

CURRENT RESEARCH ON PLECOPTERA AND REQUEST FOR STUDY SPECIMENS

This is a new and expanded section begun in PERLA 13. Below are several submissions of current Plecoptera research listed in alphabetical order by name of researcher. This information is presented exactly as it was received, with no editing. For any questions, please contact the submitting researchers directly. Please feel free to submit a paragraph and any requests for study material or other information from colleagues to the Managing Editor for publication in PERLA 15.

Masters research project "The Stonefly Fauna of the Raft River Mountains." Submitted by Dr. R. W. Baumann, Department of Zoology, Brigham Young University, Provo, Utah 84602, USA.

Richard M. Houseman is studying the stonefly fauna of the Raft River Mountains of Utah and Idaho. This interesting mountain range runs from east to west and is isolated from the nearest major ranges, Wasatch and Sawtooth, by the Lake Bonneville Basin and the Snake River Plain respectively. The northern streams drain into the Snake River and the southern streams drain to The Great Salt Lake.

Please send any specimens or useful information that might apply to this study to either Richard Houseman or Richard Baumann at the above address.

Ph.D. research project "The Zoogeographic Affinities of the Stonefly Fauna of the Northern Midwest with Special Emphasis on the Black Hills" Submitted by Dr. Richard W. Baumann, Department of Zoology, Brigham Young University, Provo, Utah 84602, USA.

Bret O. Huntsman is continuing his study of the stonefly fauna of the northern, midwestern portion of the United States. His emphasis is still the Black Hills but several questions could be answered by obtaining specimens from nearby states. The most poorly known states are North Dakota, Iowa and eastern South Dakota.

Please send literature information and specimens that would improve this study to Bret Huntsman or Richard Baumann at the above address.

The Aquatic Insects of NW Europe

A taxonomic handbook for the aquatic insects of NW Europe is being prepared and will be published in two volumes by Apollo Books in Denmark. The aim is to provide keys to genus, together with an account of their morphology, ecology, collecting methods and rearing techniques. As well as an extensive bibliography, each chapter will contain a species check-list for Denmark, Norway, Sweden, Finland, Russian Karelia, Iceland, the Faroes and Svalbard. The handbook is being edited by Anders Nilsson from Umeå University in Sweden. The stonefly chapter, which is now at the proof stage, has been written by John Brittain and Svein Jakob Saltveit from the University of Oslo (Submitted by John Brittain).

Research on "Plecoptera of Southwest Colombia: Bioindicators of Water Quality." Submitted by M. C. de Cardoso, Universidad del Valle, Facultad de Ingenieria, Departamento de Processos Quimicos y Biologicos, AA 25360, Cali, COLOMBIA.

Professor Maria del Carmen de Cardoso, Angela Martha Rojas de Hernandez and Dr. Bill P. Stark are working together to elucidate the biodiversity and water quality relationships of Plecoptera from southwestern Colombia. A monograph of Colombian Anacroneuria is expected to grow out of this study which is funded by Universidad del Valle and the Colombian Fund for Scientific Research and Special Projects, Francisco Jose de Caldas, CIENCIAS. In addition to the senior researchers, several undergraduate and graduate students are involved in the project.

Romolo Fochetti - Dipartimento di Scienze Ambientali, Università della Tuscia, v. S. Camillo de Lellis, 01100 - Viterbo, ITALY.

Gilles Vinçon - 38 bis, Rue du Drac, Grenoble, F-38000, FRANCE

Taxonomy of the genus *Tyrrhenoleuctra* in the Mediterranean area.

Populations belonging to the three species of the Circummediterranean genus *Tyrrhenoleuctra* (*T. minuta*, *T. tangerina*, *T. zavattarii*) from Spain, Tunisia, Algeria, Balearic Islands, Sardinia and Corsica, have been studied from the morphological point of view. It is suspected that the three nominal taxa are on the contrary a single

biological unit, since the morphological characters used in the taxonomy of the genus are variable and do not support the distinction of the three species. The examination of further material and the study of new characters are needed and are planned by the writers. A biochemical approach carried out by means of enzyme electrophoresis is also planned.

Graduate doctoral research on "Reproductive Ecology of Plecoptera." Submitted by S. Hanada, Department of Biology, Faculty of Science, Nara Women's University, Kitauoya-nishimachi, Nara 630, Japan.

"Ecological study of mating system in Plecoptera will be continued, and it will be my doctoral thesis. Evolution of drumming behaviors and searching system in Plecoptera will be discussed in relation to their life patterns during adulthood (e.g. emergence, reproductive system, encounter sites)."

Graduate research on "Daily Periodicities of Emergence and Oviposition in *Sweltsa*." Submitted by Dr. Y. Isobe, Department of Biology, Nara Women's University, Nara, 630, Japan.

"Yuka Hayashi is working on the daily periodicities of emergence and oviposition in *Sweltsa*, at a field station in Nara Prefecture. She will make the observations and time-interval collections of emerging adults and flying females during her third season. She is recognizing three species in the *Sweltsa*, expected to have different emergence timings, but the species names have not been determined."

Dr. Narinder N. Kapoor, Assoc. Professor, Graduate Program Director, Concordia University, Department of Biology, 1455 de Maisonneuve Blvd. W., Montreal, QC, H3G 1M8, Canada,
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Research area: Correlative physiological and morphological studies of plecopteran nymphs. Light, scanning electron and transmission electron microscopy of cuticular and subcuticular structures of plecopteran nymphs.

Research interests are primarily concentrated on the morphological, behavioral and physiological aspects of freshwater animals. Thirty-six papers have been published on various aspects of rearing, behaviour, gills, respiration, sensilla, gut, cuticular and subcuticular structures of plecopteran nymphs.

Research on "Egg Structure and Embryogenesis in Plecoptera."
Submitted by Dr. Toru Kishimoto, Biological laboratory, Tsukuba International University, 6-3960-1 Manabe, Tsuchiura, 300, Japan. E-mail: QYM01062@niftyserve.or.jp

Dr. T. Kishimoto has worked on egg structure and embryogenesis of the Plecoptera, to examine the relationship of plecopteran families and the ecological significances of egg structures. The embryogenesis of Perlodidae, Perlidae, Nemouridae and Pteronarcyidae has been well studied, but that of the other families has been unknown or examined a little. He has a special interest on Scopuridae, Peltoperlidae, Pteronarcyidae and antarctoperlarian families and will actually examine the egg structure and embryogenesis of Scopuridae and Peltoperlidae. If you can supply any information of eggs of Pteronarcyidae and antarctoperlarian families, please contact Dr. T. Kishimoto, at the above address.

Call for data on Swiss Stoneflies, Mayflies, Caddisflies, Coleoptera and Heteroptera

A Swiss project for the cartography of aquatic insects began in 1993, taking into account the following aquatic groups: Plecoptera, Ephemeroptera, Trichoptera, Coleoptera and Heteroptera.

This project will result in 1996-97 in the publication of 3 atlases of distribution of the first groups. In the same time, the CSCF (Swiss Center for Cartography of the Fauna) continues to collect data in order to continuously update the distribution of these species.

We invite anyone who is interested in and gets data on stoneflies (or the other groups) collected in Switzerland to send us a list or contact us.

To be useful, the listing has to include: species, country, state or region, name of the river, locality, date numbers of males, females, larvae, nymphs (last stage larvae) or exuviae, collectors, determinators.

Addresses: for stoneflies, for the other groups,
 Sandra Knispel Alain Badstuber
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Gerald F. "Jerry" Kraft
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- a. Stoneflies of Washington State. Updating the Hoppe and Jewett lists. Aiming for publication mid-1998.
- b. Three graduate students (MS) (Completion dates June 1997)
 Biology of Neaviperla forcipata.
 Biology of Ostrocerca dimicki.
 Stonefly populations (macroinvertebrate communities) in a glacier-melt stream and its groundwater-fed tributary.
- c. Baseline survey and distribution studies of Washington State stream macroinvertebrate species. Planning collaborative projects with State and Federal agencies, Oregon State U., and other Universities.

I am interested in systematics, identification of nymphal stages, distribution, and ecology. I have a relatively complete stonefly collection for the State, and have examined several collections in the Region. I will visit Corvallis for a few days in March and again in July or August 1996 to study Jewett and Hoppe material. From now until the time I retire in June 1997, teaching will alternate with research quarters. After that date, I plan on full-time stream insect work.

I would like to see adults of the eastern Ostrocerca species. References to any Washington records and collections would be appreciated.

Ian McLellan (Research Associate, Landcare Institute, PO Box 95, Westport, New Zealand) is continuing his work on a systematic revision of Zelandoperlinae (Gripopterygidae). More extensive and intensive collecting in the past few years by colleagues in the Department of Conservation and our museums has brought to light a number of new taxa and the missing stages of described species.

Research on "*Flow management in mountain regulated rivers by water-transfer between bassins for hydropower production*". Submitted by Dr. M.A. Puig and Dr. A.de Sostoa*, Ecology Department, Centro de Estudios Avanzados de Blanes, Camí de Sta. Barbara s/n, 17300 - Blanes, Spain. (* Dept. Zoology, Fisheries Lab., Barcelona University). This research is sponsored by Spanish governmental Department of Industry.

Dr. M.A. Puig has worked four years into stonefly and mayfly population dynamics and food web changes associated to habitat disturbance. Final results are prepared for sending to publisher this year.

Research on "*Relationship among leaf breakdown and shredders in Mediterranean rivers*". Submitted by Dr. M.A. Puig (above address). This research is sponsored by Spanish governmental Department of Education and Science.

The shredder strategy is infra-represented in the Spanish Mediterranean streams because their arid and semi-arid basins have very few and temporal restricted C.P.O.M. inputs. This general pattern change in the north-east Spain with levels of mean annual precipitation about 1000 mm. The fluvial systems of this last area are the object of our actual research. In these streams, well forested, the community is dominated by *Brachyptera braueri*, *Brachyptera risi*, *Nemoura fulviceps*, *Capnioneuria mitis* and *Capnia bifrons*. The shredder strategy importance of the three first species in the community will be studied for two years.

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Title of research:

1. Ultrastructure of egg capsules in Perlodidae stoneflies
2. The follicular cells diversification during choriogenesis in Perlodidae stoneflies

Two species are investigated: *Perlodes intricata* and *Isoperla grammatica* (both from French Pyrenees).

The project parallels similar studies which were done earlier on Perlidae.

Research on "A Revision of Andean Anacroneuria." Submitted by B. P. Stark, Department of Biology, Mississippi College, Clinton, MS 39058, USA.

Bill P. Stark is currently studying adult and mature nymphal specimens of Anacroneuria from Bolivia, Colombia, Ecuador, Peru and Venezuela. Stark would welcome material from any of these areas, or from lower MesoAmerica (Costa Rica/Panama), which he is also studying.

Research in Progress by K.W. Stewart, students and colleagues

Submitted by K.W. Stewart

1. Two projects are in progress on North American Plecoptera nymphs, to increase knowledge beyond the generic level of Stewart and Stark (1993). The logical continuation of their work is to comparatively study associated nymphs of all species within selected genera, with the ultimate goal of developing illustrated keys to species.
 - a) "Nymphs of North American Taenionema species." K.W. Stewart and Jean A. (Stanger) Leavitt. Nymphs of both sexes of the seven species: atlanticum, grinnelli, jewetti, oregonense, pacificum, pallidum and raynorium have been studied and comparatively illustrated. We have only female nymphs of T. kincaidi and T. umatilla and a good series of T. jacobii that are being drawn.

Therefore, to complete this work we need the following associated nymphs: male kincaidi, male umatilla and male and female californicum and uinta. Our immediate priority is to revisit localities for these species and to rear them. We would very much appreciate a loan of reared or field-associated material of californicum, kincaidi, uinta and umatilla, or information on known locations of good populations of them.

- b) "Nymphs of North American Isogenoides species." K.W. Stewart. I have accumulated some good series of reared nymphs of colubrinus, elongatus, frontalis, olivaceus and zionensis, and made preliminary sketches of them. I would like to see additional nymphs of these, and particularly need loan of additional nymphs of the eastern species doratus, hansoni, krumholzi and varians, or any information on location of populations.
2. Doctoral project of Kevin Alexander, submitted by Kevin D. Alexander, Dept. of Biological Sciences, University of North Texas, P.O. Box 5218, Denton, TX 76203-0218, USA.

"I am entering the last year on a revision of the chloroperlid tribe Suwalliini Surdick of the world which includes the genera *Suwallia* Ricker and *Neaviperla* Ricker. All types of North American species have been studied except for the type of *Neaviperla forcipata* (Neave) which has yet to be located. Collections of fresh material and field extrusion of aedeagi have been made for the last two summers and will continue for one additional summer. Also, Palearctic specimens kindly sent by international colleagues and collections borrowed from North American museums are currently being studied. The aedeagi continue to provide useful characters and indicate that material previously assigned to *Suwallia pallidula* (Banks) and *Suwallia autumnata* (Hoppe) are probably complexes of several cryptic species. Additionally, I have a few potentially undescribed chloroperlid species in other genera collected in association with this project."

"Field study of North American species is continuing, but the greatest need is to obtain additional Palearctic specimens, especially of *Suwallia jezoensis* (Kohn) and *Suwallia asiatica* Zhiltzova and Levanidova which have remained unavailable for study. If you can provide any of the following material, please contact Kevin D. Alexander and/or Dr. Kenneth W. Stewart at the above address:

- (1) any North American *Suwallia* or *Neaviperla* material containing males with extruded aedeagi;
 - (2) and Palearctic *Suwallia* or *Neaviperla* material, especially *S. jezoensis* or *S. asiatica*.
3. Nymph Book Revision. K.W. Stewart and B.P. Stark. We have begun the process of updating literature and obtaining reared nymphs representing genera described since 1988 for a complete revision of Stewart and Stark (1988; reprinted 1993) "Nymphs of North American Stonefly Genera (Plecoptera)." Our goal is to produce a compendium of knowledge, and latest illustrated keys to the nymphs of North American stonefly genera, to about the year 2000. We would appreciate suggestions from users of this book for correction of any errors or other improvement of the revision.
4. "Stoneflies of Alaska and Northwestern Canada." K.W. Stewart and M.W. Oswood. We have been working on this project and actively collecting in Alaska for about 15 years. The work will provide a "state-of-the-art" synthesis of information and illustrated keys to nymphs and adults of the over 150 species of stoneflies known in the region, covering Alaska and outlying islands, British Columbia, western Northwest Territories and the Yukon Territory. The University of Alaska Press has expressed interest in the manuscript for the book, that is in preparation. We intend to make our last collecting expedition in June-July 1996, through the Yukon and parts of the Mackenzie River Basin of the Northwest Territories. We would appreciate the loan of any adult or nymph collections of stoneflies from this region from any of you that we have not already contacted.
5. "Stoneflies of the Yukon Territory." K.W. Stewart and W.E. Ricker. This work on the biogeography and biology of the 71 stonefly species known to occur in the Yukon was recently completed as a book chapter. It is anticipated that the book "Insects of the Yukon," a project of the Biological Survey of Canada, will cover the major orders of insects, Araneae, Oribatei and fossils, and be in the hands of the printer by late 1996.
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- a) Henn Timm
- b) Võrtsjärv Limnological Station, Institute of Zoology and Botany, EE2454 Rannu, Tartumaa, Estonia
- c) "Elaboration of bioindication methods for the estimation of the state of environment" (1990-1995); new application for 1996 by the Institute of Environmental Protection (Estonian Agricultural Institute)
- d) Estimation of water quality and prediction of environmental variables (pH, content of biogens etc.), using taxonomical composition of macroinvertebrates (among this Plecoptera larvae) in flowing waters.

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1. Study of South American Plecoptera. Submitted by Peter Zwick (P.O.Box 260, D-36105 Schlitz, Germany) and Ian D. McLellan (Box 95, Westport, New Zealand).

"We are involved with large collections of South American Plecoptera from the United States National Museum (Courtesy Dr. O.S. Flint, Jr). So far we have completed a paper on the *Austronemoura* (Notonemouridae) and have sorted and identified most of the gripopterygids. Our next task is to describe new taxa, redefine genera and subfamilies and construct suitable keys, especially to larvae."

2. Study of African *Neoperla*. Submitted by Peter Zwick (P.O.Box 260, D-36105 Schlitz, Germany).

"Over the years, I have studied abundant material of African *Neoperla*, including types of all nominal taxa. Because of the difficult association of sexes, many problems remain; mating pairs of at least some of the numerous species would be a gift from heaven. I intend to resume my long-interrupted studies now, beginning with redescrptions of types."

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Digitale Literatur/Digital Literature

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