



Order Trichoptera Kirby, 1813 (Insecta), Caddisflies*

RALPH W. HOLZENTHAL¹, ROGER J. BLAHNIK¹, AYSHA L. PRATHER¹, & KARL M. KJER²

¹ Department of Entomology, University of Minnesota, 1980 Folwell Ave., Room 219, St. Paul, Minnesota, 55108, USA
(holze001@umn.edu; blahn003@umn.edu; prat0058@umn.edu)

² Department of Ecology, Evolution and Natural Resources, Cook College, Rutgers University, New Brunswick, New Jersey, 08901, USA (kjer@aesop.rutgers.edu)

*In: Zhang, Z.-Q. & Shear, W.A. (Eds) (2007) Linnaeus Tercentenary: Progress in Invertebrate Taxonomy. *Zootaxa*, 1668, 1–766.

Table of contents

Abstract	640
Introduction	640
Morphology	645
Adults	645
Larvae	654
Pupae	657
Classification and phylogeny	657
Synopsis of the families	663
Annulipalpia	663
Dipseudopsidae	663
Ecnomidae	664
Hydropsychidae	664
Philopotamidae	665
Polycentropodidae	666
Psychomyiidae	666
Stenopsychidae	667
Xiphocentronidae	667
“Spicipalpia”	668
Glossosomatidae	668
Hydrobiosidae	668
Hydroptilidae	669
Rhyacophilidae	671
Integripalpia, Plenitentoria	672
Apataniidae	672
Brachycentridae	672
Goeridae	672
Kokiriidae	673
Lepidostomatidae	673
Limnephilidae	674
Oeconesidae	674
Phryganeidae	677
Phryganopsychidae	677
Pisuliidae	678

Plectrotarsidae	678
Rossianidae	678
Uenoidae	678
Integripalpia, Brevitentoria, "Leptoceroidea"	678
Atriplectididae	678
Calamoceratidae	679
Leptoceridae	679
Limnacentropodidae	680
Molannidae	681
Odontoceridae	681
Philorheithridae	681
Tasimiidae	682
Integripalpia, Brevitentoria, Sericostomatoidea	682
Anomalopsychidae	682
Antipodoeciidae	682
Barbarochthonidae	682
Beraeidae	683
Calocidae	683
Chathamidae	683
Conoesucidae	684
Helicophidae	684
Helicopsychidae	684
Hydrosalpingidae	685
Petrothrincidae	685
Sericostomatidae	686
Acknowledgments	686
References	687

Abstract

The taxonomy, diversity, and distribution of the aquatic insect order Trichoptera, caddisflies, are reviewed. The order is among the most important and diverse of all aquatic taxa. Larvae are vital participants in aquatic food webs and their presence and relative abundance are used in the biological assessment and monitoring of water quality. The species described by Linnaeus are listed. The morphology of all life history stages (adults, larvae, and pupae) is diagnosed and major features of the anatomy are illustrated. Major components of life history and biology are summarized. A discussion of phylogenetic studies within the order is presented, including higher classification of the suborders and superfamilies, based on recent literature. Synopses of each of 45 families are presented, including the taxonomic history of the family, a list of all known genera in each family, their general distribution and relative species diversity, and a short overview of family-level biological features. The order contains 600 genera, and approximately 13,000 species.

Key words: Trichoptera, caddisflies, morphology, taxonomy, phylogeny, distribution, diversity, Linnaeus

Introduction

Phryganea. Os edentulum: Palpis IV. Antennae thorace longiores. Alae incumbentes: inferioribus plicatis. [Phryganea. Mouth without teeth: Palps IV. Antennae longer than thorax. Wings reclined: inferior wings folded.]