

Plecoptera

Common Name: Stoneflies.

Etymology: Pleco- = folded or pleated; -ptera = winged.

Metamorphosis: Hemimetabolous; egg, naiad, adult.

CHARACTERISTICS

Body: Small to medium; soft-bodied; elongate, flattened; body nearly parallel sided.

Head: Prognathous.

Mouthparts: Weak ectognathous chewing mouthparts, often reduced in adult.

Eyes: Small or moderate, well-developed compound eyes; 2 or 3 ocelli, or sometimes absent.

Antennae: Long and tapering, filiform.

Wings: 2 pairs; transparent, net-veined, with anal lobes; male of some forms apterous or brachypterous; wings folded flat over body at rest.

Legs: Well-developed legs; coxae small; tarsi 2 or usually 3-segmented with 2 tarsal claws and an empodium.

Abdomen: Ovipositor lacking; cerci long and filiform. Naiads with gills on first 2 abdominal segments in some species.

Comments: Naiads with closed tracheal system, gill ventilators; gills usually on venter of thorax. Adults with open tracheal system. Most naiads are phytophagous, a few are carnivorous.

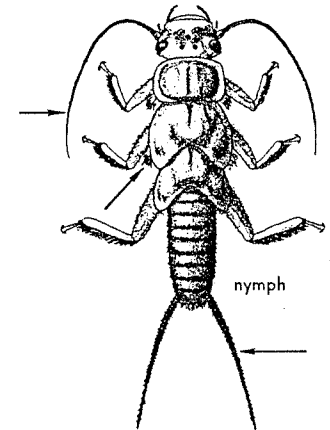
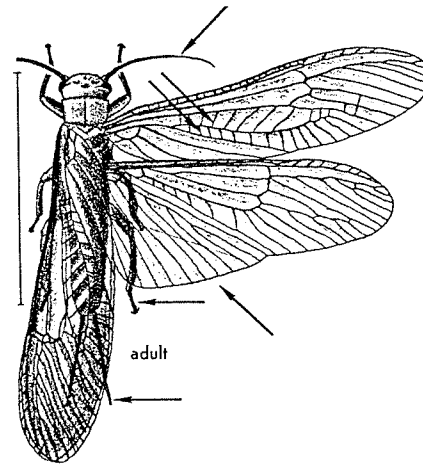
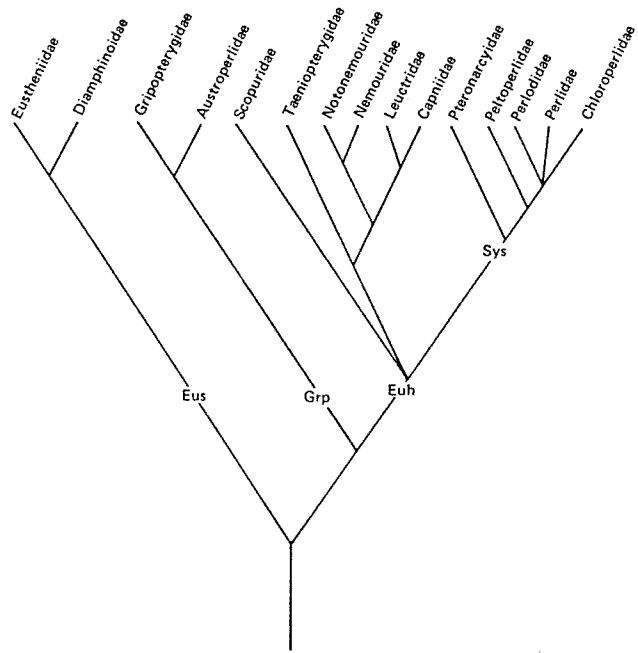
SUBORDERS

Filipalpia: Glossae and paraglossae about same size; plant feeders as naiads and adults.

Setipalpia: Glossae small, appearing almost as a basal lobe of the paraglossae; naiads mostly carnivorous, adults are usually non-feeding.

Order Plecoptera

Stoneflies

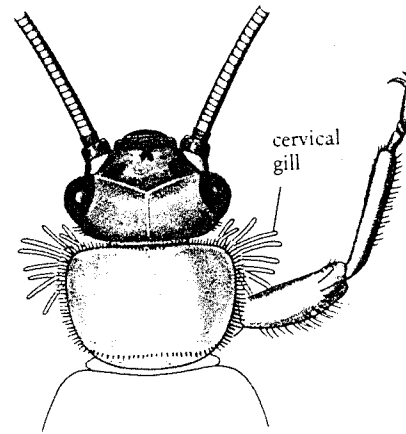
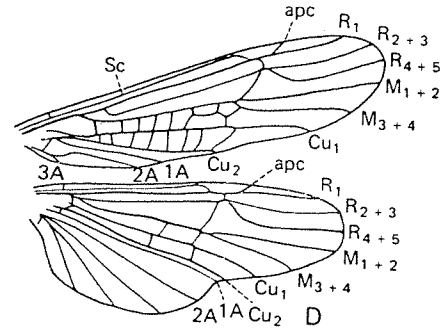
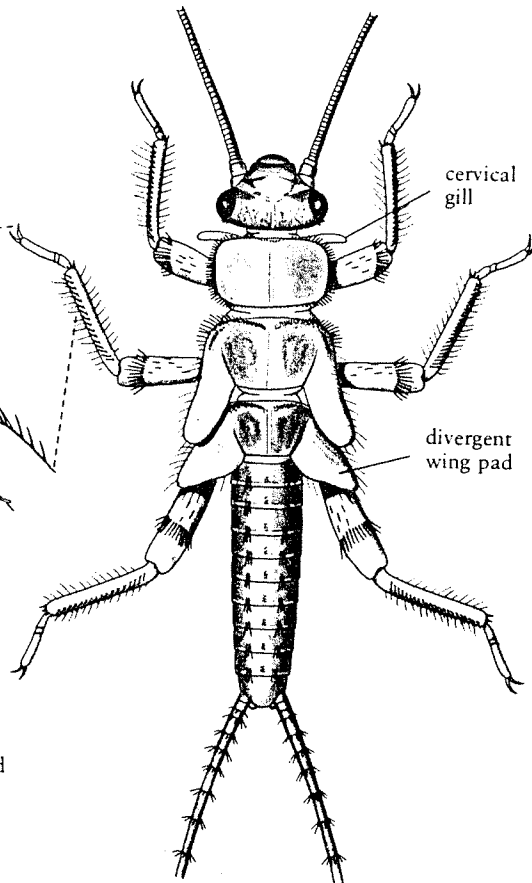
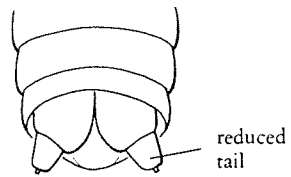
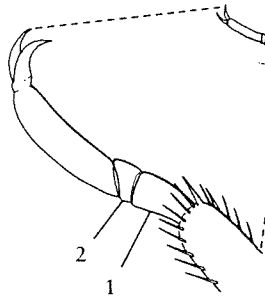


Consensus tree of phylogenetic relationships among family level taxa (after Nelson 1984).

Order Plecoptera
Group Euholognatha

Family Nemouridae
Spring stoneflies

BODY OF LABIUM
COMPACT WITH 3
NOTCHES ALONG OUTER
MARGIN, PALPS THICK

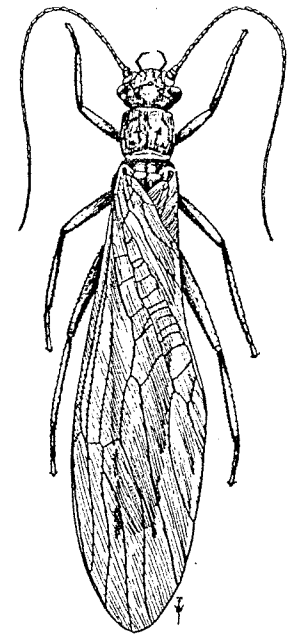
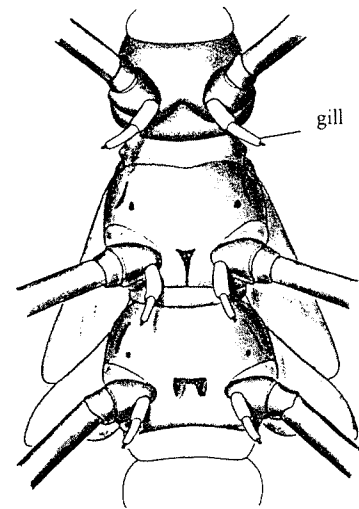
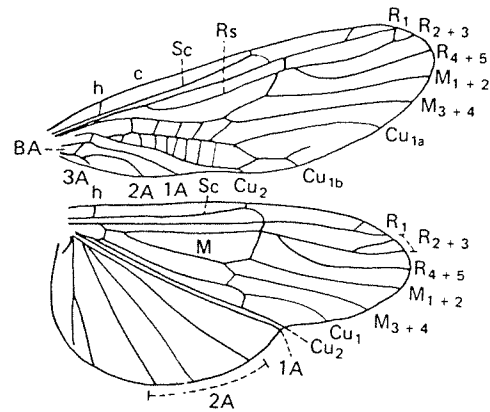
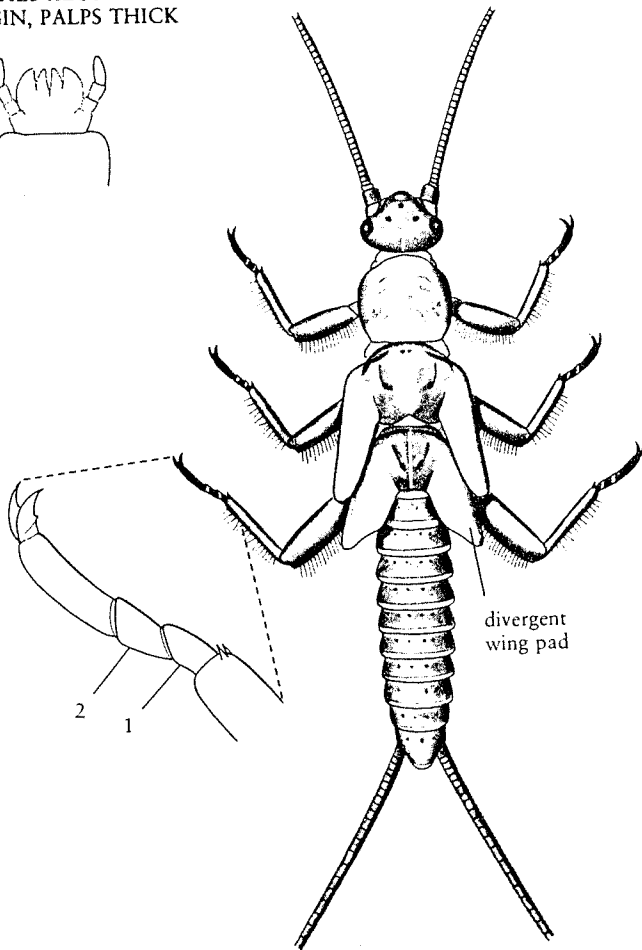


Nemoura vallicu-

Order Plecoptera
Group Euholognatha

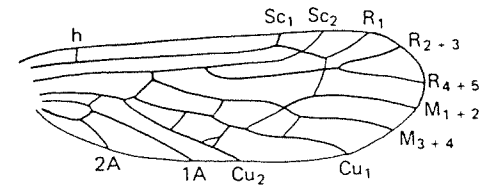
Family Taeniopterygidae
Winter stoneflies

BODY OF LABIUM
COMPACT WITH 3
NOTCHES ALONG OUTER
MARGIN, PALPS THICK

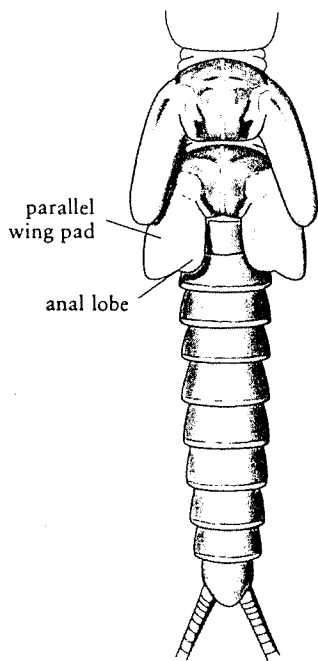


Order Plecoptera
Group Euholognatha

Family Capniidae
 Small winter stoneflies

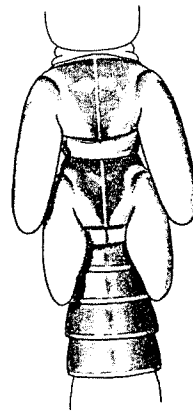


BODY OF LABIUM
 COMPACT WITH 3
 NOTCHES ALONG OUTER
 MARGIN, PALPS THICK

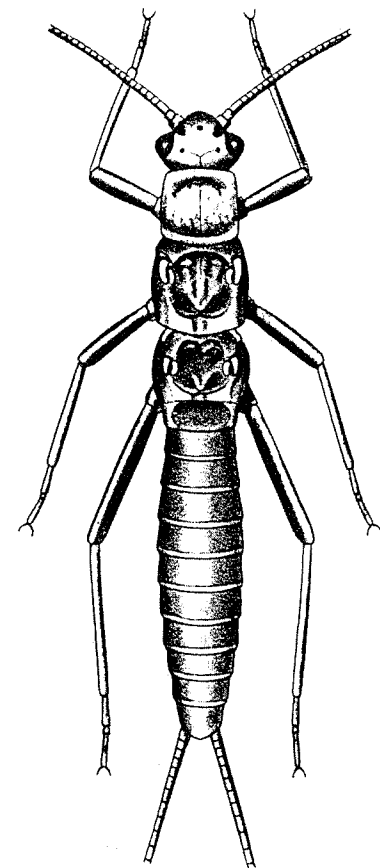
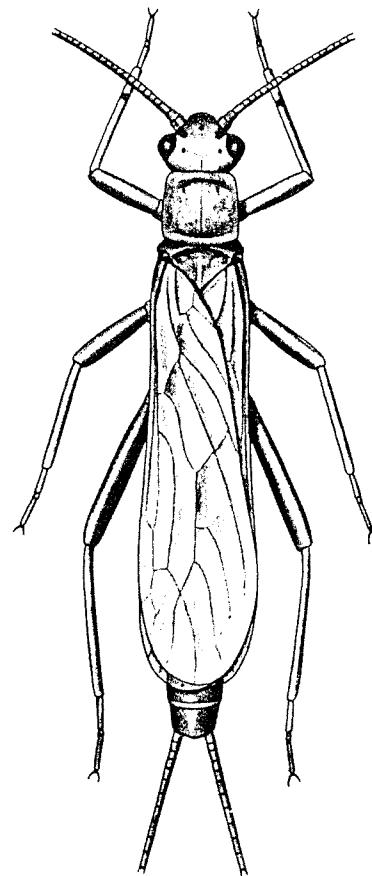
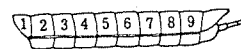


parallel
 wing pad

anal lobe

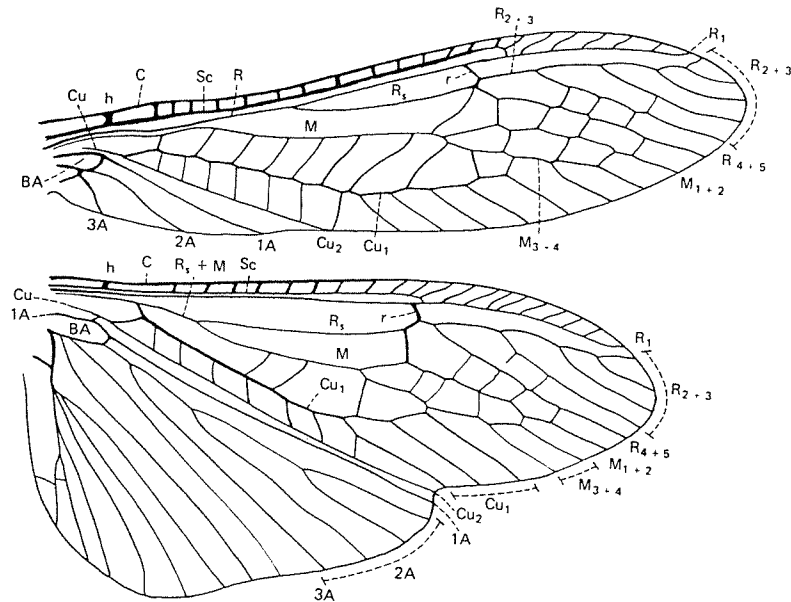
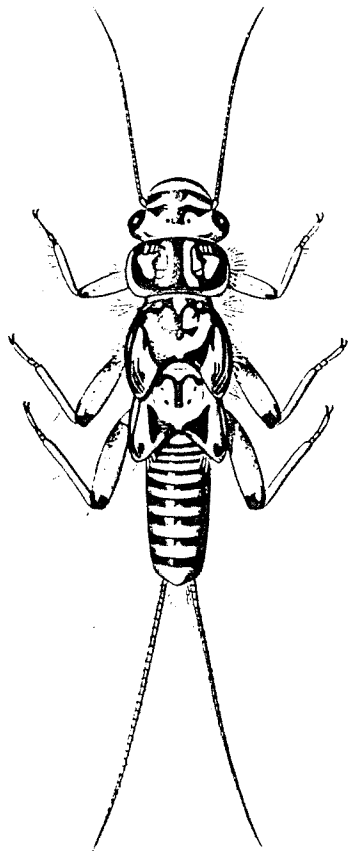
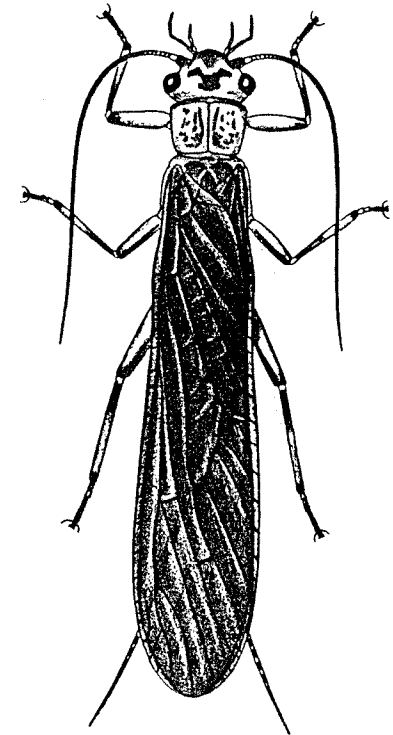
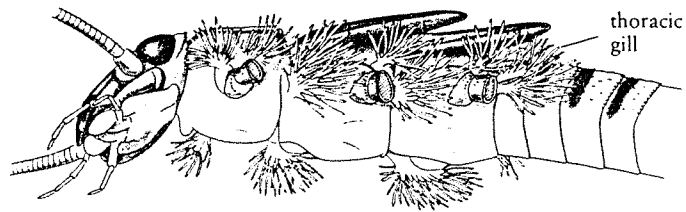
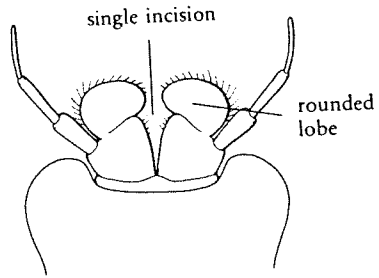


LATERAL LONGITUDINAL
 FOLD OF ABDOMEN EXTENDING
 THROUGH SEGMENT 8



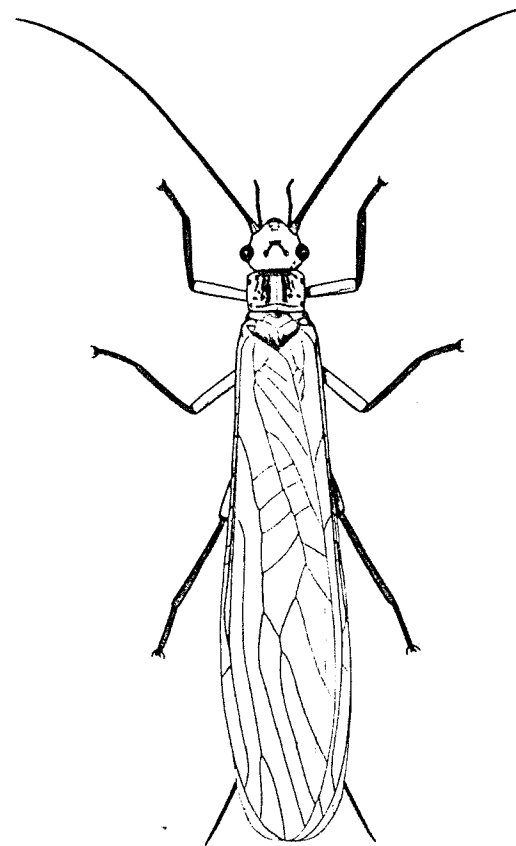
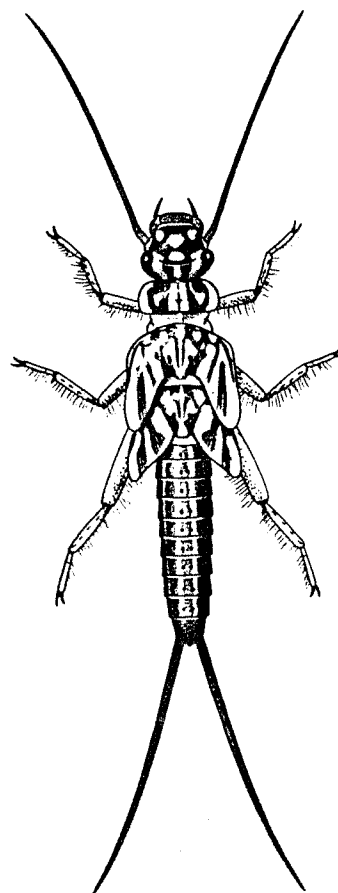
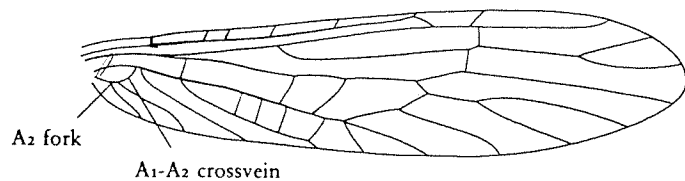
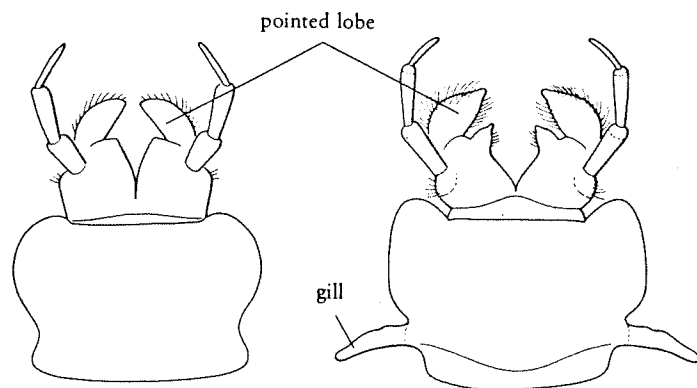
Order Plecoptera
Group Systellognatha

Family Perlidae
Common stoneflies



Order Plecoptera
Group Systelognatha

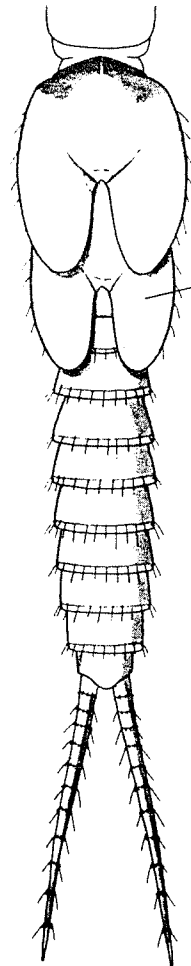
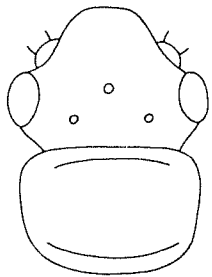
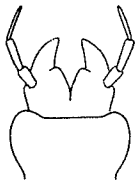
Family Perlodidae
Perlodid stoneflies



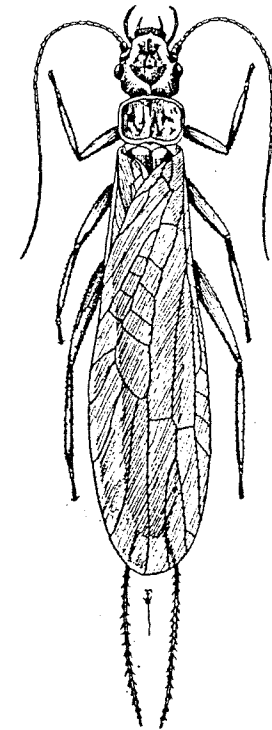
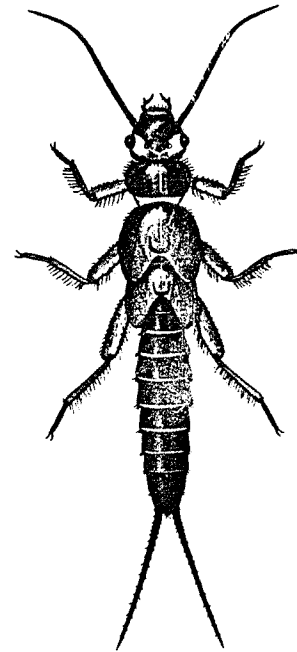
Order Plecoptera
Group Systelognatha

Family Chloroperlidae
Green stoneflies

BODY OF LABIUM DIVIDED
FROM THE OUTER MARGIN
INTO ONLY 2 PARTS,
PALPS SLENDER

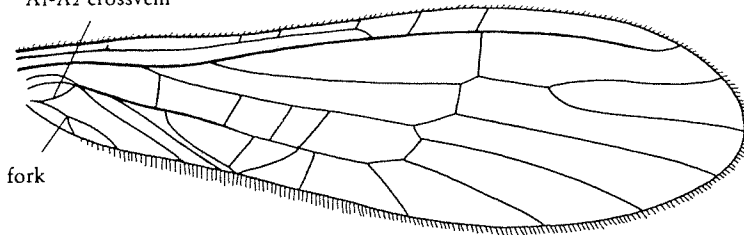


parallel
wing pad



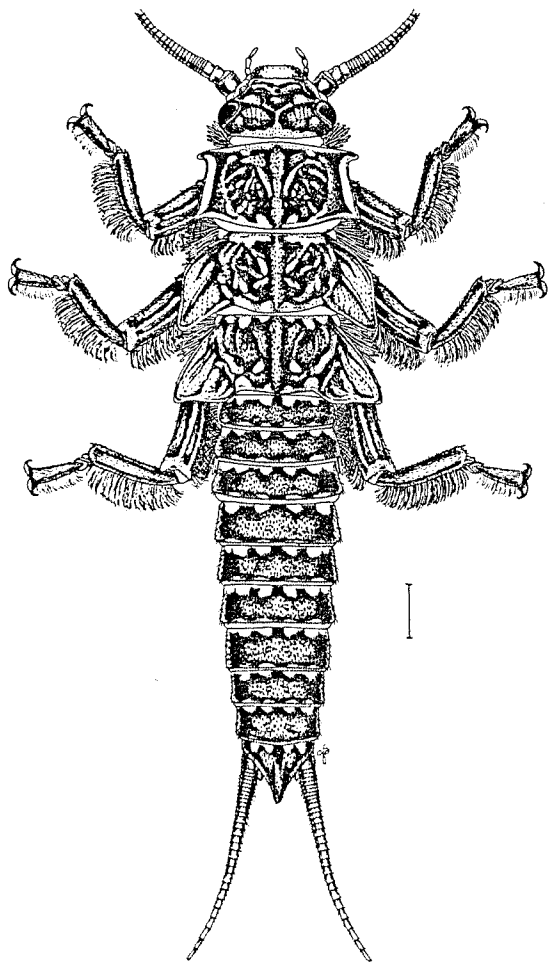
A₁-A₂ crossvein

A₂ fork

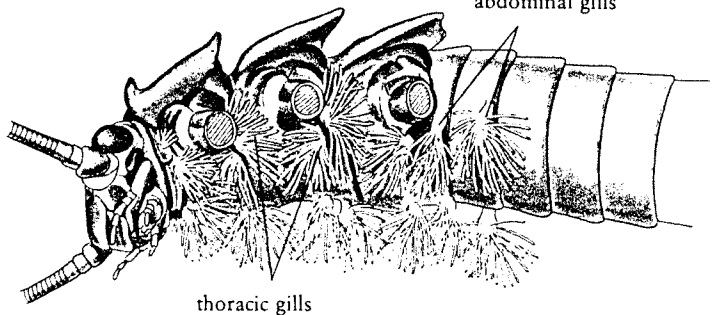


Order Plecoptera
Group Systelognatha

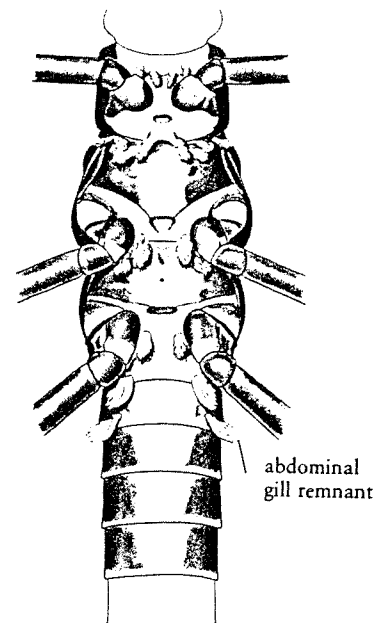
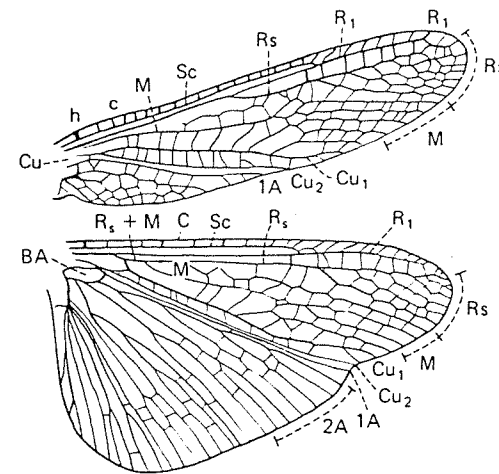
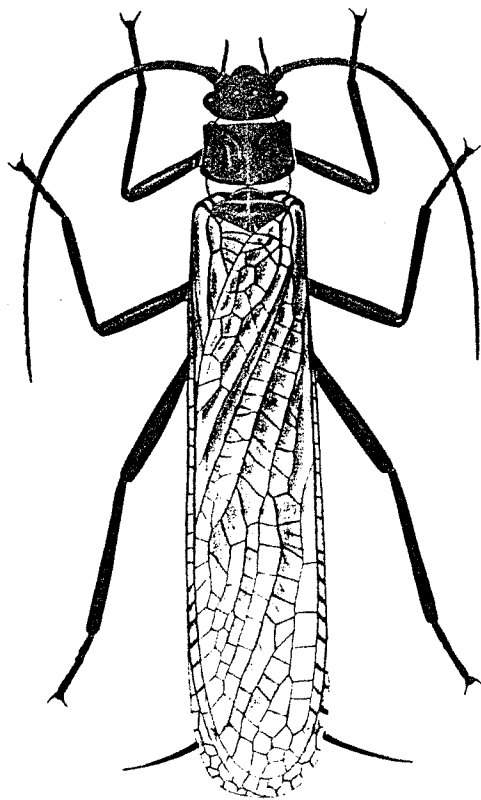
Family Pteronarcyidae
Giant stoneflies



abdominal gills



thoracic gills

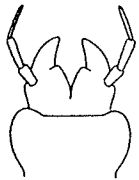


abdominal gill remnant

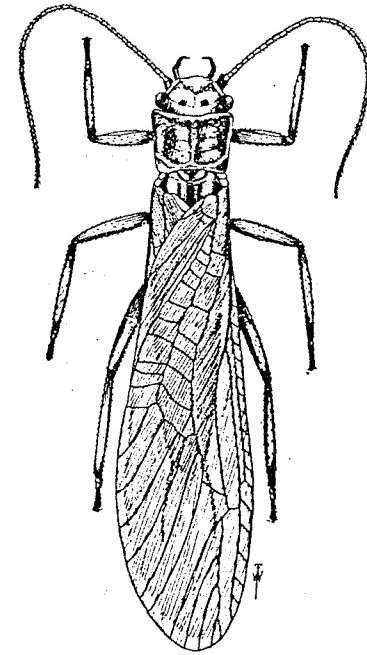
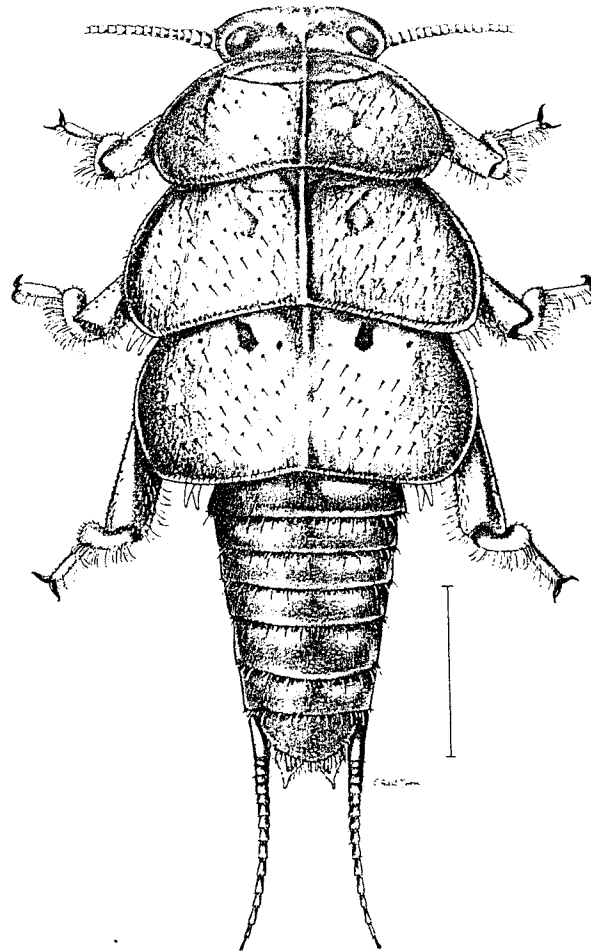
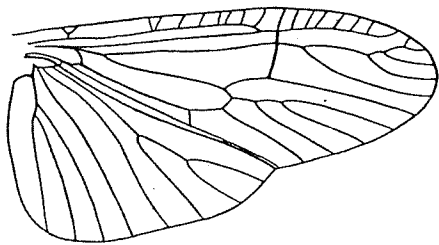
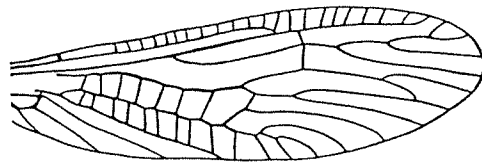
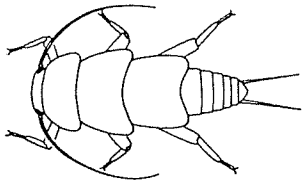
Order Plecoptera
Group Systellognatha

Family Peltoperlidae
Roach-like stoneflies

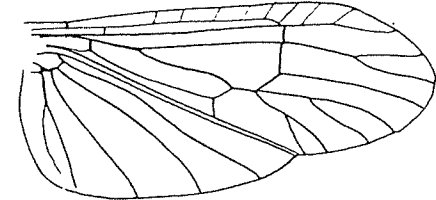
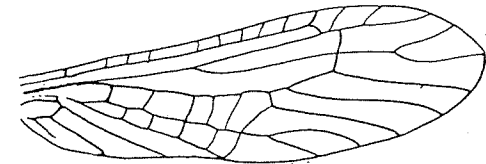
BODY OF LABIUM DIVIDED
FROM THE OUTER MARGIN
INTO ONLY 2 PARTS,
PALPS SLENDER



ROACHLIKE; THORAX WITH LARGE
SHIELDLIKE PLATES COVERING
BASES OF HEAD, LEGS AND
ABDOMEN, AND WITH OVERLAPPING
PLATES VENTRALLY

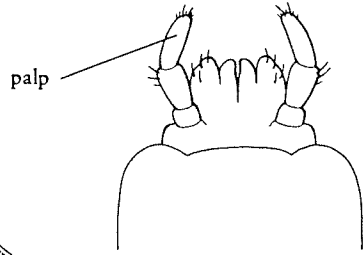
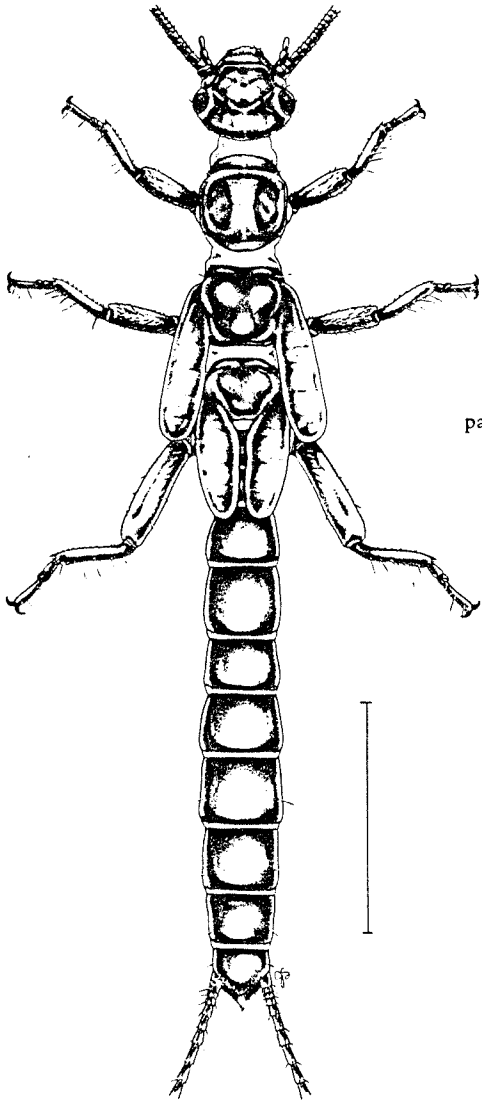


Peltoperla cora Ndm.

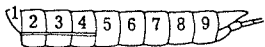
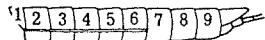


**Order Plecoptera
Group Euholognatha**

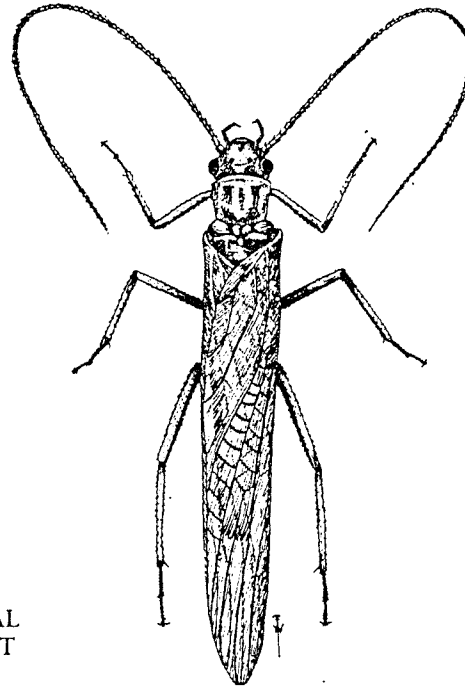
**Family Leuctridae
Rolled-winged stoneflies**



LATERAL LONGITUDINAL
FOLD OF ABDOMEN NOT
EXTENDING BEYOND
SEGMENT 7



Leuctridae



Leuctra hamula Clsn.

