

# American Stonefly Web Page

Stoneflies form the insect order Plecoptera. Adults are typified by a pair of tail-like cerci, two pairs of soft folded wings over the abdomen, well developed antennae, three tarsal segments, two tarsal claws, and an elongated anal region on the hindwings. [\(fig.1\)](#) Nymphs [\(fig. 2\)](#) are usually found in relatively clean streams, particularly those in mountainous regions. More than 600 species occur in North America, a current [North American Stonefly List](#) is available on this website.

Nine families of Stoneflies occur in North America.

## Capniidae

Capniidae are winter-emerging Stoneflies . Usually, they are small (less than 10 mm in length), black, and short-winged individuals are often seen. Adults have multisegmented cerci and small wedge-shaped mid-tarsal segments. They are often collected walking on snow near streams or they may be found on bridges, rocks, or streamside vegetation. Allocapnia [\(fig. 3\)](#) is common in eastern North America and Capnia [\(fig. 4\)](#) is common in the west. [Dr. Riley Nelson, University of Texas-Austin](#), Department of Zoology, is an authority on the systematics of the Capniidae.

## Leuctridae

Leuctridae are small dark stoneflies, generally similar to the Capniids. They differ in having 1 segmented cerci and the wings are rolled around the sides of the body. Emergence is somewhat variable, but most species are spring or summer emergers; a smaller number of primarily southern and midwestern species emerge in the fall or winter. Leuctra [\(fig.5 \)](#) is the most common genus in eastern North America. Megaleuctra [\(fig.6 \)](#) is an uncommon group of large, spring seep-inhabiting, Leuctrids found in the Appalachians, northern Rocky Mountains, Cascades, Sierras, and northern Coast ranges.

## Nemouridae

Nemouridae are small brown stoneflies with 1-segmented cerci. The Wings are held flat over the abdomen and most species have a distinctive "X" pattern of venation near the wing apex. Amphinemura is a common North American genus, and a few other Nemouridae genera such

as Zapada([fig. 7](#)), have ventral gills in the neck region. Nemouridae are typically spring emerging stoneflies. [Dr. Richard Baumann](#)([mail](#)), [Brigham Young University](#), Department of Zoology, is an authority on Neumorid systematics.

## Taeniopterygidae

Taeniopterygidae is a group of medium sized, dark bodied stoneflies. Emergence times range from winter through spring for most species. Males have 1-segmented cerci but females have short multi-segmented cerci. Adults are usually recognized by their relatively large mid-tarsal segment which is about the same size as the basal segment. Taeniopteryx ([fig. 8](#)) is a common eastern and northern genus and Taenionema([fig. 9](#)) is the common western group.

## Chloroperlidae

Chloroperlidae is a group of small to medium size, mostly pale yellow or green stoneflies. Most species are spring or summer emerging and adults are often collected while sweeping streamside vegetation during their emergence season. Adults have a reduced anal area to the hindwings. Triznaka([fig. 10](#)) and Sweltsa([fig.11](#)) are common genera. Dr. Rebecca Surdick, Laboratory of Entomology, Winchester, Virginia is an authority on this group. [Mary Leigh Lyon](#) and Mark Lyon are currently studying the epiproct complex for several Alloperla ([fi g. 12](#)) species found in western North America and southeastern North America respectively. Kevin Alexander is currently working with Dr. Ken Stewart, [University of North Texas](#), [Depar tment of Biology](#) on [Suwallia](#)

## Peltoperlidae

Peltoperlidae is a small group of medium sized stoneflies found primarily in the mountains of eastern North America and the west. These stoneflies are somewhat roachlike in appearance and they emerge in spring and summer. Adults have only two ocelli and the labial palps are short and are usually not visible from above. Tallaperla ([fig. 13](#)) is a common peltoperlid found in streams of the southern Appalachians. [Dr. Bill Stark](#), [Mississippi College](#), [Biology Department](#) is an authority on this group.

## Perlidae

Perlidae is a family of mostly medium or large summer-emerging stoneflies. Nymphs have

branched gills on their thoracic segments and the adults often retain these as vestiges around the leg bases. The front femora of adult perlids bears an anteroventral row of long bristles. *Acroneuria*([fig. 14](#)) is a common large perlid of the east while *Hesperoperla*([fig.15](#)) is common in the west. [Dr. Bill Stark](#), Mississippi College, [Biology Department](#) is an authority on this group.

## Perlodidae

Perlodidae includes stoneflies that are similar to perlids in general appearance but most lack gill vestiges and long bristles are absent from the front femora. Perlodids usually emerge in spring. *Isoperla*([fig.16](#)) is a common North American Perlodid genus and *Frisonia*([fig.17](#)) is found in the Pacific Northwest. [Dr. Boris Kondratieff](#), [Colorado State University](#), [Department of Entomology](#) and [Dr. Stan Szczytko](#), [University of Wisconsin-Stevens Point](#), [College of Natural Resources](#) are authorities on this group.

## Pteronarcyidae

Pteronarcyidae include the giant salmonflies famous among flyfishers. Adults are usually recognized by the presence of two or more cross vein rows in the forewing anal area. *Pteronarcys*([fig. 18](#)) is found in both eastern and western North America. Dr. Charlie Nelson (mail), [University of Tennessee-Chattanooga](#), Department of Biology, is an authority on this group.

[Return to Mississippi College Homepage](#)

[Question, Comment?? Send Mail!](#)

This page coded by Mark Lyon