

Homoptera Classification & Required Families

I. Suborder Auchenorrhyncha

A. Superfamily Cicadoidea

1. Cicadidae - Cicadas
2. Membracidae - Treehoppers
3. Cercopidae - Spittlebugs and Froghoppers
4. Cicadellidae - Leafhoppers

B. Superfamily Fulgoroidea

1. Delphacidae - Delphacids
2. Derbidae - Derbids
3. Cixiidae - Cixiids
4. Dictyopharidae - Dictyopharids
5. Fulgoridae - Fulgorids
6. Achilidae - Achilids
7. Flatidae - Flatids
8. Acanaloniidae - Acanaloniids
9. Issidae - Issids

II. Suborder Sternorrhyncha

A. Superfamily Psylloidea

1. Psyllidae - Jumping plantlice

B. Superfamily Aleyrodoidea

1. Aleyrodidae - Whiteflies

C. Superfamily Aphidoidea

1. Aphididae - Aphids or Plantlice
2. Eriosomatidae - Woolly and Gall-making aphids
3. Adelgidae - Pine and spruce aphids
4. Phylloxeridae - Phylloxeras

D. Superfamily Coccoidea

HOMOPTERA

Common Name: Scale insects, aphids, whiteflies, planthoppers.

Etymology: Homo = alike, uniform; -ptera = wing.

Metamorphosis: Hemimetabolous (?); pupal stage in some males.

CHARACTERISTICS

Body: Minute to quite large; form variable; many species exhibit degenerate structuring.

Head: Variable.

Mouthparts: Piercing-sucking; beak arising at the posterior end of the head and extending back between the legs.

Eyes: Compound eyes usually well-developed; 2-3 ocelli if present, absent in some.

Antennae: Variable.

Wings: Present or absent; front wings uniform in texture throughout; either leathery or membranous; male scale insects with only one pair of wings, these on mesothorax; wings held roof-like at rest.

Legs: Present or absent; variable in form; tarsi 1- or 3-segmented; one or 2 post-tarsal claws.

Abdomen: Highly modified in some scale insects; cerci absent.

Comments: All Homoptera are plant feeders; bisexual and parthenogenetic generations occur; can transmit plant diseases.

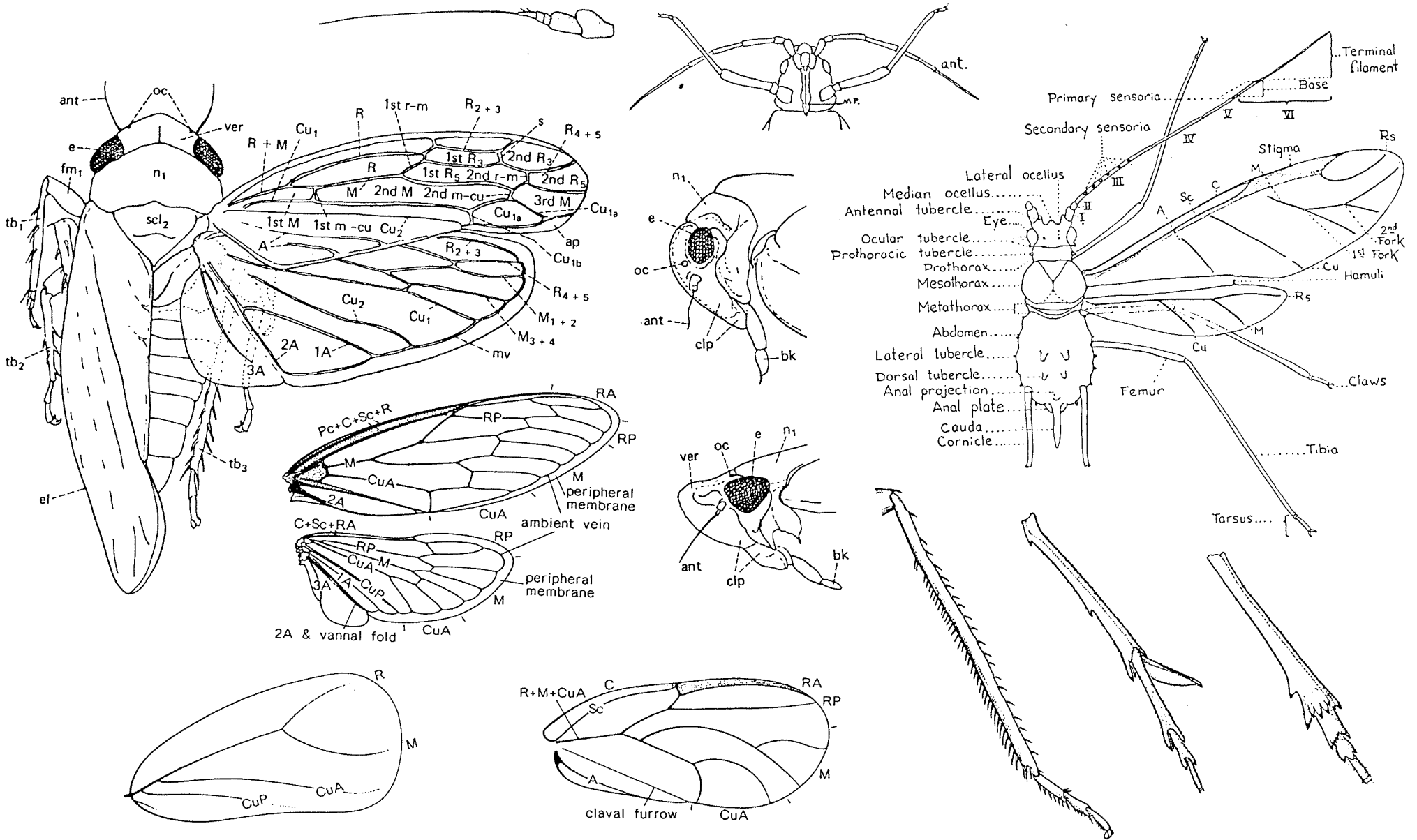
SUBORDERS

Auchenorrhyncha: Beak arises from neck region; antennae bristle-like; 3 tarsal segments.

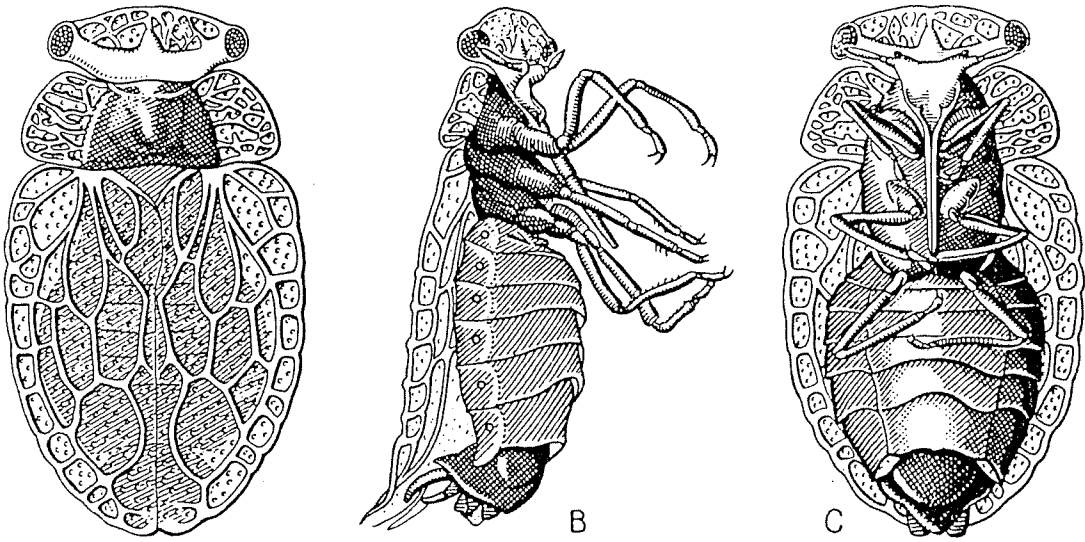
Sternorrhyncha: Mouthparts arise between front coxae; antennae usually filiform; 1 or 2 tarsal segments.

Order Homoptera

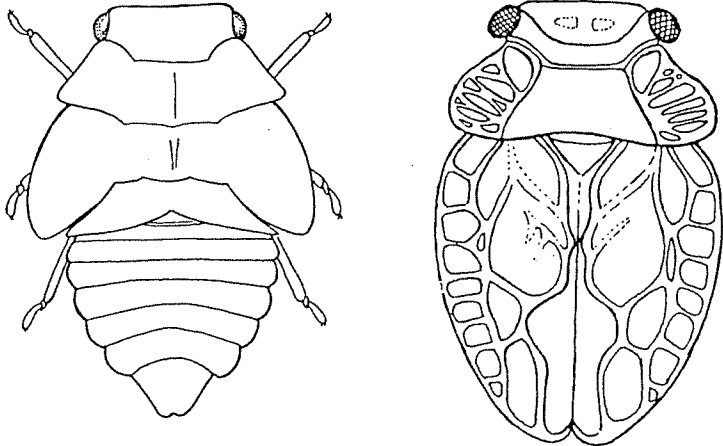
Cicadas, Planthoppers, Aphids, Scale insects, etc.



HEMIPTERA: Coleorrhyncha
Superfamily Peloridioidea
Family Peloridiidae
Pelorid bugs



— *Hemiodoecus fidelis* Ev. (Peloridiidae) (d'après nature).



Xenophyes cascus Berg., New Zealand.

HOMOPTERA: Auchenorrhyncha
 Superfamily Cicadoidea
 Family Cicadidae
 Cicadas

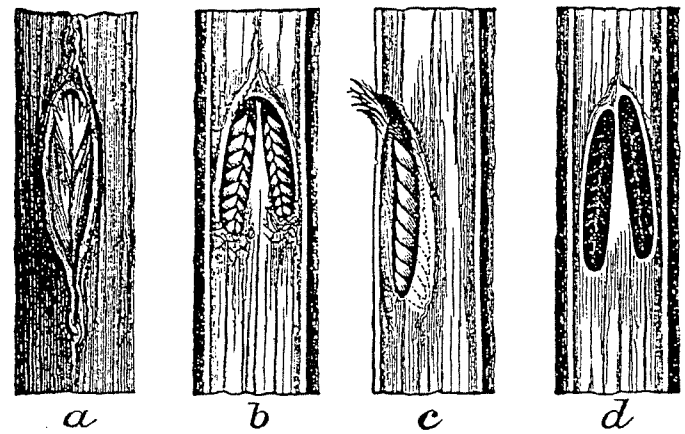
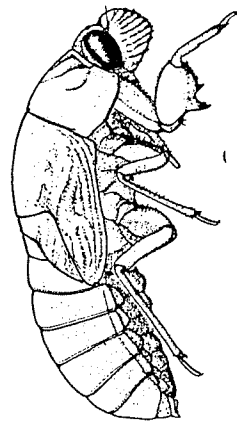
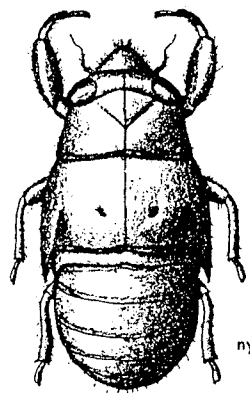
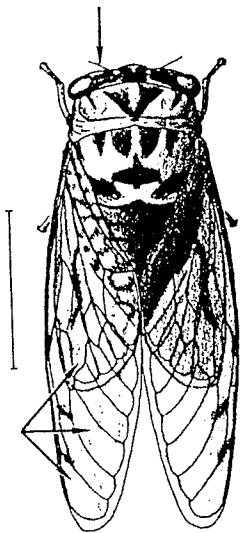
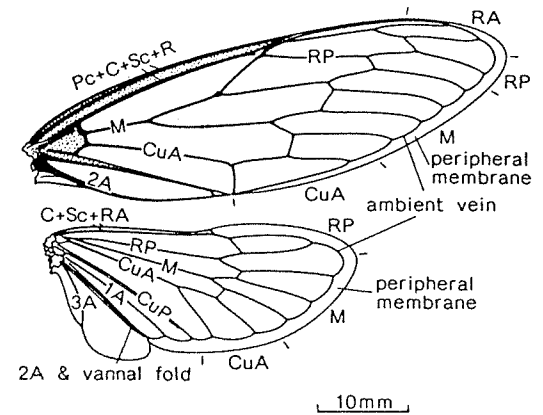
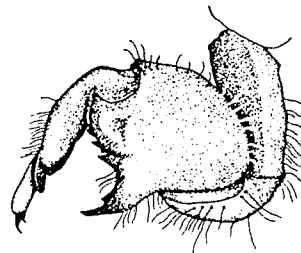
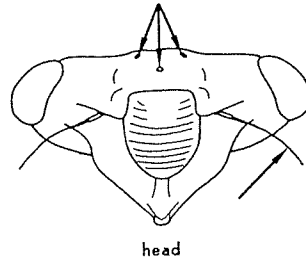
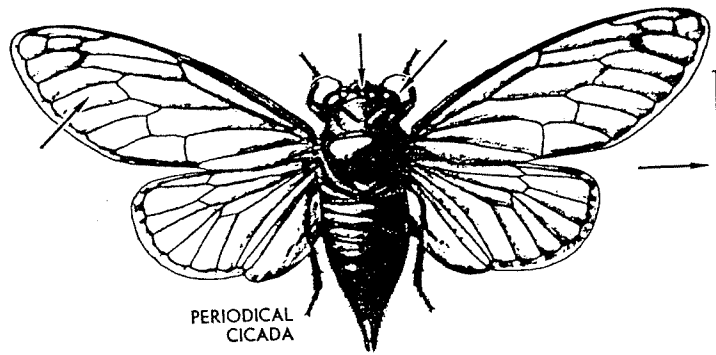
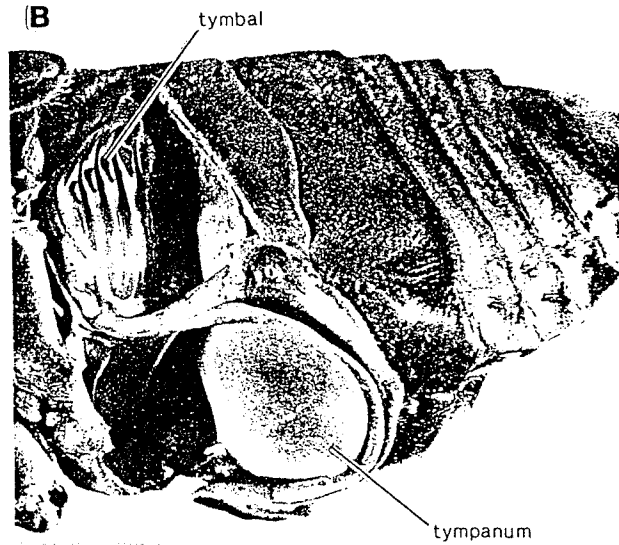
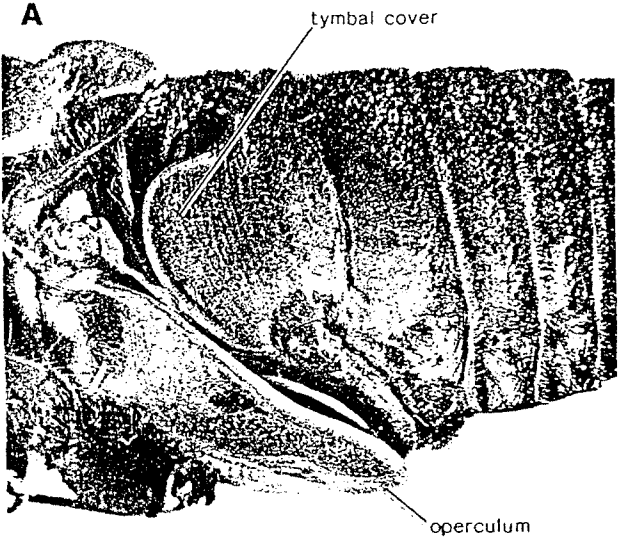
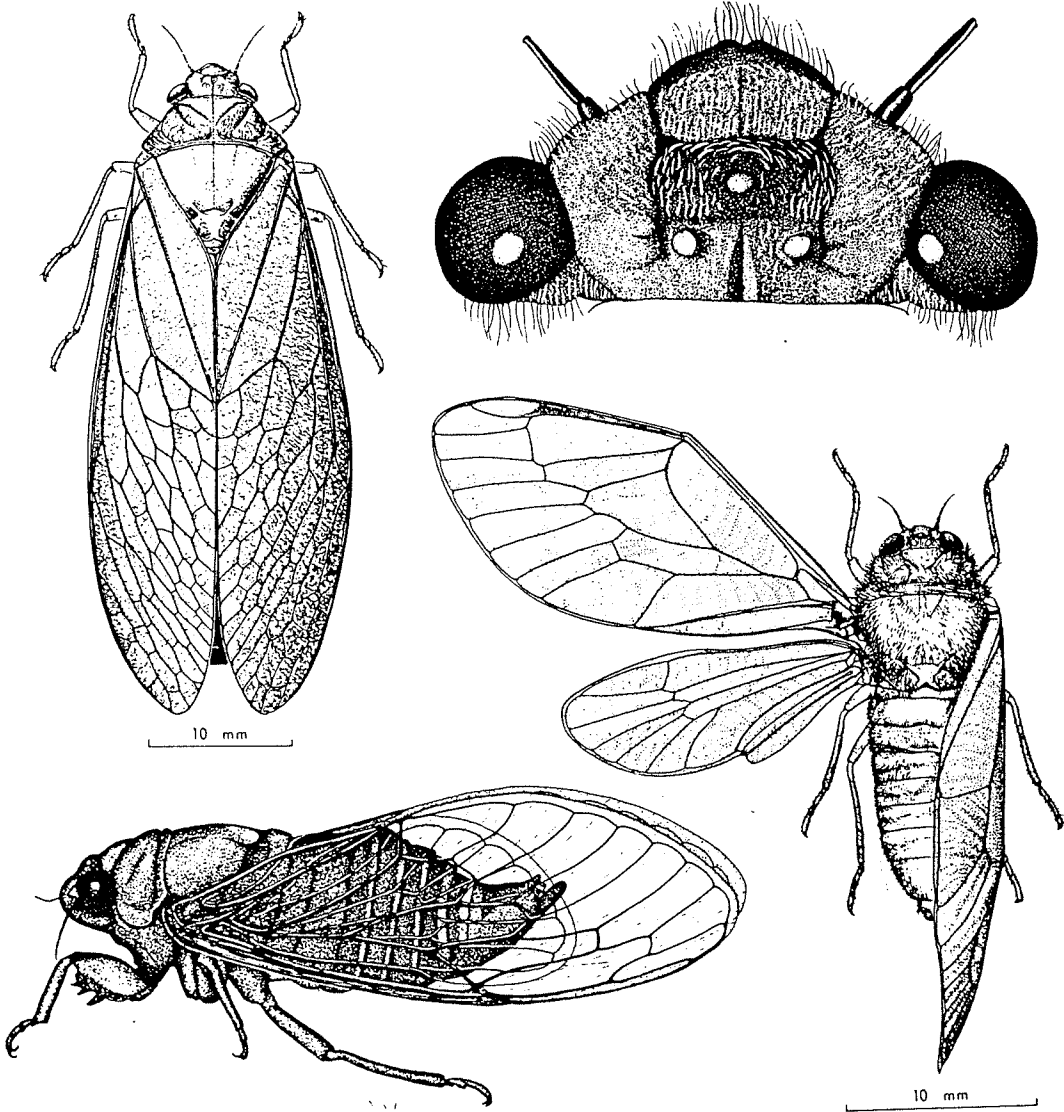
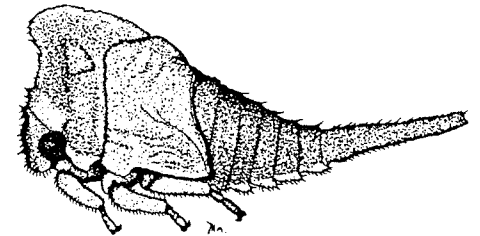
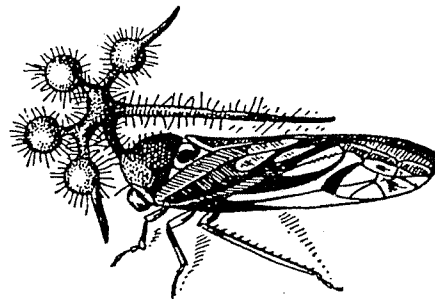
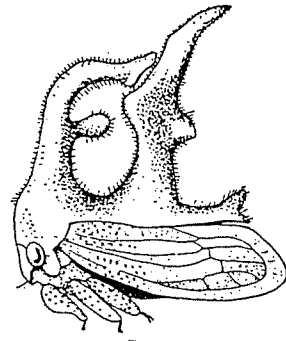
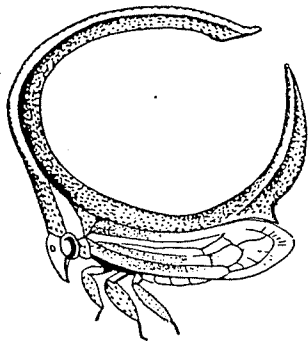
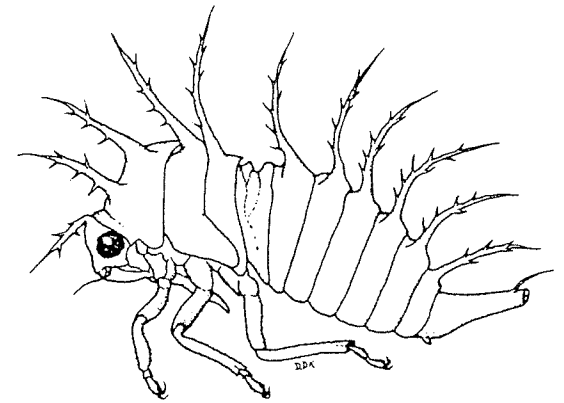
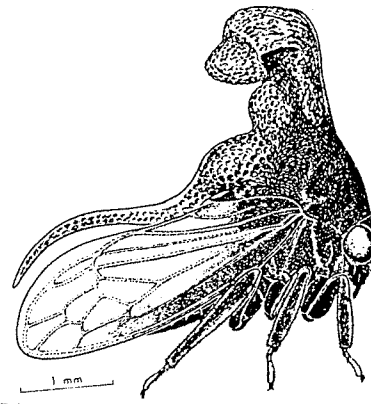
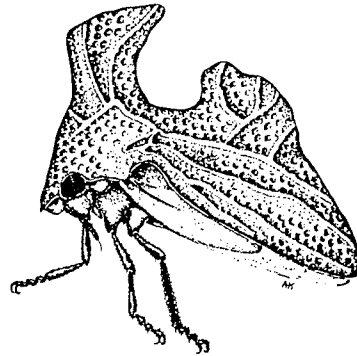
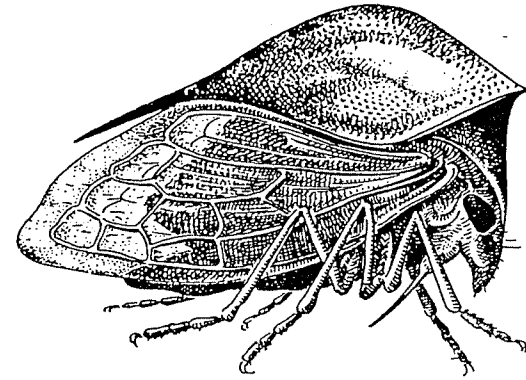
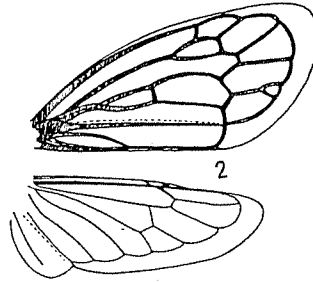
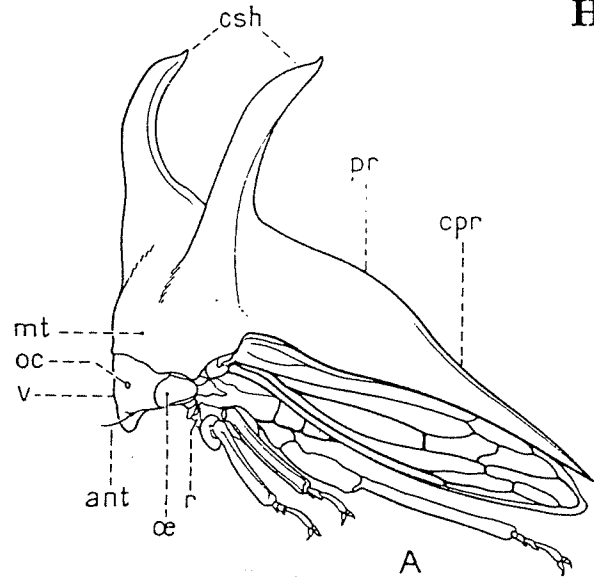


Fig. 124.—Eggs of the Periodical Cicada.
 (After Riley.)

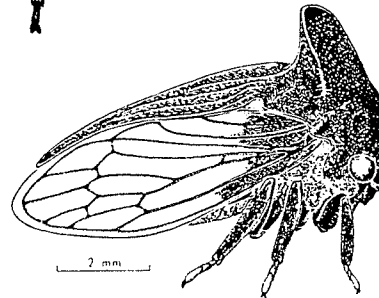
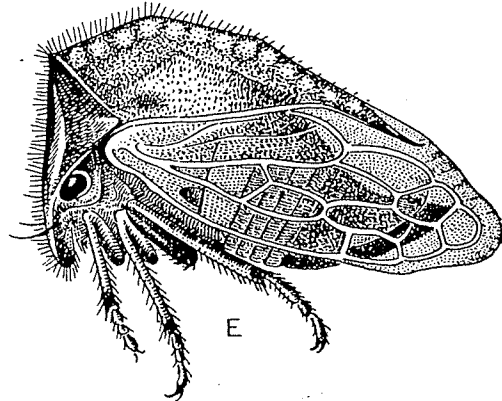
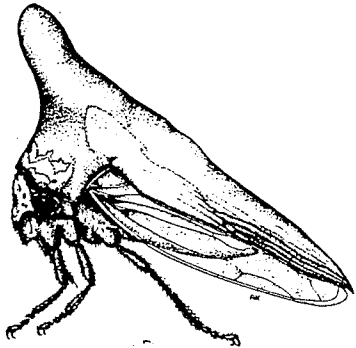
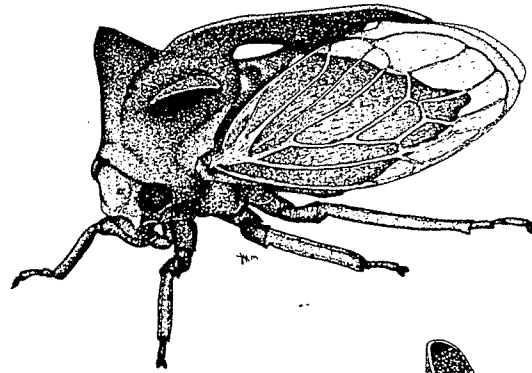
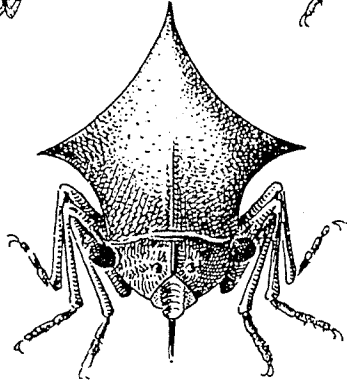
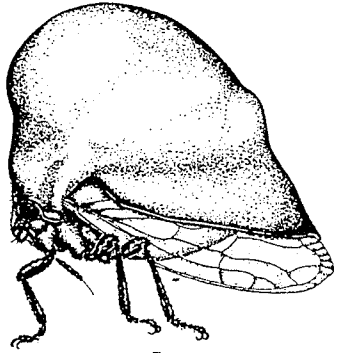
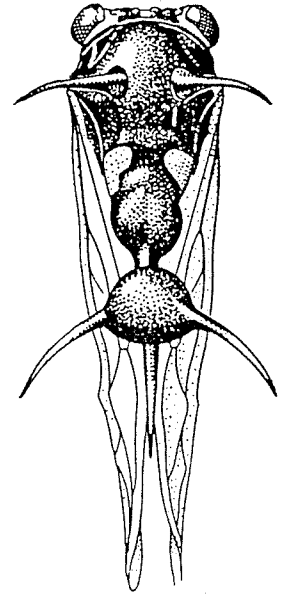
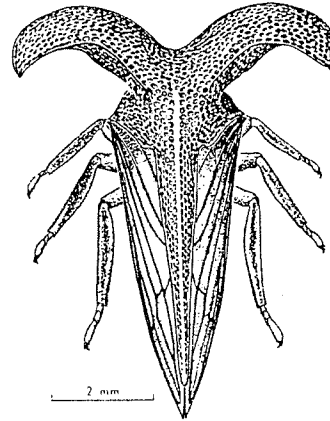
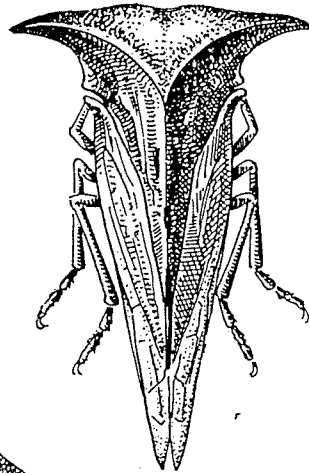
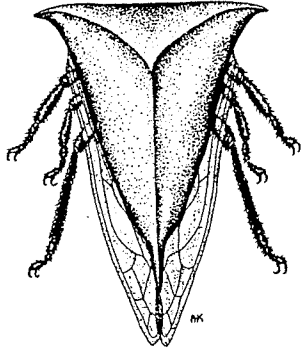
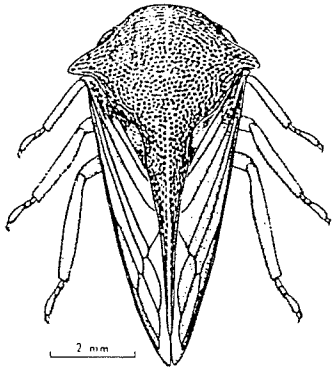
HOMOPTERA: Auchenorrhyncha
Superfamily Cicadoidea
Family Cicadidae
Cicadas



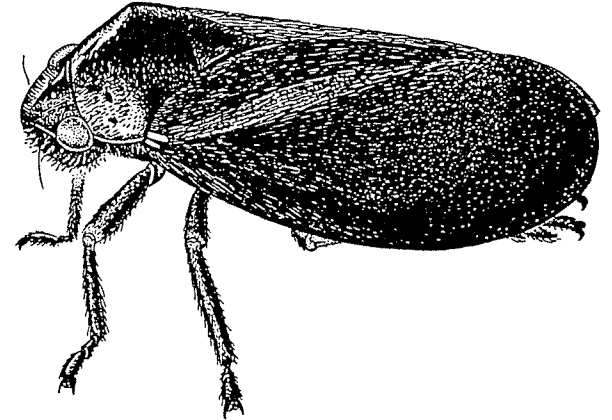
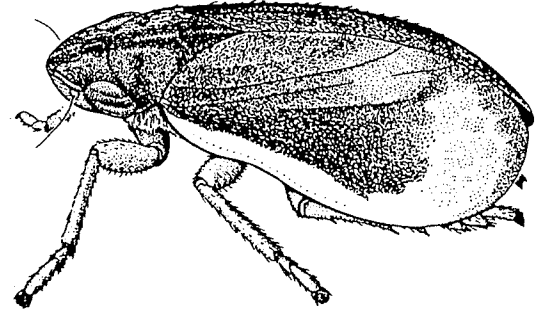
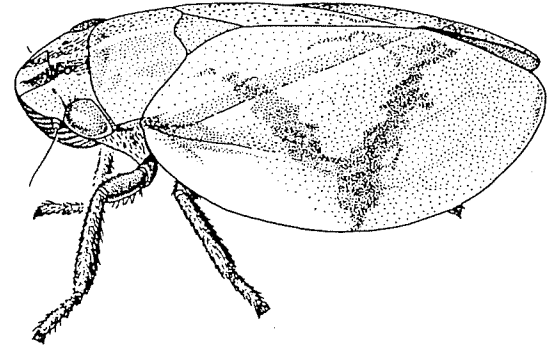
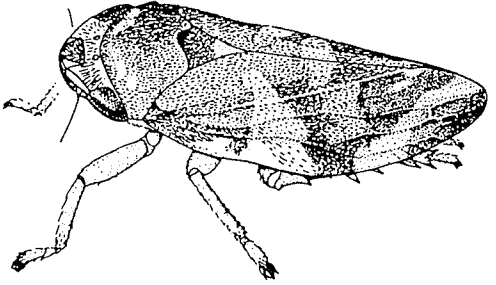
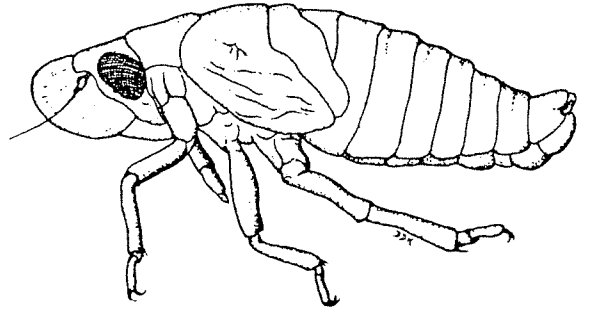
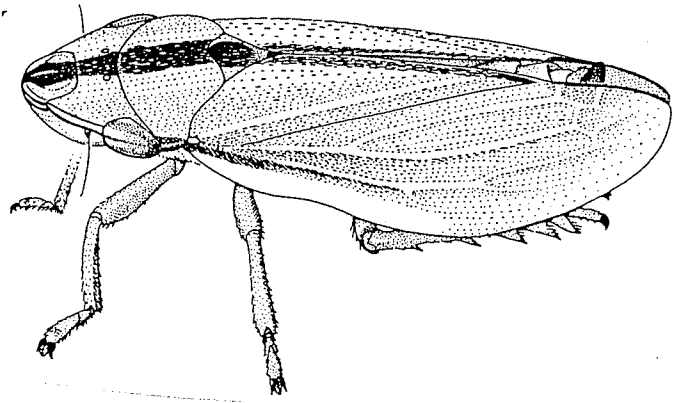
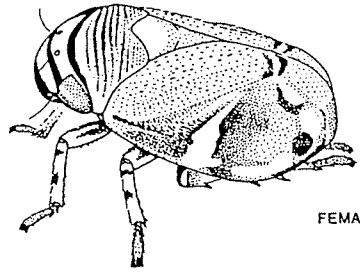
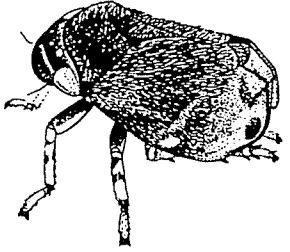
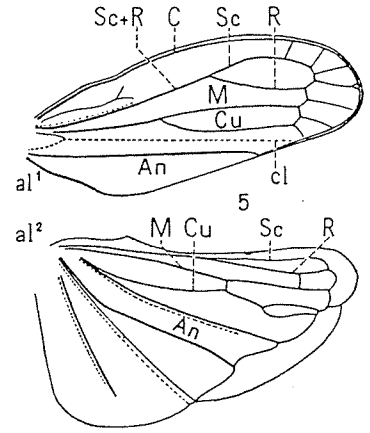
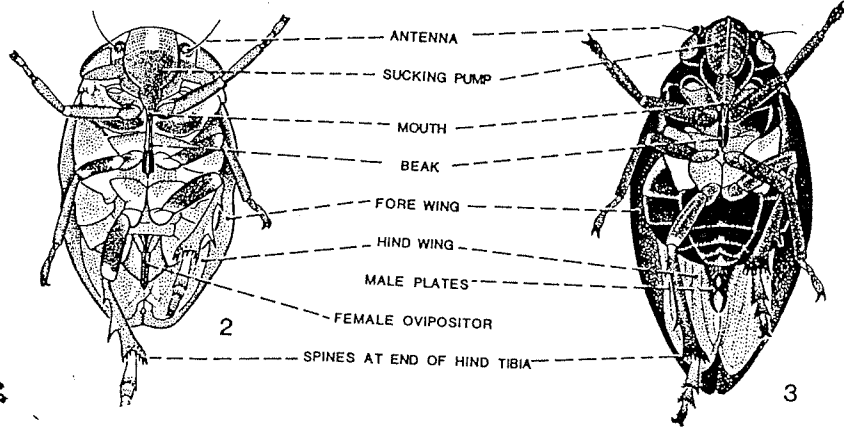
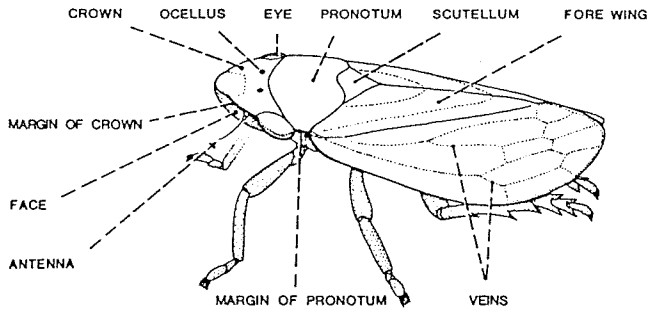
HOMOPTERA: Auchenorrhyncha
Superfamily Cicadoidea
Family Membracidae
Treehoppers



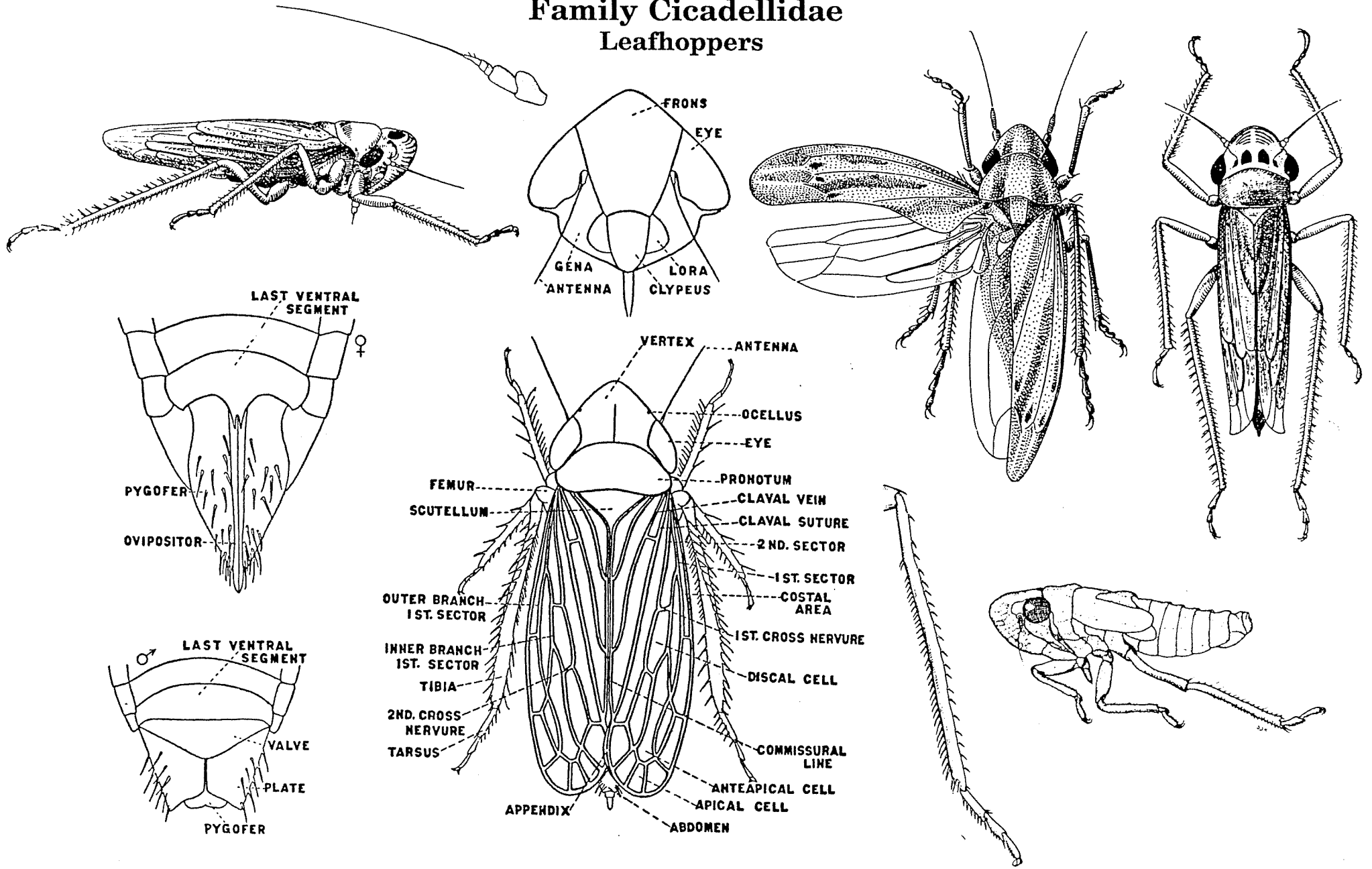
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Treehoppers



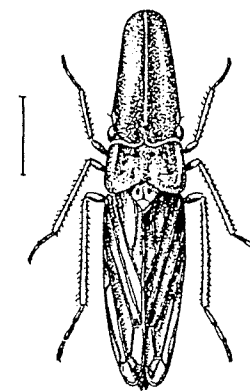
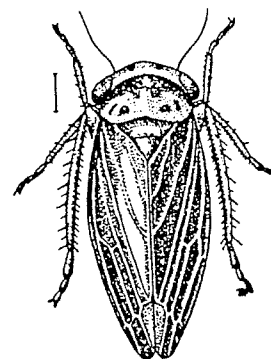
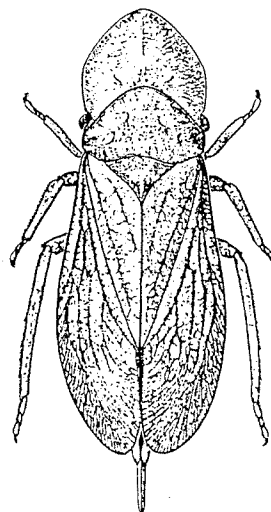
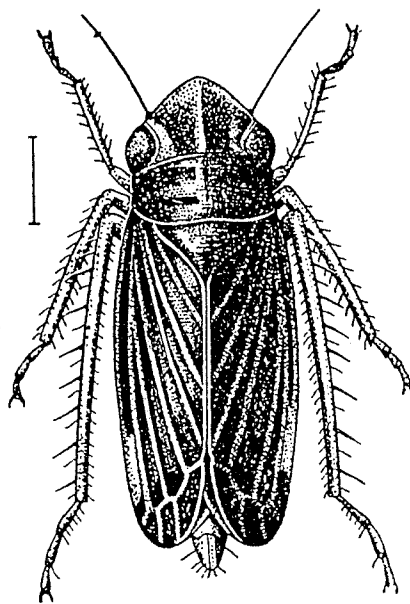
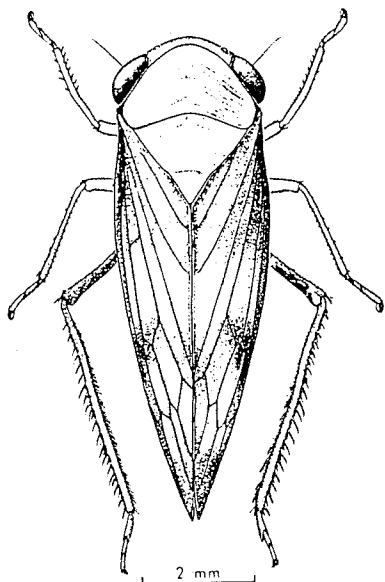
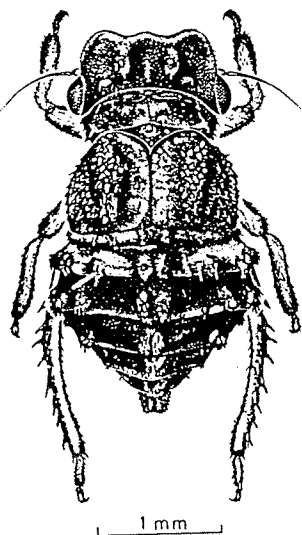
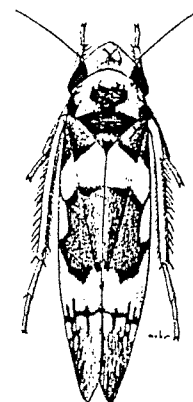
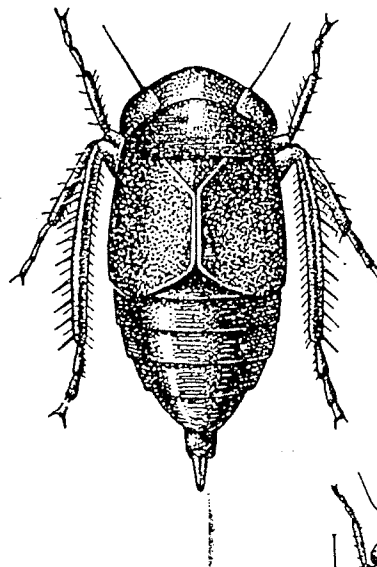
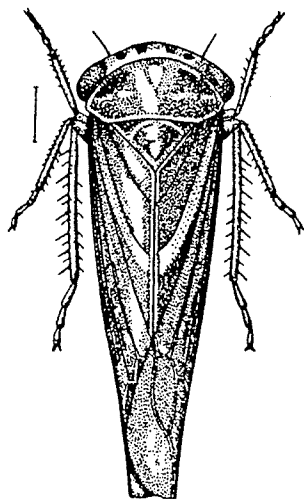
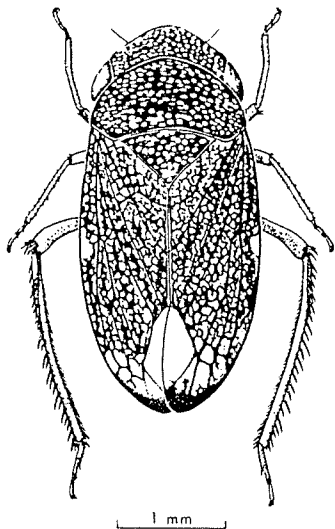
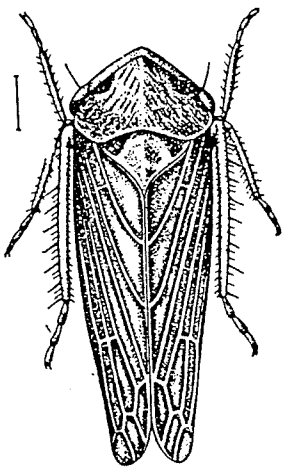
HOMOPTERA: Auchenorrhyncha
Superfamily Cicadoidea
Family Cercopidae
Froghoppers/ Spittlebugs



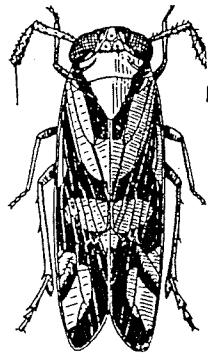
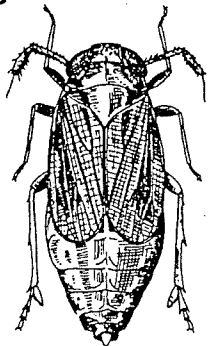
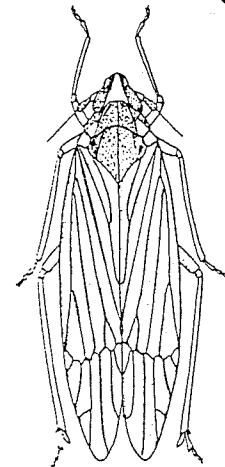
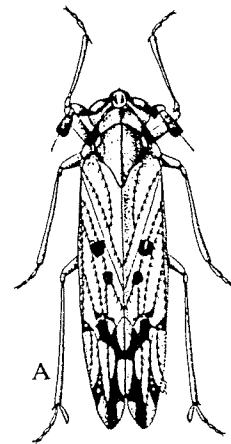
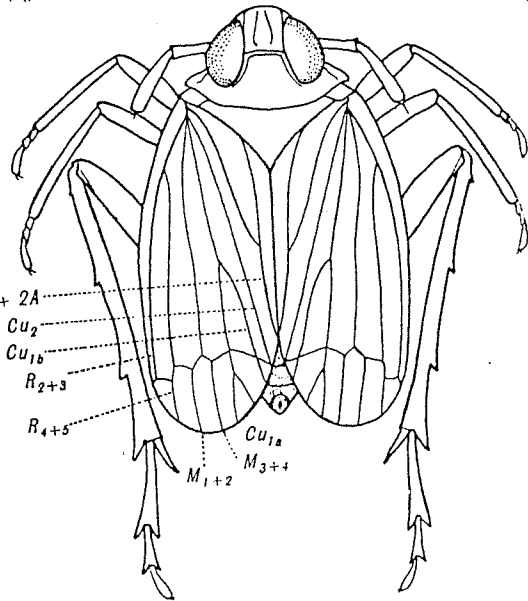
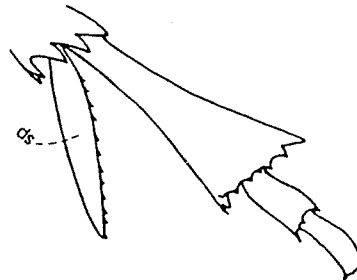
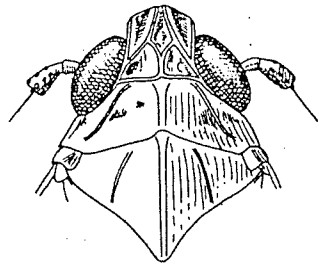
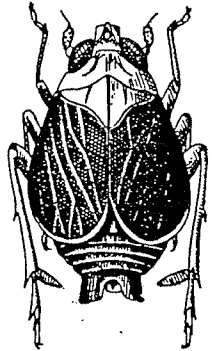
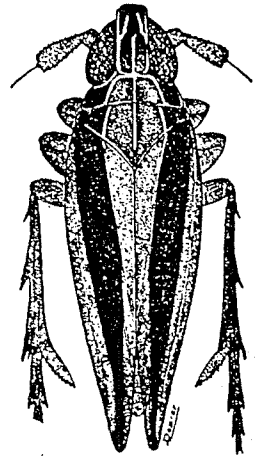
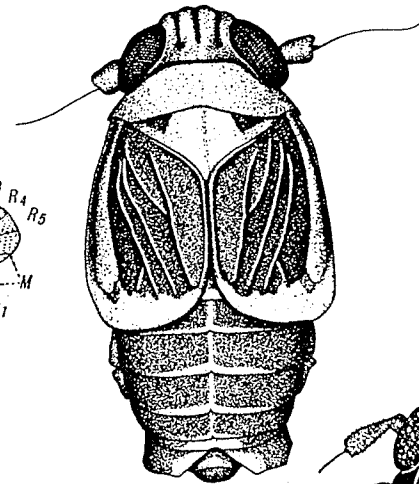
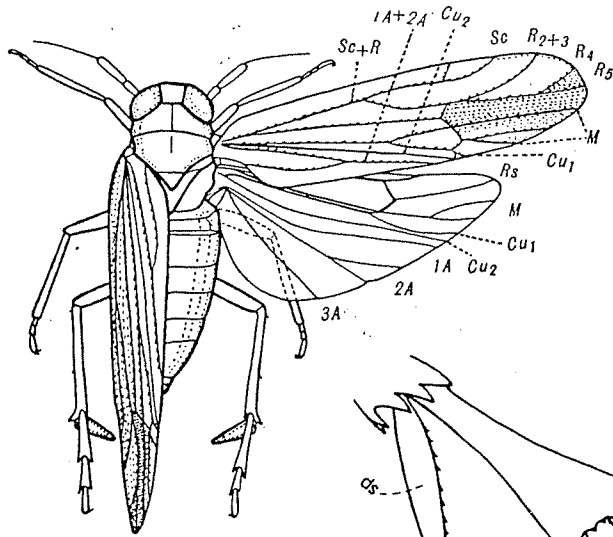
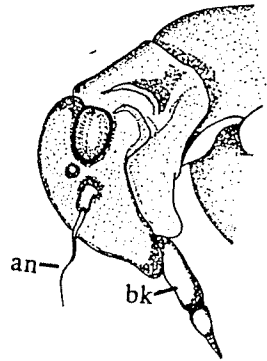
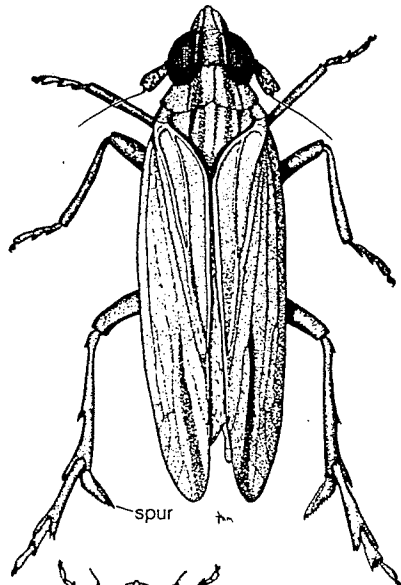
HOMOPTERA: Auchenorrhyncha
Superfamily Cicadoidea
Family Cicadellidae
Leafhoppers



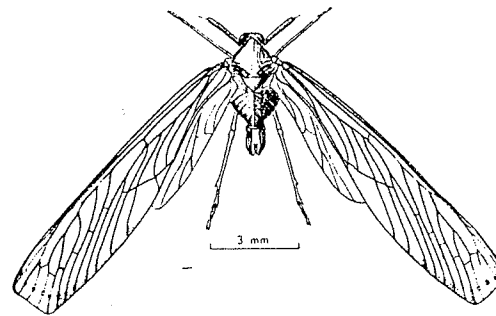
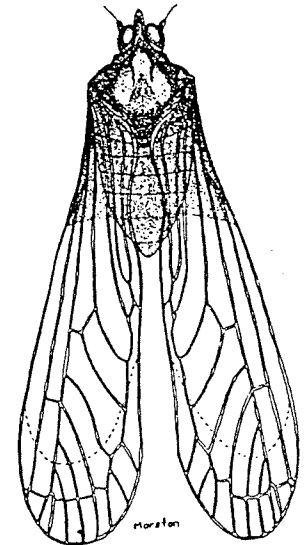
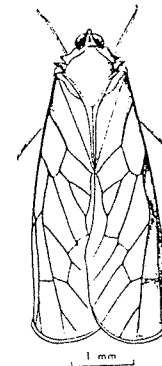
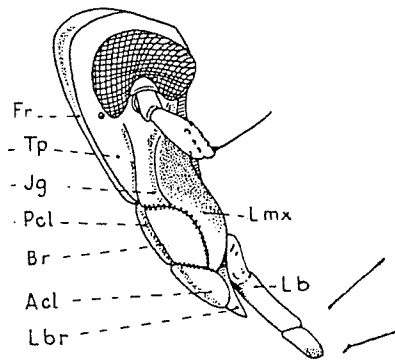
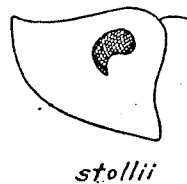
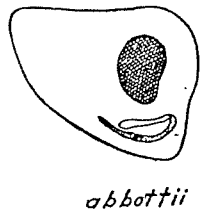
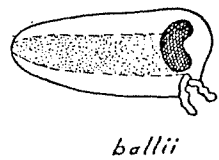
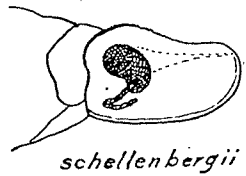
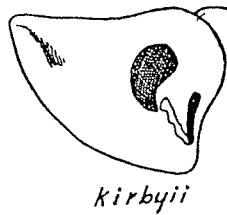
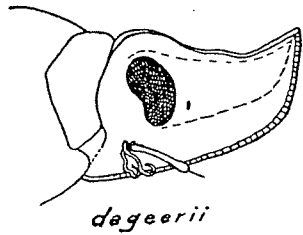
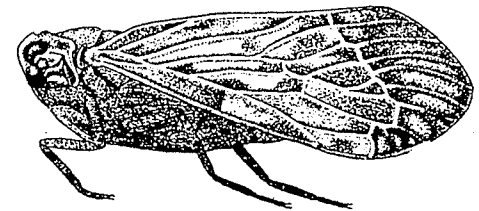
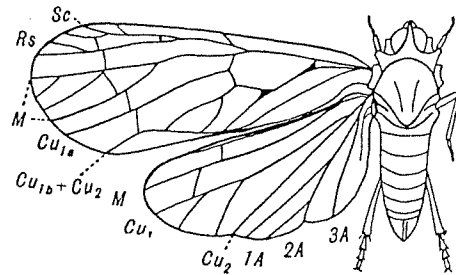
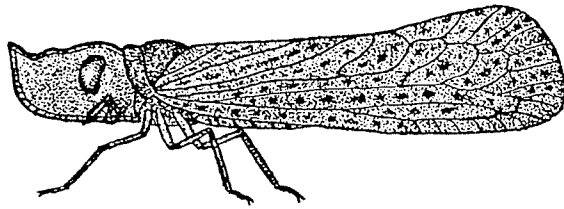
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Leafhoppers



HOMOPTERA: Auchenorrhyncha
Superfamily Fulgoroidea
Family Delphacidae
Delphacid planthoppers

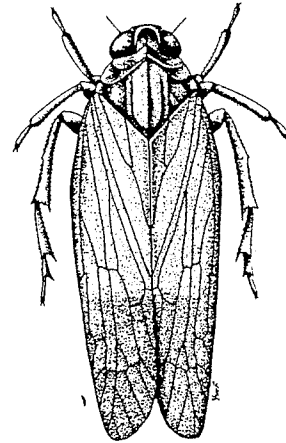
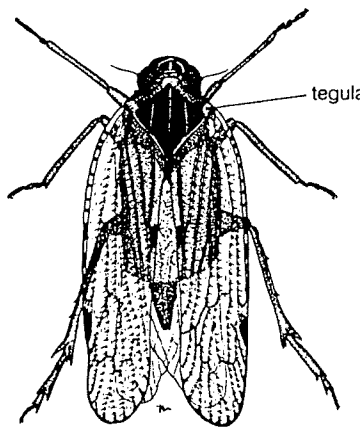
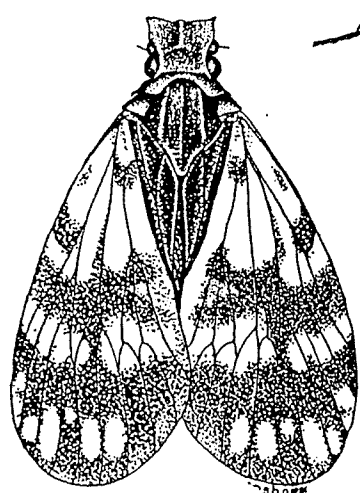
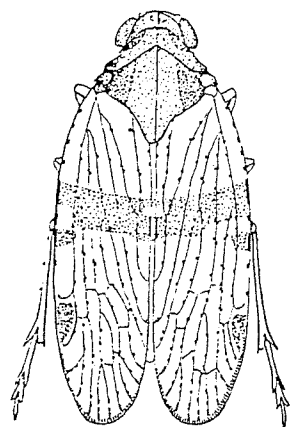
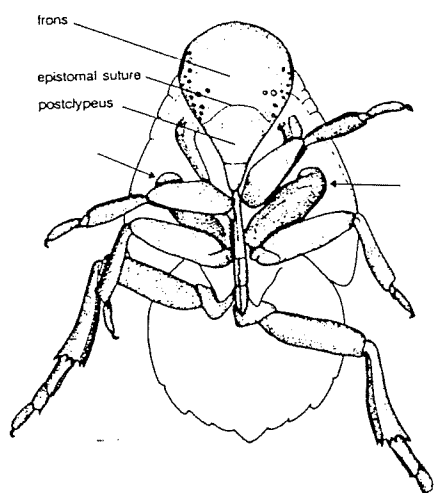
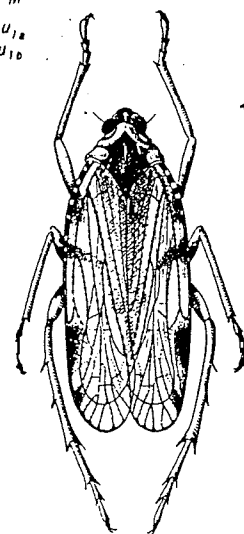
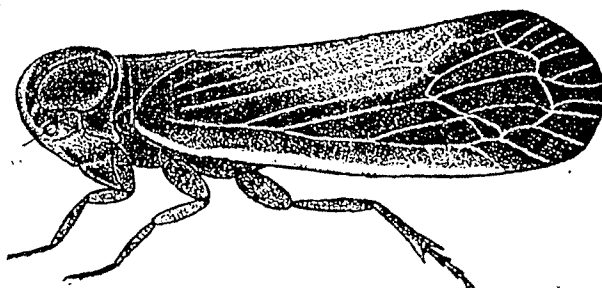
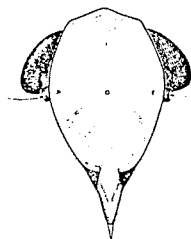
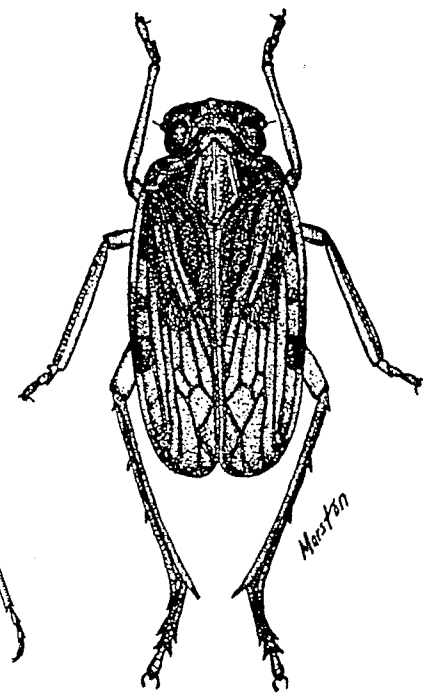
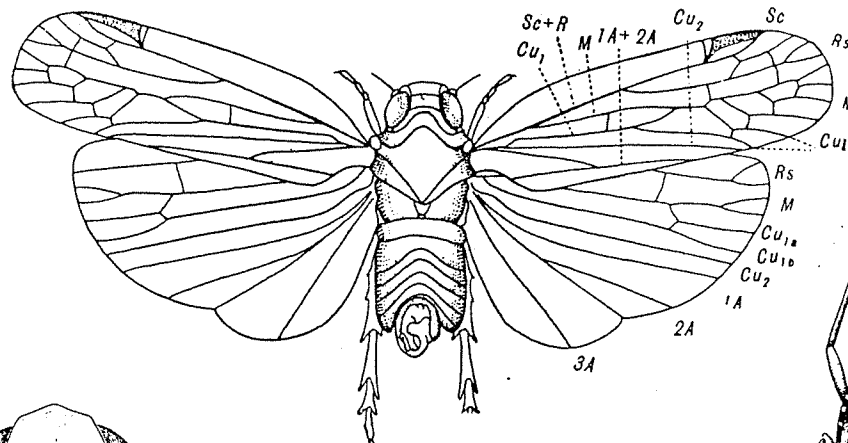
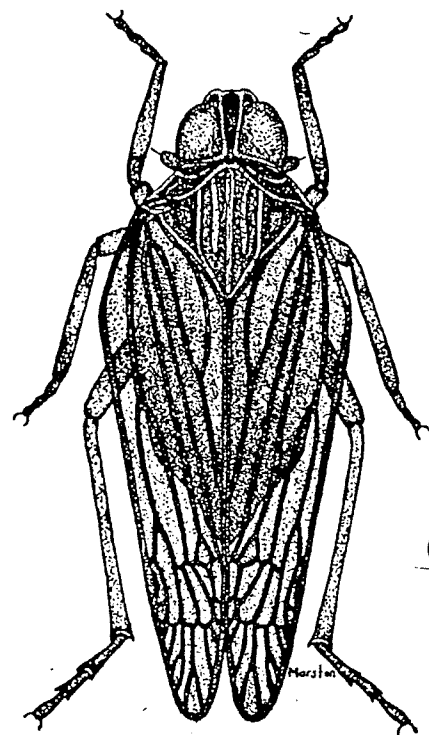


HOMOPTERA: Auchenorrhyncha
 Superfamily Fulgoroidea
 Family Derbidae
 Derbid planthoppers

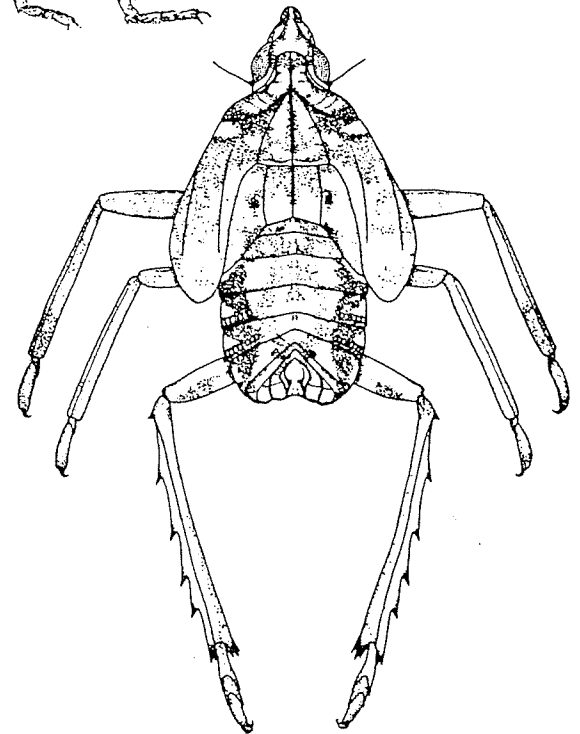
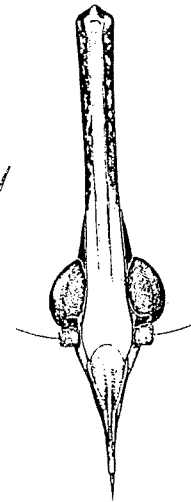
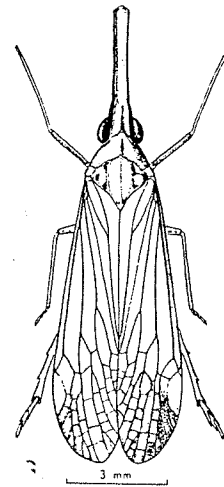
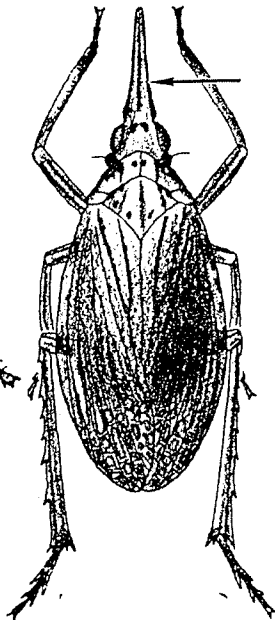
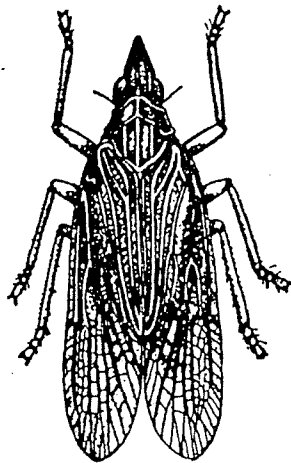
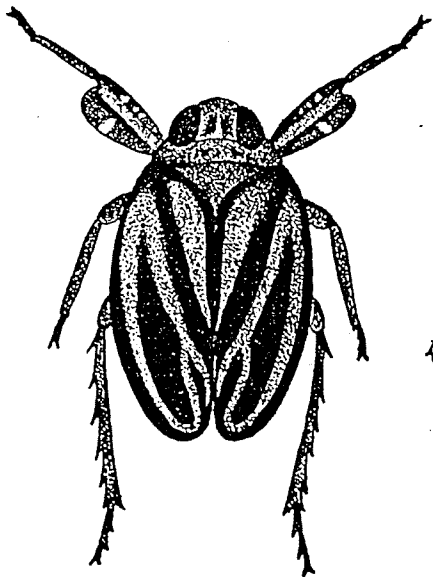
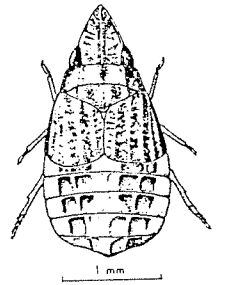
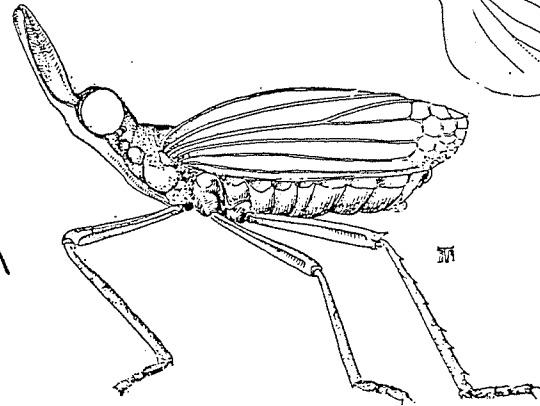
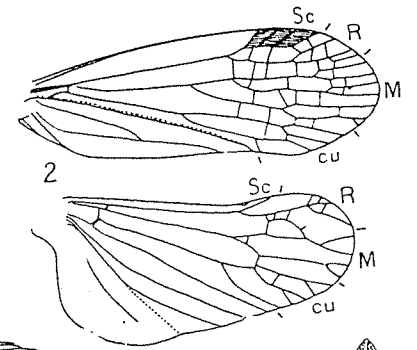
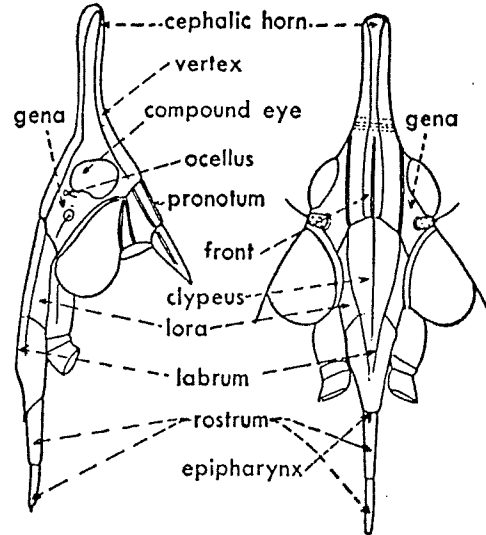
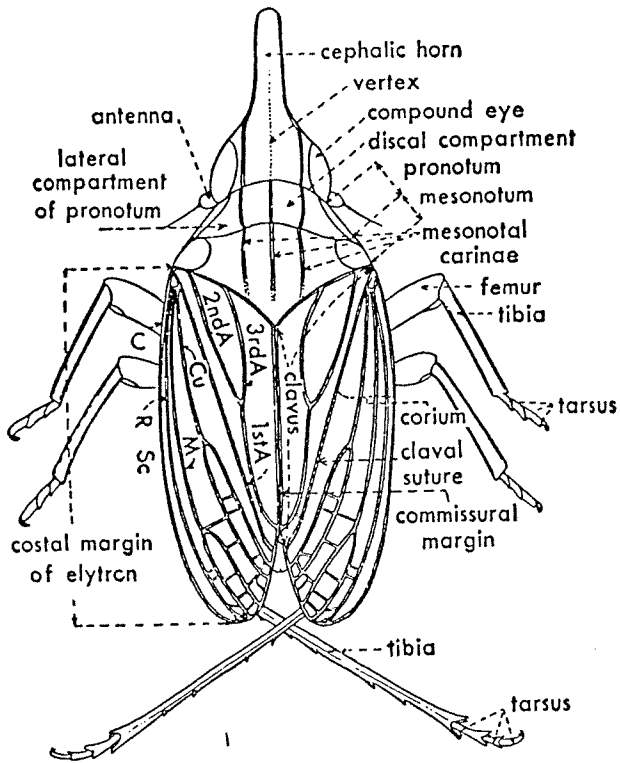


-Lateral outlines of heads of species of *Otiocerus*, drawn to same scale (original).

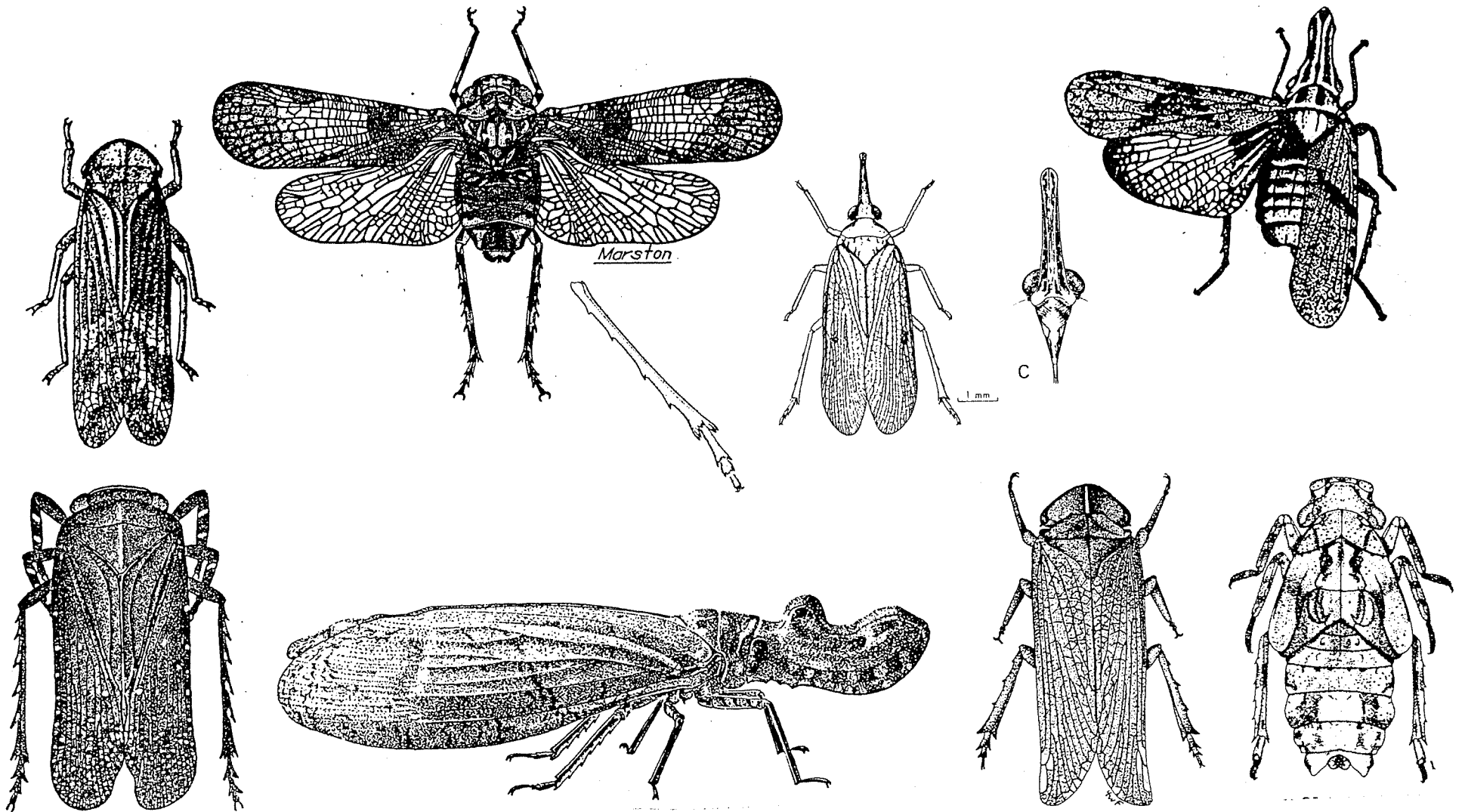
HOMOPTERA: Auchenorrhyncha
Superfamily Fulgoroidea
Family Cixiidae
Cixiid planthoppers



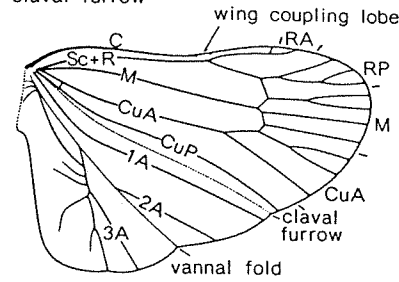
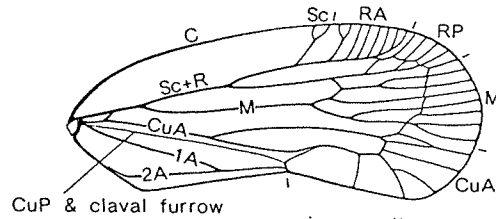
HOMOPTERA: Auchenorrhyncha
Superfamily Fulgoroidea
Family Dictyopharidae
Dictyopharid planthoppers



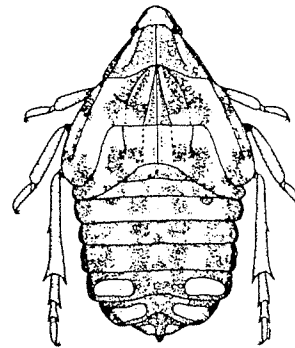
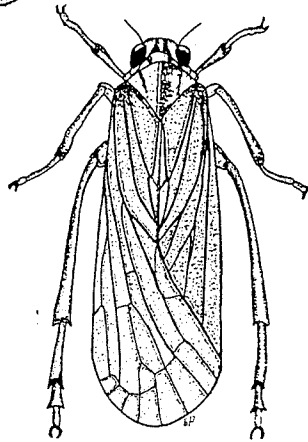
HOMOPTERA: Auchenorrhyncha
Superfamily Fulgoroidea
Family Fulgoridae
Fulgorid planthoppers



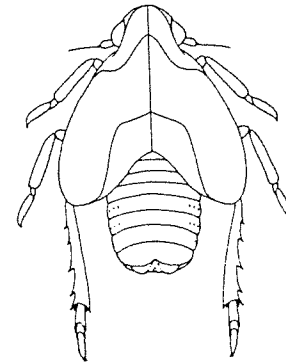
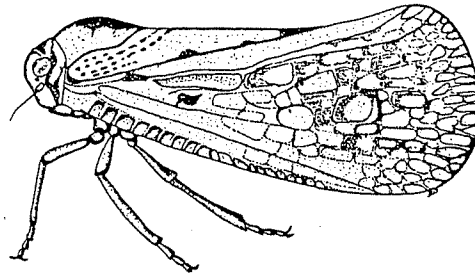
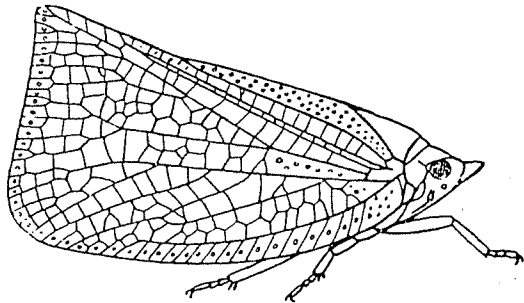
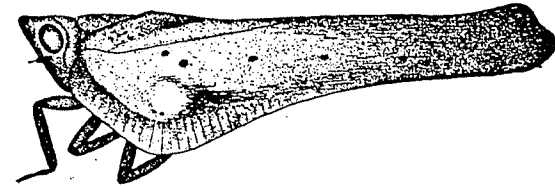
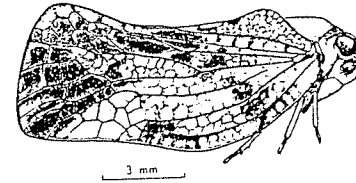
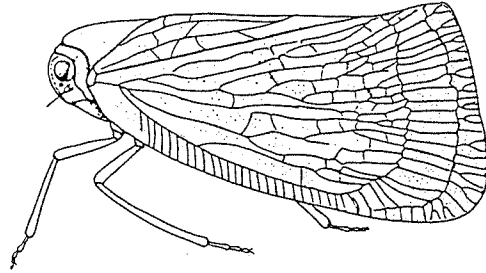
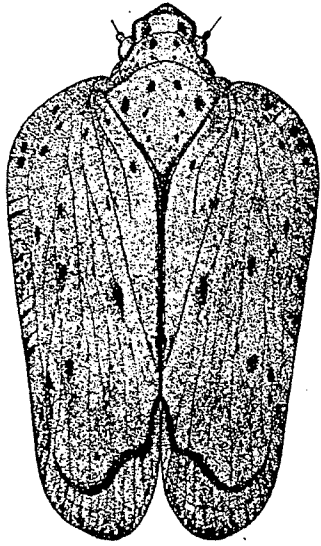
HOMOPTERA: Auchenorrhyncha
Superfamily Fulgoroidea
Family Achilidae
Achilid planthoppers



5 mm



HOMOPTERA: Auchenorrhyncha
Superfamily Fulgoroidea
Family Flatidae
Flatid planthoppers



HOMOPTERA: Auchenorrhyncha
Superfamily Fulgoroidea
Family Acanaloniidae
Acanaloniid planthoppers

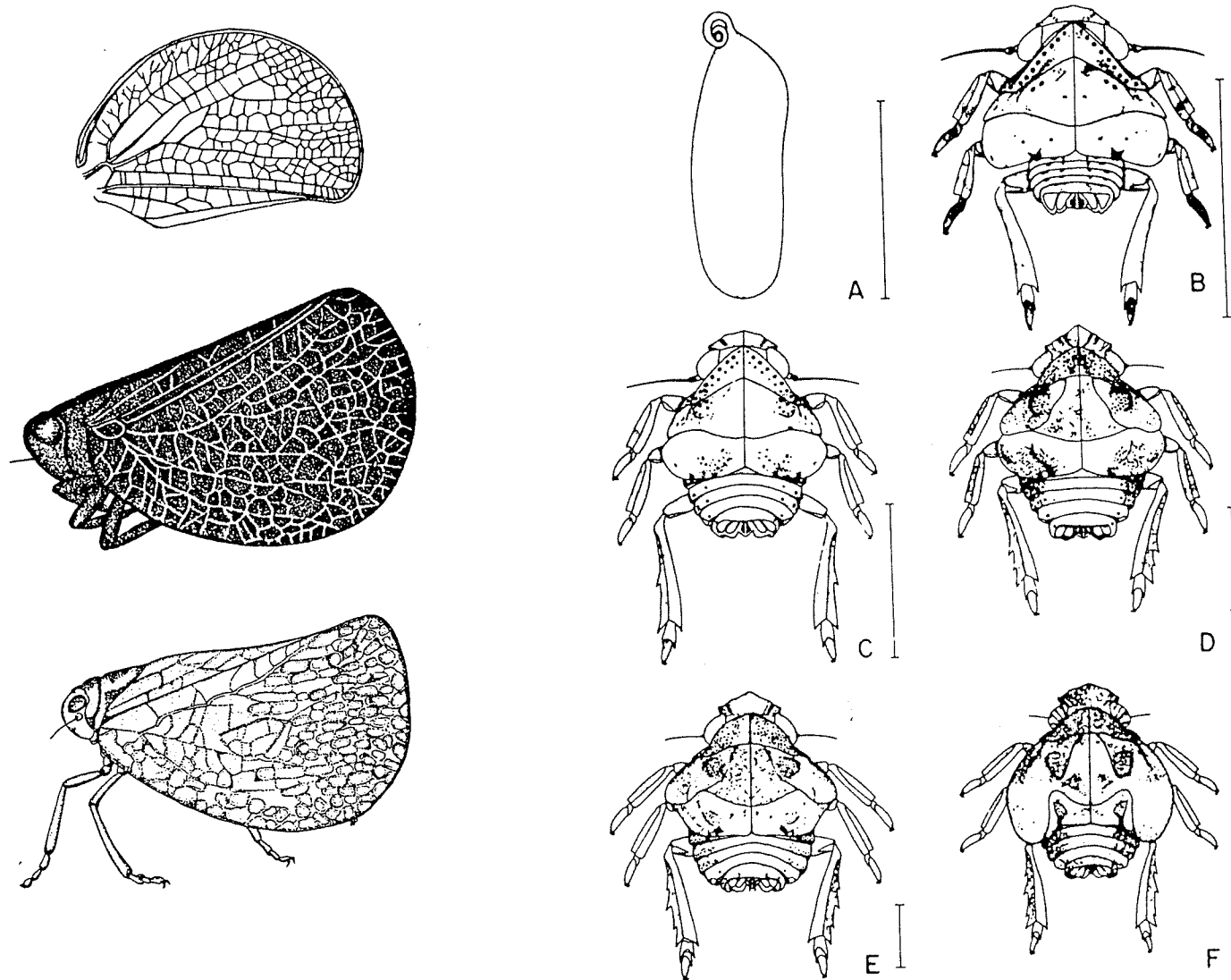
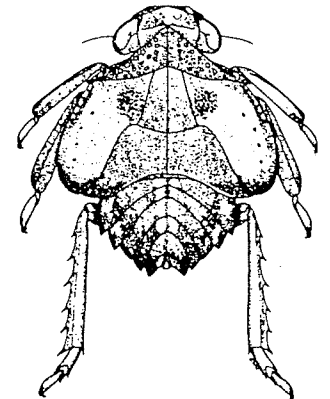
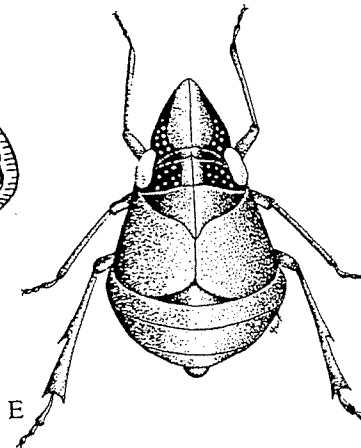
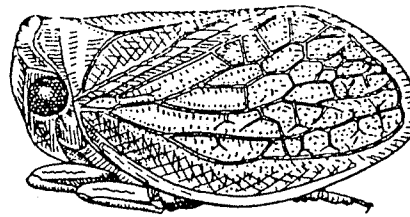
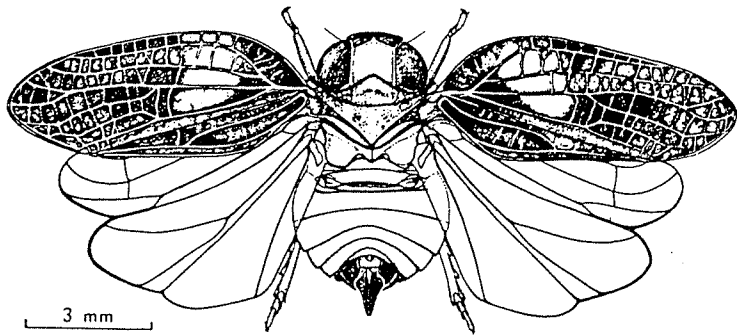
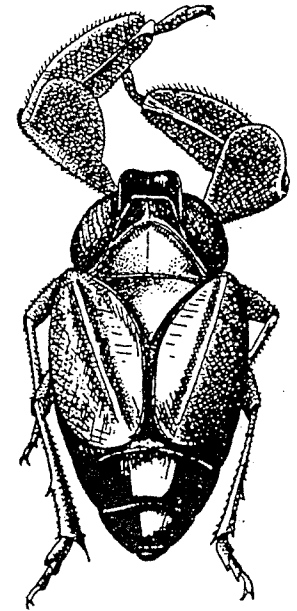
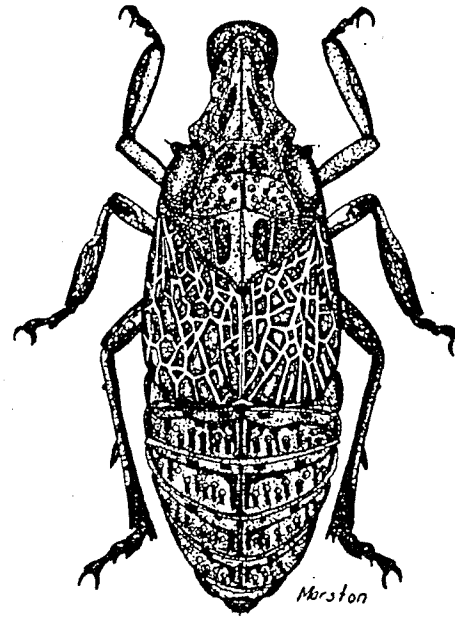
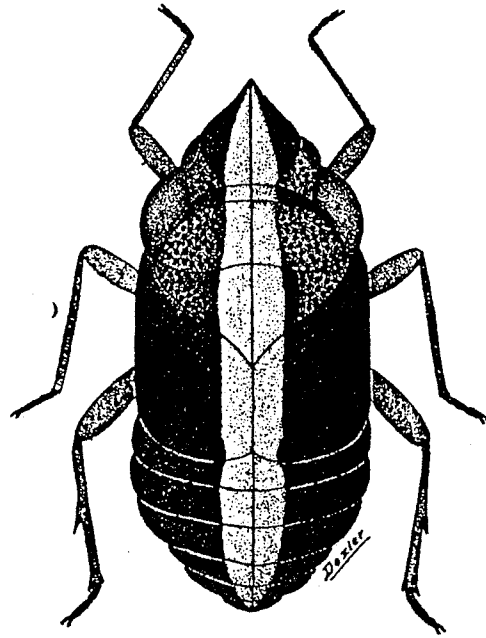
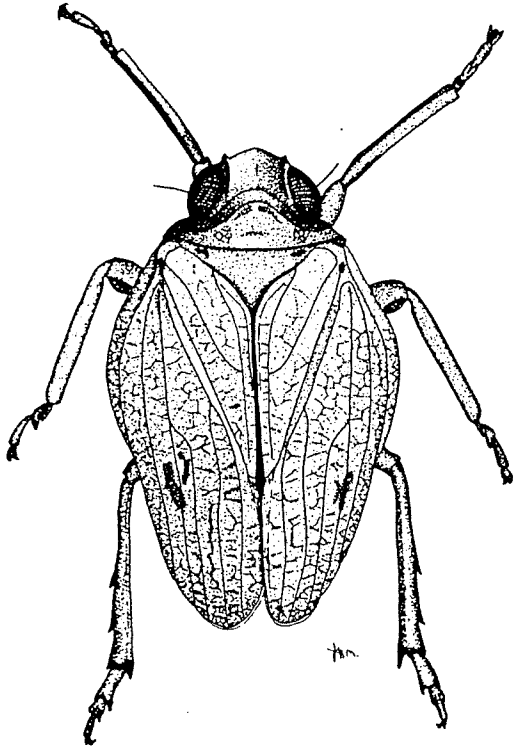
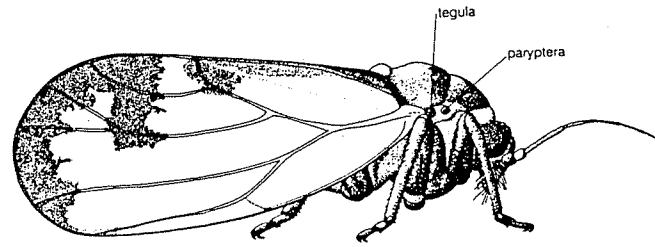
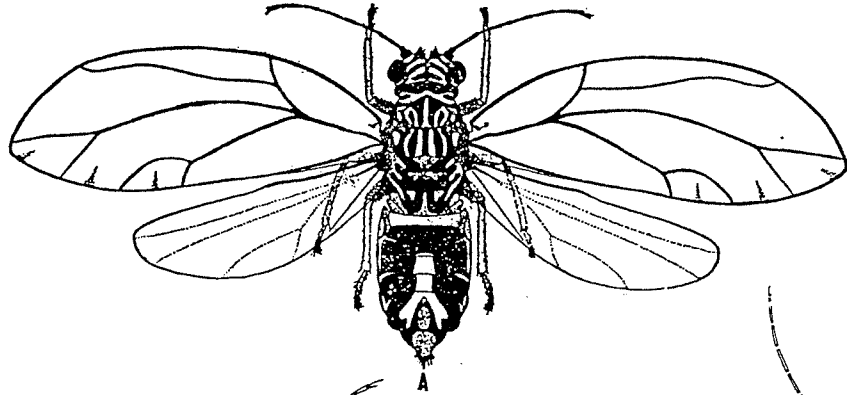


FIG. 5.—Immature stages of *A. conica*. (A) egg; (B) 1st instar; (C) 2nd instar; (D) 3rd instar; (E) 4th instar; (F) 5th instar. Vertical bar = 1.0 mm.

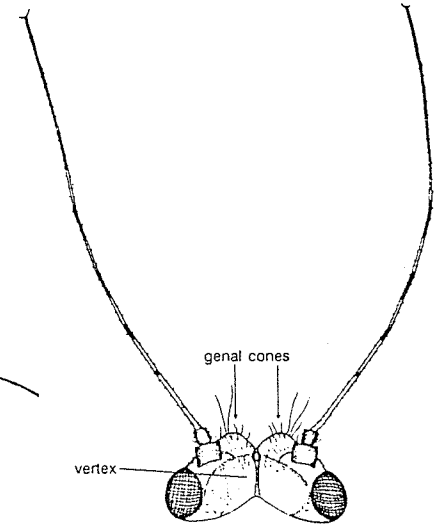
HOMOPTERA: Auchenorrhyncha
Superfamily Fulgoroidea
Family Issidae
Issid planthoppers



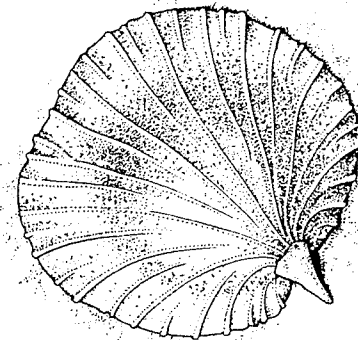
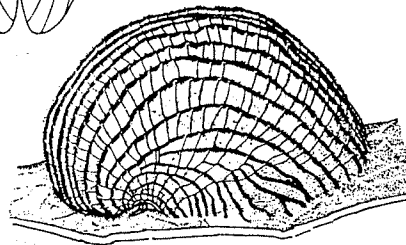
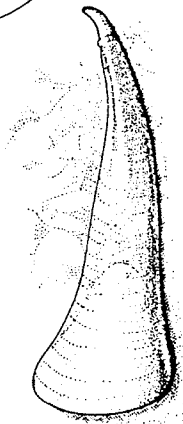
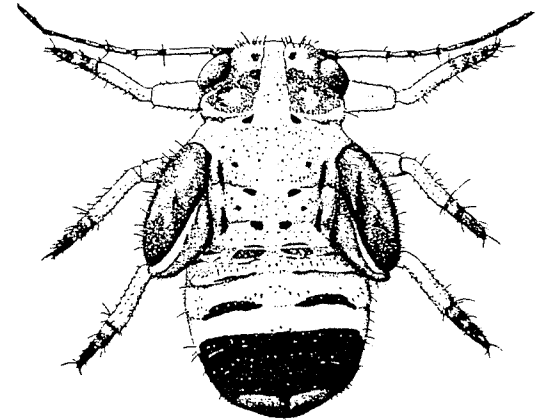
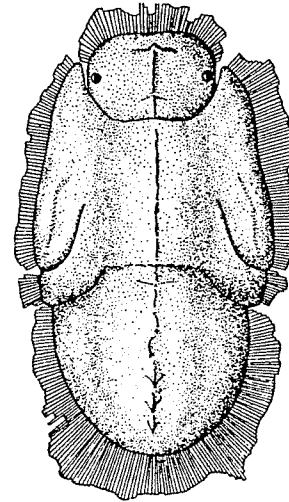
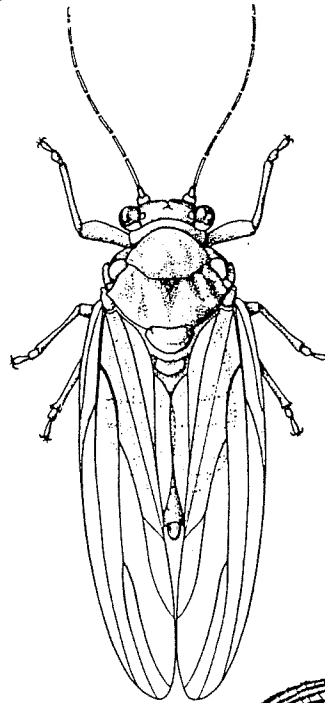
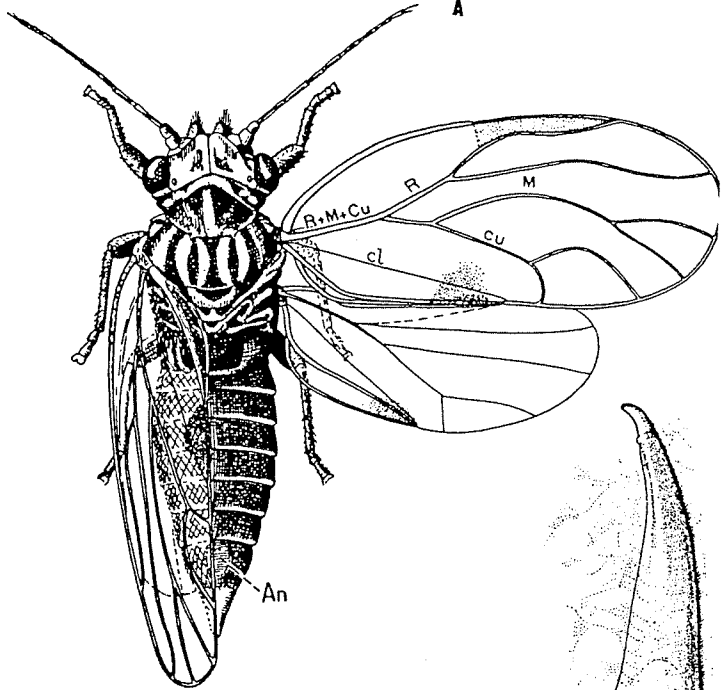
HOMOPTERA: Sternorrhyncha
Superfamily Psylloidea
Family Psyllidae
Psyllids/ Jumping plantlice



Psyllidae: *Psyllopsis fraxini*.



Psyllidae: *Psylla foersteri*, head.



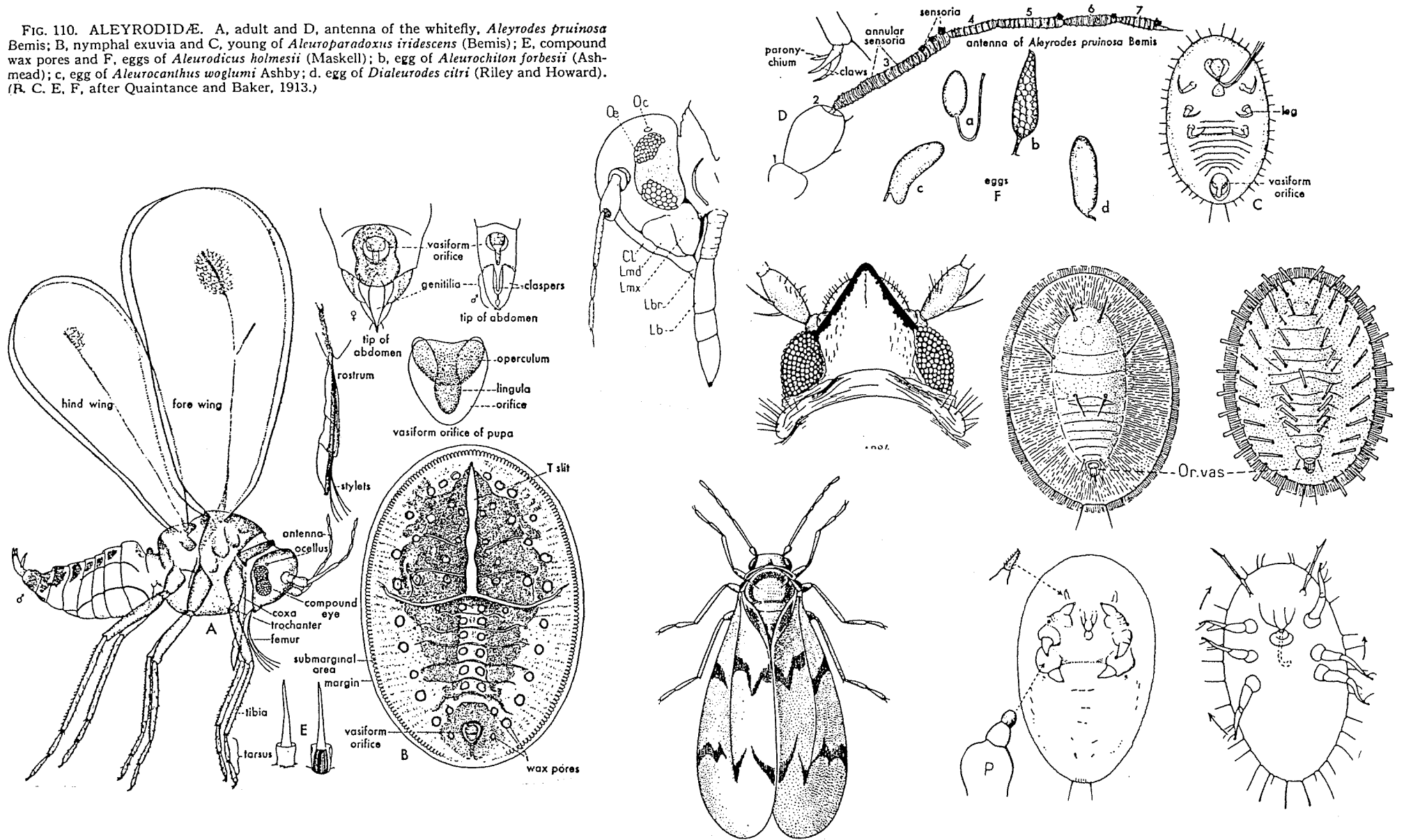
HOMOPTERA: Sternorrhyncha

Superfamily Aleyrodoidea

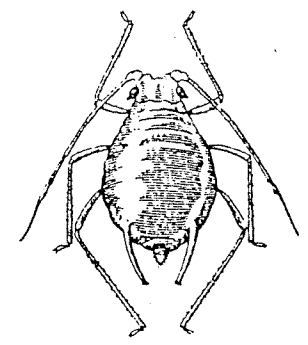
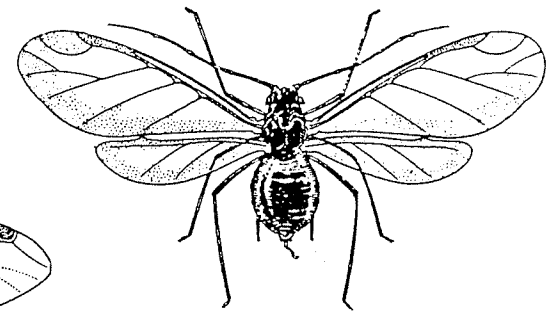
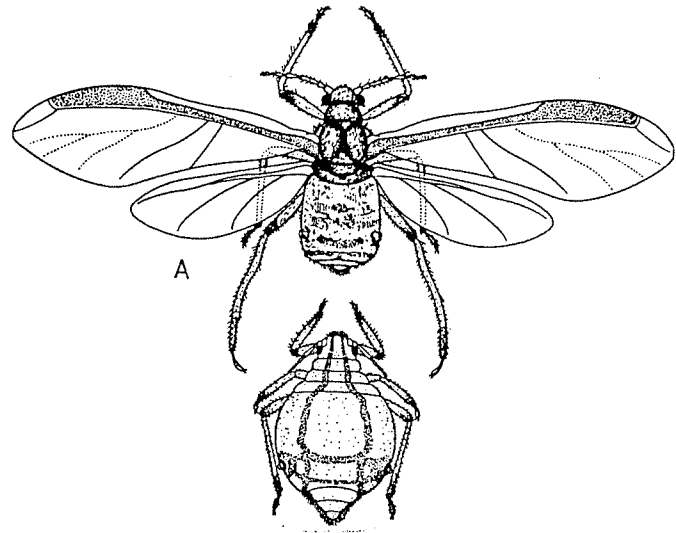
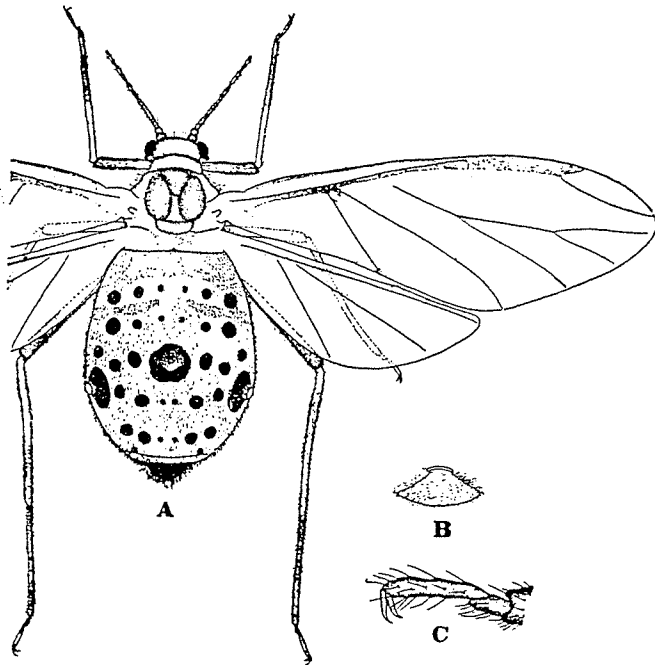
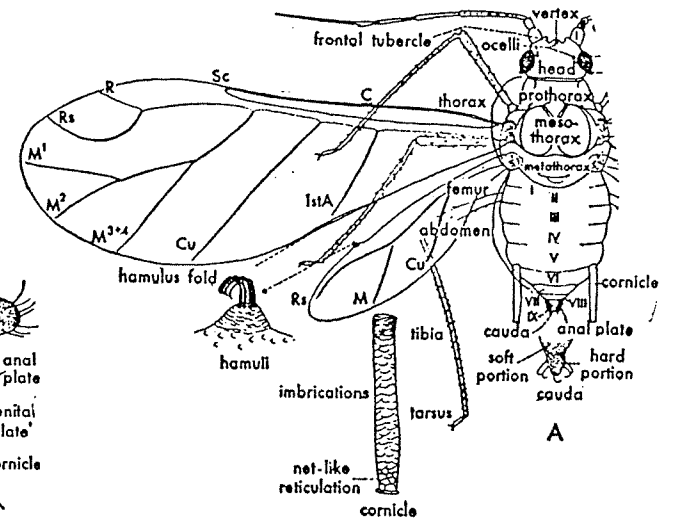
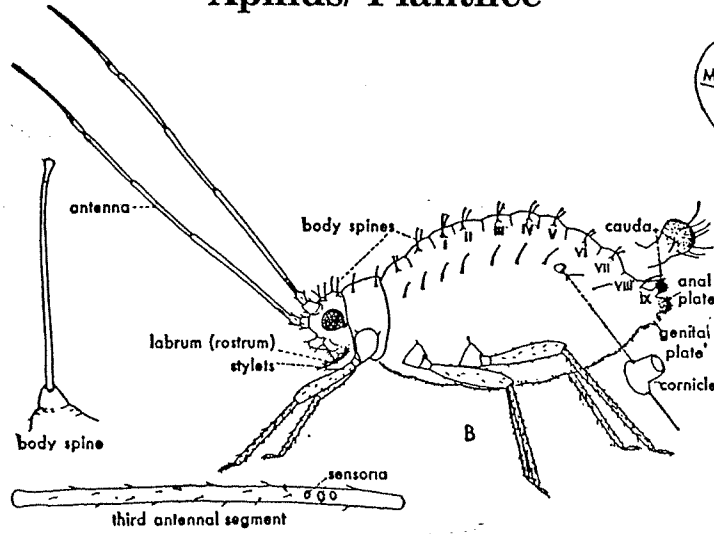
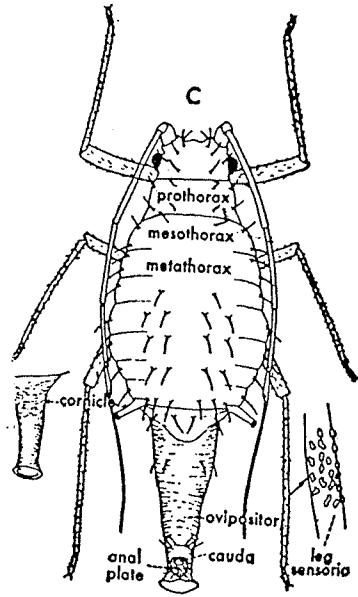
Family Aleyrodidae

Whiteflies

FIG. 110. ALEYRODIDÆ. A, adult and D, antenna of the whitefly, *Aleyrodes pruinosus* Bemis; B, nymphal exuvia and C, young of *Aleuroparadoxus iridescens* (Bemis); E, compound wax pores and F, eggs of *Aleurodicus holmesii* (Maskell); G, compound wax pores and H, eggs of *Aleurochiton forbesii* (Ashmead); I, egg of *Aleurocanthus woglumi* Ashby; J, egg of *Dialeurodes citri* (Riley and Howard). (R. C. E. F., after Quaintance and Baker, 1913.)



HOMOPTERA: Sternorrhyncha
 Superfamily Aphidoidea
 Family Aphididae
 Aphids/ Plantlice



HOMOPTERA: Sternorrhyncha
Superfamily Aphidoidea
Family Eriosomatidae
Woolly and Gall-forming aphids

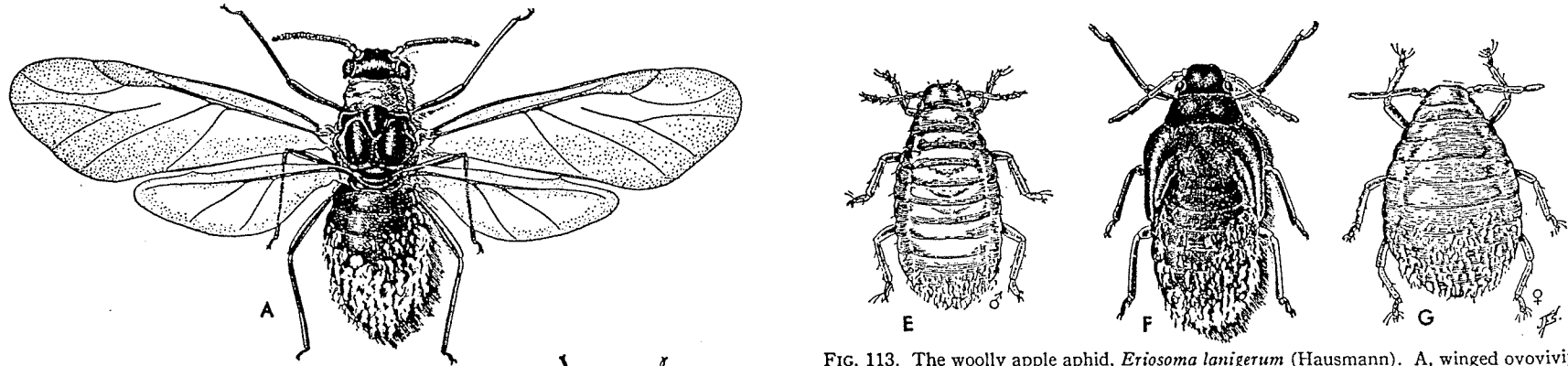
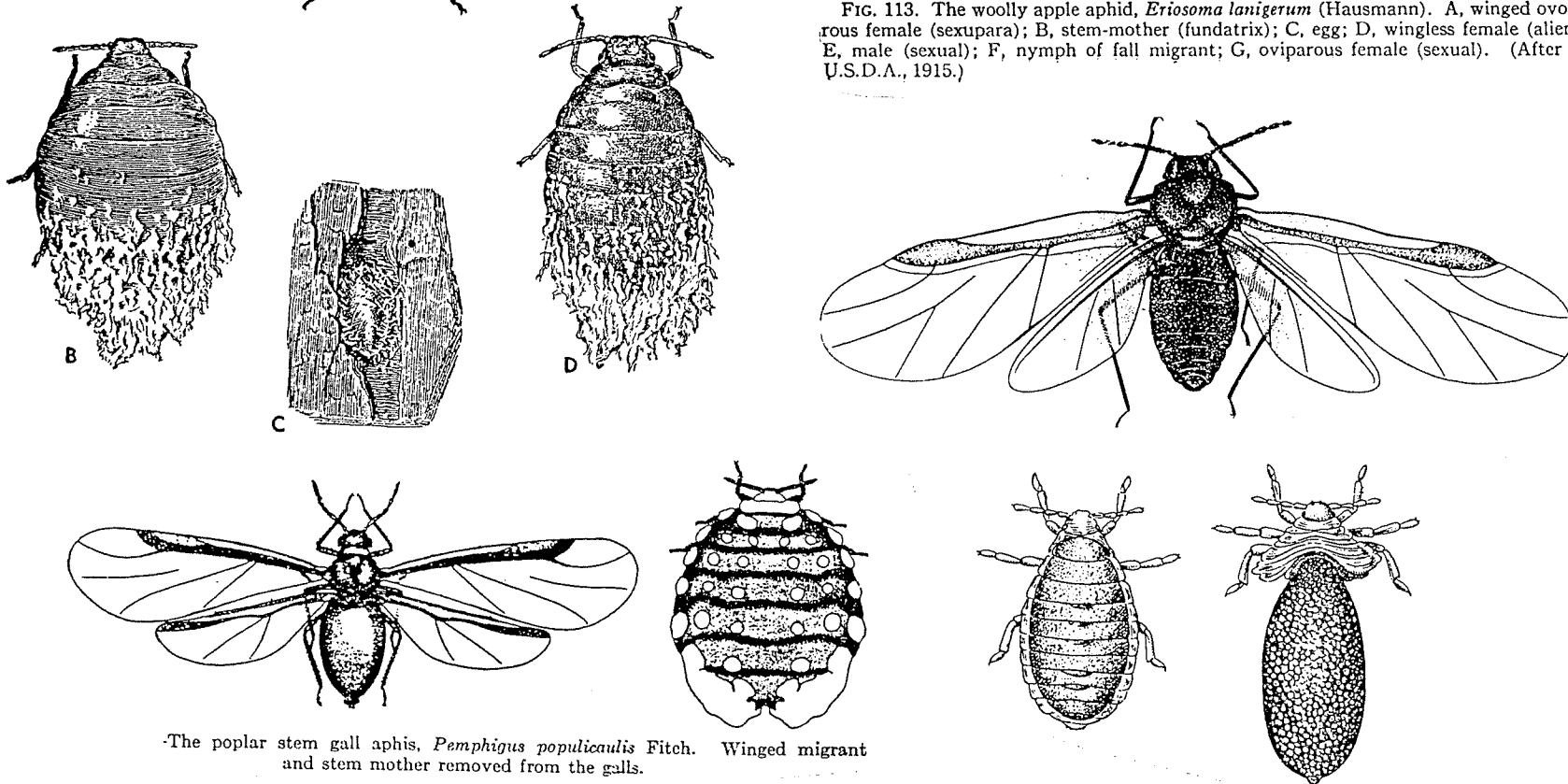


FIG. 113. The woolly apple aphid, *Eriosoma lanigerum* (Hausmann). A, winged ovoviviparous female (sexupara); B, stem-mother (fundatrix); C, egg; D, wingless female (alienicola); E, male (sexual); F, nymph of fall migrant; G, oviparous female (sexual). (After Baker, U.S.D.A., 1915.)



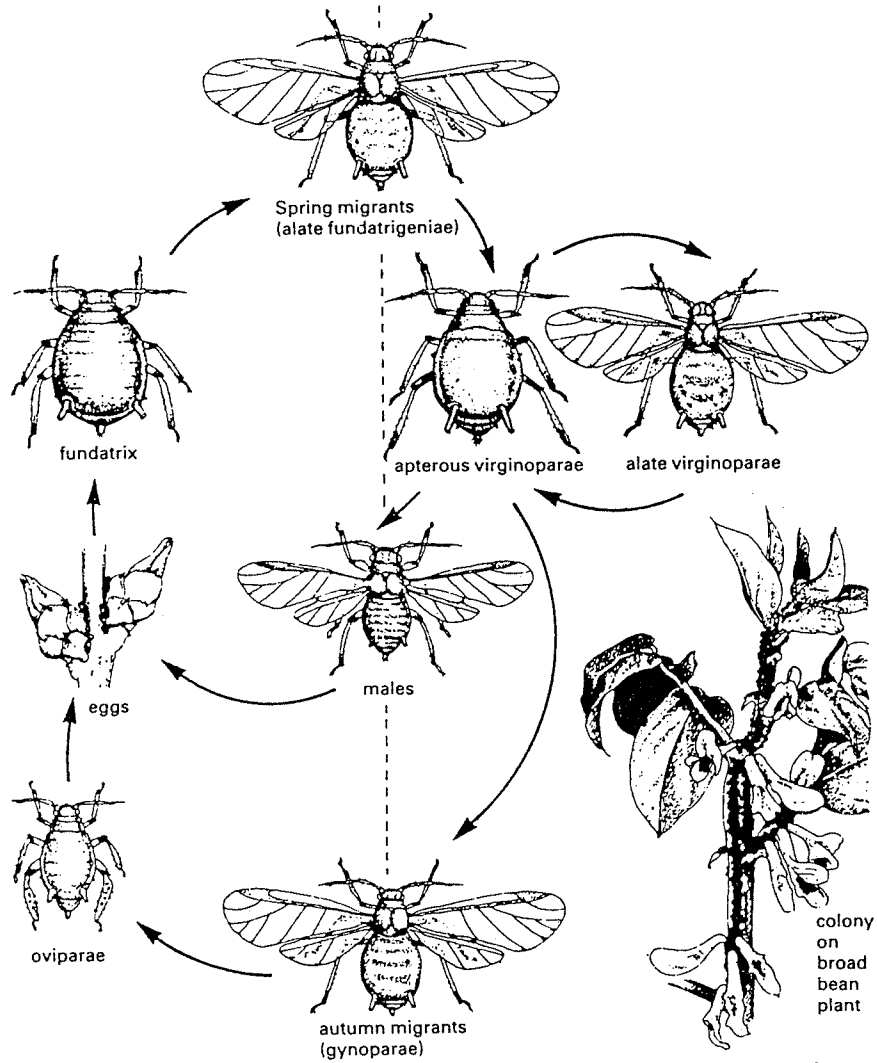
The poplar stem gall aphid, *Pemphigus populicaulis* Fitch. Winged migrant and stem mother removed from the galls.

HOMOPTERA: Sternorrhyncha
Superfamily Aphidoidea
Family Aphididae
Aphids/ Plantlice

Family Eriosomatidae
Woolly and Gall-forming aphids

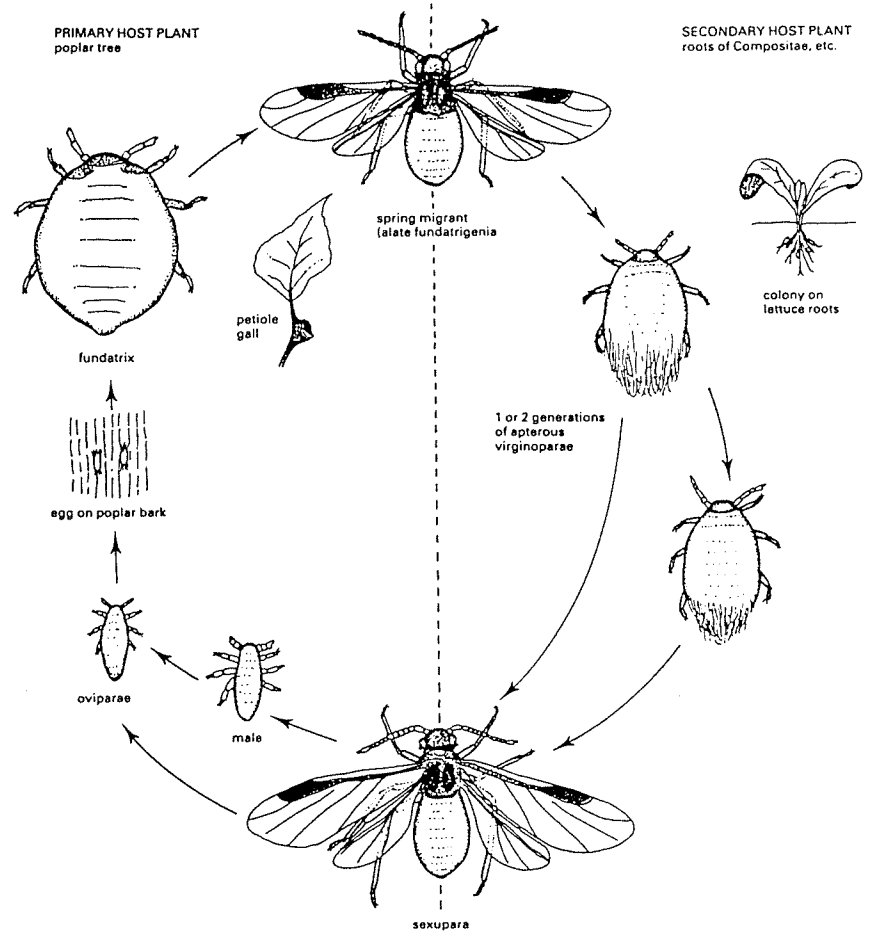
PRIMARY HOST PLANT
spindle tree

SECONDARY HOST PLANT
bean, sugar beet, and so on

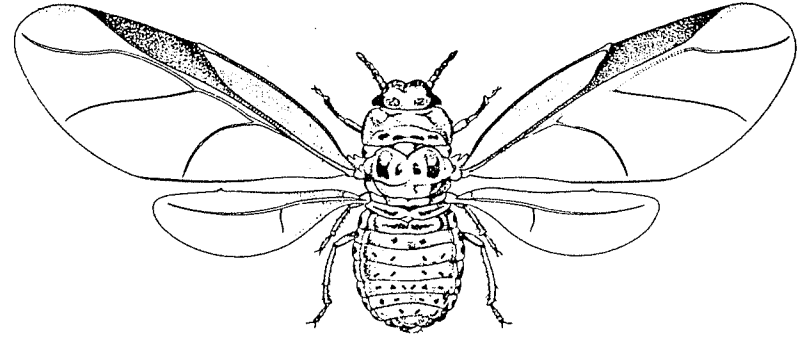
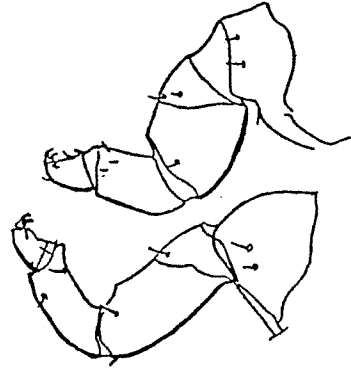
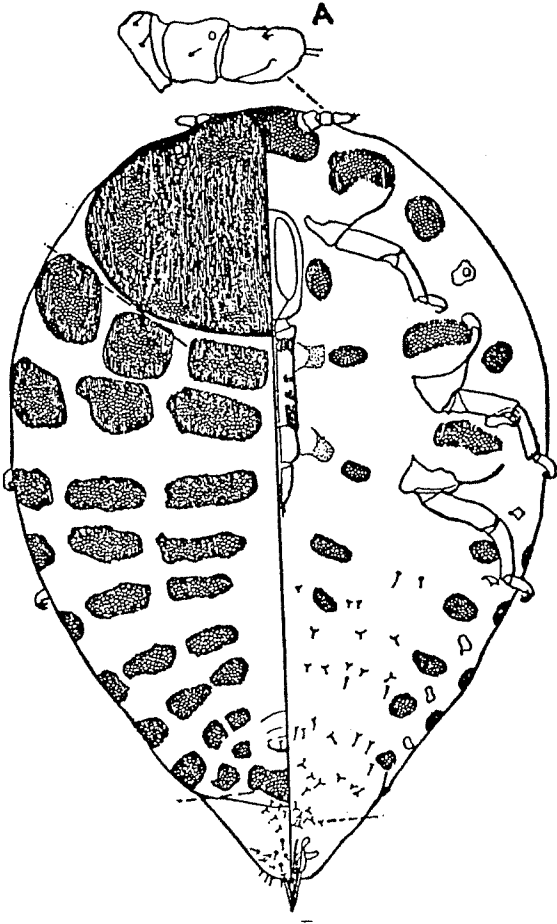


PRIMARY HOST PLANT
poplar tree

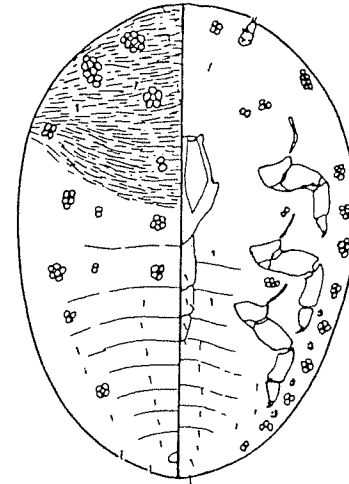
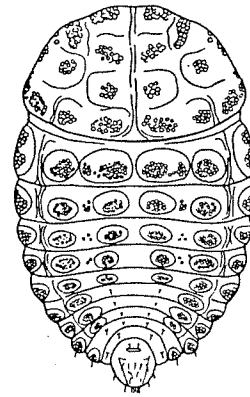
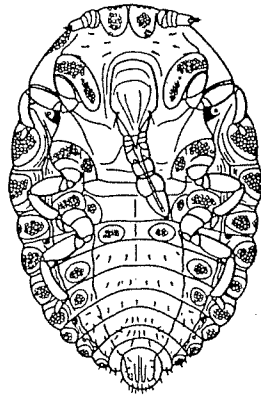
SECONDARY HOST PLANT
roots of Compositae, etc.



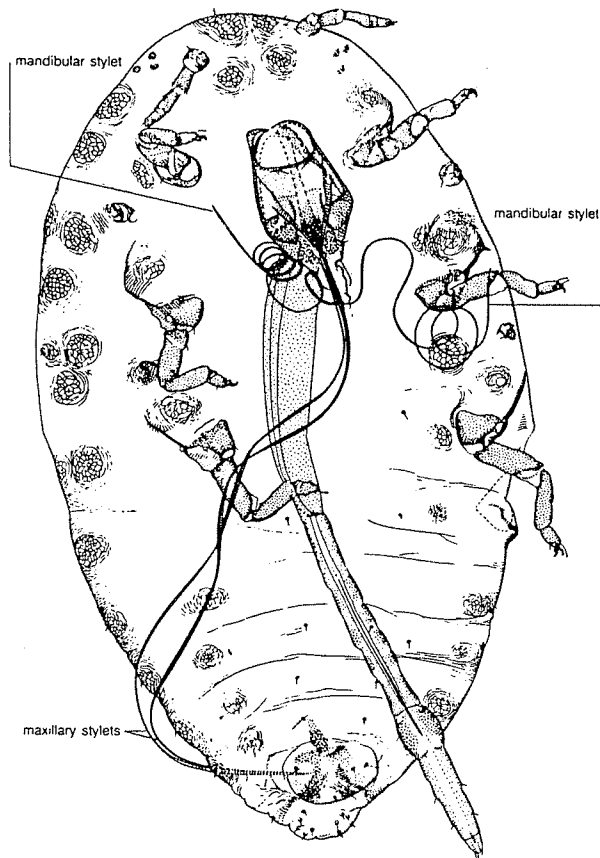
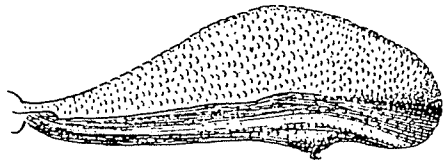
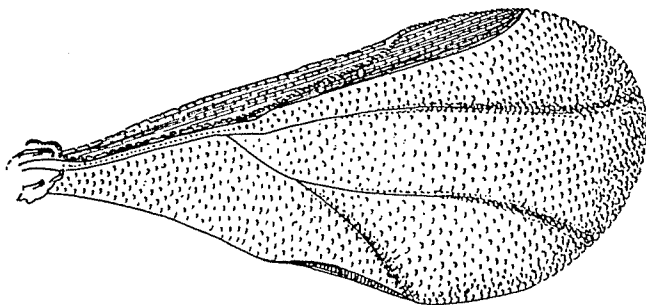
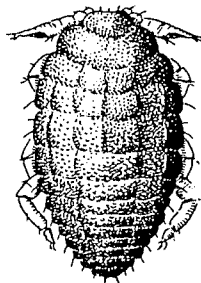
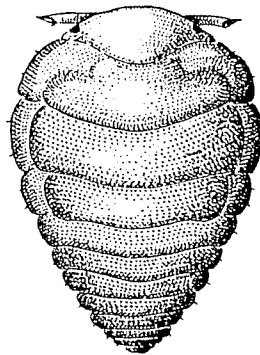
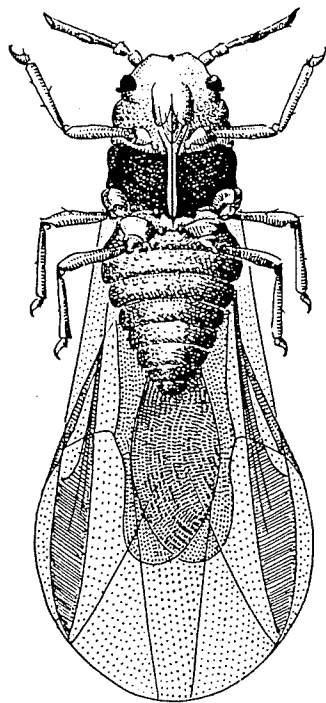
HOMOPTERA: Sternorrhyncha
Superfamily Aphidoidea
Family Adelgidae
Pine and Spruce aphids



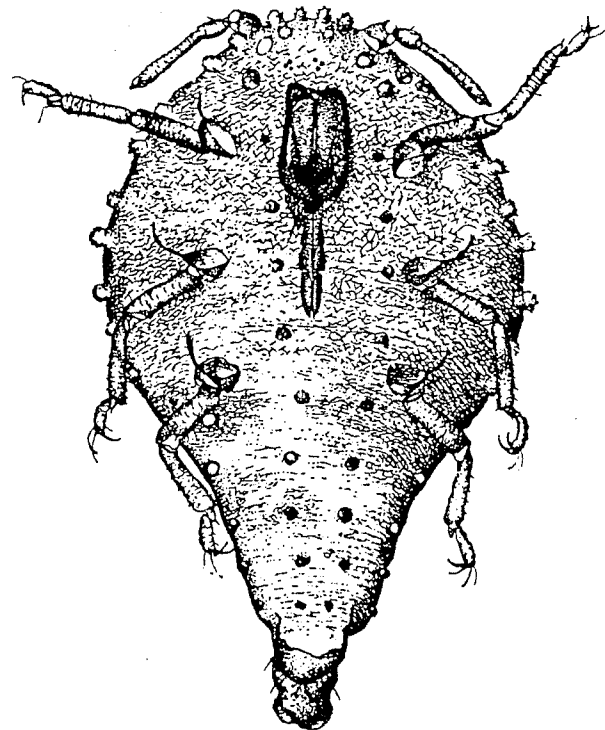
Chermes abietis,



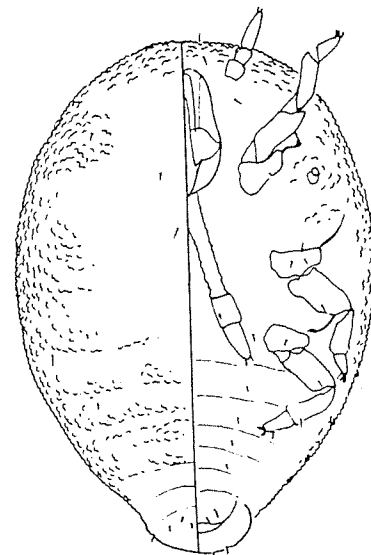
HOMOPTERA: Sternorrhyncha
Superfamily Aphidoidea
Family Phylloxeraeidae
Phylloxerans



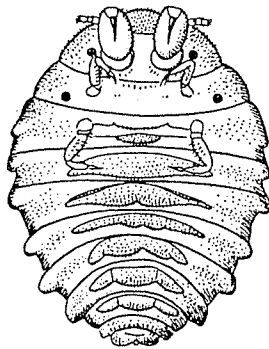
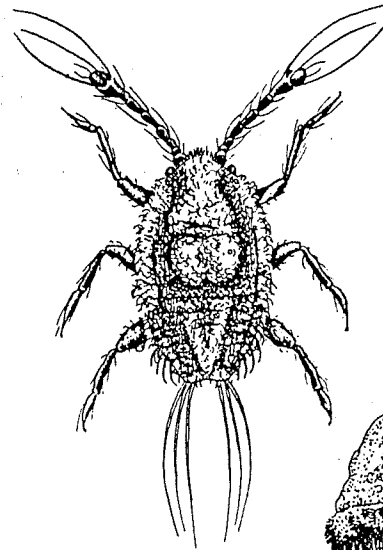
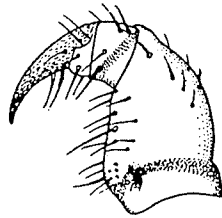
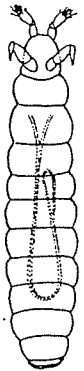
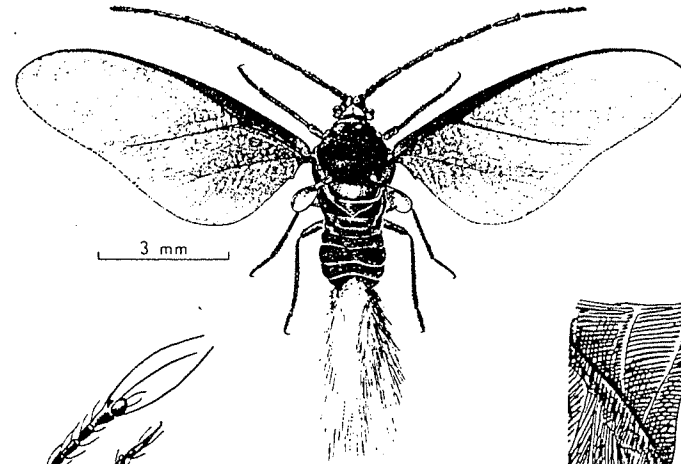
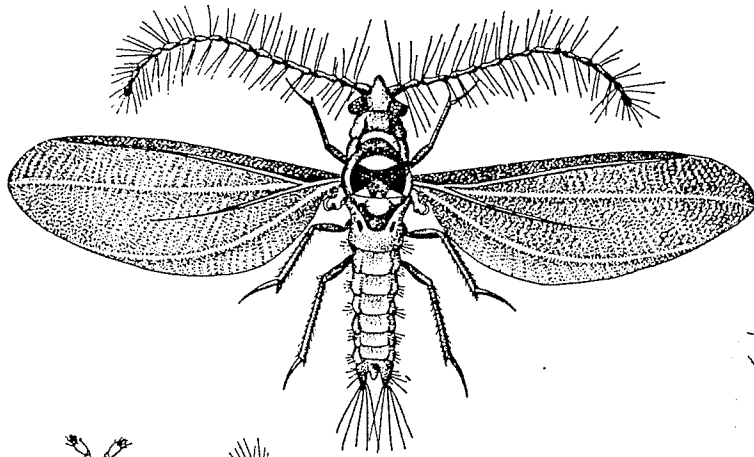
Phylloxeraeidae: Phylloxerina salicis in ventral view, microscope slide mount.



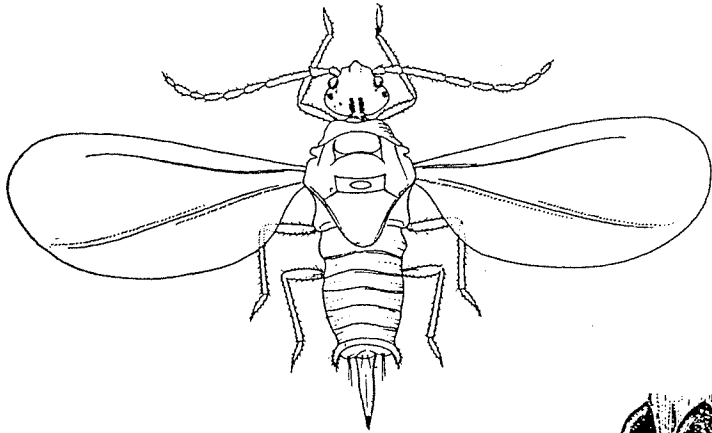
- Femelle fondatrice aptère de Acanthoecornis quercus (d'après L. GAUMONT).



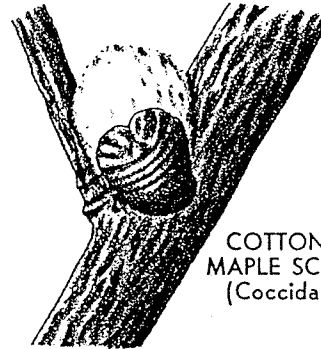
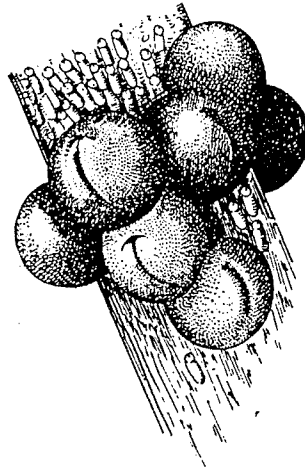
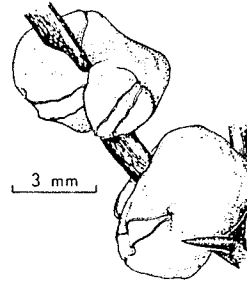
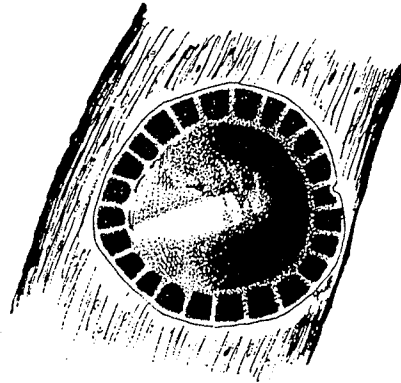
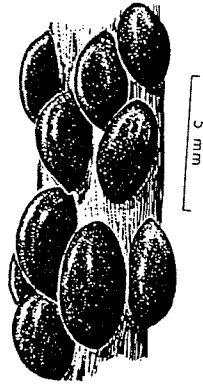
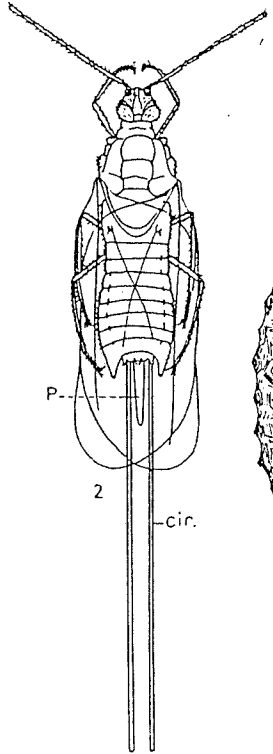
HOMOPTERA: Sternorrhyncha
Superfamily Coccoidea
Family Margarodidae
Giant scales/ Ground pearls



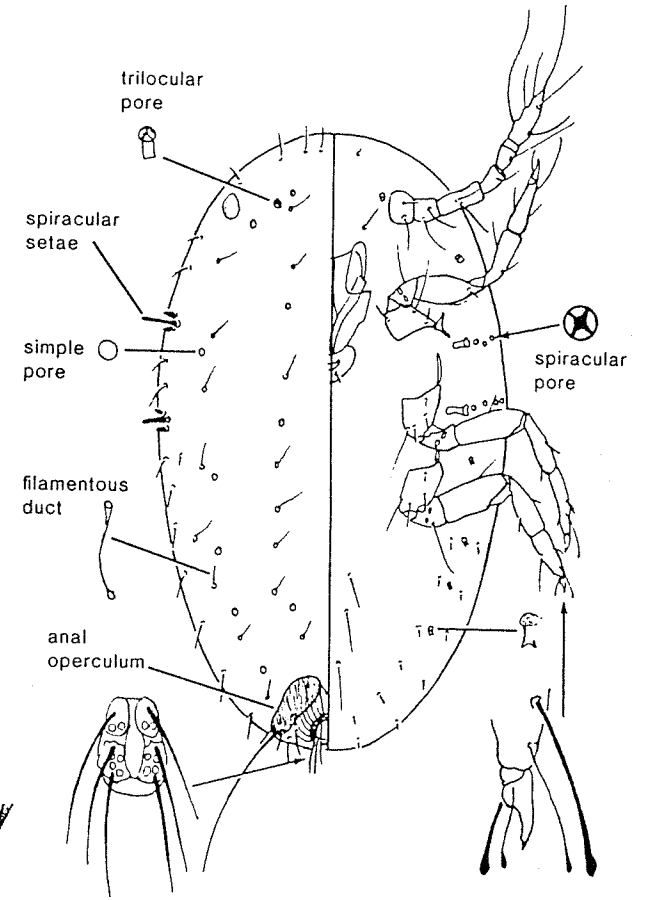
HOMOPTERA: Sternorrhyncha
Superfamily Coccoidea
Family Coccidae
Soft scales



Male of *Pulvinaria mesembryanthemi*

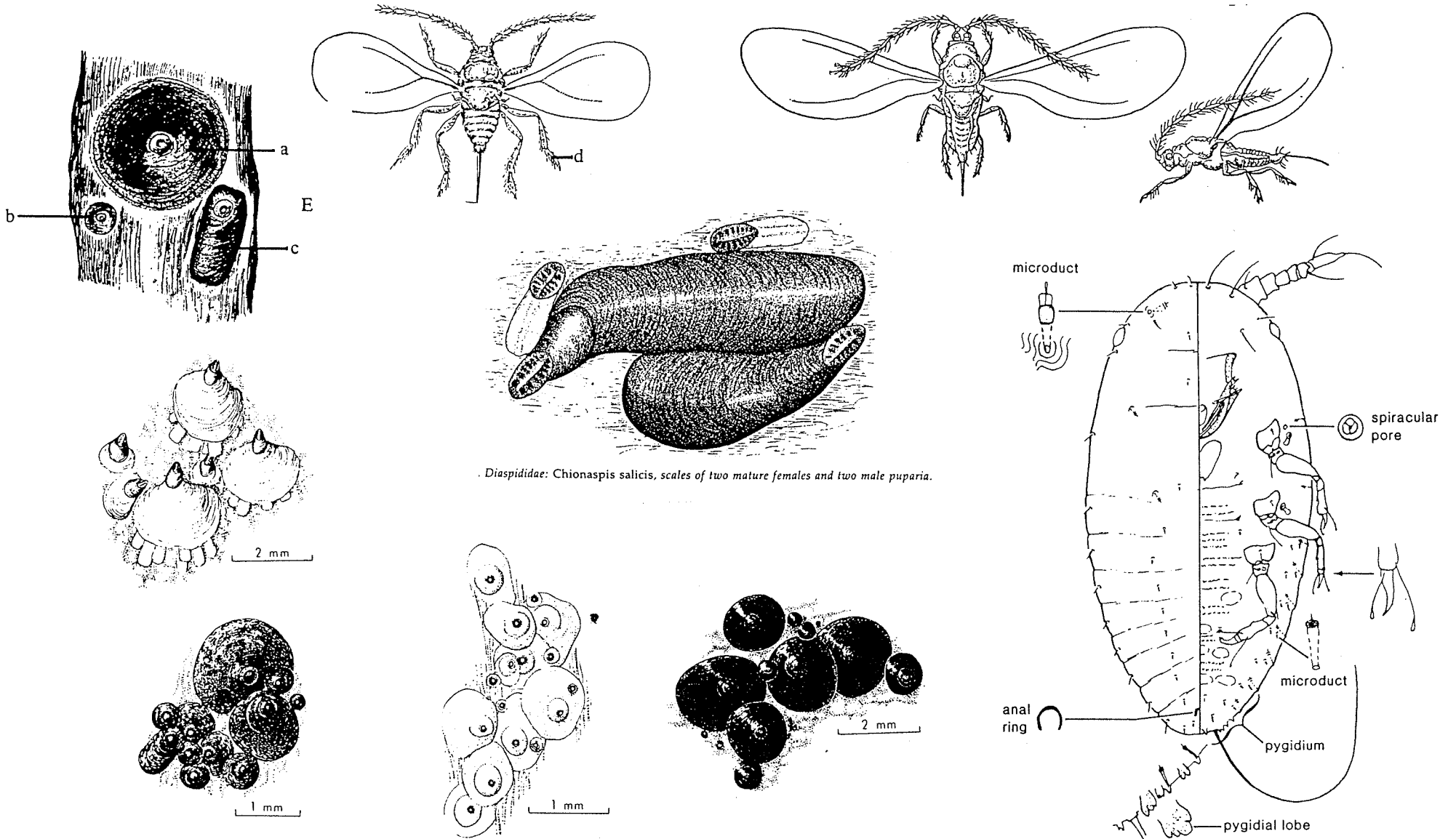


**COTTONY
MAPLE SCALE**
(Coccidae)



Coccidae. First instar—dorsal on left, ventral on right

HOMOPTERA: Sternorrhyncha
Superfamily Coccoidea
Family Diaspididae
Armored scales



Diaspididae: *Chionaspis salicis*, scales of two mature females and two male puparia.

Diaspididae. First instar—dorsal on left, ventral

HOMOPTERA: Sternorrhyncha
Superfamily Coccoidea
Family Diaspididae
Armored scales

