

## Contents

### INVITATIONAL LECTURE

Applied Aspects of Mayfly Biology .....	1
D.D. Williams	

### PHYLOGENY AND SYSTEMATICS

Permian Mayfly Nymphs: New Taxa and Systematic Characters .....	19
M.D. Hubbard and J. Kukalova-Peck	
Phylogeny of the Leptophlebiidae (Ephemeroptera): An Introduction .....	33
W.L. Peters	
Phylogenetic Relationships and Zoogeography of Cool-Adapted Leptophlebiidae (Ephemeroptera) .....	43
M.L. Pescador and W.L. Peters	
Phylogenetic Relationships of the Leptophlebiidae of New Zealand (Ephemeroptera) .....	57
D.R. Towns and W.L. Peters	
Geographic Distribution and Reclassification of the Sub-Family Ephemerellinae (Ephemeroptera, Ephemerellidae) .....	71
R.K. Allen	
A Review of the Nearctic <i>Heptagenia</i> (Heptageniidae, Ephemeroptera) .....	93
R.W. Flowers	
<i>Jubabaetis</i> gen.n. and <i>Platybaetis</i> gen.n., Two New Genera of the Family Baetidae from the Oriental Region .....	103
I. Müller-Liebenau	

Un Changement dans la Taxonomie de la Famille Baetidae .....	115
M. Keffermüller	

## FAUNISTICS

The Habitats of British Ephemeroptera .....	123
P.S. Maitland	
La Zoogeographie, l'Ecologie et la Protection des Ephéméroptères en Pologne, et leur Utilisation en tant qu'Indica- teurs de la Pureté des Eaux Courantes .....	141
R. Sowa	
The Distribution of Ephemeroptera in Northern Canada .....	155
D.G. Cobb and J.F. Flannagan	
The Occurrence and Biology of <i>Siphlonisca</i> <i>aerodromia</i> Needham (Ephemeroptera: Siphlonuridae) in Maine, U.S.A. (Abstract) .....	167
K.E. Gibbs	
Abundance and Altitudinal Distribution of Ephemeroptera in a Rocky Mountain Stream .....	169
J.V. Ward and L. Berner	

## BIOLOGY AND ECOLOGY

Mayfly Strategies in a Norwegian Lake .....	179
J.E. Brittain	
Some Aspects of the Biology of <i>Ephemeran danica</i> Müll. (Ephemeridae, Ephemeroptera) in Irish waters .....	187
K.F. Whelan	
Regime Alimentaire des Larves de Deux Genres d'Ephéméroptères: <i>Raptobaetopus</i> Müller-Liebenau, 1978 et <i>Prosopistoma</i> Latreille, 1833 .....	201
J. Fontaine	
Life History, Developmental Processes and Energetics of the Burrowing Mayfly <i>Dolania americana</i> .....	211
R.S. Harvey, R.L. Vannote and B.W. Sweeney	

The Nutritional Dynamics of the Burrowing Mayfly, <i>Hexagenia limbata</i> .....	231
M.C. Zimmerman and T.E. Wissing	
Overwintering Strategy of <i>Cloeon dipteron</i> L. Larvae .....	259
B.H. Nagell	
Stages and Physiological Periods in the Develop- ment of <i>Cloeon dipteron</i> L. (Baetidae) .....	265
L.S. Cianciara	
BEHAVIOUR	
Predation, Climate and Mating of Mayflies .....	277
G.F. Edmunds, Jr. and C.H. Edmunds	
Diel Emergence Patterns of Some Mayflies (Ephemeroptera) of the Roseau River (Manitoba, Canada) .....	287
M.K. Friesen, J.F. Flannagan and P.M. Laufersweiler	
Diurnal Variation in the Activity of <i>Mirawara</i> <i>purpurea</i> Riek (Ephemeroptera, Siphlonuridae) in the Aberfeldy River, Victoria, Australia .....	297
I.C. Campbell	
The Mechanisms that Maintain Population Stability of Selected Species of Ephemeroptera in a Temperate Stream .....	309
E.C. Gyselman	
Importance of Behaviour to the Re-establishment of Drifting Ephemeroptera .....	321
J.J.H. Ciborowski and L.D. Corkum	
The Importance of Species Associations and Substrate Types to Behavioural Drift .....	331
L.D. Corkum and H.F. Clifford	
METHODS	
Observations on the Use of the Radio-Isotope $^{32}\text{P}$ in the Study of Food Uptake by Some Mayflies and Other Benthic Macroinver- tebrates in a Laboratory Stream Ecosystem ....	343
H.J. Schoonbee and J.H. Swanepoel	

Ultrastructural Studies on Oligoneuriidae - Taxonomic Applications .....	353
J.D. Agnew	
A Comparison of Mayfly (Ephemeroptera) Instar Determination Methods .....	367
T.J. Fink	
The Effect of Mesh Size on the Interpretation of the Life History of Two Mayflies from South Australia .....	381
P.J. Suter and J.E. Bishop	
ENVIRONMENTAL IMPACT AND TOXICOLOGY	
Taxocenes of Ephemeroptera in Unpolluted and Polluted Streams of the Tatra Mountains .....	405
A. Kownacki	
A Preliminary Report from a Study on the Environ- mental Impact of Pyrite Mining and Dressing in a Mountain Stream in Norway .....	419
K.J. Aanes	
Effects of Crude Oil Contamination on Ephem- eroptera in the Trail River, Northwest Territories, Canada .....	443
D.M. Rosenberg, A.P. Wiens and J.F. Flannagan	
Evaluation of the Acute Toxicity of the Heavy Metal Cadmium to Nymphs of the Burrowing Mayfly, <i>Hexagenia rigida</i> .....	457
S.L. Leonhard, S.G. Lawrence, M.K. Friesen and J.F. Flannagan	
REVIEWS AND HISTORICAL ASPECTS OF MAYFLY BIOLOGY	
Online Retrieval of Information on Ephemeroptera: A Comparison of Different Sources .....	467
K.E. Marshall	
Mermithids (Nematoda) and Mayflies (Ephemeroptera) .....	491
W.M. Hominick and H.E. Welch	
Numerical Abundance Values of Mayfly Nymphs from the Holarctic Region .....	503
H.F. Clifford	

The Mayfly Family Baetiscidae (Ephemeroptera)	
Part 1 .....	511
L. Berner and M.L. Pescador	
Première Description d'un Ephéméroptère en Angleterre: L'Ephemeron de Harris (1730-1788) .....	525
L. Arvy	
Pictet et Eaton: Les Premiers Spécialistes des Ephéméroptères. Pictet and Eaton: The First Mayfly Specialists .....	531
J. Peters, L. Arvy and W.L. Peters	
Author Index .....	541
Taxonomic Index .....	543
Subject Index .....	551