>
-	Two pairs of hair pencils on posterior and anterior areas (Fig. 23) (E).....	<i>Streyella</i>
11	Forewing with median fascia directed from apex of costa toward posterior margin	12
-	Forewing with median fascia absent, transverse, or directed from base of costa toward posterior margin	14
12	Corpus bursae with signum (Fig. 48)	13
-	Corpus bursae without signum (E)	<i>Stenolechiodes</i>
13	Sternum surrounding ostium bursae membranous (E, A).....	<i>Parastenolechia</i>
-	Sternum surrounding ostium bursae sclerotized (E, A).....	<i>Stenolechia</i>
14	Ductus bursae with microtrichia (E).....	<i>Streyella</i>
-	Ductus bursae without microtrichia.....	15
15	Corpus bursae with signum	16
-	Corpus bursae without signum (E)	<i>Schistophila</i>
16	Sternum surrounding ostium bursae membranous, antrum sclerotized (Fig. 48) (NA)	<i>Argyrolacia</i>
-	Sternum surrounding ostium bursae sclerotized, antrum membranous (E, NA)	<i>Coleotechnites</i>
17	Forewing with scale tufts, male genitalia with gnathos not divided into dorsal and ventral parts, female genitalia with or without accessory bursa.....	19
-	Forewing without scale tufts, male genitalia with gnathos divided into dorsal and ventral parts, female genitalia with accessory bursa (Fig. 44)	18
18	Forewing with median fascia transverse or directed from base of costa toward posterior margin, R_5 and M_1 separate (NA).....	<i>Glauce</i>
-	Forewing with median fascia directed from apex of costa toward posterior margin, R_5 and M_1 stalked (Fig. 10) (NA, E, A)	<i>Agnippe</i>
19	Forewing with median fascia directed from apex of costa toward posterior margin	20

- Forewing with median fascia, absent, transverse, or directed from base of costa toward posterior margin or lacking fascia.....	21
20 Ground color dark gray to black, apex of gnathos with median projection (E, A).....	<i>Chorivalva</i>
- Ground color white, gnathos with cushionlike, trilobed apex (NA).....	<i>Arogalea</i>
21 Males.....	22
- Females.....	34
22 Hindwing with hair pencil at base (NA, E, A).....	<i>Recurvaria</i>
- Hindwing without hair pencil at base.....	23
23. Forewing with black sex scales on ventral surface between R ₁ and R ₅ (NA, E).....	<i>Exoteleia</i>
- Forewing without black sex scales on ventral surface between R ₁ and R ₅	24
24. Abdominal terga II and III with pair of hair pencils (E, A).....	<i>Parachronistis</i>
- Abdominal terga II and III without pair of hair pencils.....	25
25. Uncus bifid for ½ or more length.....	26
- Uncus bifid for less than ¼ length.....	27
26. Costal or saccular parts of valva present (E, A).....	<i>Altenia</i>
- Both costal and saccular parts of valva absent (Fig. 32) (NA, E, A).....	<i>Xenolechia</i>
27. Gnathos well developed.....	30
- Gnathos reduced or absent.....	28
28. Ductus ejaculatorius of phallus as long as length of phallus and coiled lamina (NA, E, A).....	<i>Teleiopsis</i> (part)
- Ductus ejaculatorius of phallus without long and coiled lamina.....	29
29. Saccular part of valva present (NA, E, A).....	<i>Carpatolechia</i>
- Saccular part of valva absent (NA, E, A).....	<i>Pseudotelphusa</i>
30. Gnathos hook shaped (Fig. 28) (NA).....	<i>Telphusa</i>
- Gnathos not hook shaped.....	31
31. Gnathos lingulate.....	32
- Gnathos horn shaped (Fig. 49a).....	33
32. Saccular part of valva well developed (NA, E, A).....	<i>Teleiopsis</i> (part)
- Saccular part of valva reduced (Huemer and Karsholt 1999: 228, Fig. 24) (NA, E).....	<i>Neotelphusa</i>
33. Apex of uncus notched (E).....	<i>Teleiodes</i>
- Apex of uncus not notched (NA).....	<i>Arcutelphusa</i>
34. Signum well developed in corpus bursae.....	35
- Signum absent in corpus bursae (NA, E).....	<i>Exoteleia</i>
35. Colliculum present in ductus bursae (Fig. 46).....	36
- Colliculum absent in ductus bursae.....	37
36. Signum rhomboid (Fig. 47) (NA, E).....	<i>Coleotechnites</i>
- Signum elongate, margins rounded (NA).....	<i>Telphusa</i>
37. Antrum well developed, sclerotized.....	38
- Antrum indistinct or membranous.....	40
38. Antrum dilated anteriorly (Huemer and Karsholt 1999: 272, Fig. 11) (E, A).....	<i>Parachronistis</i>
- Antrum not dilated anteriorly.....	39
39. Sternum sclerotized surrounding ostium (E).....	<i>Pseudotelphusa</i> (part)
- Sternum not sclerotized surrounding ostium (E).....	<i>Teleiopsis</i>
40. Hindwing with M ₃ and CuA ₁ connate.....	41
- Hindwing with M ₃ and CuA ₁ separate.....	42
41. Forewing with M ₂ and M ₃ connate.....	<i>Recurvaria</i>
- Forewing with M ₂ and M ₃ separate.....	<i>Altenia</i>
42. Ductus bursae covered with microtrichia (Fig. 45) (NA, E, A).....	<i>Xenolechia</i>

- Ductus bursae without microtrichia..... 43
- 43. Forewing with M_1 and R_5 stalked (NA, E, A)..... *Carpatolechia*
- Forewing with M_1 and R_5 separate..... *Pseudotelphusa* (part), *Arcutelphusa*, *Neotelphusa*, *Teleiodes*



FIGURES 19–24. Characters of the labial palpi and abdomen. 19–20, Third segment of labial palpus. 19, *Recurvaria leucateilla*. 20, *Istrianis myricariella*. 21–22, Male sternum VIII. 21, *Telphusa perspicua*. 21, *Arcutelphusa talladega* sp. nov., 22, *Coleotechnites* sp.1, 23–24. Male tergum VIII. 23, *Teleiopsis diffinis*. ahp = anterolateral hair pencil. 24, *Arogalea cristifasciella*.

Systematic treatment of genera

Agnippe Chambers

Agnippe Chambers, 1872b: 194.

Type species: *Agnippe bicolorella* Chambers, 1872, by subsequent designation (Meyrick 1925).

Aganippe Chambers, 1880b: 198. Misspelling of *Agnippe* Chambers, 1872.

Phaetusa Chambers, 1875f: 105. Preoccupied by *Phaetusa* Wagler, 1832.

Evippe Chambers, 1873a: 185. **New Synonymy**

Type species: *Evippe prunifoliella* Chambers, 1873, by monotypy.

Tholerostola Meyrick, 1917: 40.

Type species: *Tholerostola omphalopa* Meyrick, 1917, by monotypy.

Description. Imago (Figs. 51–52). Labial palpus long, extending beyond vertex, second and third segments subequal in length, second segment slightly thickened with scales dorsoventrally. Antenna longer than half forewing length. Clypeus with ventral margin rounded. Ocellus absent. Posterior area of sitophore with four

campaniform sensilla in line except one or other of middle two offset; anterior area with four campaniform sensilla. Forewing (length/width ratio 4.1) without tufts of raised scales, R_1 absent in male, present in female, R_5 and M_1 stalked, M_2 and M_3 stalked, CuA_1 arising halfway between M_3 and CuA_2 (Fig. 10); median fascia present or absent, if present, directed from base of costa toward posterior margin, often with sinuate line separating dark costal area and pale posterior area. Hindwing narrower than forewing (length/width ratio 4.6), M_1 absent, M_2 close to M_3 , M_3 and CuA_1 separate (Fig. 15), male with hair pencil present at base of anal area or at 1/3 costa. Male abdominal tergum VIII lingulate, with anterolateral hair pencil; sternum VIII broad, anterior margin broadly emarginate. Female abdominal segment VIII evenly sclerotized, without special modifications.

Male genitalia (Fig. 25): uncus elongate, slender, rounded distally, with slight mesial incision, subequal in length with gnathos; gnathos with spatulate dorsal part and trifold apex of ventral part; costal part of valva as long as length of tegumen, digitate with small apical dentate projection; saccular part of valva lobelike; tegumen basal width/length ratio 0.8; vinculum with pair of weak mesial projections; saccus as long as length of gnathos, rodlike; phallus stout, some species with group of needlelike cornuti.

Female genitalia (Fig. 40): apophyses posteriores 2 x length of apophyses anteriores; apophyses anteriores subequal in length with abdominal segment VIII; antrum broadly funnel shaped to tubular; ductus bursae broad, shorter than species in *Teleiodes*; distinct accessory bursae with row of well-developed spinules; signum suboval with sinuous posterior margin, irregular anterior edge and with transverse ridge.

Larva. Undescribed.

Pupa. Body smooth; abdominal segment VII with lateral cavity bordered by fringe of setae and with cephalic margin trilobed (Mosher 1916).

Diagnosis. *Agnippe* and some species of *Aristotelia* have a similar wing pattern, but *Agnippe* differs by the forewing having R_5 and M_1 stalked and M_2 and M_3 stalked, and the male genitalia having a split valva and a dorsal part of gnathos (Fig. 25).

Hosts. Fagaceae: *Quercus* spp. (*A. laudatella*). Fabaceae: *Lespedeza* sp. (*A. sp.*), *Gleditsia* sp. (*A. bicolorella*). Rosaceae: *Cercocarpus ledifolius* Nutt. (*A. abdita*), *Prunus* spp. (*A. prunifoliella*). (Forbes 1923; Kimball 1965; Okada 1961; Opler 1974; Robinson *et al.* 2002).

Diversity and distribution. *Agnippe* includes 23 species occurring throughout North America, southeastern Europe, and Asia (Amsel 1961; Forbes 1923; Huemer and Karsholt 1999; Keifer 1927; Li 1993; Li and Zheng 1998; Meyrick 1925; Okada 1961; Wang and Li 1994).

Notes. Chambers (1873a) differentiated *Evippe* from *Agnippe* based on the absence of R_1 in the forewing (termed the first subcostal branch), but he mentioned his uncertainty in naming this genus. Although R_1 is absent in the male of the type species, *E. prunifoliella*, this vein is present in the female as well as in the female of *A. crinella* Keifer. Busck (1906, fig. 1) illustrated a male forewing of *A. evippeella* Busck that lacks R_1 . Male and female genital characters indicate all species belong to one genus.

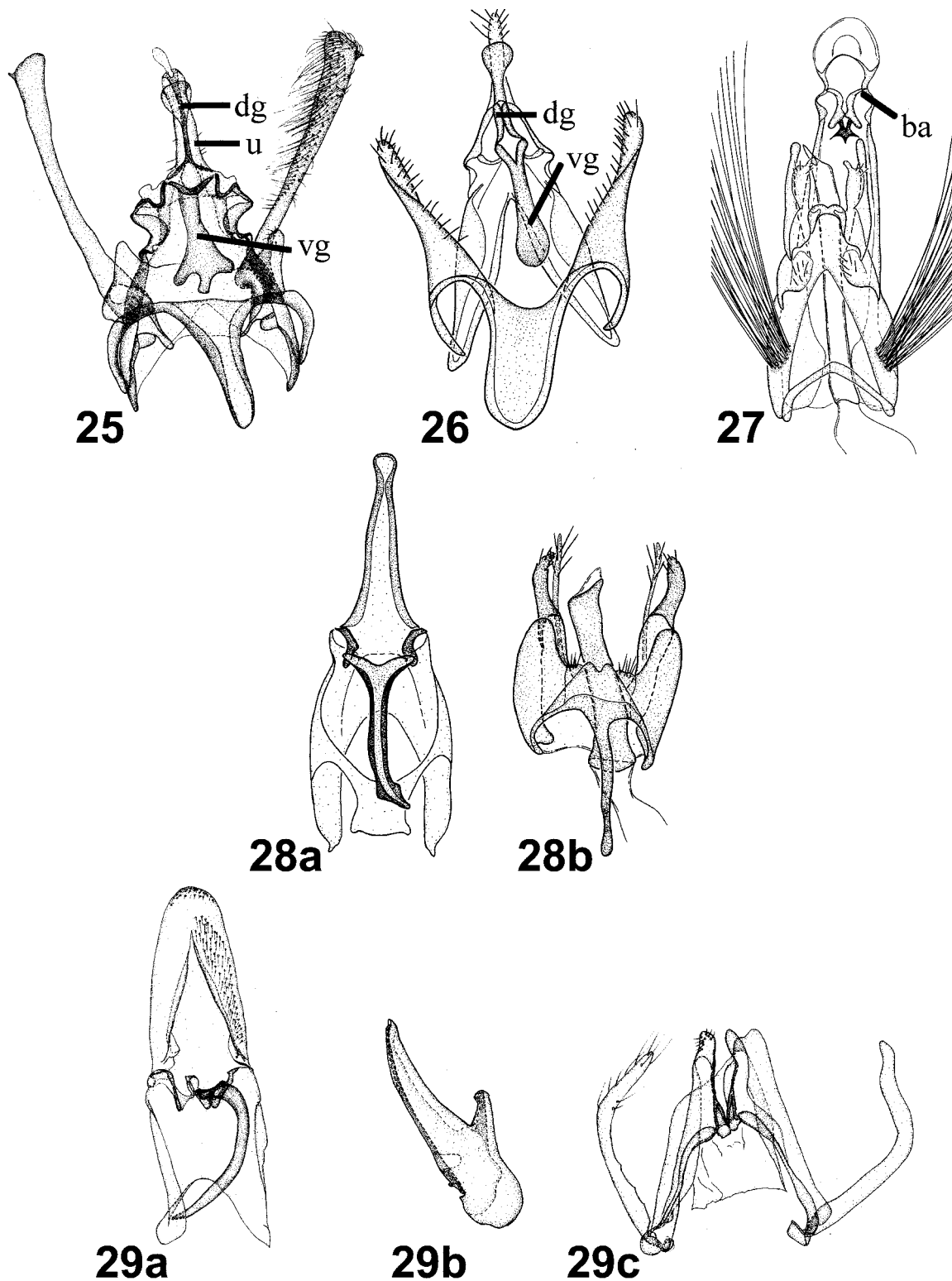
Glauce Chambers

Glauce Chambers, 1875a: 11.

Type species: *Glauce pectenalaella* Chambers, 1875, by monotypy.

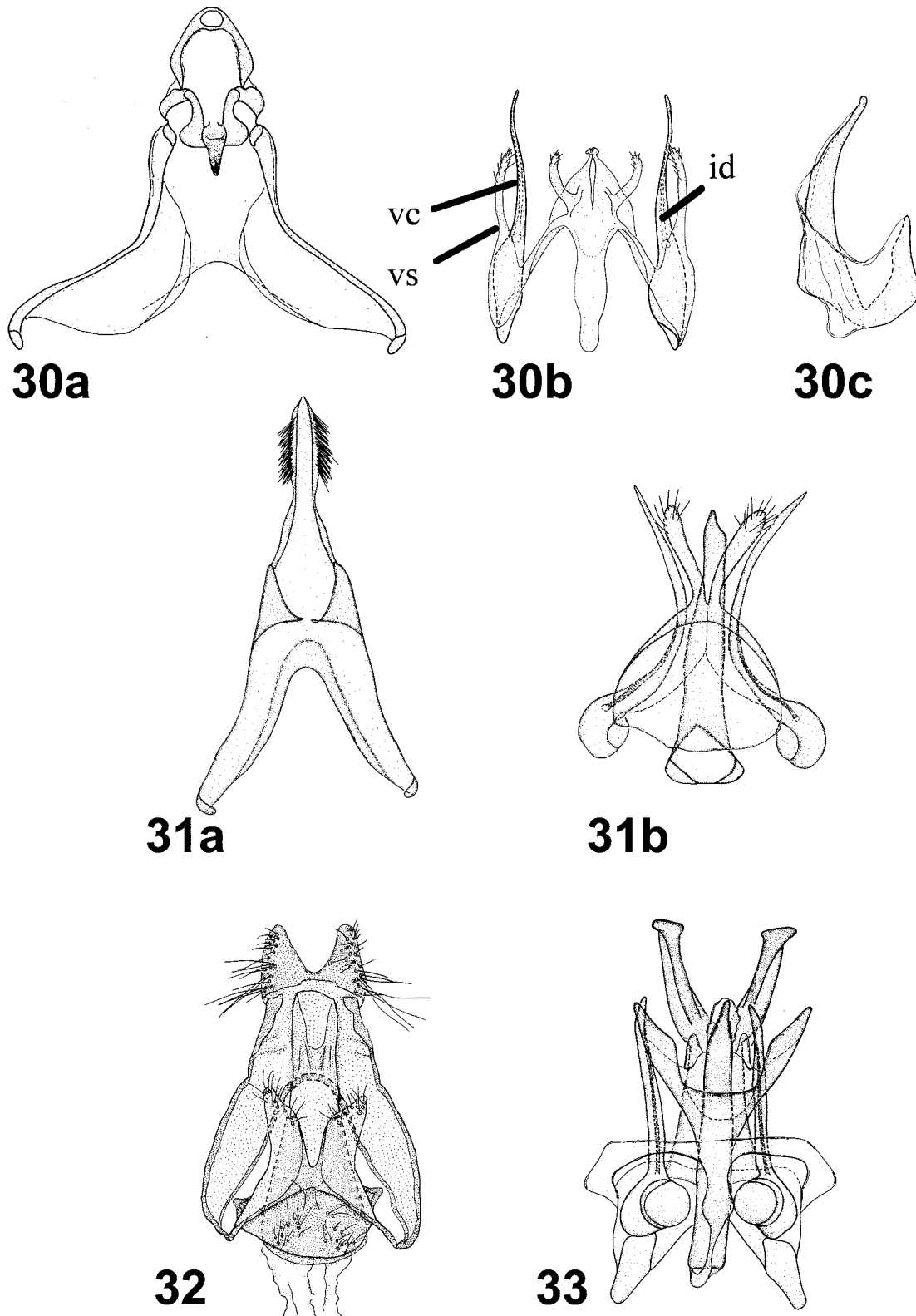
Description. Imago (Fig. 53). Labial palpus with third segment nearly as long as second, apex acute. Antenna more than half forewing length. Clypeus with ventral margin rounded. Ocellus present. Posterior area of sitophore with four campaniform sensilla in line except one sensillum offset on left or right side; anterior area with six campaniform sensilla. Forewing (length/width ratio 4.4) without tufts of raised scales; R_4 and R_5 stalked, R_5 , M_1 , and M_2 separate, M_2 and M_3 connate, CuA_1 and CuA_2 present; median fascia transverse or

directed from base of costa toward posterior margin. Hindwing (length/width ratio 4.8) with strong black hair pencil at one-third length of costa in males; R_5 and M_1 widely separate, M_2 twice as near to M_3 as to M_1 , M_2 and M_3 separate, M_3 and CuA_1 separate. Male abdominal tergum VIII lingulate.



FIGURES 25–29. Male genitalia, basal articulation (ba), dorsal gnathos (dg), ventral gnathos (vg), and uncus (u). 25, *Agnippe* sp.1. 26, *Glauce* sp.1. 27, *Arogalea cristifasciella*. 28, *Telphusa sedulitella*. a, tegumen. b, vinculum and phallus. 29, *Sinoe robiniella*. a, tegumen. b, phallus. c, vinculum.

Male genitalia (Fig. 26): uncus present, subequal in length with gnathos; gnathos divided into dorsal and ventral parts; valva entire, not divided into costal and saccular parts; tegumen basal width/length ratio 0.8; saccus well developed; phallus without cornuti; phallic fulcrum well developed.



FIGURES 30–33. Male genitalia, internal duct (id), costal part of valva (vc), and saccular part of valva (vs). 30, *Exoteleia dodecella*. a, tegumen. b, vinculum and valva. c, phallus. 31, *Pseudotelphusa basifasciella*. a, tegumen. b, vinculum, valva, and phallus. 32, *Xenolechia ontariensis*. 33, *Argyrolacia bifida*.

Female genitalia (Fig. 44): apophyses posteriores about 3 x length of apophyses anteriores; apophyses anteriores subequal in length with abdominal segment VIII; antrum undeveloped or membranous; accessory bursae lacking spinules; ductus bursae lacking colliculum; signum pocketlike.

Larva. Undescribed.

Pupa. Undescribed.

Diagnosis. *Glauce* and *Agnippe* differ from other genera of Teleiodini by lacking tufts of raised scales on the forewing. *Glauce* is easily distinguished from *Agnippe* by having an undivided male valva and vein M_1 separate from R_5 in the forewing.

Hosts. Unknown.

Diversity and distribution. *Glauce* includes one species in eastern United States.

Notes. An undescribed species of *Glauce* has been misidentified in many collections as the type species, *G. pectenalaella*. Chambers described the male of *G. pectenalaella* from Texas as having a hindwing with the costal margin having a row of widened “bristles” that changed gradually into large scales from the base to the middle. Male specimens matching this description have been collected in longleaf pine savannahs in Louisiana and remnants of the Black Belt prairie in Mississippi. These specimens have sex scales that vary from black near the wing base to gray near midwing. In contrast, the undescribed species, sp.1 in Appendix 1 and elsewhere, has a black, hair pencil near the base of the costa that extends no more than one third the wing length. The undescribed species occurs widely in a variety of habitats in eastern North America.

***Telphusa* Chambers**

Telphusa Chambers, 1872a: 132.

Type species: *Telphusa curvistrigella* Chambers, 1872, by monotypy.

Telphusa curvistrigella is a junior synonym of *T. longifasciella* (Clemens, 1863).

Adrasteia Chambers, 1872b: 149.

Type species: *Adrasteia alexandriacella* Chambers, 1872b, by subsequent designation (Walsingham 1911). The identity of the type species is uncertain. Until a suitable species from the type locality can be found that matches the original description, as suggested by Busck (1903), the only alternative is to maintain the synonymy of *Adrasteia* and *Telphusa*.

Adrastia Kirby, 1874: 379. Misspelling of *Adrasteia* Chambers, 1872.

Geniaphora Walsingham, 1897: 71.

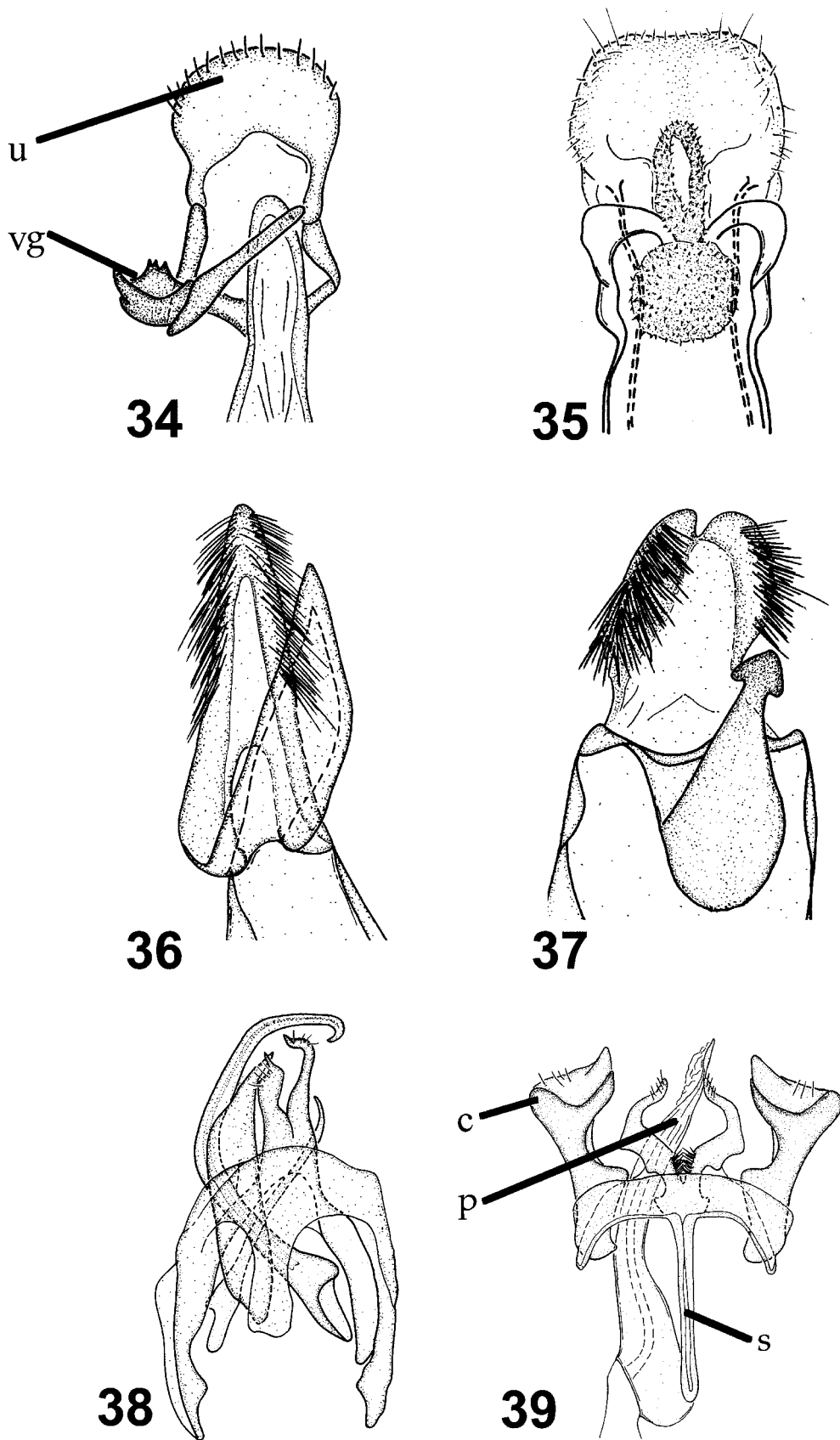
Type species: *Poecilia extranea* Walsingham, 1892, by original designation.

Telephusa Beirne, 1938: 228. Misspelling of *Telphusa* Chambers, 1872.

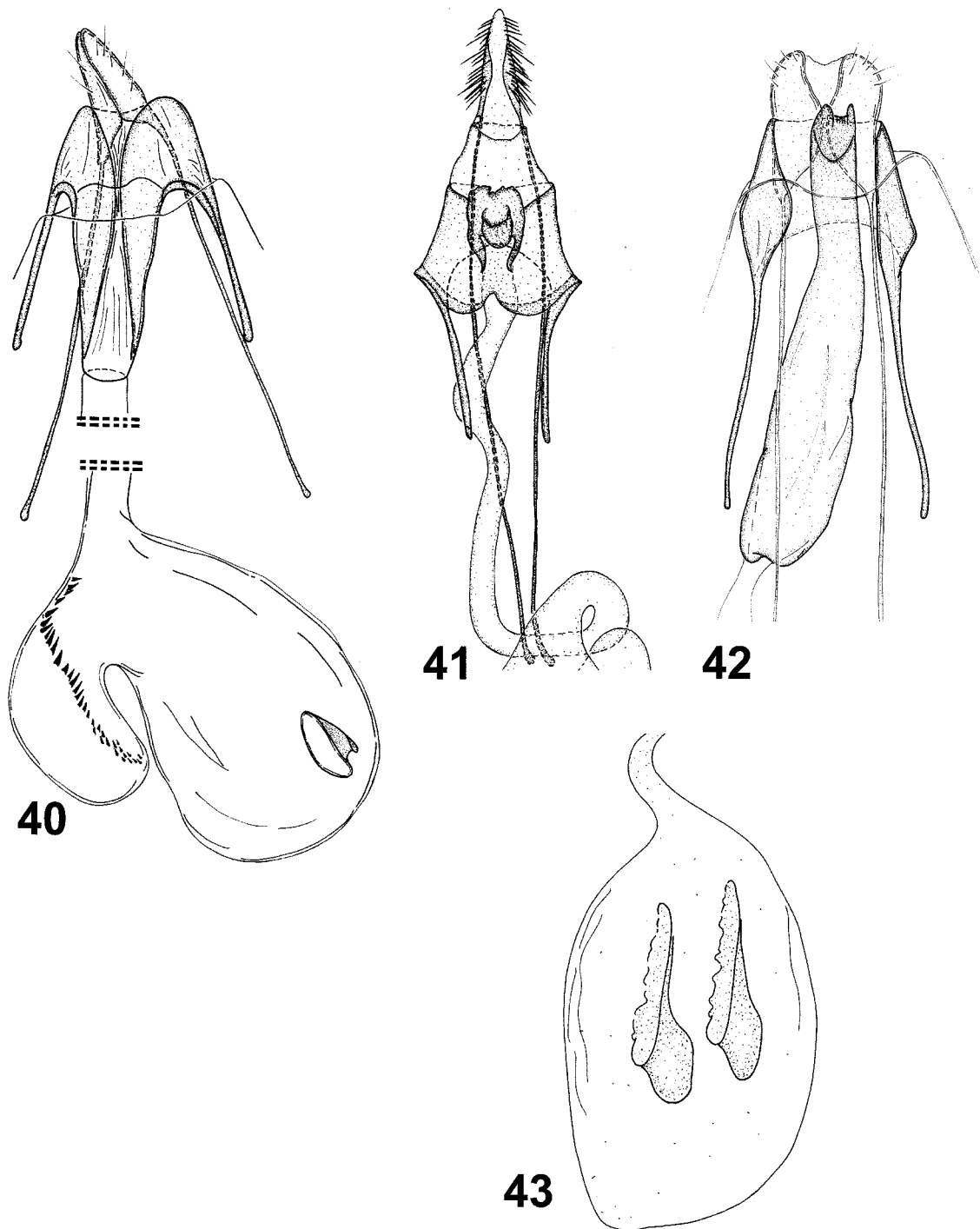
Description. Imago (Fig. 54). Labial palpus with third segment longer than second. Clypeus with ventral margin rounded. Antenna longer than half forewing length. Ocellus present. Posterior area of sitophore with four campaniform sensilla in asymmetrical trapezoid; anterior area with 5–7 campaniform sensilla. Forewing (length/width ratio 4.5) with tufts of raised scales; R_5 , M_1 , M_2 , and M_3 separated, CuA_1 and CuA_2 present; median fascia transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 3.4) with R_5 and M_1 connate or stalked, M_2 and M_3 separate, M_3 and CuA_1 separate. Male abdominal tergum VIII with pair of anterolateral hair pencils.

Male genitalia (Fig. 28): uncus slender, tapered to rounded apex, subequal in length with gnathos; ventral part of gnathos hook shaped; costal part of valva present with bulbous base; tegumen basal width/length 0.8; phallus without cornuti.

Female genitalia (Fig. 46): apophyses about 2 x length of apophyses anteriores; apophyses anteriores subequal in length with abdominal segment VIII; ductus bursae with colliculum; sternum surrounding ostium bursae sclerotized; signum a small plate, lateral flaps, irregularly shaped, with serrate margins.



FIGURES 34–39. Male genitalia, cucullus (c), phallus (p), ventral part of gnathos (vg), saccus (s), and uncus (u). 34, *Parachronistis albiceps* (modified from Huemer and Karsholt, 1999). 35, *Stenolechia bathrodyas* (modified from Huemer and Karsholt, 1999). 36, *Istrianis myricariella*. 37, *Schistophila laurocistella*. 38, *Coleotechnites floriae*. 39, *Parachronistis albiceps* (modified from Huemer and Karsholt, 1999).



FIGURES 40–43. Female genitalia. 40, *Agnippe crinella*. 41, *Pseudotelphusa betulella*. 42, *Teleiopsis diffinis*. 43, *Stenolechia gemmella*.

Larva. Body with transverse stripes; head with stemmata 4, 5, and 6 forming triangle with right or obtuse angle from stemma 4; prolegs with a complete circle of crochets; abdomen VII with D2 closer to mid-dorsal line than D1; abdomen VIII with SD1 in front of spiracle (Fracker 1915).

Pupa. Less than 6 mm in length, brownish orange with the four terminal abdominal segments red brown and covered with fine punctuations (Opler 1974: 44).

Diagnosis. Species of *Telphusa* are superficially similar to those of *Gelechia*, but differ in generally being smaller and having tufts of raised scales on the forewing. *Telphusa* are differentiated from other genera in

Teleiodini by having a distinct hook shaped gnathos and saccular part of the valva that is stout and shorter than the costal part.

Hosts. Anacardiaceae: *Rhus typhina* L. (*T. longifasciella*). Corylaceae: *Corylus* sp. (*T. sedulitella*). Fagaceae: *Quercus* spp. (*T. sedulitella*). Rhamnaceae: *Ceanothus* sp. (*T. sedulitella*). Salicaceae: *Salix* sp. (*T. sedulitella*). (De Benedictis *et al.* 1990; Miller 1995; Opler 1974; Prentice 1966; Robinson *et al.* 2002).

Diversity and distribution. *Telphusa* includes five species occurring in eastern and western United States and Canada (Busck 1903; Forbes 1923; Fracker 1915; Meyrick 1909; Walsingham 1908). An additional 17 species have been reported from the Neotropical Region (Becker 1984).

Notes. This genus previously has been considered to have a worldwide distribution; however, it is restricted here to species occurring in North and South America. Species previously assigned to this genus that occur in Palearctic and Afrotropical Regions, as well as *T. latifasciella* in Nearctic Region, need to be transferred into other genera after further study.

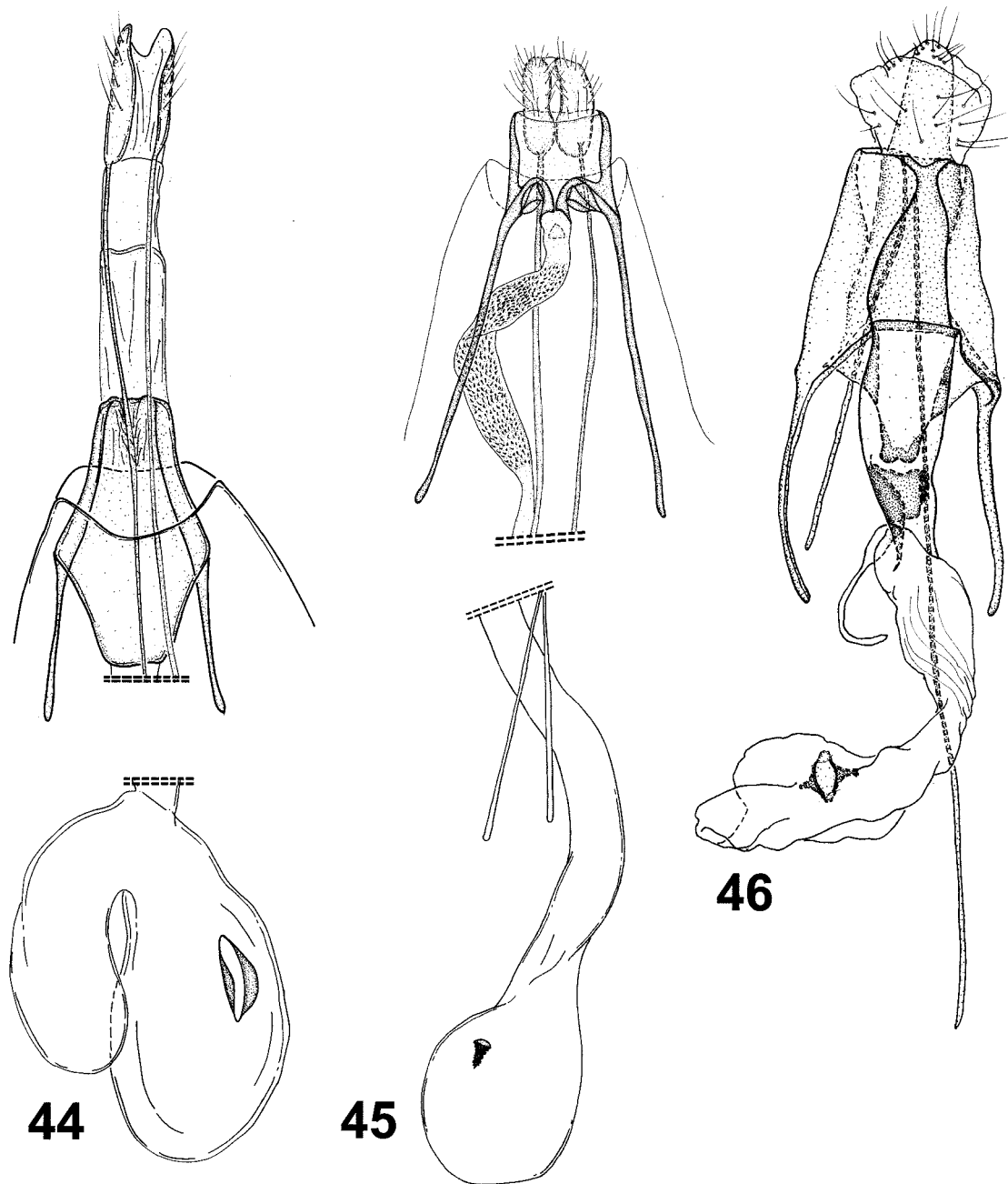


FIGURE 44–46. Female genitalia. 44, *Glauce* sp.1. 45, *Arogalea cristifasciella*. 46, *Telphusa sedulitella*.

Arogalea Walsingham

Arogalea Walsingham, 1910: 48.

Type species: *Gelechia cristifasciella* Chambers, 1878, by original designation.

Description. Imago (Fig. 55). Labial palpus with second segment rough-scaled ventrally, third segment as long as second, apex acute. Antenna more than half forewing length. Clypeus with ventral margin rounded. Posterior area of sitophore with four campaniform sensilla in line except left side; anterior area with seven campaniform sensilla. Ocellus present. Forewing (length/width ratio 4.3) with slight tufts of raised scales easily lost and sometimes absent in worn specimens; R_5 , M_1 , M_2 , and M_3 separated, CuA_1 and CuA_2 present (Fig. 9); subbasal fascia directed from apex of costa toward posterior margin. Hindwing (length/width ratio 3.9) with R_5 and M_1 well separated, M_3 and CuA_1 separated (Fig. 17). Male abdominal tergum VIII subrectangular (Fig. 24).

Male genitalia (Fig. 27): uncus hoodlike, apically rounded, subequal in length with gnathos; ventral part of gnathos cushionlike, trilobed at apex, without basal articulation, dorsal part absent; valva with costal part sinuous, with bulbous base; posterolateral margins of vinculum well developed, symmetrical; tegumen narrower mesially than basally, basal width/length ratio 0.3; phallus as long as length of tegumen, straight, slender, with transverse, sclerotized band on ventral surface at base, without cornuti.

Female genitalia (Fig. 45): apophyses posteriores about 2 x length of apophyses anteriores; apophyses anteriores about 1–2 x length of abdominal segment VIII; antrum sclerotized, cylindrical, width subequal to length of ductus bursae; ductus bursae covered with spinules, with colliculum; signum a small plate supporting a digitate process.

Larva. Undescribed.

Pupa. Undescribed.

Diagnosis. *Arogalea* is superficially similar to the European genera *Stenolechia*, *Parastenolechia*, and *Stenolechiodes*. However, the one known species, *A. cristifasciella*, differs from other species in having the trilobed apex of the gnathos in male genitalia. *Arogalea* and *Pseudotelphusa basifasciella* differ from all other Nearctic Teleiodini in having forewings with white ground color, but the latter species differs in having the subbasal fascia extending from the wing base toward the posterior margin.

Hosts. Fagaceae: *Quercus* spp. (Forbes 1923; Robinson *et al.* 2002; Wagner *et al.* 1995).

Diversity and distribution. This genus includes one species occurring in eastern North America (Forbes 1923; Hodges 1983; Wagner *et al.* 1995).

Sinoe Chambers

Sinoe Chambers, 1873b: 229, 231.

Type species: *Sinoe fuscopalidella* Chambers, 1873, by monotypy.

Description. Imago (Fig. 56). Labial palpus with third segment as long as second. Clypeus with ventral margin broadly truncate or rounded. Antenna longer than half forewing length. Ocellus absent. Posterior area of sitophore with four campaniform sensilla not in trapezoid; anterior area with two or four campaniform sensilla. Forewing (length/width ratio 4.6) with pterostigma; R_5 and M_1 stalked, M_2 and M_3 connate, CuA_1 and CuA_2 present (Fig. 7); subbasal fascia directed from apex of costa toward dorsum; median fascia transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 5.4) with R_5 and M_1 connate, M_2 and M_3 connate, M_3 and CuA_1 connate (Fig. 16).

Male genitalia (Fig. 29): uncus rounded apically, subequal in length with gnathos; gnathos without dorsal part, ventral part of gnathos hook shaped; valva divided into costal and saccular parts; tegumen basal width/

length 0.4; phallus without cornuti, phallic fulcrum well developed.

Female genitalia (Fig. 47): apophyses posteriores 1.5 x length of apophyses anteriores; apophyses anteriores 2 x length of abdominal segment VIII; sternum surrounding ostium bursae sclerotized; ductus bursae smooth; signum present.

Larva. Undescribed.

Pupa. Undescribed.

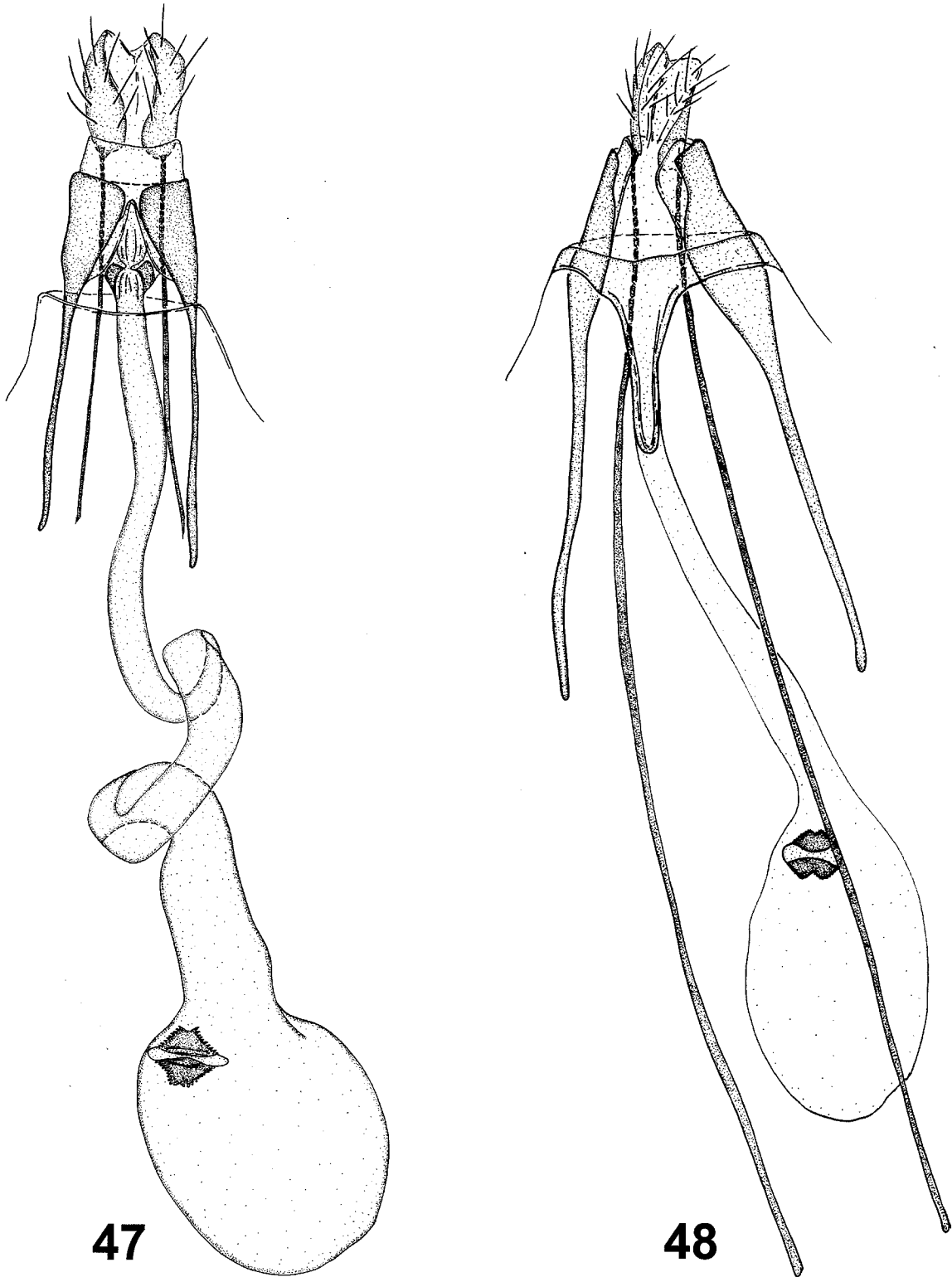
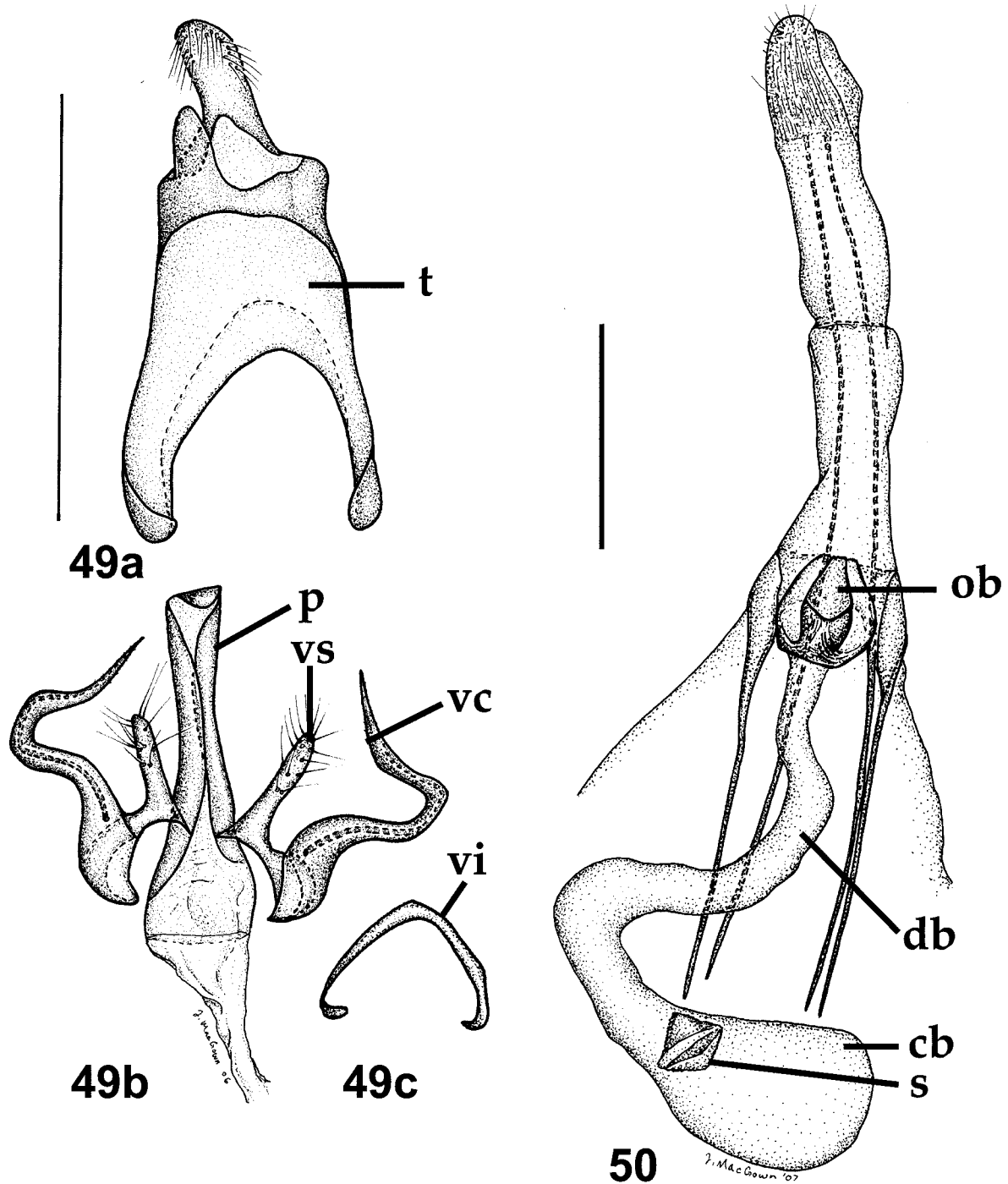


FIGURE 47–48. Female genitalia. 47, *Sinoe robiniella*. 48, *Argyrolacia bifida*.

Diagnosis. *Sinoe* species are superficially similar to *Coleotechnites*, but can be differentiated by having the forewing with the subbasal fascia directed from apex of costa toward posterior margin, and by the bilaterally symmetrical vinculum + valva and apically hook shaped ventral gnathos instead of a cushionlike apex in male genitalia.

Hosts. Fabaceae: *Amorpha fruticosa* L. (*S. robiniella*), *Robinia pseudoacacia* L. (*S. robiniella*). (Forbes 1923; Godfrey *et al.* 1987; Robinson *et al.* 2002; Schaffner 1959).

Diversity and distribution. This genus includes one species occurring in eastern North America (Hodges 1965).



FIGURES 49–50. *Arcutelphusa talladega*, sp. nov. 77, Male genitalia. a, tegumen (t). b, phallus (p) and valva, costal part (vc), sacculus (vs). c, vinculum (vi). 78, female genitalia, corpus bursae (cb), ductus bursae (db), ostium bursae (ob), and signum (s). Scale bar: 0.5 mm.

***Recurvaria* Haworth**

Recurvaria Haworth, 1828: 547.

Type species: *Tinea nanella* [Denis and Schiffermüller], 1775, by subsequent designation (Walsingham 1910).

Lita Kollar, 1832: 95.

Type species: *Tinea nanella* [Denis and Schiffermüller], 1775, by subsequent designation (Nye and Fletcher 1991).

Telea Stephens, 1834: 244. Preoccupied by *Telea* Hübner (1819).

Aphanaula Meyrick, 1895: 579.

Type species: *Phalaena leucatella* Clerck, 1759, by subsequent designation (Walsingham 1910).

Hinnebergia Spuler, 1910: 356.

Type species: *Tinea nanella* [Denis and Schiffermüller], 1775, by monotypy.

Microlechia Turati, 1924: 162.

Type species: *Microlechia chretieni* Turati, 1924 by monotypy.

Description. Imago (Fig. 57). Labial palpus with third segment as long as second (Fig. 19). Antenna longer than half forewing length. Clypeus with ventral margin rounded. Ocellus present. Posterior area of sitophore with four campaniform sensilla in symmetrical trapezoid pattern with posterior pair closer together than anterior pair; anterior area with 4 or 8 campaniform sensilla. Forewing (length/width ratio 4.2) with tufts of raised scales, with pterostigma; R_5 and M_1 stalked to near apex, M_2 and M_3 connate, CuA_1 longer than CuA_2 and closer to M_3 than to CuA_2 ; median fascia transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 4.1) with R_5 and M_1 connate, M_3 and CuA_1 connate; males of some species with off-white hair pencil at base of anal area. Male abdominal sternum VIII broad, with slightly to broadly emarginate mesial margin; tergum VIII much smaller than sternum VIII.

Male genitalia: uncus as wide as long, widest near apex, shorter than gnathos; gnathos with ventral part hook shaped, stout, shorter than that in species of *Agnippe*; costal part of valva as narrow as that in species of *Parastenolechia*, flagellate, with bulbous base; saccular part of valva absent; saccus not developed; tegumen basal width/length ratio 0.4; vinculum with mesial process directed posteriorly; phallus straight, without cornuti.

Female genitalia: apophyses anteriores about 2 x length of abdominal segment VIII; antrum not developed; ductus bursae membranous; signum subtrapezoidal with serrate margins.

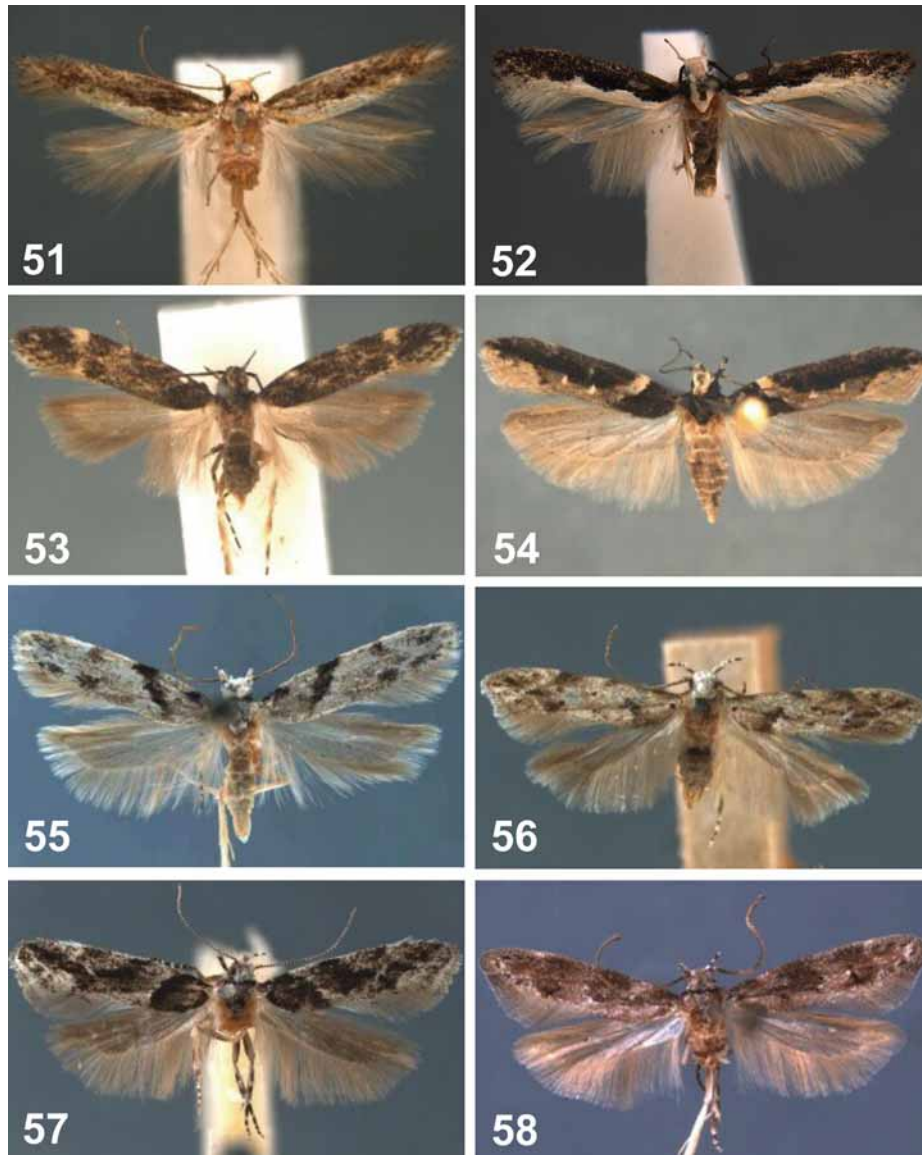
Larva. Length 6 to 10 mm; head and divided prothoracic shield black; prolegs often with a fuscous annulus, crochets in a complete circle, unevenly biordinal (Keifer 1928; Meyrick 1895; Stainton 1865).

Pupa. Maxillary palpi separated from genae; frons lacking a tubercle; frontoclypeal suture convex; labrum rounded; prothoracic legs adjacent to oculi; apices of metathoracic legs small, their caudal part subequal in width to antennae; abdominal segment VII not margined caudally by setae (Keifer 1928; Patoëka and Turčáni 2005).

Diagnosis. Species of *Recurvaria* resemble those of *Coleotechnites* in color, pattern, and size, but *Recurvaria* can be differentiated by having veins M_2 and M_3 connate in the forewing, M_2 and M_3 separate in the hindwing, and bilaterally symmetrical male genitalia.

Hosts. Aceraceae: *Acer* sp. (*R. leucatella*). Betulaceae: *Betula* sp. (*R. nanella*, *R. leucatella*). Corylaceae: *Corylus* L. (*R. nanella*). Oleaceae: *Fraxinus* L. (*R. leucatella*). Rhamnaceae: *Ceanothus* spp. (*R. consimilis*, *R. francisca*). Rosaceae: *Prunus* spp. (*R. leucatella*, *R. nanella*, *R. thomeriella*), *Pyrus* spp. (*R. nanella*, *R. leucatella*), *Amelanchier ovalis* Med. (*R. nanella*, *R. leucatella*), *Chaenomeles* sp. (*R. nanella*), *Cotoneaster* sp. (*R. nanella*), *Crataegus* spp. (*R. leucatella*, *R. nanella*), *Cydonia* sp. (*R. nanella*), *Malus* spp. (*R. leucatella*, *R. nanella*), *Sorbus* spp. (*R. leucatella*, *R. nanella*). (Bland 2002; De Benedictis *et al.* 1990; Chrétien 1901; Emmet 1988; Forbes 1923; Huemer 1988; Huemer and Karsholt 1999; Keifer 1930; Robinson *et al.* 2002).

Diversity and distribution. *Recurvaria* includes 11 species occurring in eastern North America, Europe, and Asia with greatest diversity in the Nearctic Region (Braun 1930; Fletcher 1929; Forbes 1923; Fracker 1915; Hauder 1913; Heinemann 1870; Hering 1932; Hodges 1965; Huemer and Karsholt 1999; Kuznetsov 1979; Meyrick 1925, 1928; Patoëka 1987; Snellen 1882; Spuler 1910; Stainton 1870).



FIGURES 51–58. Imagos. 51, *Agnippe crinella*. 52, *Agnippe prunifoliella*. 53, *Glauce pectenalaella*. 54, *Telphusa longifasciella*. 55, *Aroglea cristifasciella*. 56, *Sinoe robinella*. 57, *Recurvaria nanella*. 58, *Exoteleia dodecella*.

***Exoteleia* Wallengren**

Exoteleia Wallengren, 1881: 94.

Type species: *Phalaena (Tinea) dodecella* Linnaeus, 1758, by monotypy.

Paralechia Busck, 1903: 820.

Type species: *Gelechia pinifoliella* Chambers, 1880b, by subsequent designation (Meyrick 1925).

Heringia Spuler, 1910: 357, f. 124. Preoccupied by *Heringia* (Insecta: Diptera) Rondani, 1856.

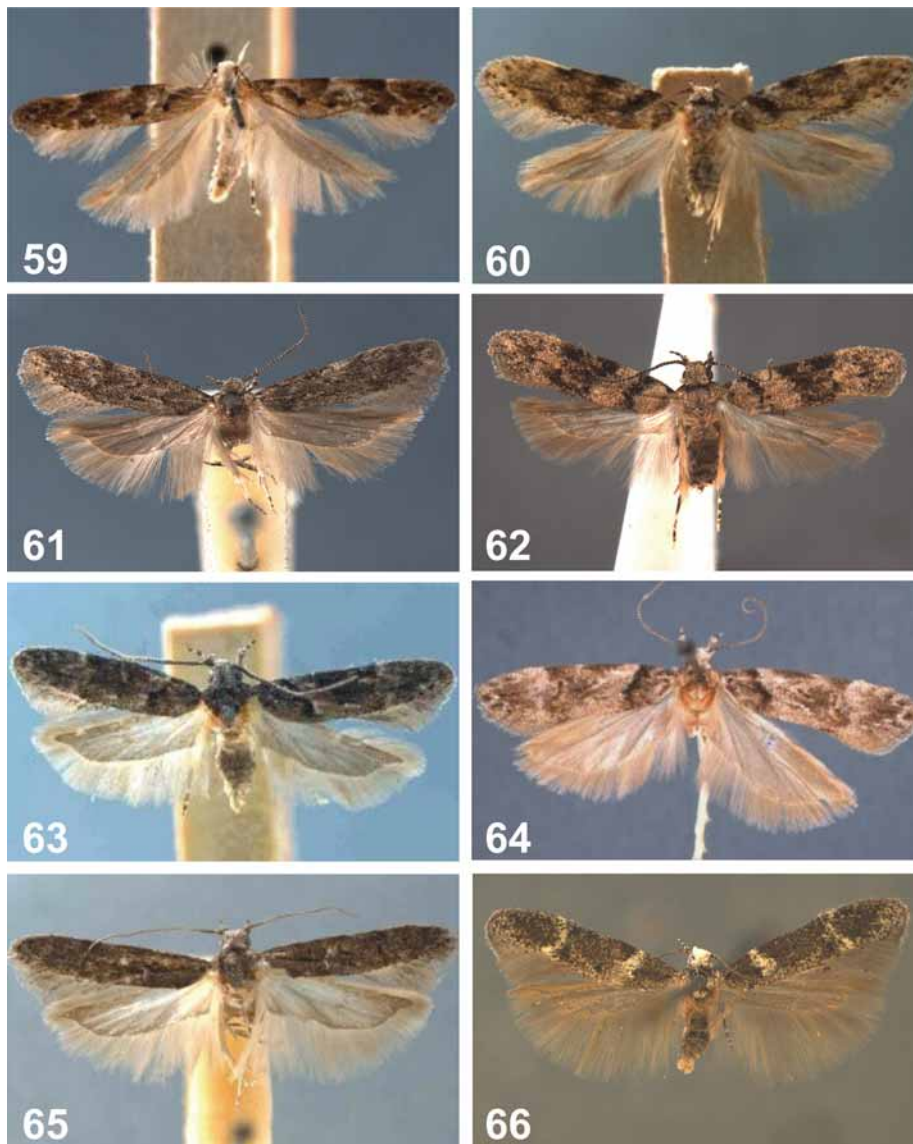
Heringiola Strand, 1917: 137. Replacement name for *Heringia* Spuler, 1910.

Type species: *Phalaena dodecella* Linnaeus, 1758, by monotypy.

Description. Imago (Fig. 58). Labial palpus third segment shorter than second. Clypeus with ventral margin truncate. Antenna flattened laterally, longer than half forewing length. Ocellus present (Fig. 1). Posterior area of sitophore with four campaniform sensilla in asymmetrical trapezoid pattern; anterior area with two or four campaniform sensilla. Forewing (length/width ratio 4.3) with tufts of raised scales, male with black sex scales

on underside between R_1 and R_5 ; R_5 , M_1 , M_2 , and M_3 separate, CuA_1 and CuA_2 present; median fascia transverse or directed from base of costa toward posterior margin. Hindwing (length/width 4.7) with R_5 , M_1 , M_2 , and M_3 separate; M_3 and CuA_1 connate. Male abdominal sternum VIII with length 0.75 width; tergum VIII distinctly longer than sternum VIII, with pair of anterolateral hair pencils.

Male genitalia (Fig. 30): uncus mitre shaped, longer than wide and widest near base; ventral part of gnathos stout, hook shaped, with median articulation, dorsal part absent; costal and saccular parts of valva present; tegumen basal width/length ratio 1.1; vinculum a sclerite; saccus well developed; fulcrum of phallus well developed, phallus widened basally, curved below middle or near apex, without cornuti.



FIGURES 59–66. Imagos. 59, *Coleotechnites piceaella*. 60, *Pseudotelphusa palliderosacella*. 61, *Carpatolechia notatella*. 62, *Arcutelphusa talladega*, **sp. nov.**, 63, *Neotelphusa querciella*. 64, *Teleiopsis baldiana*. 65, *Xenolechia aethiops*. 66, *Argyrolacia bifida*.

Female genitalia: apophyses anteriores about 2.5 x length of abdominal segment VIII; antrum not developed; combined length of ductus and corpus bursae shorter than in *Recurvaria*, extending nearly to about apex of apophyses anteriores; signum absent.

Larva. Length approximately 4.5 mm; head brown to black; prothoracic shield with small black pinacula; prolegs with 4 to 5 crochets (Keifer 1932; Meyrick 1895).

Pupa. Proboscis not reaching the end of pro- and mesothoracic legs; prothoracic legs exceeding mesothoracic legs (Patočka and Turčáni 2005).

Diagnosis. *Exoteleia* species superficially resemble those of *Coleotechnites*. Both genera are known to feed on coniferous and deciduous hosts. *Exoteleia* species are distinguishable from *Coleotechnites* by the bilaterally symmetrical male genitalia and the mitre shaped uncus.

Hosts. Fagaceae: *Quercus dumosa* Nutt. (*E. graphicella*). Pinaceae: *Larix decidua* Mill. (*E. dodecella*), *Picea abies* (L.) (*E. pinifoliella*), *Pinus* spp. (*E. anomala*, *E. burkei*, *E. dodecella*, *E. burkei*, *E. nepheos*, *E. pinifoliella*, *E. succinctella*). (Bland 2002; Browne 1968; Burdick and Powell 1960; Craighead 1950; Emmet 1988; Escherich 1931; Evans 1952; Forbes 1923; Freeman 1960, 1967; Hodges 1985; Keifer 1932; Opler 1974; Prentice 1966; Robinson *et al.* 2002; Schaffner 1959; Stevens 1986; Styles 1959; Zhang 1994.)

Diversity and distribution. This genus includes eight species occurring in eastern and western United States, eastern Canada, and throughout Europe (Fletcher 1929; Freeman 1960, 1963, 1967; Hodges 1983, 1985; Huemer and Karsholt 1999; Meyrick 1925, 1928; Patočka 1987).

Coleotechnites Chambers

Coleotechnites Chambers, 1880a: 206.

Type species: *Coleotechnites citriella* Chambers, 1880a, by monotypy.

Evagora Clemens 1860: 165. Preoccupied by *Evagora* Péron and Lesueur, 1810 (Coelenterata). No replacement name has been proposed.

Type species: *Evagora apicitripunctella* Clemens, 1860, by monotypy.

Eidothea Chambers, 1873b: 229. Preoccupied by *Eidothea* Risso (1826) (Mollusca). No replacement name has been proposed.

Type species: *Eidothea vagatioella* Chambers, 1873, by monotypy.

Eidothoa Chambers, 1873a: 186. Misspelling of *Eidothea* Chambers, 1873.

Eidothoa was corrected in an Errata in a later part of the same work.

Eucordylea Dietz, 1900: 349.

Type species: *Eucordylea atrupictella* Dietz, 1900, by monotypy.

Pulicalvaria Freeman, 1963: 727.

Type species: *Recurvaria gibsonella* Kearfott, 1907, by original designation.

Hapalosaris Meyrick, 1917: 37. **New Synonymy**

Type species: *Hapalosaris petulans* Meyrick, 1917, by monotypy.

Description. Imago (Fig. 59). Labial palpus with third segment shorter than second. Clypeus with ventral margin broadly truncate. Antenna simple in female, somewhat thickened in male, usually longer than half forewing length, some species half forewing length. Ocellus absent. Posterior area of sitophore with four campaniform sensilla in symmetrical trapezoid pattern with anterior pair closer together than posterior pair; anterior area with two, four, or six campaniform sensilla. Forewing (length/width ratio 5.1) with tufts of raised scales, with pterostigma; R_5 and M_1 stalked, M_2 and M_3 separate, CuA_1 and CuA_2 present; median fascia transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 5.6) with R_5 and M_1 connate, M_2 and M_3 connate, M_3 and CuA_1 separate, male with yellow hair pencil at base of anal area (Fig. 3). Male abdominal sternum VIII broad, emarginate mesially (Fig. 22); tergum VIII well developed.

Male genitalia (Fig. 38): uncus small, subequal in length with gnathos; gnathos shorter than that in species of *Agnippe*, hook shaped; valva and vinculum complex strongly asymmetrical; costal part of valva with bulbous base, distal part slender; saccular part of valva absent; tegumen basal width/length ratio 0.6; saccus not developed; phallic fulcrum well developed, without cornuti.

Female genitalia: apophyses posteriores about 2 x length of apophyses anteriores; apophyses anteriores and abdominal segment VIII subequal in length; antrum not developed; ductus bursae membranous, shorter than length of corpus bursae, with sclerotized colliculum; signum spiny, wedge shaped.

Larva. Length approximately 5–9 mm; pinacula small, fuscous; crochets on abdominal prolegs in a complete biordinal circle, weaker laterally; anal crochets in a complete biordinal series or broken line; anal fork present (Freeman 1967; Keifer 1932, 1933, 1936; McLeod 1966; Opler 1974; Peterson 1977; Stevens *et al.* 1978).

Pupa. Maxillary palpi separated from genae; labrum obtusely angled; frons lacking a tubercle; frontoclypeal suture concave in central part; prothoracic legs adjacent to oculi; apices of metathoracic legs large, their caudal part wider than antenna; abdominal segment VII not margined by setae caudally (Keifer 1932, 1936; Patočka and Turčáni 2005).

Diagnosis. *Coleotechnites* species superficially resemble those of *Recurvaria* and *Exoteleia*. *Coleotechnites* can be easily differentiated from them by the bilaterally asymmetrical male genitalia.

Hosts. Asteraceae: *Baccharis pilularis* (*C. bacchariella*). Betulaceae: *Alnus* sp. (*C. alnifruetella*). Corylaceae: *Corylus* sp. (*C. alnifruetella*). Cupressaceae: *Cupressus macrocarpa* Hartw. (*C. stanfordia*), *Juniperus* spp. (*C. albicostata*, *C. australis*, *C. carbonaria*, *C. gibsonella*, *C. juniperella*, *C. obliquistrigella*, *C. occidentis*, *C. thujaella*), *Thuja occidentalis* L. (*C. thujaella*). Ericaceae: *Arctostaphylos glauca* Lindl. (*C. mackiei*), *Rhododendron occidentale* (Torr. and A. Gray) (*C. huntella*). Fagaceae: *Quercus* spp. (*C. quercivorella*). Guttiferae: *Hypericum suffruticosum* P. Adams and Robson (*C. nigritus*). Hamamelidaceae: *Liquidambar styraciflua* L. (*C. vagatioella*). Pinaceae: *Abies* spp. (*C. atrupictella*, *C. granti*, *C. obliquistrigella*, *C. piceaella*), *Larix laricina* (Du Roi) (*C. laricis*), *Picea* spp. (*C. atrupictella*, *C. blastovora*, *C. canusella*, *C. ducharmeii*, *C. martini*, *C. piceaella*), *Pinus* spp. (*C. ardas*, *C. atrupictella*, *C. biopes*, *C. canusella*, *C. chilcotti*, *C. condignella*, *C. coniferella*, *C. edulicola*, *C. florae*, *C. lewisi*, *C. milleri*, *C. moreonella*, *C. pinella*, *C. ponderosae*, *C. resinosae*, *C. starki*), *Pseudotsuga menziesii* (Mirbel) (*C. atrupictella*), *Tsuga* spp. (*C. atrupictella*, *C. apicitripunctella*, *C. macleodi*, *C. ponderosae*, *C. resinosae*). Rhamnaceae: *Colubrina texensis* (T. and G.) (*C. colubrinae*). Rutaceae: *Citrus sinensis* (L.) (*C. citriella*). Salicaceae: *Salix lasiolepis* Benth. (*C. gallicola*). Taxodiaceae: *Taxodium distichum* (L.) (*C. apicitripunctella*, *C. variella*). Umbelliferae: *Eryngium aquaticum* L. (*C. eryngiella*). (Bland 2002; Braun 1921; Browne 1968; Craighead 1950; Emmet 1988; Forbes 1923; Freeman 1957, 1960, 1962, 1963, 1965, 1967; Godfrey *et al.* 1987; Hellrigl 1996; Hodges 1985; Hodges and Stevens 1978; Ives and Wong 1988; Keifer 1927, 1932, 1933, 1936; Opler 1974; Prentice 1966; Robinson *et al.* 2002; Schaffner 1959; Wagner *et al.* 1995; Zhang 1994).

Diversity and distribution. This genus includes 49 species throughout United States and Canada; one species, *C. piceaella*, is introduced to Europe (Braun 1921; Freeman 1957, 1960, 1967; Hodges 1985; Hodges and Stevens 1978; Huemer and Karsholt 1999).

Notes. *Hapalosaris* was proposed by Meyrick (1917) to include a single species, *Hapalosaris petulans*, from Peru. *Hapalosaris* is synonymized here with *Coleotechnites* based on the similarity of wing venation and structures of male genitalia.

***Parachronistis* Meyrick**

Parachronistis Meyrick, 1925: 14 [key], 52.

Type species: *Gelechia (Brachmia) albiceps* Zeller, 1839, by original designation.

Description. Imago. Labial palpus with second and third segments subequal in length. Antenna simple in female, laterally flattened in male. Clypeus with ventral margin rounded. Ocellus present. Posterior area of sitophore with four campaniform sensilla, in an asymmetrical trapezoidal pattern, posterior pair closer together than anterior pair; anterior area with four campaniform sensilla. Forewing (length/width ratio 4.7) with tufts of slightly raised scales; R_4 and R_5 stalked, R_{4+5} and M_1 separate, M_2 and M_3 separate, CuA_1 present, CuA_2 absent (Fig. 13); median fascia transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 5.4) with R_5 and M_1 connate, M_3 and CuA_1 separate. Male with pair of hair pencil

between abdominal terga II and III; sternum VIII with two broad lateral lobes; tergum VIII small, lingulate, with anterolateral hair pencil. Female abdominal segment VIII without special modifications

Male genitalia (Figs. 34, 39): uncus rounded apically, shorter than gnathos; gnathos present, cushionlike with dentate apical projections; valva divided into strongly spatulate costa with a cucullus and digitate sacculus; tegumen basal width/length ratio 0.5; saccus strongly fused with ventrobasal part of phallus; phallus without cornuti.

Female genitalia: apophyses anteriores about 3 x length of abdominal segment VIII; antrum strongly sclerotized, cylindrical, distally conical to funnel shaped; ductus bursae not covered with microtrichia; signum a subhexagonal, serrate plate with two transverse ridges.

Larva. Body relatively compact, reddish brown; head, prothoracic shield, and anal shield brownish black; similar to *Parastenolechia nigronotella* except prothorax has L3 present, meso- and metathorax with L2 and L3 on common pinaculum, A9 with L3 more or less on separate pinaculum, prolegs with biordinal crochets, and anal fork fully developed with stout, central teeth (Patoëka 1977).

Pupa. Maxillary palpi separated from genae; maxillary palpi adjacent to mesothoracic legs for nearly same distance as to prothoracic legs; frons lacking a tubercle; frontoclypeal suture bowl-like, front convex; prothoracic legs adjacent to oculi; abdominal segment VII not edged caudally by setae (Patoëka and Turcáni 2005).

Diagnosis. *Parachronistis* species are superficially similar to those of *Coleotechnites* and *Chorivalva*, especially in the forewing pattern. However, *Parachronistis* can be easily differentiated by the valva that is divided into a strongly spatulate costa with a cucullus and digitate sacculus.

Hosts. Corylaceae: *Corylus avellana* L. (*P. albiceps*). Rosaceae: *Prunus persica* (L.) (*P. albiceps*). Ulmaceae: *Ulmus* sp. (*P. albiceps*). (Bradford and Sokoloff 1988; Disqué 1908; Emmet 1988; Huemer and Karsholt 1999; Patoëka 1977).

Diversity and distribution. The five species of *Parachronistis* occur in Asia and throughout Europe (Huemer and Karsholt 1999; Huisman and Koster 2000; Park 1985 1989; Patoëka 1987).

Stenolechiodes Elsner

Stenolechiodes Elsner, 1995 [1996]: 74.

Type species: *Stenolechiodes pseudogemmellus* Elsner, 1995 [1996].

Description. Imago. Labial palpus with third segment shorter than second. Clypeus with ventral margin rounded. Antenna simple, longer than half forewing length. Ocellus absent. Posterior area of sitophore with four campaniform sensilla not arranged in a trapezoid; anterior area with four campaniform sensilla (Fig. 6). Forewing (length/width ratio 4.3) with small tufts of raised scales; R₄ and R₅ stalked, R₄₊₅ and M₁ stalked, M₂ and M₃ connate, CuA₁ and CuA₂ present; median fascia directed from apex of costa toward posterior margin. Hindwing (length/width ratio 5.8) with M₁, M₂, and M₃ separate, M₃ and CuA₁ connate. Male with pair of hair pencil between abdominal segment II and III; sternum VIII with two broad posterolateral lobes; tergum VIII small, lingulate.

Male genitalia: uncus rounded apically, subequal in length with gnathos; ventral part of gnathos cushion-like, apex with dentate projections, without basal articulation, dorsal part absent; tegumen slender, narrower mesially than basally, longer than length of valva; valva divided into distally curved costa and setose, elongate, lightly sclerotized sacculus; tegumen basal width/length ratio 0.4; vinculum strongly projecting; saccus strongly fused with ventrobasal part of phallus; phallus without cornuti.

Female genitalia: apophyses anteriores about 2 x length of abdominal segment VIII; ostium bursae membranous, funnel shaped; antrum indistinct; ductus bursae extending to apices of apophyses anteriores; corpus bursae small; *signum absent*.

Larva. Undescribed.

Pupa. Undescribed.

Diagnosis. *Stenolechiodes* resembles *Parastenolechia* in the wing pattern and some male genital characters, but can be distinguished by the presence of CuA₁ in the hindwing and the absence of a signum in the female genitalia.

Hosts. Fagaceae: *Quercus* spp. (*S. macrolepiellus*, *S. pseudogemmellus*). (Elsner 1995 [1996]; Huemer and Karsholt 1999).

Diversity and distribution. The two species of *Stenolechiodes* occur in Europe (Huemer and Karsholt 1999; Huisman and Koster 2000).

***Parastenolechia* Kanazawa**

Parastenolechia Kanazawa, 1985: 6.

Type species: *Parastenolechia asymmetrica* Kanazawa, 1985.

Origo Omelko, 1988: 156.

Type species: *Telphusa argobathra* Meyrick, 1935, by original designation.

Laris Omelko, 1988: 152. **New Synonymy**

Type species: *Laris collucata* Omelko, 1988.

Description. Imago. Labial palpus with third and second segments subequal in length. Clypeus with ventral margin sinuate mesially. Antenna almost filiform but slightly serrate distally, about 3/5 forewing length, shorter and thicker in male than female. Ocellus absent. Posterior area of sitophore with four campaniform sensilla in line except one offset on right side; anterior area with four campaniform sensilla. Forewing (length/width ratio 4.0) with raised scale tufts, R₅ and M₁ separate, M₂ and M₃ connate, CuA₁ absent, CuA₂ almost vestigial (Fig. 12); median fascia directed from apex of costa toward posterior margin. Hindwing (length/width ratio 5.0) with M₁ absent, M₂, M₃, and CuA₁ separate. Male abdomen with tergum VIII considerably reduced; sternum VIII well developed, without posterior or anterolateral hair pencils.

Male genitalia: uncus flattened, slightly concave at middle of apex; gnathos almost as long as uncus, with small, cushionlike, mesially projected apex; tegumen narrower mesially than basally, strongly widened anteriorly; valva asymmetrical, divided into flagelliform costa, longer than length of tegumen, and broad sacculus; tegumen basal width/length ratio 0.9; vinculum absent; saccus fused with ventrobasal part of slender phallus; phallus slightly shorter than tegumen, fulcrum well developed; no cornuti.

Female genitalia: apophyses anteriores thick and slightly curved dorsally; apophyses posteriores elongate, 2.0–2.6 x as long as apophyses anteriores; ostium bursae on intersegmental membrane posterior to sternum VII; antrum membranous; signum a semiovate plate with pair of anterolateral lobes.

Larva. 5.5–6.5 x 1.2–1.5 mm, head width 0.67 mm; body compact, reddish brown, with posterior areas of abdominal segments bluish gray, giving a transversely banded appearance; pinnacula inconspicuous; head brownish black, with broadly incised labrum, antenna longer than in *Stenolechia gemmella*; prothoracic shield brownish black, pale on anterior and ventral margins, narrowly divided into two plates anteriorly, widely divided posteriorly; anal shields and plates of anal prolegs brownish black; abdominal prolegs short, crochets uniordinal; anal comb reduced to small spines; prothorax with only L1 and L2 present; all setae on meso- and metathorax on isolated pinnacula; Abdomen with microscopic, conical granulations dorsally; L1 and L2 horizontal on A1–8, transverse on A9; A9 and A10 with enlarged pinnacula, all setae isolated except L group (Patoëka 1977).

Pupa. Maxillary palpi separated from genae; contiguous boundary between maxillary palpi and mesothoracic legs short; frons lacking a tubercle; frontoclypeal suture almost straight; prothoracic legs adjacent to oculi; abdominal segment VII not edged caudally by setae (Patoëka and Turcáni 2005).

Diagnosis. *Parastenolechia* species are similar to those of *Stenolechiodes* in the wing pattern and male genitalia, but differ by having M_1 vein absent in hindwing and a signum present in female genitalia.

Hosts. Fagaceae: *Quercus pubescens* Willd. (*P. nigrinotella*). (Patoèka 1977).

Diversity and distribution. The twelve species of *Parastenolechia* occur in Europe and eastern Asia, with highest diversity in the latter region (Elsner 1995 [1996]; Huemer and Karsholt 1999; Kanazawa 1991; Okada 1961; Omelko 1988; Park 1993, 2000b; Park and Ponomarenko 2006).

Notes. *Laris* was described to include two species in two subgenera and was differentiated from other genera by a strongly differentiated sacculus (Omelko 1988). Park (1993) synonymized subgenus *Origo* with *Parastenolechia* and differentiated the nominal subgenus, including *L. collucata*, from *Parastenolechia* based on the venation of forewing with CuA_2 present (absent in *Parastenolechia*), R_4 and R_5 with a long stalk, and male genitalia with lobate distal portion of the valval sacculus. However, the forewing has CuA_2 present in both genera, although it is almost vestigial in *Parastenolechia* (Kanazawa 1985), and the length of R_{4+5} varies among species in other genera of Teleiodini. The valval sacculus is distally lobate in both *L. collucata* and species of *Parastenolechia*, as illustrated by Kanazawa (1985). Species of *Parastenolechia* and *L. collucata* are the only taxa of Teleiodini with a forewing lacking CuA_1 . In addition they have an uncus with a truncate apex and a gnathos with the ventral part being cushionlike with a median projection, which are synapomorphic for the polytomy of *Parastenolechia*, *Stenolechia*, and *Chorivalva* (Lee 2007). Therefore, *Laris* is regarded as a junior synonym of *Parastenolechia*.

***Stenolechia* Meyrick**

Stenolechia Meyrick, 1894: 230.

Type species: *Phalaena (Tinea) gemmella* Linnaeus, 1758, by subsequent designation (Meyrick 1925).

Poecilia Heinemann, 1870: 281. Homonym of *Poecilia* Bloch and Schneider, 1801 (Pisces).

Type species: *Phalaena (Tinea) gemmella* Linnaeus, 1758, by subsequent designation (Meyrick 1925).

Gibbosa Omelko, 1988: 152.

Type species: *Gibbosa celeris* Omelko, 1988, by original designation.

Description. Imago. Labial palpus with third segment shorter than second. Clypeus with ventral margin rounded. Antenna simple, about 4/5 as long as forewing. Ocellus absent. Posterior area of sitophore with four campaniform sensilla in symmetrical trapezoid, posterior pair closer together than anterior pair; anterior area with four or six campaniform sensilla. Forewing (length/width ratio 4.0) with small tufts of raised scales; R_5 and M_1 stalked, M_2 fused with M_3 , CuA_1 present, CuA_2 absent (Fig. 11); median fascia directed from apex of costa toward posterior margin. Hindwing (length/width ratio 4.1) with R_5 and M_1 nearly parallel, M_2 and M_3 separated, M_3 and CuA_1 parallel, male hindwing with hair pencil at base of anal area in some species and on costa at one-third length in other species. Male with pair of hair pencil between abdominal segment III and IV or absent in some Asian species; tergum VIII rounded, reduced, or absent; sternum VIII simple in structure but greatly enlarged, slightly emarginate posteriorly. Female abdominal segment VIII heavily sclerotized.

Male genitalia (Fig. 35): uncus broad, somewhat flattened, hood shaped, apical margin rounded or bluntly produced, bearing setae laterally, subequal in length with gnathos; ventral part of gnathos horn shaped, heavily sclerotized, without basal articulation, dorsal part absent; tegumen flat, longer than length of valva, basal width/length ratio 0.5; vinculum forming an acute angle with tegumen in lateral view; valva divided into costal and saccular parts; saccus always present, variable in size and shape; phallic fulcrum well developed; cornuti absent.

Female genitalia (Fig. 43): apophyses anteriores about 1.5 x length of abdominal segment VIII; antrum membranous; ostium bursae surrounded by sclerotized area in intersegmental area between sterna VII and VIII; ductus bursae membranous except near ostium bursae; corpus bursae fusiform to spherical; one or two

signa present and variable in shape and size, usually consisting of two strong lobes, without rhomboid base and serrate margins.

Larva. Body slender and cylindrical, 5–7 x 1–1.1 mm, dull gray; head, anal shield, and pinnacula chestnut-brown; prothoracic shield pale, margined with green spots; pinnacula and anal shield large; head 0.6–0.63 mm in width, with low frontoclypeus and enlarged hemispheres of crown, antenna short, mandible with long teeth; meso- and metathorax with D1 and D2 on common pinnaculum, SD1 and SD2 on common pinaculum (Patočka 1977).

Pupa. Maxillary palpi separated from genae; frons with a tubercle; frontoclypeal suture concave anteriorly; prothoracic legs separated from oculi (Patočka and Turčáni 2005).

Diagnosis. *Stenolechia* resembles the Nearctic genus *Arogalea* and the European genera *Stenolechiodes* and *Parastenolechia* in wing color and pattern. *Stenolechia* differ from these genera by having veins M_2 and M_3 fused in forewing. *Stenolechia* species have shorter forewing lengths (6.5–8.5 mm) than does the single species of *Arogalea* (8.5–9.4 mm).

Hosts. Fagaceae: *Quercus* spp. (*S. gemmella*). (Bland 2002; Emmet 1988; Kanazawa 1984; Meess 1923; Schütze 1931).

Diversity and distribution. The seven species of *Stenolechia* occur throughout Europe, except northern areas, and Asia, with highest diversity in the latter region. One species, *S. bathrodyas* Meyrick, has been introduced into North America (California) (Elsner 1995 [1996]; Huemer and Karsholt 1999; Kanazawa 1984; Okada 1961; Park 1994).

***Chorivalva* Omelko**

Chorivalva Omelko, 1988: 143.

Type species: *Chorivalva unisaccula* Omelko, 1988.

Neochronistis Park, 1989: 162.

Type species: *Neochronistis hodgesi* Park, 1989, by monotypy.

Description. Imago. Forewing with tufts of raised scales; R_4 and R_5 stalked, R_{4+5} and M_1 stalked, M_2 and M_3 separate, M_3 and CuA_1 stalked, CuA_2 present. Hindwing with M_1 absent, M_2 , M_3 , and CuA_1 separate. Hair pencil present between terga II and III in male. Male tergum VIII large and triangular; sternum VIII with hair pencils.

Male genitalia: uncus truncate apically; gnathos with a median projection, about 1.5 x longer than uncus; valva with saccular part slender and as long as length of tegumen; tegumen basal width/length ratio 0.5; phallic fulcrum recurved; phallus stout, with cornutus.

Female genitalia: apophyses posteriores about 2 x length of apophyses anteriores; apophyses anteriores subequal in length with abdominal segment VIII; ductus bursae shorter than length of corpus bursae, accessory bursa without spinules; colliculum present in ductus bursa; signum absent.

Larva. Undescribed.

Pupa. Undescribed.

Diagnosis. *Chorivalva* species are superficially similar to *Stenolechia*, *Stenolechiodes*, *Parachronistis*, and *Parastenolechia* and are similar in male genitalia to *Stenolechiodes*. *Chorivalva* differs by the male phallus having a cornutus and the female having an accessory bursa without spinules.

Hosts. Unknown.

Diversity and distribution. The four species of *Chorivalva* occur in East Asia in the southern Maritime Territory of Russia and in Korea (Elsner 1995 [1996]; Park 1994).

Pseudotelphusa Janse

Pseudotelphusa Janse, 1958: 68.

Type species: *Telphusa probata* Meyrick, 1909, by original designation.

Sattleria Căpușe, 1968a: 19. Unnecessary replacement name for *Pseudotelphusa* Janse, 1958.

Note: *Pseudotelphusa* Janse, 1958 is not a junior homonym of *Pseudotelphusa* Marschall, 1873, which is an incorrect subsequent spelling of *Pseudothelphusa* Saussure, 1857 (Crustacea), and is therefore invalid and unavailable for purposes of homonymy. *Sattleria* Căpușe also is a homonym of *Sattleria* Povolný, 1965 (Lepidoptera: Gelechiidae).

Klaussattleria Căpușe, 1968b: 80. Unnecessary replacement name for *Sattleria* Căpușe, 1968.

Klaussattleria Căpușe, 1968b: 80. Misspelling of *Klaussattleria* Căpușe, 1968b.

Description. Imago (Fig. 60). Labial palpus with third segment slightly shorter than second. Clypeus with ventral margin rounded. Antenna longer than half forewing length. Ocellus present. Posterior area of sitophore with four campaniform sensilla in symmetrical trapezoid; anterior area with five, eight, or nine campaniform sensilla. Forewing (length/width ratio 4.3) with tufts of raised scales; M_1 , M_2 , and M_3 separate, CuA_1 and CuA_2 present; median fascia transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 3.9) with R_5 and M_1 connate, M_2 , M_3 , and CuA_1 separate. Male abdomen with sternum VIII broadly subrectangular, slightly or deeply emarginate posteriorly; tergum VIII lingulate, with pair of anterolateral hair pencils.

Male genitalia (Fig. 31): uncus as long as length of tegumen, tapered apically; gnathos absent; valva with costal part developed, curved dorsad (outwards in slide preparations with vinculum rolled to one side); tegumen basal width/length ratio 1.0; vinculum with pair of processes; phallus slender, base slightly inflated, without cornuti.

Female genitalia (Fig. 41): apophyses posteriores about 3 x length of apophyses anteriores; ductus bursae shorter than that in species of *Carpatolechia*; signum rhomboid with serrate margins, with transverse ridges, anterior ridge sinuous.

Larva. Body with black or brown pinacula; head and prothoracic shield pale brown, prothoracic shield with median sulcus (Bland 2002; Braun 1930).

Pupa. Maxillary palpi touching or adjacent to genae; antennae adjacent to each other for about 3 x greater distance than the length of visible ends of metathoracic legs; pronotum with the midline length at least 1/3 its greatest length; prothoracic legs separated from oculi; if body less than 6 mm in length, abdomen usually lacking setae (Mosher 1916; Patočka and Turčáni 2005).

Diagnosis. *Pseudotelphusa* species are superficially similar to those of *Carpatolechia*. Males of *Pseudotelphusa* are distinguished by absence of a gnathos and an uncus that is as long as tegumen and tapered apically.

Hosts. Berberidaceae: *Berberis vulgaris* L. (*P. tessella*). Betulaceae: *Betula* spp. (*P. betulella*, *P. paripunctella*). Elaeagnaceae: *Hippophae rhamnoides* L. (*P. paripunctella*). Fagaceae: *Quercus* spp. (*P. fuscopunctella*, *P. istrella*, *P. palliderosacella*, *P. paripunctella*, *P. quercinigracella* *P. scalella*). Myricaceae: *Myrica gale* L. (*P. paripunctella*). Rosaceae: *Amelanchier canadensis* (L.) (*P. amelanchierella*), *Malus* spp. (*P. incana*). (Bland 2002; Braun 1930; Chapman and Lienk 1971; Forbes 1923; Heinemann 1870; Kaitila 1996; Mann 1872; Patočka 1987; Robinson *et al.* 2002; Sattler 1980; Zhang 1994).

Diversity and distribution. The 14 species of *Pseudotelphusa* occur in Europe, Asia, and eastern North America (Huemer and Karsholt 1999; Park 1992; Patočka 1987; Sattler 1960, 1982). Additional species occur in southern Africa (Janse 1958) and possibly in other regions of the world.

Carpatolechia Căpușe

Carpatolechia Căpușe, 1964: 12.

Type species: *Carpatolechia dumitrescui* Căpușe, 1964, by original designation, a junior synonym of *Tinea decorella* Haworth, 1812.

Description. Imago (Fig. 61). Labial palpus with third segment shorter than second. Clypeus with ventral margin rounded. Antenna and forewing subequal in length. Ocellus present. Posterior area of sitophore with four campaniform sensilla posterior area in line except right sensillum off-set; anterior area with three or ten campaniform sensilla. Forewing (length/width ratio 3.8) with tufts of raised scales; R_5 , M_1 , M_2 and M_3 separate, CuA_1 and CuA_2 present (Fig. 8); median fascia present or absent, if present, transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 3.4) with R_5 and M_1 stalked, M_2 , M_3 , and CuA_1 separate. Male abdominal tergum VIII short, lingulate, exceptionally bilobed, with pair of anterolateral hair pencils, some species with additional pair of posterolateral hair pencil, sternum VIII broad, distally rounded. Female abdominal segment VIII with posteriorly rounded lobes.

Male genitalia: uncus well developed, elongate, with numerous, large setae laterally; gnathos reduced or absent; tegumen deeply emarginate anteriorly with broadly rounded lateral arms, basal width/length ratio 1.4; costal part of valva slender and digitate or reduced, saccular part of valva 1/2 to 3/4 length of costal part; phallos without cornuti.

Female genitalia: apophyses posteriores about 3 x length of abdominal segment VIII; ostium bursae surrounded by suboval sclerotization; antrum reduced; ductus and corpus bursae well developed; signum subhexagonal to rhomboid, with strongly serrate margins and two transverse ridges.

Larva. Body light green, sometimes tinged with pink or red; head and prothoracic shield yellow, light brown, or black; pinacula black (Emmet 2002).

Pupa. Less than 6 mm in length; maxillary palpi touching or adjacent to genae; antennae adjacent to each other for about 3 x greater distance than the length of visible ends of metathoracic legs; pronotum with the midline length at least 1/3 its greatest length; prothoracic legs separated from oculi; abdomen usually lacking setae (Patočka and Turčáni 2005).

Diagnosis. *Carpatolechia* species are superficially similar to those of *Pseudotelphusa*, *Teleiodes*, and *Neotelphusa*, but differ by the presence of a well-developed saccular part of the valva and a rounded uncus, which is tapered or notched in the other genera.

Hosts. Aceraceae: *Acer* sp. (*C. fugitivella*). Anacardiaceae: *Cotinus coggryria* Scop. (*C. decorella*), *Pistacia* spp. (*C. decorella*), *Rhus* sp. (*C. decorella*). Betulaceae: *Alnus* spp. (*C. belangerella*, *C. proximella*); *Betula* spp. (*C. alburnella*, *C. fugacella*, *C. notatella*, *C. proximella*). Cornaceae: *Cornus mas* L. (*C. decorella*), *C. sanguinea* (L.) (*C. decorella*). Corylaceae: *Corylus* sp. (*C. notatella*, *C. fugitivella*). Fagaceae: *Quercus* spp. (*C. decorella*, *C. fugitivella*). Oleaceae: *Phillyrea* sp. (*C. decorella*), *Fraxinus* sp. (*C. fugitivella*). Rosaceae: *Prunus avium* L. (*C. fugitivella*), *Pyracantha coccinea* L. (*C. fugitivella*). Salicaceae: *Salix* spp. (*C. notatella*). Tiliaceae: *Tilia* sp. (*C. fugitivella*). Ulmaceae: *Ulmus* spp. (*C. fugitivella*, *C. fugacella*). (Bradford and Sokoloff 1988; Disqué 1901, 1908; Emmet 1988; Forbes 1923; Huemer 1988; Kasy 1979; Kaitila 1996; Lhomme, [1946]; Sattler 1980, 1982; Robinson *et al.* 2002). Lhomme ([1946]) also listed *Abies alba* Mill. (Pinaceae) as one of several hosts of *C. decorella* in his catalogue of Lepidoptera of France and Belgium. However, this record is questionable because other polyphagous species in Teleiodini are restricted to either coniferous or deciduous hosts, e.g., *Exoteleia* and *Coleotechnites*. Thus, *Carpatolechia* is not included as a coniferous feeder.

Diversity and distribution. The sixteen species of *Carpatolechia* occur in Europe and Asia (Huemer and Karsholt 1999; Huisman and Koster 2000; Park 2000a). An undescribed species from eastern Canada was found in this study.

Arcutelphusa gen. nov.

Type species: *Arcutelphusa talladega* sp. nov.

Description. Imago. Antenna longer than half forewing length. Clypeus with ventral margin rounded. Labial palpus with third segment shorter than second. Ocellus present. Posterior area of sitophore with four campaniform sensilla in asymmetrical trapezoid, posterior pair closer together than anterior pair; anterior area with four campaniform sensilla. Forewing (length/width ratio 4.3) with tufts of raised scales, median and postmedian fasciae confluent, transverse, R_4 and R_5 stalked, R_{4+5} and M_1 separate, M_2 and M_3 connate, CuA_1 and CuA_2 present (Fig. 14). Hindwing (length/width ratio 3.7) with R_5 and M_1 stalked, M_2 , M_3 , and CuA_1 separate, CuA_2 present (Fig. 18). Male abdominal tergum VIII subrectangular, sternum with slightly emarginate posterior mesial margin (Fig. 21).

Male genitalia (Fig. 49): uncus rounded apically; gnathos horn shaped without basal articulation, subequal in length with uncus; valva divided into saccular and costal parts, costal part sickle shaped, strongly bent at middle, with internal tube and bulbous base, saccular part digitate, one-half length of costal part; tegumen basal width/length 0.9; phallus without cornuti, phallic fulcrum not developed, cornuti absent.

Female genitalia (Fig. 50): apophyses anteriores about one-half length of apophyses posteriores; apophyses anteriores about 1.5 x length of abdominal segment VIII; ostium bursae surrounded by horseshoe-shaped sclerite; ductus bursae membranous; colliculum in ductus bursae absent; signum a rhomboid plate with finely serrate margins.

Diagnosis. Imagos are superficially similar to *Pseudotelphusa* in wing pattern and color but differ by having the costal part of the valva sickle shaped and bent near the middle.

Diversity and distribution. *Arcutelphusa* is represented only by the type species that occurs in mid-southern United States.

Etymology. The generic name is derived from a combination of the Latin noun “*arcus*” (bend, Latin), referring to the bending of the valval costa, and *Telphusa*, a basal genus of Teleiodini.

Arcutelphusa talladega, sp. nov.

Description (Fig. 62). Wingspan: 8.5–10.0 mm. Head light brown, scales with pale apices. Antennal scape and pedicel dark brown, flagellomeres alternating dark brown and off-white, with off-white limited to bases of flagellomeres in some specimens. Labial palpus with second segment dark brown, ringed with white at 2/3 length and apex; third segment dark brown ringed with white at base, middle, and apex. Base of tegula and anterior area of mesonotum dark brown, remainder of thorax light brown. Legs dark brown, except ringed with off-white at apices of tibia and tarsomeres 1 and 2 of foreleg, at middle and apex of tibia and apices of all tarsomeres of midleg, and base, middle, and apex of tibia and apices of all tarsomeres of hindleg, dorsal surface of hindtibia with setiform scales in both sexes. Forewing lanceolate, with tufts of erect scales, ground color light brown, subbasal fascia dark brown; median and postmedian fasciae dark brown, confluent or partly separated by light brown scales; apical fourth of wing with scattered dark brown scales. Hindwing brownish gray with slightly emarginate termen and pointed apex. Abdomen light brown.

Male genitalia (Fig. 49): as for description of genus.

Female genitalia (Fig. 50): as for description of genus.

Diagnosis. Imagos are superficially similar to *Pseudotelphusa fuscopunctella* (Clem.) but differ by having the transverse median fascia confluent with the postmedian fascia on the forewing. *Arcutelphusa talladega* can be distinguished from other Teleiodini by having the costal part of the valva sickle shaped and strongly bent at its middle.

Type material. Holotype. ♂, United States of America, Alabama, Clay Co., Talladega Natl. Forest, 33°27'15"N 85°50'30"W, 16 May 1998, R.L. Brown and J. MacGown, genitalia slide MEM 965. Deposited in USNM.

Paratypes. United States of America, Alabama: Houston Co., Madrid, 3 May 1986, J.R. MacDonald (2♀), ♀ whole body slide MEM 2297. Mississippi: Winston Co., Tombigbee Natl. Forest, 33°10'20"N 89°03'55"W, 20 Apr 1999, R.L. Brown and J. MacGown (7♂, 3♀), ♂ whole body slide MEM 2296, ♀ genitalia slide MEM 966; MS., Winston Co., Tombigbee Natl. Forest, 33°10'31"N 89°02'38"W, 3 May 1999, J. MacGown (3♂). Deposited in MEM and USNM.

Etymology. The specific epithet refers to the type locality, which is derived from the Creek Indian word meaning "border town" (Jemison 1959).

Hosts. Unknown.

Istrianis Meyrick

Istrianis Meyrick, 1918: 130.

Type species: *Istrianis crauropa* Meyrick, 1918, by monotypy.

Description. Imago. Labial palpus with third segment shorter than second (Fig. 20). Clypeus with ventral margin truncate (Fig. 4). Antenna simple, longer than half forewing length. Ocellus absent. Posterior area of sitophore with four campaniform sensilla in symmetrical trapezoid, posterior pair closer together than anterior pair; anterior area with six campaniform sensilla. Forewing (length/width ratio 4.6) with tufts of raised scales, basal third of male forewing with a subcostal pocket inclosing yellow hair pencils in *I. femoralis*, with costal fold in *I. myricariella* (Huemer and Karsholt 1999); M₁, M₂, and M₃ separate, CuA₁ and CuA₂ present; median fascia directed from apex of costa toward posterior margin. Hindwing (length/width ratio 5.0) with R₅ and M₁ stalked, M₂, M₃, and CuA₁ separate. Male abdomen with sternum VIII broad with a posterolateral lobe, tergum VIII lingulate with pair of anterolateral hair pencil. Female abdominal segment VIII without distinct modifications.

Male genitalia (Fig. 36): length of uncus subequal to or slightly longer than length of tegumen, basal width/length ratio 0.4, distal margin slightly rounded; ventral part of gnathos extending beyond or not reaching apex of uncus, lingulate, apex with strong dorsal sclerotization; tegumen strongly widening anteriorly, frequently with sclerotized area mesially, basal width/length 1.0; costal part of valva absent; saccular part of valva digitate, subequal in length with phallus; phallus without cornuti.

Female genitalia: apophyses anteriores about 1–2 x length of abdominal segment VIII; ostium bursae surrounded by variably shaped sclerotization, opening with lateral sclerites or colliculum; ductus bursae longer than length of corpus bursae; corpus bursae moderately small; signum subhexagonal with serrate margins and transverse ridges, anterior ridge sinuous.

Larva. Undescribed.

Pupa. Undescribed.

Diagnosis. *Istrianis* species resemble *Argyrolacia* in forewing pattern and *Carpatolechia* in male genital structures. *Istrianis* is easily differentiated from *Argyrolacia* by the shape of male genitalia and from *Carpatolechia* by having the ventral part of gnathos.

Hosts. Anacardiaceae: *Pistacia mutica* Fisch. et Mey. (*I. femoralis*), *P. vera* L. (*I. femoralis*). Tamaricaceae: *Myricaria germanica* (L.) (*I. myricariella*), *Tamarix* sp. (*I. brucinella*, *I. myricariella*). (Budashkin and Piskunov 1990; Huemer and Karsholt 1999; Mann 1872).

Diversity and distribution. The four species of *Istrianis* occur in India and the western Palaearctic Region (Fletcher 1929; Huemer and Karsholt 1999; Meyrick 1925).

Streyella Janse

Streyella Janse, 1958: 99.

Type species: *Streyella pallidigrisea* Janse, 1958, by original designation.

Description. Imago. Labial palpus with second segment somewhat rough scaled and indistinctly grooved ventrally; third segment as long as second, stout, smooth. Clypeus with ventral margin rounded. Antenna simple, longer than half forewing length. Ocellus absent. Posterior area of sitophore with four campaniform sensilla in asymmetrical trapezoid; anterior area with eight campaniform sensilla. Forewing (length/width ratio 4.3) with tufts of erect scales; M_1 , M_2 , and M_3 separate, CuA_1 and CuA_2 present; median fascia transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 4.0) with R_5 and M_1 connate, M_2 and M_3 separate, M_3 and CuA_1 connate. Male abdominal sternum VIII broad with posterolateral lobe; tergum VIII lingulate with anterolateral and posterolateral brushes of hair pencil, posterior half rectangular. Female abdominal segment VIII membranous mesially.

Male genitalia: uncus subrectangular; gnathos not reaching apex of uncus, horn shaped; tegumen strongly widening anteriorly, anterior margin of tegumen emarginate, with subrectangular sclerotized area mesially, pedunculi small; vinculum with sclerites laterobasally; costal part of valva absent; sacculus part of valva broad, shorter than phallus; tegumen basal width/length ratio 1.0; phallus without cornuti.

Female genitalia: apophyses anteriores stout, about 3 x length of abdominal segment VIII; ostium bursae surrounded by variably shaped sclerotization; ductus bursae longer than corpus bursae, covered with microtrichia; signum rhomboid with weakly serrate margins, acute angles forming elongate lobes, with pair of transverse ridges.

Larva. Undescribed.

Pupa. Undescribed.

Diagnosis. *Streyella* species are similar to those of *Altenia* and *Stenolechiodes* in wing venation, but differ by having a horn shaped gnathos, a broad sacculus part of valva that is shorter than the phallus, and the absence of the costal part of the valva.

Hosts. Unknown.

Diversity and distribution. *Streyella* includes three species, the type species from South Africa, a second species from the Canary Islands, and a third occurring in the southwestern Palearctic Region (Huemer and Karsholt 1999; Janse 1958; Sattler 1964).

Neotelphusa Janse

Neotelphusa Janse, 1958: 77.

Type species: *Telphusa castrigera* Meyrick, 1913, by original designation.

Description. Imago (Fig. 63). Labial palpus with third segment as long as second, stout. Clypeus with ventral margin mesially sinuate (Fig. 5). Antenna longer than half forewing length. Ocellus present. Posterior area of sitophore with four campaniform sensilla in symmetrical trapezoid; anterior area with six campaniform sensilla. Forewing (length/width ratio 4.1) with raised scales; M_1 , M_2 , and M_3 separate, CuA_1 and CuA_2 present; median fascia transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 3.5) with R_5 and M_1 stalked, M_2 , M_3 , and CuA_1 separate. Male abdominal tergum VIII forming a large lobe with anterolateral hair pencil; sternum VIII forming a broad flap. Female with abdominal sternum VII broad and well sclerotized, strongest posteriorly and forming two rounded lobes ventrally, tergum VII reduced to two sclerotized patches.

Male genitalia: uncus tapered apically; gnathos well developed, lingulate, as long as uncus; tegumen width/length ratio 1.4–1.7; costal part of valva symmetrical, base bulbous, saccular part reduced; tegumen basal width/length ratio 0.8; phallus not narrowed beyond base, moderately sclerotized, without cornuti.

Female genitalia: apophyses posteriores weakly sclerotized, elongate, 5 x length of apophyses anteriores; apophyses anteriores about 2 x length of abdominal segment VIII; ostium enclosed by sternum VII; ductus bursae membranous; corpus bursa shortly oval, large; signum irregularly rhomboid with serrate margins.

Larva. Head and prothoracic shield brown, plate with small posterolateral darker spots; pinacula gray, small; thoracic legs annulate (Emmet 2002).

Pupa. 7th abdominal segment completely edged posteriorly by a row of small setae; antennae reaching apices of forewings and separating them from metathoracic legs (Patoèka and Turcáni 2005).

Diagnosis. *Neotelphusa* is similar to *Teleiodes* in the forewing pattern and some male genital structures. *Neotelphusa* species differ from *Teleiodes* by having an apically tapered uncus and a lingulate gnathos that is as long as the uncus.

Hosts. Ericaceae: *Vaccinium pallidum* Sm. (*N. praefixa*). Fagaceae: *Quercus* spp. (*N. querciella*). (Huemer and Karsholt 1999; Prentice 1966; Robinson *et al.* 2002).

Diversity and distribution. The six species of *Neotelphusa* occur in Europe, North America, and South Africa (Hodges 1983; Huemer and Karsholt 1999; Janse 1958).

Notes. The following species are transferred here from *Teleiodes* to *Neotelphusa*: *Recurvaria sequax* Haworth (1828), *Teleiodes huemeri* Nel (1998), and *Gelechia cisti* Stainton (1869).

***Teleiopsis* Sattler**

Teleiopsis Sattler, 1960: 66.

Type species: *Recurvaria diffinis* Haworth, 1828, by original designation.

Description. Imago (Fig. 64). Labial palpus with third segment subequal in length or shorter than second. Clypeus with ventral margin sinuate. Antenna simple, longer than half forewing length. Ocellus present. Posterior area of sitophore with four campaniform sensilla not in trapezoid; anterior area with eight or twelve campaniform sensilla. Forewing (length/width ratio 4.1) with tufts of raised scales, sometimes prominent; M_1 , M_2 , and M_3 separate, CuA_1 and CuA_2 present; median fascia transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 3.1) with R_5 and M_1 stalked, M_2 , M_3 , and CuA_1 separate, CuA_2 present. Male sternum VIII with posterolateral margin rounded; tergum VIII with two pairs of hair pencils, one pair on anterolateral margin and one pair on posterolateral lobes (Fig. 23). Female abdominal segment VIII weakly sclerotized, with or without lateral pouches toward anterior margin of ostium bursae.

Male genitalia: uncus as long as length of tegumen, tapered at apex, subequal in length with gnathos; gnathos weak, lingulate, reduced to pair of basal arms in some species; valva divided into digitate shaped costa and variably shaped sacculus; tegumen basal width/length ratio 1.2; saccus reduced; phallus longer than length of tegumen, slender, base articulated with anterodorsal margin of vinculum, without cornuti.

Female genitalia (Fig. 42): apophyses posteriores two-thirds to subequal length of abdomen; apophyses anteriores about 2–3 x length of abdominal segment VIII; antrum large, well developed, funnel shaped to tubular; ductus bursae well differentiated from wider corpus bursae; signum diamond shaped or in form of cross with obtuse angles forming parallel sided extensions, with serrate margins and transverse median ridges.

Larva. Undescribed.

Pupa. Less than 6 mm in length; maxillary palpi touching or adjacent to genae; antenna adjacent to each other for about 3 x greater distance than length of visible ends of metathoracic legs; pronotum weakly narrowed, or narrower at middle by at least 1/3 than its greatest length; prothoracic legs separated from oculi; abdomen usually lacking setae (Patoèka and Turcáni 2005).

Diagnosis. *Teleiopsis* species are relatively large sized relative to other genera in Teleiodini. This genus is superficially similar to *Xenolechia*, but it is easily distinguished by having both the costal and saccular parts of valva, the apex of uncus not bifid, and the ductus bursae without microtrichia.

Hosts. Anacardiaceae: *Rhus coriaria* L. (*T. latisacculus*, *T. terebinthinella*), *Pistacia terebinthus* L. (*T. latisacculus*, *T. terebinthinella*). Polygonaceae: *Rumex* spp. (*T. diffinis*, *T. rosabella*, *T. albifemorella*), *Oxyria digyna* (L.) (*T. bagriotella*). (Burmans 1977; Emmet 1988; Klimesch 1950, 1968; Mann 1862; Sattler 1982; Stainton 1854).

Diversity and distribution. *Teleiopsis* has nine species with one in North America and the remainder in Europe and Asia (Hodges 1983; Huemer and Karsholt 1999; Pitkin 1988; Sattler 1982).

Schistophila Chrétien

Schistophila Chrétien, 1899: 114.

Type species: *Schistophila laurocistella* Chrétien, 1899, by monotypy.

Description. Imago. Labial palpus with third segment shorter than second. Clypeus with ventral margin rounded. Antenna simple in female, thickened and slightly serrate in male. Ocellus absent. Posterior area of sitophore with four campaniform sensilla in asymmetrical trapezoid; anterior area with four campaniform sensilla. Forewing (length/width ratio 4.6) with tufts of raised scales; R_5 and M_1 stalked, M_2 and M_3 separate, CuA_1 and CuA_2 present; median fascia present or absent, if present, transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 4.8) with R_5 and M_1 stalked, M_2 and M_3 separate, M_3 and CuA_1 separate. Male abdominal sternum VIII with posterior margin rounded and slightly emarginate mesially; tergum VIII lingulate, with pair of small anterolateral hair pencils basally. Female abdominal segment VIII without modifications.

Male genitalia (Fig. 37): uncus small, suboval with incised apex, with moderately strong, long setae laterally; gnathos horn shaped, subequal in length with uncus; tegumen with distinct emargination anteromesially, with broadly rounded pedunculi; costal part of valva curved, with broadly bulbous base; saccular part of valva distant from costal part, digitate, longer than costal part; tegumen basal width/length ratio 0.8; phallus curved ventrad, slender, without cornuti.

Female genitalia: apophyses posteriores short, about 2 x length of apophyses anteriores; apophyses anteriores about 1.5 x length of abdominal segment VIII; sternum surrounding ostium bursae membranous; antrum indistinct; ductus bursae without microtrichia; corpus bursae small; signum absent.

Larva. Length 4–5 mm; body yellowish or greenish, with abdominal segments flattened; head dark brown with black crown; prothoracic shield large and brown, pale anteriorly and darker posteriorly; pinacula indistinct; venter of abdominal segments with reddish brown, rhomboid spots. Leaf mining (Chrétien 1899).

Pupa. Undescribed.

Diagnosis. *Schistophila* species resemble *Teleiodes* in the wing pattern, but differ by having the saccular part of valva present and the signum absent.

Hosts. Cistaceae: *Cistus laurifolius* L. (*S. laurocistella*). (Chrétien 1899; Huemer and Karsholt 1999).

Diversity and distribution. *Schistophila* has one species in western Europe (Huemer and Karsholt 1999).

Teleiodes Sattler

Teleiodes Sattler, 1960: 63.

Type species: *Tinea vulgella* [Denis and Schiffermüller], 1775, by original designation. Replacement name for *Teleia* Heinemann, 1870.

Teleia Heinemann, 1870: 272. Preoccupied by *Teleia* Hübner ([1825]) (Lepidoptera: Tortricidae).
Type species: *Tinea vulgella* [Denis and Schiffermüller], 1775, by subsequent designation (Meyrick 1925).
Feleia Christoph, 1882: 25. Misspelling of *Teleia* Heinemann, 1870.
Teleja Turati, 1924: 161. Misspelling of *Teleia* Heinemann, 1870.
Telia Kirby, 1879: 185. Misspelling of *Teleia* Heinemann, 1870.
Tellia Busck, 1903: 813. Misspelling of *Teleia* Heinemann, 1870.

Description. Imago. Antenna more than half forewing length. Forewing with tufts of raised scales; M_1 , M_2 , and M_3 separate, CuA_1 and CuA_2 present; median fascia absent, represented by spot on costa. Hindwing with R_5 and M_1 connate, M_2 , M_3 , and CuA_1 separate. Male abdominal tergum VIII lingulate, with pair of hair pencils anterolaterally.

Male genitalia: uncus well developed, notched apically; gnathos horn shaped; tegumen deeply emarginate anteriorly with widely separated, moderately slender, lateral arms, costal part of valva with bulbous base, straight, and gradually tapered beyond base to apex; tegumen basal width/length ratio 1.1; saccular part of valva greatly reduced; phallus slender, cornuti absent.

Female genitalia: apophyses anteriores about 1.5 x length of abdominal segment VIII; ostium bursae surrounded by tubelike sclerotization; ductus and corpus bursae well developed; signum subhexagonal with serrate margins.

Larva. Body greenish gray; head yellowish brown; prothoracic shield black; pinacula small, black; legs whitish ringed with black (Emmet 2002).

Pupa. Frontoclypeal suture forming acute bow; abdominal segment VII edged caudally by row of setae laterally and ventrally; cremaster absent (Patočka and Turčáni 2005).

Diagnosis. *Teleiodes* species are superficially similar to those of *Xenolechia* and *Altenia*. However, the uncus is notched in *Teleiodes* and deeply bifid for $\frac{1}{2}$ or more length in *Xenolechia* and *Altenia*. *Altenia* also have a pair of hair pencils between abdominal terga II and III, which are absent in *Teleiodes* and *Xenolechia*.

Hosts. Rosaceae: *Crataegus* sp. (*T. vulgella*), *Prunus spinosa* L. (*T. vulgella*). (Emmet 1988). Emmet (1988) also listed *Quercus* sp. (Fagaceae) as a host of "*Teleiodes*" *luculella*, a species treated here as *incertae sedis*.

Diversity and distribution. *Teleiodes* is restricted here to four species that occur in Europe (Huemer and Karsholt 1999).

Notes. *Teleiodes* has been recognized as a polyphyletic assemblage of differing taxa (Huemer and Karsholt 1999), and this concept is supported here. The Nearctic species, *T. sequax* (Haworth), and the Palearctic species, *T. huemeri* Nel and *T. cisti* (Stainton), are transferred here to *Neotelphusa*. The generic assignment of other Palearctic species assigned to *Teleiodes* by Huemer and Karsholt (1999, 2001) remains uncertain.

Xenolechia Meyrick

Xenolechia Meyrick, 1895: 583.

Type species: *Anacampsis aethiops* Humphreys and Westwood, 1845, by subsequent designation (Walsingham 1911).

Description. Imago (Fig. 65). Labial palpus with second and third segments subequal in length. Antenna simple in both sexes, longer than half forewing length. Posterior area of sitophore with four campaniform sensilla in symmetrical trapezoid, posterior pair closer together than anterior pair; anterior area with two, four, or seven campaniform sensilla. Forewing lanceolate to slender (length/width ratio 3.8) with tufts of raised scales; R_5 , M_1 , M_2 , and M_3 separate, CuA_1 and CuA_2 present; median fascia absent or present, if present, transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 3.3) with R_5 and M_1 connate, M_2 , M_3 , and CuA_1 separate. Male abdominal sternum VIII broad, with posterior margin mesially emar-

ginate; tergum VIII lingulate, with pair of anterolateral hair pencils. Female abdominal segment VIII without special modifications.

Male genitalia (Fig. 32): uncus deeply bifid for $\frac{1}{2}$ or more length, with two, broad lobes; gnathos absent; tegumen broad, stout, strongly widening ventrally, basal width/length ratio 3.0; valva absent; vinculum with a pair of processes; phallus broad, stout, without cornuti.

Female genitalia: apophyses anteriores about 1–2 x length of abdominal segment VIII; ostium bursae near middle of abdominal segment VIII, margined laterally by sclerites; antrum membranous; ductus bursae, broad with numerous microtrichia, evenly widened toward corpus bursae; signum rhomboid, with serrate margins.

Larva. Length 6–11 mm; crochets unevenly biordinal; caudal fork present; D1 of abdomen about one-half length of D2; SD1 pinaculum on segments A2 to A7 closer to and dorsad of spiracle; SD2 pinaculum minute, on level with spiracle; SD1 on A8 dorsoanterior of and farther from spiracle than on A7; L1, L2, and L3 on A9 on common pinaculum (Keifer 1928, 1933; Opler 1974).

Pupa. Length less than 6 mm; body orange brown, widest at metathorax, tapering to acute caudal end; maxillae ending at convergence of midlegs; caudal end of abdomen with hooked setae (Keifer 1928).

Diagnosis. *Xenolechia* is similar to *Argyrolacia* and *Altenia* by having a bifid uncus in the male genitalia, but differs in lacking a valva and having veins M_3 and CuA_1 separated in the hindwing. Most species of *Xenolechia* have the forewing with non-contrasting colors and patterns.

Hosts. Ericaceae: *Erica cinerea* L. (*X. aethiops*), *Vaccinium* sp. (*X. quinquecristatella*). Fagaceae: *Quercus* spp. (*X. querciphaga*). Rhamnaceae: *Ceanothus* spp. (*X. ceanothiella*). (Bland 2002; Emmet 1988; Forbes 1923; Keifer 1928, 1930, 1933; Opler 1974; Robinson *et al.* 2002; Zhang 1994).

Diversity and distribution. The nine species of *Xenolechia* occur in Europe, Asia, and North America (Busck 1907; Huemer and Karsholt 1999; Keifer 1933; Sattler 1960).

Notes. *Recurvaria ceanothiella* (Braun 1921) is transferred here to *Xenolechia* based on the structure of the male genitalia.

Argyrolacia Keifer

Argyrolacia Keifer, 1936: 243, pl. 4, figs 1a–f.

Type species: *Argyrolacia bifida* Keifer, 1936, by original designation.

Description. Imago (Fig. 66). Labial palpus third segment slender and acute apically, subequal in length with second. Antenna more than half forewing length. Clypeus with ventral margin rounded. Ocellus absent. Posterior area of sitophore with four campaniform sensilla in trapezoid pattern; posterior pair closer together than anterior pair; anterior area with four campaniform sensilla. Forewing (length/width ratio 4.9) with tufts of raised scales, without pterostigma; M_1 and R_5 stalked, M_2 and M_3 separate, CuA_1 present, CuA_2 absent; median fascia transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 5.7) with R_5 , M_1 , M_2 and M_3 separate, CuA_1 and M_3 separate.

Male genitalia (Fig. 33): uncus slender, deeply bifid to base; gnathos absent; costal part of valva well developed, with internal duct and bulbous base; saccular part of valva absent; tegumen basal width/length ratio 0.9; phallus attached to vinculum, curved at base and diagonally truncate apically, without cornuti.

Female genitalia (Fig. 48): antrum funnel shaped posteriorly, not widened anteriorly; apophyses anteriores about 2 x length of abdominal segment VIII; signum roughly diamond shaped with serrate margins, with projecting flanges from obtuse corners.

Larva. Undescribed.

Pupa. Undescribed.

Diagnosis. *Argyrolacia* was established primarily on the presence of a deeply bifid uncus, a character state also shared with *Xenolechia* and *Altenia*. *Argyrolacia* differs from these two genera by lacking an ocellus

and having the forewing with M_1 stalked with R_5 and CuA_2 absent, the hindwing with M_1 absent, and the female antrum sclerotized instead of membranous.

Hosts. Rhamnaceae: *Ceanothus* sp. (Keifer 1936; Robinson *et al.* 2002).

Diversity and distribution. The one species of *Argyrolacia* occurs in the western United States.

Altenia Sattler

Altenia Sattler, 1960: 58.

Type species: *Gelechia perspersella* Wocke, 1862, by original designation.

Description. Imago. Labial palpus with third segment longer than second. Clypeus with ventral margin sinuate. Antenna longer than half forewing length. Ocellus present. Posterior area of sitophore with four campaniform sensilla in asymmetrical trapezoid, posterior pair closer together than anterior pair; anterior area with four or six campaniform sensilla. Forewing lanceolate to slender (length/width ratio 4.4) with tufts of raised scales; R_5 , M_1 , M_2 , and M_3 separate, CuA_1 and CuA_2 present; median fascia absent or present, if present, transverse or directed from base of costa toward posterior margin. Hindwing (length/width ratio 3.3) with R_5 and M_1 stalked, M_2 and M_3 separate, M_3 and CuA_1 connate. Male abdominal sternum VIII with posterior margin slightly emarginate mesially; tergum VIII lingulate, with pair of hair pencils anterolaterally. Female abdominal segment VIII without special modifications, membranous to strongly sclerotized, with only lateral areas strongly sclerotized in some species.

Male genitalia: uncus deeply bifid for $\frac{1}{2}$ or more length, with two digitate processes; gnathos absent; sacular part of valva absent; costal part of valva well developed or reduced; tegumen basal width/length ratio 1.6; vinculum well developed to small, with pair of processes; phallus broad, stout, without cornuti.

Female genitalia: apophyses anteriores about 1.5 x length of abdominal segment VIII; ostium bursae near anterior margin of sternum VIII, surrounded by small sclerotized plate; ductus bursae longer than length of corpus bursae, smooth or covered with microtrichia; corpus bursae distinct; signum large, rhomboid, with serrate margins.

Larva: Head and prothoracic shield yellowish; body with black pinacula (Emmet 2002).

Pupa. Less than 6 mm in length, maxillary palpi touching or adjacent to genae; antennae adjacent to each other for about 3 x greater distance than the length of visible ends of metathoracic legs; pronotum with midline length $\frac{1}{3}$ or less greatest lateral length; prothoracic legs separated from oculi; abdomen usually lacking setae (Patočka and Turčáni 2005).

Diagnosis. The definition of *Altenia* is based primarily on the deeply bifid uncus with a pair of digitate lobes, which is shared with *Argyrolacia* and *Xenolechia* (Fig. 33). *Argyrolacia* differs from *Altenia* in having CuA_2 absent in the forewing. *Xenolechia* can be distinguished by lacking the valva in male genitalia.

Hosts. Empetraceae: *Empetrum nigrum* L. (*A. perspersella*). Anacardiaceae: *Pistacia vera* L. (*A. modesta*). Aceraceae: *Acer* spp. (*A. scriptella*). (Bradford and Sokoloff 1988; Danilevsky 1955; Emmet 1988, 2002; Kaitila 1996; Sattler 1982; Schütze 1931).

Diversity and distribution. The seven species of *Altenia* occur throughout Europe, Central Asia, and North Africa (Huemer and Karsholt 1999, 2001).

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Appendix 1. Checklist of Teleiodini in Nearctic and Palearctic Regions.

Asterisk = examined species, TS = type species, H = Holarctic, P = Palearctic, A = Afrotropical, and N = Neotropical.

Agnippe Chambers, 1872

Aganippe Chambers, 1880

Evippe Chambers, 1873 **New Synonymy**

Phaetusa Chambers, 1875

Tholerostola Meyrick, 1917

abditata (Braun, 1925) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers H

albidorsella (Snellen, 1884) (*Recurvaria*) **New Combination**, transferred from *Evippe* Chambers P

^{TS}*biscalorella* Chambers, 1872 P

conjugella (Caradja, 1920) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers P

**crinella* Keifer, 1927

dichotoma (Li, 1993) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers

echinulata (Li, 1993) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers P

**evippeella* Busck, 1906

fuscopulvella Chambers, 1872

haberlandi (Amsel, 1961) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers P

kuznetzovi (Lovovsky and Piskunov, 1989) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers P

laudatella (Walsingham, 1907) (*Gelechia*) **New Combination**, transferred from *Evippe* Chambers P

leuconota (Zeller, 1873) (*Phthorimaea*) **New Combination**, transferred from *Evippe* Chambers

plutella (Chambers, 1875) (*Phaetusa*)

lunaki (Rebel, 1941) (*Stenolechia*) **New Combination**, transferred from *Evippe* Chambers P

miniscula (Li, 1993) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers P

novisyriactis (Li, 1993) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers P

penicillata (Amsel, 1961) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers P

prunifoliella* (Chambers, 1873) (*Evippe*) **New Combination, transferred from *Evippe* Chambers

pseudolella (Christoph, 1888) (*Lita*) **New Combination**, transferred from *Evippe* Chambers P

cephalella (Caradja, 1920) (*Lita*)

syriactis (Meyrick, 1936) (*Recurvaria*) **New Combination**, transferred from *Evippe* Chambers P

yongdengensis (Li, 1993) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers P

zhengi (Wang and Li, 1994) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers P

zhouzhiensis (Li, 1993) (*Evippe*) **New Combination**, transferred from *Evippe* Chambers P

*sp.1

Altenia Sattler, 1960

elsneriella Huemer and Karsholt, 1999 P

inscriptella* (Christoph, 1882) (*Teleia*) **New Combination, transferred from *Telphusa* Chambers P

mersinella (Staudinger, 1879) (*Teleia*) P

sagittella (Caradja, 1920) (*Stenolechia*)

melanostictella (Ragonot, 1895) (*Teleia*)

praedicta (Meyrick, 1923) (*Gelechia*)

tribolopis (Meyrick, 1927) (*Telphusa*)

**modesta* (Danilevsky, 1955) (*Teleia*) P
^{TS}**perspersella* (Wocke, 1862) (*Gelechia*) P
empetrella (Karvonen, 1932) (*Teleia*)
scriptella (Hübner, 1796) (*[Tinea]*) P
wagneriella (Rebel, 1926) (*Gelechia*) P
danilevskyi (Piskunov, 1973) (*Klaussattleria*)

Arcutelphusa gen. nov.
talladega sp. nov.

Argyrolacia Keifer, 1936
^{TS}**bifida* Keifer, 1936

Arogalea Walsingham, 1910
^{TS}**cristifasciella* (Chambers, 1878) (*Gelechia*)
inscripta (Walsingham, 1882) (*Gelechia*)

Carpatolechia Căpușe, 1964
aenigma (Sattler, 1983) (*Teleiodes*) P
alburnella (Zeller, 1839) (*Gelechia*) P
alburnella ab. *radiella* (Krulikowsky, 1909) (*Gelechia*)
seniculella (Eversmann, 1844) (*Lita*)
belangerella* (Chambers, 1875) (*Gelechia*) **New Combination, transferred from *Pseudotelphusa* Janse P
oronella (Walsingham, 1882) (*Gelechia*) **New Combination**, transferred from *Pseudotelphusa* Janse
**daehania* (Park, 1993) (*Pseudotelphusa*) P
decorella (Haworth, 1812) (*Tinea*) P
buckwelli (Lucas, 1956) (*Gelechia*)
^{TS}*dumitrescui* Căpușe, 1964
erschoffii (Frey, 1880) (*Gelechia*)
huemeraella (Bruand, [1851]) (*Lita*)
humeralis (Zeller, 1839) (*Gelechia*)
incretella (Duponchel, [1845]) (*Lita*)
lyellella (Humphreys and Westwood, 1845) (*Anacamptis*)
marmoripennella (Bruand, [1851]) (*Lita*)
pisticella (Nowicki, 1860) (*Gelechia*)
scabra (Staudinger, 1870) (*Gelechia*)
subericolella (Caradja, 1920) (*Teleia*)
deogyusanae* (Park, 1992) (*Teleiodes*) **New Combination, transferred from *Teleiodes* Sattler P
digitilobella (Park, 1992) (*Teleiodes*) **New Combination**, transferred from *Teleiodes* Sattler P
epomidella (Tengström, 1869) (*Gelechia*) P
fugacella (Zeller, 1839) (*Gelechia*) P
nigrofasciella (Bruand, [1851]) (*Lita*)
**fugitivella* (Zeller, 1839) (*Gelechia*) P
fugitivella ab. *melanella* (Piskunov, 1973) (*Teleia*)
vovkella (Piskunov, 1973) (*Klaussattleria*)
intermediella Huemer and Karsholt, 1999 P
longivalvella (Park, 1992) (*Teleiodes*) **New Combination**, transferred from *Teleiodes* Sattler P
minor (Kasy, 1979) (*Teleiodes*) P
notatella (Hübner, [1813]) (*[Tinea]*) P
euratella (Herrich-Schäffer, 1854) (*Gelechia*)
oskella (Piskunov, 1973) (*Teleiodes*)
**proximella* (Hübner, 1796) (*[Tinea]*) P
signatella (Eversmann, 1844) (*Lita*)
proximella ab. *ochracella* (Romaniszyn, 1933) (*Teleia*)
proximella var. *peritella* (Constant, 1885) (*Teleia*)
yangyangensis (Park, 1992) (*Teleiodes*) P

Chorivalva Omelko, 1988

Neochronistis Park, 1989
bisaccula Omelko, 1988 P
grandialata Omelko, 1988 P
hodgesi Park, 1989 P
^{TS}*unisaccula* Omelko, 1988 P

Coleotechnites Chambers, 1880

Eidothea Chambers, 1873
Eidothoa Chambers, 1873, missp.
Eucordylea Dietz, 1900
Evagora Clemens, 1860
Hapalosaris Meyrick, 1917 **New Synonymy**
Pulicalvaria Freeman, 1963
**albicostata* (Freeman, 1965) (*Eucordylea*)
alnifruetella (Busck, 1915) (*Recurvaria*)
**apicitripunctella* (Clemens, 1860) (*Recurvaria*)
abietisella (Packard, 1883) (*Gelechia*)
atritella (Walker, 1864) (*Gelechia*)
ardas (Freeman, 1960) (*Evagora*)
argentiabella (Chambers, 1874) (*Gelechia*)
atruplictella (Dietz, 1900) (*Eucordylea*)
**australis* (Freeman, 1963) (*Pulicalvaria*)
**bacchariella* (Keifer, 1927) (*Recurvaria*)
biopes (Freeman, 1960) (*Evagora*)
blastovora (McLeod, 1962) (*Eucordylea*)
**canusella* (Freeman, 1957) (*Recurvaria*)
**carbonaria* (Freeman, 1965) (*Pulicalvaria*)
**chilcotti* (Freeman, 1963) (*Exoteleia*)
^{TS}*citriella* (Chambers, 1880) (*Recurvaria*)
colubrinae (Busck, 1903) (*Recurvaria*)
condignella (Busck, 1929) (*Recurvaria*)
**coniferella* (Kearfott, 1907) (*Recurvaria*)
crisatella (Chambers, 1875) (*Gelechia*)
**ducharmei* (Freeman, 1962) (*Eucordylea*)
edulicola Hodges and Stevens, 1978
elucidella (Barnes and Busck, 1920) (*Eucordylea*)
**eryngiella* (Bottimer, 1926) (*Recurvaria*)
**florae* (Freeman, 1960) (*Evagora*)
gallicola (Busck, 1915) (*Recurvaria*)
gibsonella (Kearfott, 1907) (*Recurvaria*)
granti (Freeman, 1965) (*Pulicalvaria*)
**huntella* (Keifer, 1936) (*Eucordylea*)
invictella (Busck, 1908) (*Recurvaria*)
juniperella (Kearfott, 1903) (*Recurvaria*)
**laricis* (Freeman, 1965) (*Pulicalvaria*)
**lewisi* (Freeman, 1960) (*Evagora*)
**mackiei* (Keifer, 1932) (*Eucordylea*)
**macleodi* (Freeman, 1965) (*Pulicalvaira*)
martini (Freeman, 1965) (*Pulicalvaria*)
**milleri* (Busck, 1914) (*Recurvaria*)
moreonella (Heinr., 1920) (*Recurvaria*)
**nigritus* Hodges, 1983
niger (Busck, 1903) (*Recurvaria*)
**obliquistrigella* (Chambers, 1872) (*Anarsia*)
**occidentis* (Freeman, 1965) (*Pulicalvaria*)
petulans (Meyrick, 1917) (*Hapalosaris*) **New Combination**, transferred from *Hapalosaris* Meyrick
**piceaella* (Kearfott, 1903) (*Recurvaria*) Introduced to P
obscuraella (Kearfott, 1907) (*Recurvaria*)
piceaella var. *nigra* (Kearfott, 1903) (*Recurvaria*)

pinella (Busck, 1906) (*Recurvaria*)
ponderosae Hodges and Stevens, 1978
**quercivorella* (Chambers, 1872) (*Gelechia*)
gilviscopella (Zeller, 1873) (*Gelechia*)
**resinosae* (Freeman, 1960) (*Evagora*)
**stanfordia* (Keifer, 1933) (*Recurvaria*)
**starki* (Freeman, 1957) (*Recurvaria*)
**thujaella* (Kearfott, 1903) (*Recurvaria*)
vagatioella (Chambers, 1873) (*Eidothoa*)
dorsivittella (Zeller, 1873) (*Gelechia*)
**variella* (Chambers, 1872) (*Gelechia*)
*sp.1

Exoteleia Wallengren, 1881

Heringia Spuler, 1910
Heringiola Strand, 1917
Paralechia Busck, 1903
**anomala* Hodges, 1985
**burkei* Keifer, 1932
**californica* (Busck, 1907) (*Paralechia*)
^{TS}**dodecella* (Linnaeus, 1758) (*Phalaena*) H
annulicornis (Stephens, 1834) (*Anacamptis*)
dodecea (Haworth, 1828) (*Recurvaria*)
duodecim cristata (Retzius, 1783) (*Phalaena*)
favillaticella (Zeller, 1839) (*Gelechia*)
punctulata (Fourcroy, 1785) (*Tinea*)
reussiella (Ratzeburg, 1840) (*Phalaena*)
**graphicella* (Busck, 1903) (*Gnorimoschema*)
**nepheos* Freeman, 1967
**pinifoliella* (Chambers, 1880) (*Gelechia*)
succinctella (Zeller, 1872) (*Gelechia*) H
oribatella (Rebel, 1918) (*Gelechia*)

Glauce Chambers, 1875

^{TS}**pectenalaella* Chambers, 1875
*sp.1

Istrianis Meyrick, 1918

brucinella (Mann, 1872) (*Gelechia*) P
^{TS}*crauropa* Meyrick, 1918 P
**femoralis* (Staudinger, 1876) (*Teleia*) P
angustipennis (Rebel, 1941) (*Teleia*)
comendonella (Staudinger, 1879) (*Teleia*)
funebrella (Rebel, 1941) (*Teleia*)
gravosensis (Rebel, 1937) (*Teleia*)
myricariella (Frey, 1870) (*Gelechia*) P

Neotelphusa Janse, 1958

^{TS}*castrigera* (Meyrick, 1913) (*Telphusa*) A
cisti (Stainton, 1869) (*Gelechia*) **New Combination**, transferred from *Teleiodes* Sattler P
huemeri (Nel, 1998) (*Teleiodes*) **New Combination**, transferred from *Teleiodes* Sattler P
pseudocisti (Leraut, 1997) (*Teleiodes*) P
**praefixa* (Braun, 1921) (*Telphusa*)
**querciella* (Chambers, 1872) (*Depressaria*)
sequax* (Haworth, 1828) (*Recurvaria*) **New Combination, transferred from *Teleiodes* Sattler H
apicistrigella (Duponchel, [1843]) (*Lita*)
sequacella (Doubleday, 1859) (*Gelechia*)
sequaxella (Bruand, 1859) (*Gelechia*)

Parachronistis Meyrick, 1925

- ^{TS}**albiceps* (Zeller, 1839) (*Gelechia*) P
albicapitella (Doubleday, 1859) (*Gelechia*)
albicipitella (Herrich-Schäffer, 1854) (*Gelechia*)
geniculella Park, 1989 P
jiriensis Park, 1985 P
maritime Omelko, 1986 P
sellaris Park, 1985 P

Parastenolechia Kanazawa, 1985

- Origo* Omelko, 1988
Laris Omelko, 1988 **New Synonymy**
acclivis (Omelko, 1988) (*Tutor*) P
albicapitella Park, 2000b P
argobathra (Meyrick, 1935) (*Telphusa*) P
^{TS}*asymmetrica* Kanazawa, 1985 P
claustrifera (Meyrick, 1935) (*Telphusa*) P
collucata (Omelko, 1988) (*Laris*) **New Combination**, transferred from *Laris* Omelko P
formosana Kanazawa, 1991 P
gracilis Kanazawa, 1991 P
issikiella (Okada, 1961) (*Stenolechia*) P
cornisignella (Moriuti, 1977) (*Telphusa*)
**nigrinotella* (Zeller, 1847) (*Gelechia*) P
nigralbella (Herrich-Schäffer, 1854) (*Gelechia*)
superba (Omelko, 1988) (*Origo*) P
suriensis Park and Ponomarenko, 2006 P

Pseudotelphusa Janse, 1958

- Klaussatleria* Căpușe, 1968
Klaussattleria Căpușe, 1968
Sattleria Căpușe, 1968
acrobrunella Park, 1992 P
**amelanchierella* (Braun, 1930) (*Telphusa*)
**basifasciella* (Zeller, 1873) (*Gelechia*)
**betulella* (Busck, 1903) (*Telphusa*)
**fuscopunctella* (Clemens, 1863) (*Gelechia*)
**incana* Hodges, 1969
**istrella* (Mann, 1865) (*Gelechia*) P
decuriella (Mann, 1872) (*Gelechia*)
trifasciella (Rebel, 1916) (*Teleia*)
**occidentella* Huemer and Karsholt, 1999 P
**palliderosacella* (Chambers, 1878) (*Gelechia*)
**paripunctella* (Thunberg, 1794) (*Tinea*) P
pseudowagae (Svensson, 1993) (*Exoteleia*)
tigratella (Costa, 1834) (*Oe[cophora]*)
trijugella (Erschoff, 1877) (*Gelechia*)
triparella (Zeller, 1839) (*Gelechia*)
triparella ab. *griseella* (Priessecker, 1931) (*Teleia*)
triparella r[ace] *myricae* (Gilles, 1936) (*Telphusa*)
triparella var. *sultanella* (Caradja, 1920) (*Teleia*)
^{TS}*probata* (Meyrick, 1909) (*Telphusa*) A
**quercinigracella* (Chambers, 1872) (*Gelechia*)
fragmentella (Zeller, 1873) (*Phalaena*)
**scalella* (Scopoli, 1763) (*Phalaena*) P
aleella (Fabricius, 1794) (*Tinea*)
alternella (Hübner, 1796) (*Tinea*)
bicolorrella (Treitschke, 1832) (*Yponomeuta*)

**tessella* (Linnaeus, 1758) (*Phalaena*) P
albinigrella ([Denis and Schiffermüller], 1775) (*Tinea*)
alboquadrella (Bruand, 1859) (*Gelechia*)
berberidella (Hübner, [1825]) (*Chionodes*)
funestella (Geyer, [1832]) (*Tinea*)
sturmella (Hübner, [1825]) (*Scythropia*)

Recurvaria Haworth, 1828

Aphanaula Meyrick, 1895
Hinnebergia Spuler, 1910
Lita Kollar, 1832
Microlechia Turati, 1924
Telea Stephens, 1834
comprobata (Meyrick, 1935) (*Telphusa*) P
**consimilis* Braun, 1930
costimaculella Huemer and Karsholt, 2001 P
**francisca* Keifer, 1928
leucatella (Clerck, 1759) (*Phalaena*) P
albocingulella (Duponchel, [1839]) (*Lita*)
leucatea (Haworth, 1828) (*Erminea*)
leucatella (Linnaeus, 1761) (*Phalaena*)
^{TS}**nanella* ([Denis and Schiffermüller], 1775) (*Tinea*) H
crataegella Busck, 1903
nanella subsp. *unicolor* Rebel, 1927
nana Haworth, 1828
pruniella auctt.; Misspelling of *Tinea pumilella* [Denis and Schiffermüller], 1775
pumilella ([Denis and Schiffermüller], 1775) (*Tinea*)
stibomorpha Meyrick, 1929
taphiopsis Meyrick, 1929
thomeriella (Chrétien, 1901) (*Teleia*) P
toxicodendri Kuznetzov, 1979 P
vestigata Meyrick, 1929

Schistophila Chrétien, 1899

^{TS}**laurocistella* Chrétien, 1899 P
striatana Lucas, 1937

Sinoe Chambers, 1873

^{TS}**robiniella* (Fitch, 1859) (*Anacampsis*)
fuscopalidella Chambers, 1873
*sp.1

Stenolechia Meyrick, 1894

Gibbosa Omelko, 1988
Poecilia Heinemann, 1870
**bathrodyas* Meyrick, 1935 H
celeris (Omelko, 1988) (*Gibbosa*) P
^{TS}**gemmella* (Linnaeus, 1758) (*Phalaena*) P
lepidella (Zeller, 1839) (*Gelechia*)
nigrovittella (Duponchel, [1839]) (*Lita*)
nivea (Haworth, 1828) (*Recurvaria*)
nivella (Fabricius, 1794) (*Alucita*)
kodamai Okada, 1961 P
notomochla Meyrick, 1935 P
rectivalva Kanazawa, 1984 P
robusta Kanazawa, 1984 P
squamifera Kanazawa, 1984 P
Stenolechiodes Elsner, 1995 [1996]

**macrolepiellus* Huemer and Karsholt, 1999 P

^{TS}*pseudogemmellus* Elsner, 1995 [1996] P

Streyella Janse, 1958

**anguinella* (Herrich–Schäffer, 1861) (*Gelechia*) P

ostentella (Zerny, 1934) (*Telphusa*)

^{TS}*pallidigrisea* Janse, 1958 E

canariensis (Walsingham, 1908) (*Telphusa*) P

Teleiodes Sattler, 1960

Feleia Christoph, 1882

Teleia Heinemann, 1870

Teleja Turati, 1924

Telia Kirby, 1879

Tellia Busck, 1903

albiluculella Huemer and Karsholt, 2001 P

brevivalva Huemer, 1992 P

italica Huemer, 1992 P

gallica Huemer, 1992

^{TS}*vulgella* ([Denis and Schiffermüller], 1775) (*Tinea*) P

aspera (Haworth, 1828) (*Recurvaria*)

Incertae sedis:

wagae (Nowicki, 1860) (*Gelechia*) P

saltuum (Zeller, 1878) (*Gelechia*) P

luculella (Hübner, [1813]) (*Tinea*) P

flavimaculella (Herrich–Schäffer, 1854) (*Gelechia*) P

albidorsella Huemer and Karsholt, 1999 P

bradleyi Park, 1992 P

traugotti Huemer and Karsholt, 2001 P

hortensis Li and Zheng, 1996 P

qinghaiensis Li, 1996 P

Teleiopsis Sattler, 1960

albifemorella (Hofmann, 1867) (*Gelechia*) P

**bagriotella* (Duponchel, [1840]) (*Anacamptis*) P

elatella (Herrich–Schäffer, 1854) (*Gelechia*)

baldiana (Barnes and Busck, 1920) (*Telphusa*)

^{TS}**diffinis* (Haworth, 1828) (*Recurvaria*) P

diffinella (Doubleday, 1859) (*Gelechia*)

diffinis ab. *groenliensis* (Strand, 1920) (*Gelechia*)

dissimilella (Treitschke, 1833) (*Lita*)

friesella (Zetterstedt, 1839) (*Lita*)

scabidella (Zeller, 1839) (*Gelechia*)

insignita Pitkin, 1988 P

latisacculus Pitkin, 1988 P

rosalbella (Fologne, 1862) (*Gelechia*) P

sophistica (Meyrick, 1935) (*Telphusa*) P

terebinthinella (Herrich–Schäffer, 1856) (*Gelechia*) P

terebinthinella (Herrich–Schäffer, 1854) ([no genus])

Telphusa Chambers, 1872

Adrasteia Chambers, 1872

Adrastia Kirby, 1874, missp.

Geniadophora Walsingham, 1897

Telephusa Beirne, 1938

alexandriacella (Chambers, 1872) (*Adrasteia*)

fasciella (Chambers, 1872) (*Adrasteia*)

^{TS}**longifasciella* (Clemens, 1863) (*Gelechia*)

curvistrigella Chambers, 1872
lutraula Meyrick, 1923
obliquifasciella (Chambers, 1879) (*Gelechia*)
**perspicua* (Walsingham, 1897) (*Gelechia*)
**sedulitella* (Busck, 1910) (*Gelechia*)
agrifolia Braun, 1921

Incertae sedis:

cistiflorella (Constant, 1890) (*Lita*) P
incognitella (Caradja, 1920) (*Gelechia*) P
necromantis Meyrick, 1932
**latifasciella* (Chambers, 1875) (*Gelechia*)

Xenolechia Meyrick, 1895

^{TS}**aethiops* (Humphreys and Westwood, 1845) (*Anacamptis*) H
aethiopella (Doubleday, 1859) (*Gelechia*)
aterrima (Edleston, 1844) (*Anacamptis*)
diffinis var. *tristis* (Staudinger, 1879) (*Gelechia*)
squamulella (Peyerimhoff, 1871) (*Gelechia*)
basistrigella (Zeller, 1873) (*Gelechia*)
ceanothiella* (Braun, 1921) (*Recurvaria*) **New Combination, transferred from *Recurvaria* Haworth
lindae Huemer and Karsholt, 1999 P
**ontariensis* Keifer, 1933
pseudovulgella Huemer and Karsholt, 1999 P
**querciphaga* Keifer, 1933
quinquecristatella (Chambers, 1878) (*Gelechia*)
velatella (Busck, 1907)