

Annual Newsletter and Bibliography of the International Society of Plecopteroologists



Andiperla morenensis Pessacq & Rivera-Pomar, 2019 (Gripopterygidae). Adult male, Perito Moreno Glacier in Los Glaciares National Park, Patagonia, Argentina. It is one of two stonefly species that inhabits glacial ice. Submitted by Pablo Pessacq. Photo credit, Riley C. Nelson, BYU.

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Managing Editor: R. Edward DeWalt

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PERLA 41 EDITORIAL COMMITTEE

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Ed DeWalt is stepping down as Managing Editor with the completion of Perla 41. Scott Grubbs will take over as Managing Editor for Perla 42 in 2024. Ed wishes Scott good luck with his new task.

Acknowledgments

As managing editor, I thank Manuel Tierno de Figueroa (Granada, Spain) for supplying an early draft of this year's bibliography and for additions provided by Peter Zwick (Schlitz, Germany). Additionally, Species File Group staff member, Heidi Hopkins of Ithaca, New York, USA, has diligently added references to Plecoptera Species File (<http://plecoptera.speciesfile.org>), these have been compared to the above sources to produce a final bibliography. The members of the Editorial Board quickly reviewed an early draft of *Perla* 41. Society members contributed laboratory summaries which made this issue of *Perla* fascinating reading. The following members contributed the images for the cover page of the volume. All submitted images are provided at the end of this issue with credits.

International Society of Plecopteroologists Policy

As of 2021 the International Society of Plecopteroologists (ISP) requires no dues for membership, nor for receiving *Perla*. *Perla* is now completely electronic. Due to the size of the issue, Society members will be given notice when the issue is ready to be downloaded and from where.

Membership is maintained by the Managing Editor as a Google Sheet and new names are added when they appear in articles added to Plecoptera Species File. Others may request addition to the list of members by sending an email request to the Managing Editor (dewalt@illinois.edu, soon to be scott.grubbs@WKU.edu). The list is private but may be shared with those who have direct business with the Society (e.g., those hosting the joint mayfly and stonefly meetings).

International Society of Plecopteroologists Funds

Dr. DeWalt has secured *Perla* funds from Colorado State University and an agreement has been signed with the University of Illinois to serve as custodian of the funds. Dr. DeWalt is now Treasurer for the International Society of Plecopteroologists given his employment with the University. Purchasing, payments, and accounting will be conducted under University of Illinois and Illinois Natural History Survey structures. DeWalt will provide reports of income and expenditures annually or as requested from the Chair of the Standing Committee. Requests for disbursements may be sent by email to Dr. DeWalt (dewalt@illinois.edu). Please provide at least one month to arrange for payment to recipients. A brief Treasurer's report will be provided to Society members with each *Perla* issue.

Currently, the Society has modest funds amounting to \$15,500. Expenses the past year were non-existent given that the Joint Meeting was virtual and no registration was charged. Several small donations were received from Society members.

Given rules at the University of Illinois for managing "Custodial Funds", the University accepts donations to support the fund in the form of a check made payable to the "University of Illinois" with "Perla Fund" written in the memo line. The checks can be sent to:

Fiscal Services
615 E Peabody Dr.
Champaign, IL 61820

DeWalt will also accept checks or cash in person at the Turin meeting.

Boris Carl Kondratieff: Obituary



Boris C. Kondratieff, in his office at the C. P. Gillette Museum of Arthropod Diversity. Credit, Tom Eckberg, by permission.

By R. Edward DeWalt

There are still many colleagues, students, and acquaintances of Boris Kondratieff who do not know of Boris's death. This is one last effort to let those know of his passing and remind each other of what a tremendous person he was.

Boris's life spanned 30 April 1954 to 14 August 2022. He died just a few weeks after our mayfly and stonefly virtual symposium, where many of you shared a few hours with him. There are other obituaries and memorials to Boris published already. I encourage you to read them all and will refrain from reproducing them here.

Boris was greatly loved by his colleagues at Colorado State University where he served from 1986 to 2021. I attended a memorial service at Dr. Leroy Poff's residence in Fort Collins, Colorado, USA on 5 November 2022. The love his colleagues had for him was unmistakable. The many stories, pictures and anecdotes shared at that gathering are recounted in an online [memorial](#). This is a rich, living document and if you wish you may add images and stories about Boris.

Donna Giberson and Peter M. Grant also wrote an obituary that was published in the *Mayfly Newsletter* (Giberson & Grant 2023, see link). It is a worthy read and does a great job recounting Boris as a teacher, a kind mentor, gracious editor, and as a wonderful human being.

My own contribution to honoring Boris can be found in the proceedings of our 2022

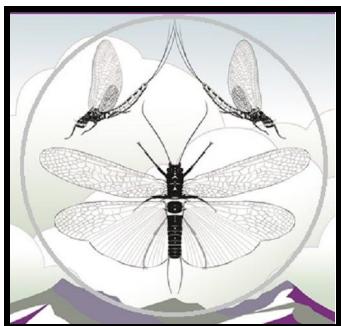
conference (DeWalt 2023, see link). I had already seen the online memorial from his friends and colleagues at Colorado State University, so my article focused on Boris's publication record. You can find a detailed bibliography of Boris's aquatic entomology publications in that article.

I recently spoke with Dr. Richard W. "Dick" Baumann (emeritus, Brigham Young University, Monte L. Bean Life Science Museum) about Boris as I was preparing to write this document. Dick reminded me that Boris was one of his best friends and that they had traveled the continent together. Dick always felt safe and comfortable to travel when with Boris. Those who knew Boris well can sympathize with this statement. Below is a paragraph that Dick sent to me after our conversation. You can see that they were very close.

"Boris Konfrat tieff was my best professional friend. Ever since we first met in the Washington, D. C. area in the early 1970's, we have had a special bond. I went to BYU and he went to CSU. My favorite memories of Boris are best expressed by our many collecting trips for stoneflies throughout the world. He was always the driver and I was the guide. Early on we had a goal to collect stonefly adults from every state in the United States and from most Canadian Provinces. When these goals were realized we branched out to Mexico and some countries in Europe. We spent over five years in the Mexican states of Sonora, Chihuahua and Baja California. Then we moved to the volcanic mountains surrounding Mexico City. Next we collected stoneflies in Europe as part of some International Plecoptera meetings in Germany, Spain, Sweden and Scotland. Finally we emphasized our own states and some nearby localities. Boris was always so good at taking care of me and also my 90 plus year old father. We are not proud to say but during our many trips to Mexico we or members of our groups had three or four close brushes with death from: rattlesnakes, waterfalls, washed out roads or bridges and sickness."

I hope that with the combined efforts of Leroy Poff and friends, Donna Giberson and Peter Grant, and myself that Boris Kondratieff will be remembered fondly for his scholarship, mentoring, teaching, and kindness to all those he met during his life.

DeWalt RE (2023) Boris Carl Kondratieff, a lifetime of scholarship and service to aquatic entomology. *Zoosymposium* 24, 8–21. <https://doi.org/10.11646/zoosymposia.24.1.4>
Giberson D, Grant PM (2023) "Boris Carl Kondratieff April 30, 1954 - August 14, 2022" *The Mayfly Newsletter*: Vol. 26 (1): 11. Available at: <https://dc.swosu.edu/mayfly/vol26/iss1/1>



A summary of the 2022 XVIth International Conference on Ephemeroptera and XXth International Symposium on Plecoptera, a virtual affair

Our 2022 symposium was indeed a virtual affair. It occurred over four days, 3 hours per day, Tuesday July 26 through Friday July 29. While not an optimal replacement for an in-person meeting, 41 oral and 26 poster presentations were given. A total of 133 authors appeared 187 times across all abstracts and presenters were from 28 countries. The Symposium was well attended with at least 196 unique viewers identified. This seems enough evidence of enough support for consideration of a hybrid meeting.

Several side meetings were held, including one hosted by Heath Ogden who was discussing with interested mayfly workers the submission of an NSF grant to continue work on the phylogenomics of the order. Meetings of the representative standing committees were held. A more complete summary is available in the preface of the Symposium Proceedings (DeWalt & Burian 2023). The program of the Symposium with abstracts and presentations is available at this [link](#).

Stefano Fenoglio, Romolo Fochetti, Manu Rodriguez, and Manuel Tierno de Figueroa proposed to the attending members a Joint Meeting in Turin, Italy 21–26 July 2024. This proposal was accepted by the relevant standing committees. First notice of the meeting is included in this document. Please contact the organizers so they may plan accordingly.

DeWalt RE, Burian SK. (2023) Preface: Proceedings of the XVIth International Conference on Ephemeroptera. *Zoosymposium* 24, 5–7. <https://doi.org/10.11646/zoosymposia.24.1.3>

Proceedings of the 2022 XVIth International Conference on Ephemeroptera and XXth International Symposium On Plecoptera

The Proceedings of the Symposium was published 31 July 2023 in Zoosymposia, volume 24. We recognize the pressure authors are under to publish in venues with higher impact factors. Thank you for publishing in our Proceedings. Included is a preface with a summary of the virtual conference, an obituary, and 14 research articles. Individual articles may be downloaded at embedded link: [Proceedings](#).

The bibliography of the Proceedings is as follows:

Bibliography of Proceedings in *Zoosymposium*, Volume 24

DeWalt RE, Burian SK Eds (2023) Proceedings of the 2022 XVI International Conference On Ephemeroptera and XX International Symposium On Plecoptera. *Zoosymposium* 24, 1-214. ISSN 1178-9913 (online). <https://doi.org/10.11646/zoosymposia.24.1.1>

DeWalt RE, Burian SK. (2023) Preface: Proceedings of the XVIth International Conference on Ephemeroptera. *Zoosymposium* 24, 5–7. <https://doi.org/10.11646/zoosymposia.24.1.3>

DeWalt RE (2023) Boris Carl Kondratieff, a lifetime of scholarship and service to aquatic entomology. *Zoosymposium* 24, 8–21. <https://doi.org/10.11646/zoosymposia.24.1.4>

Sandberg JB (2023) Stonefly drumming behavior descriptions of three *Soliperla* Ricker, 1952 species (Plecoptera: Peltoperlidae). *Zoosymposium* 24, 22–43. <https://doi.org/10.11646/zoosymposia.24.1.5>

Burian SK (2023) Description of adults of *Acentrella nadineae* McCafferty, Waltz & Webb, 2009 (Baetidae: Ephemeroptera) with notes on rearing and madicolous behavior of nymphs. *Zoosymposium* 24, 44–56. <https://doi.org/10.11646/zoosymposia.24.1.6>

Sivaramakrishnan KG, Selvakumar C, Vasanth M, Subramanian MK (2023) Factors structuring patterns of Ephemeroptera (mayflies) species assemblages in different segments of the Western Ghats of peninsular India—a snapshot. *Zoosymposium* 24, 57–69. <https://doi.org/10.11646/zoosymposia.24.1.7>

Boonsoong B (2023) Mayfly larvae (Ephemeroptera) in Thailand: diversity and science communication. *Zoosymposium* 24, 70–81. <https://doi.org/10.11646/zoosymposia.24.1.8>

Cherchesova SK, Shapovalov MI, Mamaev VI, Palatov DM (2023) Ecology and phenology of stoneflies (Plecoptera) in the northern slopes of the Central Caucasus in winter and spring seasons. *Zoosymposium* 24, 82–93. <https://doi.org/10.11646/zoosymposia.24.1.9>

Vasanth M, Subramanian KA, Selvakumar C, Kubendran T (2023) Mayflies (Insecta: Ephemeroptera) of the Indian Himalaya and future challenges. *Zoosymposium* 24, 94–101. <https://doi.org/10.11646/zoosymposia.24.1.10>

Macadam CR, Kitchen L, Yeomans WE (2023) Water temperature and the growth of *Ameletus inopinatus* (Ephemeroptera: Ameletidae) in the Cairngorms, Scotland. *Zoosymposium* 24, 102–106. <https://doi.org/10.11646/zoosymposia.24.1.11>

Hogan PN, DeWalt RE (2023) Using distribution models to identify range shifts of four *Acroneuria* Pictet, 1841 (Plecoptera: Perlidae) species in the Midwest USA.

Zoosymposium 24, 107–117. <https://doi.org/10.11646/zoosymposia.24.1.12>

Montilla V, Márquez JA, Principe RE (2023) Inter-annual and habitat variation of the mayfly assemblage in grassland and pine afforested headwater streams (Córdoba, Central Argentina). *Zoosymposium* 24, 118–124. <https://doi.org/10.11646/zoosymposia.24.1.13>

Peredo Arce A, Kail J, Schletterer M (2023) Riparian forests as dispersal corridors for adult European mayflies, stoneflies and caddisflies (EPTs). *Zoosymposium* 24, 125–136. <https://doi.org/10.11646/zoosymposia.24.1.14>

Grubbs SA, DeWalt RE, Hart LV, Layer MR (2023) Systematics and updated range alter the conservation status of the Louisiana Needlefly, *Leuctra szczytkoi* Stark & Stewart, 1981 (Plecoptera: Leuctridae). *Zoosymposium* 24, 137–148. <https://doi.org/10.11646/zoosymposia.24.1.15>

Sivaruban T, Srinivasan P, Barathy S, Rajasekaran I (2023) *Baetis venkataramani* sp. nov., a new species of the genus *Baetis* Leach, 1815 (Ephemeroptera: Baetidae) from Tamil Nadu, India. *Zoosymposium* 24, 149–154. <https://doi.org/10.11646/zoosymposia.24.1.16>

Murányi D, Manko P, Kováks T, Vinçon G, Žiak M (2003) Contribution to the Protonemura Kempny, 1898 (Plecoptera: Nemouridae) of the Caucasus. *Zoosymposium* 24, 155–198. <https://doi.org/10.11646/zoosymposia.24.1.17>

Zheng X, Gong DW, Zhou CF (2003) A review of Asian mayfly species of *Habrophlebiodes* (Ephemeroptera: Leptophlebiidae). *Zoosymposium* 24, 199–214. <https://doi.org/10.11646/zoosymposia.24.1.18>

Plecoptera Species File Is Moving to TaxonWorks

By R. Edward DeWalt

Those of you who routinely use Plecoptera Species File have noticed the following header in the website since August:

"All old/original Species File websites have transitioned to read-only status as of 14 August 2023. When new "Pages" sites are live in the coming weeks, this content will still be available at <your_file>.archive.speciesfile.org . Please contact jrflood@illinois.edu for more information."

Certainly, this notice is confusing because the “why” was not explained. The Species File Group (SFG) is a biodiversity informatics group at the Illinois Natural History Survey that has been supporting Plecoptera Species File since 2007. The group is endowment supported and secure well into the future. I am the coordinator of this group.

The original software is old, frail, proprietary, and lacks many modern amenities. We have been developing the next generation software, [TaxonWorks](#) (TW), for several years. Until recently, we lacked a user interface to share data with the public, an impediment to completing migration to the new software. That milestone was reached in the last month and the migration of all Species Files to TaxonWorks is now complete. The new TW-based Plecoptera SF lives at <https://plecoptera.speciesfile.org>. The old website is static as of August, 2023 but is available at <http://plecoptera.archive.speciesfile.org>.

TW uses modern coding languages and practices. Code bugs, errors in the data, and desires for new features may all be added to an issue tracker run by GitHub. The software is open source, ICZN compliant, follows biodiversity informatics data standards, and the data are shared frequently with the [Catalogue of Life](#) and the [Global Biodiversity Information Facility](#). The code, data, and images are managed by top-of-the-line servers and software, backed up constantly, and mirrored at multiple locations.

You might also consider using TW as a taxonomic workbench or as your institutional collection management tool. We sign you up, you add students and collaborators, and we keep the systems running. We currently have >200 individual researchers and research groups using the software. We provide remote training and listening sessions weekly. If you want to discuss using TW, send me an email at dewalt@illinois.edu.

Announcements

2024 Joint Meeting of the XVII International Conference on Ephemeroptera and XXI International Symposium on Plecoptera

First announcement

Organizers: Stefano Fenoglio, Università di Torino, Italy, stefano.fenoglio@unito.it; Romolo Fochetti, Università della Tuscia, Italy, fochetti@unitus.it; Manuel J. López-Rodríguez, Universidad de Granada, Spain, manujlr@ugr.es; J. Manuel Tierno de Figueroa, Universidad de Granada, Spain, jmtdef@ugr.es



The 2024 Joint Meeting of the XVII International Conference on Ephemeroptera and XXI International Symposium on Plecoptera will take place in Turin, Italy, from 21 - 26 July 2024. The conference will be held at the Dipartimento di Scienze della Vita e Biologia dei Sistemi (Department of Life Sciences and Systems Biology) of the Università di Torino (University of Turin, Italy), placed in the city centre and quite close to the airport and main railway station. Turin-Caselle International Airport is one of the best in Italy for efficiency and destinations served, but, alternatively, you can use the nearby airports (Malpensa, Linate, Orio al Serio). Turin is also accessible by train and car/bus considering its excellent railways and motorways networks.



Turin, Italy



Università di Torino DBIOS (University of Turin)

A preliminary schedule of activities would be:

- Sunday: registration and welcome to the participants
- Monday: registration, oral and poster sessions. Evening cocktail party
- Tuesday: oral and poster sessions
- Wednesday: group field trip
- Thursday: oral and poster sessions. Social and awards banquet
- Friday: oral and poster sessions
- Saturday: after conference trip (optional, additional cost apply)

Wednesday's field trip will take place in the Alps, in the Monviso Natural Park area where the ALPSTREAM (Alpine Stream Research Center, Ostana) is located.



Wednesday field trip

On this day two different itineraries will be organised at choice, one more aimed at tourist, cultural and landscape aspects (historic city of Saluzzo and Castello della Manta) and one more outdoor, with a walk around the Po source. There will be no restrictions regarding collecting insects and other invertebrates in the nearby mountain streams, ponds, and wetlands.



Wednesday field trip

We are also planning to organise a series of cultural and recreational events and evening activities for participants and a plan of activities, visits, and excursions for accompanying people. We would like to open a space also dedicated to non-specialists but enthusiasts of mayflies and stoneflies: for example, fly fishermen (Turin hosts the oldest fly-fishing club in Italy).

Regarding the meeting proceedings, the editorial of the journal *Aquatic Insects* has been contacted for the possible submission of papers in a special issue dedicated to the congress.

Further details about the program, student hostels and other accommodations, accompanying guest activities, post-conference trip, registration costs, availability of conference scholarships, call for abstract/papers and instructions for authors, and forms for conference registration (including those for accompanying guest) will be given in the second announcement (scheduled for September or October 2023) and the third announcement (scheduled for January or February 2024).

Please, if you wish to receive the next announcements, fill the [attendance interest form](#).



We hope to see you soon in Turin!

13th North American Plecoptera Symposium
June 25-27, 2024 (Tuesday-Thursday)
Atmospheric Sciences Research Center
Whiteface Mountain Field Station
SUNY Albany

The North American Plecoptera Society (NAPS) is hosting the 13th North American Plecoptera Symposium June 25–27, 2024 at the Atmospheric Sciences Research Center (ASRC) Whiteface Mountain Field Station (44.3945,-73.85980), located in [Adirondack Park](#) in northern New York State.

We invite you to attend this meeting which will consist of formal presentations on anything regarding stoneflies, informal congenial conversations, and relaxing time together in the field. This meeting will bring together Plecoptera workers and aquatic biologists to talk amongst friends, build research relationships, enhance our collective knowledge of stoneflies, and enjoy the wonderful ambiance and scenery of the beautiful Adirondack Mountains.

Organizers

Luke Myers, Lake Champlain Research Institute, SUNY-Plattsburgh,
myerslw@plattsburgh.edu, (518) 570-9995

Scott Grubbs, Western Kentucky University, Department of Biology, Bowling Green, Kentucky, scott.grubbs@wku.edu (270) 202-6981

Ed DeWalt, Illinois Natural History Survey, 1816 S Oak St., Champaign, Illinois, dewalt@illinois.edu, (217) 649-7414

Draft Agenda

- ***Day 1 Tuesday, June 25***
 - Check in at ASRC Whiteface Mountain Field Station beginning at 2 pm.
 - Dinner at ASRC Whiteface Mountain Field Station.
 - Meeting welcome and participant introductions.
- ***Day 2 Wednesday, June 26***
 - Breakfast and coffee at ASRC Whiteface Mountain Field Station.
 - Stonefly presentations.
 - Box Lunch at ASRC Whiteface Mountain Field Station and field collections.
 - Stonefly presentations.
 - Overview of NE RSGCN project.
 - Dinner at ASRC Whiteface Mountain Field Station.
- ***Day 3 Thursday, June 27***
 - Breakfast and coffee at ASRC Whiteface Mountain Field Station.
 - Stonefly presentations (if needed)
 - Meeting Summary
 - Box Lunch (optional) at Whiteface Mountain Field Station
 - Business Meeting, including discussion of next NAPS Meeting

Housing

Please use Wilmington, New York, USA, 12997 as a base for housing opportunities. Options include local motels, VRBO, Airbnb, Wilmington Notch State Campground, and KOA. Please note that there is no housing available at the station.

Meals

Meals will be prepared by a catering service. Please note on the registration form if vegetarian or vegan meals are required and if you have a food allergy. We will be happy to accommodate your needs.

Registration

The anticipated maximum cost for the meeting, including meals, is \$215–220/person. There is a Wednesday only option for attendance at \$120–125/person. Registration is currently open and we will be accepting registrations until April 30, 2024. Registration link:

<https://fs30.formsite.com/CASplattsburgh/NAPS2024/index>

T-shirt

A meeting theme T-shirt comes with the cost of registration. Please indicate preferred size when registering.

Submission of abstracts

Abstracts will be accepted March 1 through May 15, 2024. Please send abstracts to scott.grubbs@wku.edu.

Presentations

Oral and poster presentations will be in person only. We anticipate a standard 15 minute talk (including questions) but are open to longer presentations. Please contact scott.grubbs@wku.edu with presentation questions.

Travel

Airports

1. BTV Burlington International, Burlington, Vermont (approximately 2 hours with ferry route (Grand Isle to Cumberland Head)).
2. ALB Albany International Airport (2.5 hour drive time).
3. PLB Plattsburgh International (approximately 45 minute drive time).
4. SLK Saranac Lake (30 minute drive time)

Driving

ASRC Whiteface Mountain Field Station, 110 Marble Mountain Lane, Wilmington, NY 12997 (44.3945, -73.8598)

Take I-87 (south if coming from Plattsburgh/Burlington, north if coming from Albany). Take Exit 34 (NY-9N) (traveling SW) towards Ausable Forks, passing through Ausable Forks to the town of Jay, take a right onto NY-86 (WNW) towards Wilmington. At the four way stop signs in Wilmington, proceed straight onto the Whiteface Memorial Highway. You will pass North Pole, NY and the tourists' stop called Santa's Workshop on your right. Shortly afterwards, turn left (S)

onto Marble Mountain Road and the ASRC Field Station. If you miss this road and make it to the toll booth on Whiteface Memorial Highway you have gone too far. Note the organizer phone numbers above if you get lost.

Final note

Please forward this notice to other potential attendees and presenters. Mentors with students who work on any aspect of stonefly biology and ecology are encouraged to participate.

ICE2024 (XXVII International Congress of Entomology)

August 25 (Sunday) - 30 (Friday), 2024

Kyoto, Japan

Theme: New Discoveries through Consilience

<https://ice2024.org/>

Venue: Kyoto International Conference Center

<https://www.icckyoto.or.jp/en/>

President: Masato Ono (Graduate School of Agriculture, Tamagawa University)

Deadline for Early Bird Registration with full payment

December 15, 2023 (Fri) (23:59) (JST)

Early Bird registration fee:

General: JPY 74,100, Student: JPY 37,700, Developing country: JPY 37,700

Accompanying guest: JPY 31,200

※All payment must be made in Japanese yen.

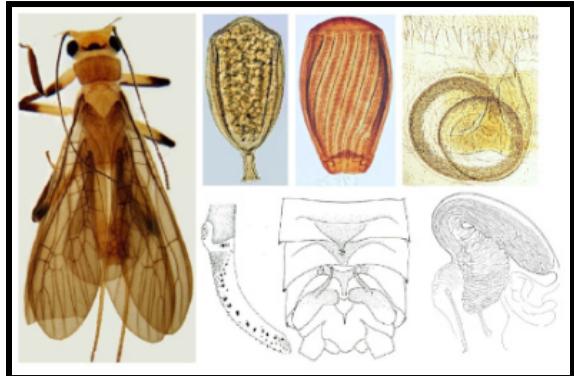
※The category "Student" is for students at the time of registration.

※We follow the 2021 World Bank Criteria of a developing country. The countries that can be registered as developing countries are "LOW-INCOME ECONOMIES (\$1,085 OR LESS*)" and "LOWER-MIDDLE INCOME ECONOMIES (\$1,086 TO \$4,255*)."

Recent Major Taxonomic Works

Zwick Peter & Zwick Andreas (2023) Revision of the African *Neoperla* Needham, 1905 (Plecoptera: Perlidae: Perlinae) based on morphology and molecular data. *Zootaxa* (Monograph) 5316(1), 194 pp. ISBN 97877688-819-1 (Online edition).

<https://doi.org/10.11646/zootaxa.5316.1.1>



The long-awaited integrative, systematic treatment of the *Neoperla* of Africa was published on 17 July 2023 as a Monograph in *Zootaxa*. I proudly served as the editor. To state that this work represents a monumental advance in the knowledge of African Plecoptera is an understatement. Sixty-two species were described as new, several lectotypes designated, plus several demotions to junior synonym status.

Names of doubtful and dubious nature were listed and briefly noted, too. The joint taxonomic-phylogenetic narratives should be easily interpretable from novice students to the experienced scientist active in the field. Regarding the molecular methods in this study, the authors embodied an adaptive approach upon realizing that sequencing one mitochondrial gene subunit was problematic due to the age of many specimens. Instead, they shifted to a whole mitochondrial genome-skimming approach to sequence as many proteins (13) and nucleotides as possible. Not only was this successful with providing the high resolution necessary to define and describe as many species as possible, but this also provided strong evidence to denote sister group relationships between individual species and between species complexes and groups. This study represents a roadmap for how future systematic studies can be designed to best maximize the amount of both rapidly- and slower-evolving genes (including fragments) that can be successfully sequenced and analyzed. Now published, this monograph will likewise serve as a roadmap for subsequent work on African *Neoperla*.

Prepared by Dr. Scott Grubbs, Western Kentucky University, USA
Plecoptera Co-Subject Editor, *Zootaxa*

Grubbs Scott A & Baumann Richard W (2023) The Nemourinae (Insecta, Nemouridae) of the eastern Nearctic. Zootaxa 5306 (1): 1–53. <https://doi.org/10.11646/zootaxa.5306.1.1>

It is invaluable to have large scale, up-to-date taxonomic, synthesized treatments for adult insects if species level identification at large geographic scale is your aim. Without these treatments, a large library of primary literature is necessary to do the job. Scientists conducting monographs synthesize information from hundreds to thousands of specimens, conduct intermediate revisions, and work for years to gather fresh material for comparative work. This is the roadmap followed by Grubbs (Professor of Biology, Western Kentucky University, Bowling Green, Kentucky, USA) & Baumann (emeritus, Brigham Young University, Monte L. Bean Life Science Museum, Provo, Utah, USA) in their monograph of the Nemourinae of eastern North America.

This work was published 19 June 2023 in Zootaxa. A total of 26 eastern Nemourinae species across eight genera may now be confidently identified, in most cases for both sexes. The monograph is richly illustrated with both scanning electron micrographs and professionally illustrated line drawings by Jean Stanger-Leavitt and Debra Horner. An extensive synonymy, Nearctic distribution, diagnostic features for sexes and life stages, and new keys to genus and species are provided. The last eastern source with this kind of detail in the Nemourinae was provided by Hitchcock (1974). The current volume is far superior.

This volume adds to prior work conceived of in 1992 at the 11th International Plecoptera Symposium in Treehaven, Wisconsin (Stark & Armitage 2000). Grubbs' & Baumann's work is complementary to the work of Stark & Armitage (2000) in Peltoperlidae (by Stark), Pteronarcyidae (by Nelson) and Taeniopterygidae (by Stewart) and by Stark & Armitage (2004) in Chloroperlidae (by Surdick), Perlidae (by Stark), and Perlodinae (by Kondratieff). Like these volumes, the Grubbs and Baumann work will be coveted by stonefly scientists working in the eastern USA. Remaining to complete the task of 1992 include the Capniidae, Leuctridae, and the Amphinemurinae (Nemouridae). It is my guess that at least one of the current authors will be involved in coming treatments. Congratulations to Scott and Dick for their worthy addition to the series.

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Stark BP & Armitage BJ (Eds.) (2004) The stoneflies (Plecoptera) of eastern North America. Vol. II. Chloroperlidae, Perlidae, and Perlodidae (Perlodinae). Bulletin of the Ohio Biological Survey. New Series. Vol. 14. Ohio Biological Society, Columbus, Ohio, pp. 61–148.

Prepared by R. Edward DeWalt, University of Illinois, USA
Plecoptera Co-Subject Editor, Zootaxa

Member News

Plecopterologists of the Argentinean Patagonia

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The plecopterologists of the CIEMEP (Argentina, Chubut, Esquel) include Dr. Pablo Pessacq and postdoc Dr. Tácio Duarte. We study several aspects of Plecoptera in our lab: the taxonomy and distribution of the order in Patagonia; reconstruction of the phylogeny of Gripopterygidae; and the biological and taxonomy of *Andiperla* (Gripopterygidae), the only stoneflies that inhabit glaciers--nymphs in ice streams and adults on the ice. See cover photo.

A recently funded project includes a survey of the order in Patagonia to improve taxonomic and distributional information of the species, including the creation of a DNA library for Patagonian stoneflies.

Obtaining molecular information is a bottleneck for science in Argentina. We are open to collaboration with other researchers who can help with the molecular work.

Ongoing Research from the Northeast USA States

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During the early spring (April 2-5) and late summer (June 25-28) in 2022, I had the pleasure of embarking on two very memorable and successful collecting trips with Boris Kondratieff, one of my friends and mentors (Fig. 1). I am happy to have had time with him before his death. On these two trips we collected at 85 locations across four USA states (Massachusetts, New Hampshire, New York, and Vermont) (Fig. 2). In total, 2075 specimens representing 54 species of stoneflies were collected over the course of these two forays. Collecting has continued in the 2023 field season, with strategic focus on species in greatest conservation need (SGCNs) in New York and the New England states.

I have also spent time over the last few years visiting regional museums to examine and digitize specimens. Museums visited include: University of Vermont Insect Collection, Cornell University Insect Collection, and the University of New Hampshire Insect Collection. These efforts have yielded many significant historical and contemporary records. Future returns to these collections and others in New England are planned.

These efforts have spurred an inventory of the stonefly fauna of Vermont. A preliminary list was presented in the spring/summer 2023 issue of the [Vermont Entomological Society Newsletter](#). To date, we have documented 79 species in Vermont. In addition, a long overdue manuscript documenting the stonefly fauna of New York (>31,000 individual specimens, >6500 records, and 132 species) is currently in the final stages of preparation and will be submitted for review in the coming months.

I am looking for a graduate student to work on this project starting in spring 2024. The research will focus on conservation and systematics of stoneflies in the Northeast.



Fig. 1. Boris Kondratieff, April 2022, Taconic Mountains, New York, USA. Credit Luke Myers.

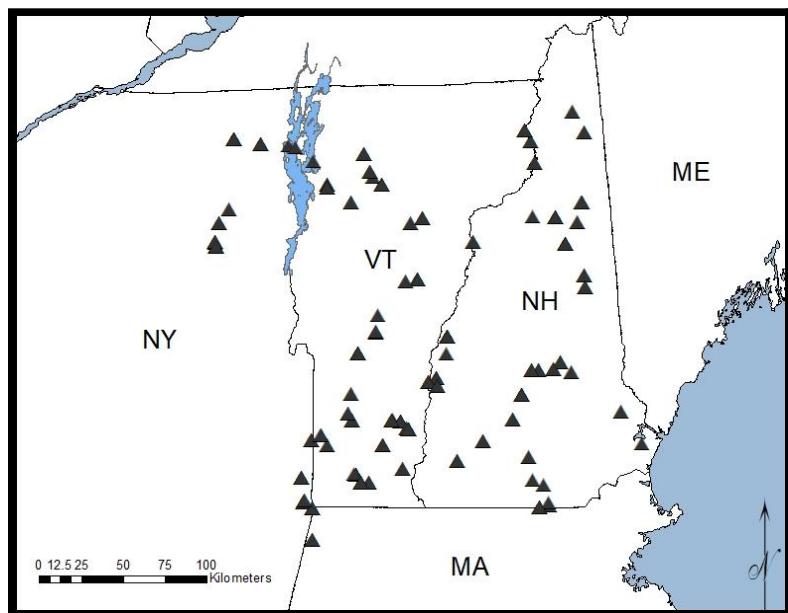


Fig. 2. Collection locations from April 2-5 and June 25-28 2022 stonefly collecting trips. MA = Massachusetts, ME = Maine, NH = New Hampshire, NY = New York, VT = Vermont.

A Collection of Northern Canada Stoneflies Now Housed at the Canadian National Collection of Insects, Arachnids, and Nematodes

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Researchers interested in arctic Plecoptera may be interested to learn that a collection of >1000 vials of Plecoptera nymphs and adults collected in the Canadian north was recently deposited in the Canadian National Collection of Insects (CNCI) in Ottawa, Canada. These specimens have been databased so information on them is available by contacting the Collections Manager or by browsing the CNCI specimen database
<https://www.cnc.agr.gc.ca/taxonomy/TaxonMain.php>.

This collection consisted of specimens from two sources: an archived collection from a large environmental impact study in the early 1970s relating to a proposed pipeline along the Mackenzie River system (Northwest Territories) and northern Yukon (Brunskill et al. 1973; Wiens et al. 1975), and collections from a series of more recent collecting trips in Yukon in 2006, along the Horton and Thelon rivers (described in Currie et al. 2000, 2002, respectively), Mackenzie River tributaries (Rempel and Gill 2010; Vinke et al. 2015), and additional sites in Yukon and near Yellowknife, Norman Wells and Banks Island, Northwest Territories (Cordero et al. 2016). A summary of the collecting methods and sites can be found in Giberson and Burian (2017).

A brief history of the collection. In 1999, a group of us (Donna Giberson, UPEI; Douglas Currie, Royal Ontario Museum; Peter Adler, Clemson University; Brian Brown, LA County Museum, and Mac Butler, North Dakota State U.) planned an expedition for summer 2000 along the Horton River. The Horton is a major Canadian tundra river that is generally navigable by canoe, and runs for >700 km in a general south-north direction from its source north of Great Bear Lake to the Arctic Ocean. Our goal was to fly into the headwaters and canoe down the river over about four weeks in the summer, sampling insects along the south-north gradient to try to fill in some distributional gaps for our target taxa. My own targets were the mayflies and stoneflies. The trip was so successful that we planned a second trip along another major tundra river, the Thelon River, in 2002 (Giberson 2014, 2021). Doug Currie and I continued to visit the arctic to collect in additional locations for about a decade, and the work resulted in some other researchers making their collections available to us.

Not long after the start of these expeditions, I was reminded by Dr. Dave Rosenberg (Freshwater Institute of Fisheries and Oceans Canada) of a large collection of northern aquatic insects from the early 1970s; these were collected as part of a massive environmental impact study into a proposed pipeline development along the Mackenzie River in the Northwest Territories. There were thousands of vials of mayflies, stoneflies, and caddisflies, but they needed a lot of work to make them useful in a current context – the vials were generally sorted to Order or Family only and contained a mix of species. They also contained large numbers of specimens that were a challenge to identify: specimens were faded from many years in ethanol and many specimens were tiny since vials consisted of entire sorted samples from kick, Surber, or drift samples. And most importantly, the specimen labels were difficult to decipher, since most were coded ecological labels without clear locality, date, or sampling information. If I had realized at the time just how much work would be involved in decoding those labels, I probably would not have tackled these specimens, but once I got into it, it became a bit of an obsession to

figure them out. Details on the coding and the labels can be found in Giberson and Burian (2017).

Once the labels were decoded, the specimens were sorted to the lowest possible taxon into separate vials, and databased. All specimens were deposited in the CNC. Most of the specimens are nymphs, though some adults were also collected. It is important to note here that my own expertise in Plecoptera is limited, but Dr. Ken Stewart was gracious enough to identify many of the specimens from the Horton and Thelon expeditions, and these were then included in his publication on Alaska and western Canada stoneflies (Stewart and Oswood 2006). Many of the specimens were too tiny to identify beyond family (including large numbers of just hatched nymphs collected in drift or Surber samples for the Mackenzie project), but larger specimens were identified to genus when possible.

The collection. A summary of the collection is provided in the table. Note again that the Mackenzie Pipeline study collections are dominated by tiny nymphs (with relatively fewer mature specimens) due to the bulk collecting and sorting of those samples, but those collected more recently focused on collecting more mature specimens, and where possible, also adults.

Managing Editor's Note. The CNCI search page is a bit idiosyncratic. Follow these instructions to get started: click on the “Specimen” tab and choose “Specimen search”. From the “Taxon search” field type in a taxon name--keep it simple. The query “Plecoptera” returns a new field, a drop down list, called “Search results”. Within that list chose “Plecoptera 0” (other “Plecop....” are Lepidoptera) and select “Inclusive” at the end of the field. In the bottom left of the page, click on “Search”. This returns 11,446 specimen records. It may take half an hour of practice before you obtain more specific information. Try searching for genera as a way to get more specific information. Sorting is possible one column at a time, for instance, sorting on “Taxon” or “Province” is useful. No download is provided, but copy and paste into a spreadsheet works. These data are not yet available at the Global Biodiversity Information Service in Copenhagen, Denmark, which would provide better tools for querying the data.

Family	Vials	Specimens	Adults	Genera identified
Capniidae	42	272	14	<i>Capnia</i>
Chloroperlidae	170	1217	236	<i>Alaskaperla, Alloperla, Haploperla, Plumiperla, Suwallia</i>
Nemouridae	193	6078	84	<i>Amphinemura, Nemoura, Shipsa, Zapada</i>
Perlidae	15	35	2	<i>Claassenia</i>
Perlodidae	152	1156	107	<i>Arcynopteryx, Diura, Isogenoides, Isoperla, Skwala</i>
Pteronarcyidae	41	192	0	<i>Pteronarcys</i>
Taeniopterygidae	13	45	0	<i>Taeniopteryx</i>

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The Canadian and American species of Plecoptera in the Canadian National Collection of Insects, Arachnids and Nematodes (CNCI)

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In January 2017 I began a project to curate the entire CNCI collection of Plecoptera. Phase 1 of this study involved confirming species identification, updating the taxonomic names, updating labeling, renewing preservatives, replacing vials and stoppers, databasing the specimens, and georeferencing of the localities. This phase was completed in January of 2023, creating over 11,000 specimen records, representing both pinned and alcohol preserved specimens, <https://www.cnc.agr.gc.ca/taxonomy/TaxonMain.php>.

Of the approximately 660 described species of Plecoptera from Canada and the United States (DeWalt *et al.* 2023), 451 species or 68 % are present in the CNCI collection.

Examination of unidentified adult species from Canadian localities were also identified to species and databased during this phase. Of the approximately 267 species reported from Canada (Kondratieff *et al.* 2019) only four species are not represented in the CNC collection: *Bolshecapnia milami* (Nebeker & Gaufin, 1967); *Alloperla acadiana* Harper, 1984; *Neoperla mainensis* Banks, 1948 and *Yoraperla siletz* Stark & Nelson, 1994.

Species of Plecoptera added to the Canadian list (Kondratieff *et al.* 2019) include: *Agnetina flavescens* (Walsk, 1862); *Arsapnia tumida* (Claassen 1924); *Diura washingtoniana* (Hanson, 1940); *Helopicus nalatus* (Frison, 1942); *Isoperla citronella* (Newport, 1851); *Isoperla katmaiensis* Szczytko & Stewart 1979; *Isoperla marmorata* (Needham & Claassen 1925); *Isoperla obscura* (Zetterstedt, 1840); *Lednia borealis* Baumann & Kondratieff, 2010; *Leuctra carolinensis* Claassen, 1923; *Nemoura sahlbergi* Morton, 1896; *Neoperla coosa* Smith & Stark, 1998; *Neoperla stewarti* Stark & Baumann, 1978; *Paraleuctra jewetti* Nebeker & Gaufin, 1966; *Paraleuctra projecta* (Frison, 1942); *Perlesta dakota* Kondratieff & Baumann, 1999; *Perlesta lagoi* Stark 1989; *Perlesta nitida* Banks, 1948; *Perlesta xube* Stark & Rhodes 1997; *Sweltsa lyrata* Stark & Baumann, 2018 and *Taenionema uinta* Strange & Baumann, 1993.

Species removed from the list (Kondratieff *et al.* 2019) include: *Diura nanseni* (Kempny, 1900) (replaced by *D. washingtoniana*); *Nemoura rickeri* Jewett, 1971 (junior syn. of *N. sahlbergi*); *Nemoura trispinosa* Claassen, 1923 (junior syn. of *N. arctica* Esben-Petersen, 1910); *Sweltsa coloradensis* (Banks, 1898) (replaced by *S. lyrata*) and *Utacapnia distincta* (Frison, 1937) (these specimens from Alberta in the CNCI are either an undescribed species or a hybrid between *Utacapnia trava* (Nebeker & Gaufin, 1965) and *U. distincta*).

Phase 2 of this study is underway, involving the identification of specimens from American localities.

Managing Editor's Note. David has done a fantastic job. This is probably the 4th or 5th largest Plecoptera collection in North America. It is great that the specimen data are now available. It would be even better to get these data mobilized to GBIF.

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USA Northeast Regional Stonefly Species of Greatest Conservation Need

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Species of Greatest Conservation Need (SGCN) are those listed in individual USA State Wildlife Action Plans as the species that likely need a combination of conservation practice and protection to survive. Species do not follow political boundaries and often require conservation across states. The [Northeast Fish and Wildlife Diversity Technical Committee](#) of the [Northeastern Association of Fish and Wildlife Agencies](#) promoted stoneflies as a group of species in the northeast states that require a regional approach to conservation. Over several years the committee pushed our group to assess from state lists of 65 SGCNs, a smaller list of species needing regional study. In 2018 our group, which at that time included the late Boris Kondratieff, created a list of 33 RSGCN species (see table). A funding model was developed by the Committee, the US Fish and Wildlife Service and the Wildlife Management Institute that resulted in a 4-year, \$300,000 grant funded to study these RSGCNs in the 13 NE USA states (Connecticut, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia and West Virginia). The grant is led by Myers of the State University of New York at Plattsburgh with subcontracts to Grubbs and DeWalt. Our objectives include accumulating existing museum and literature specimen records, developing standard operating protocols for field and museum work, conducting targeted fieldwork, training graduate students and regional biologists, modeling distributions of the species, and conducting objective conservation assessments. Graduate students Josie Griffith and Jack Merda-Lapsen (both of WKU) and Theodore Cook and Phillip Hogan (U Illinois) will participate in fieldwork, analyze data, and/or develop thesis topics related to this project.

North American stonefly workers will learn more about the work at our 2024 North American Plecoptera Symposium held next year in June. We are now applying for funding to train regional biologists in stonefly identification and sampling and host one or two bioblitzes in West Virginia and Virginia during May, 2024. We hope to have details by December, 2023. We are interested in regional biologists who might help us, including sampling, providing data and specimens, hosting training sessions, and sharing your favorite sampling locations. Email us with suggestions. MA, ME, NY, VT

NE RSGCN stoneflies, NE states with published records, and Concern Level (CL, 1 most concern).																
Family	Species	CL	CT	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VA	VT	WV	RSGCN Sum
Capniidae	<i>Allocapnia frumi</i>	1				1										1 2
Capniidae	<i>Allocapnia harperi</i>	2				1					1		1			4
Capniidae	<i>Allocapnia illinoensis</i>	3				1	1			1		1				5
Capniidae	<i>Allocapnia simmonsi</i>	3				1					1		1			4
Chloroperlidae	<i>Alloperla aracoma</i>	2				1					1		1			4
Chloroperlidae	<i>Alloperla biserrata</i>	2				1					1		1			4

Chloroperlidae	<i>Alloperlula stipitata</i>	2								1			1		
Chloroperlidae	<i>Alloperlula voinae</i>	2		1	1			1			1		4		
Chloroperlidae	<i>Alloperlula vostoki</i>	1						1	1				2		
Chloroperlidae	<i>Sweltsa holstonensis</i>	1								1			1		
Chloroperlidae	<i>Sweltsa palearata</i>	2		1				1	1		1		4		
Chloroperlidae	<i>Sweltsa pocahontas</i>	2		1							1		2		
Chloroperlidae	<i>Utaperla gaspesiana</i>	2		1	1	1		1	1		1		6		
Leuctridae	<i>Leuctra laura</i>	1				1							1		
Leuctridae	<i>Leuctra monticola</i>	1								1			1		
Leuctridae	<i>Megaleuctra flinti</i>	3		1				1	1	1	1		4		
Nemouridae	<i>Ostrocerca prolongata</i>	3	1			1	1	1	1	1	1		7		
Nemouridae	<i>Prostoia hallasi</i>	2	1	1						1			3		
Nemouridae	<i>Soyedina merritti</i>	1							1				1		
Peltoperlidae	<i>Tallaperla lobata</i>	3								1			1		
Perlidae	<i>Acroneuria arida</i>	1						1	1	1			3		
Perlidae	<i>Acroneuria flinti</i>	3								1			1		
Perlidae	<i>Hansonoperla appalachia</i>	3		1	1		1		1	1	1		6		
Perlidae	<i>Hansonoperla hokolesqua</i>	2									1		1		
Perlidae	<i>Neoperla mainensis</i>	1				1							1		
Perlodidae	<i>Diploperla kanawholensis</i>	2								1	1		2		
Perlodidae	<i>Diura washingtoniana</i>	1					1						1		
Perlodidae	<i>Isoperla gibbsae</i>	3	1	1	1			1				1	5		
Perlodidae	<i>Isoperla major</i>	1						1		1			2		
Perlodidae	<i>Isoperla myersi</i>	1						1					1		
Perlodidae	<i>Isoperla stewarti</i>	2								1			1		
Perlodidae	<i>Remenus kirchneri</i>	3								1			1		
Taeniopterygidae	<i>Taeniopteryx nelsoni</i>	2								1			1		
RSGCN Sum			2	1	4	12	5	5	1	9	12	0	20	1	15

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Systematics and taxonomy of Nearctic *Leuctra*

This is a collaborative project with several individuals, including recent WKU M.S. students (Maddie Metzger and Madison Layer) and Ed DeWalt (INHS). We are slowly working through individual species groups (*sensu* Harper & Harper 1997) and making good progress during the last few years on the *L. biloba* and *L. ferruginea* groups. Manuscript submissions on both groups are anticipated later in 2023 or early 2024.

Systematics and taxonomy of Nearctic *Perlesta* (Perlidae)

Ed DeWalt, Luke Myers, and I are working on a Nearctic *Perlesta* project. This work has two primary goals: (1) to expand upon the partial barcode-based phylogenetic treatment presented in South et al. (2019), and (2) to make it easier for the novice and expert alike to navigate through the species covered in Stark (2004) and the several described since that time. We may have new species to describe but the stated goals are bigger priorities. A manuscript submission is anticipated later in 2023 or early 2024.

Systematics of the Spiny Forestfly, *Nemoura spiniloba*

Dick Baumann (Brigham Young University), John Sandberg (California Department of Fish and Wildlife), and I are collaborating on a project to assess the evolutionary relationship of Nearctic *Nemoura spiniloba* within the *N. cercispinosa* group and with all other species of *Nemoura*

whose barcodes are readily available. *Nemoura spiniloba* has only been recorded from California, USA. A manuscript submission is anticipated later in 2023 or early 2024.

Conservation status of the Karst Snowfly, *Allocapnia cunninghami*

Thanks to the U.S. Fish & Wildlife Service (USFWS), I have procured a small grant to continue addressing the conservation status of *Allocapnia cunninghami*. This species has a small known range in central Kentucky and middle Tennessee, USA. (Grubbs 2021) and was one of three species petitioned by the Center for Biological Diversity in 2010 for formal status assessments by USFWS. The other two were the Tennessee Forestfly, *Amphinemura mockfordi* and the Louisiana Needlefly, *Leuctra szczytkoi*. Following the research conducted in winters of 2019 and 2020, the USFWS Kentucky Ecological Services Field Office installed and routinely visited Malaise traps at several public and private properties mainly within the known range of *A. cunninghami* during winters of 2020–2021, 2021–2022, and 2022–2023. At some point, I will be seeking collaboration to better guide preparing a formal conservation assessment and preparing iterative distributional models.

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Pre-European reconstruction of the Midwest USA stonefly fauna. Phillip N. Hogan, PhD student, University of Illinois, Department of Entomology. I nearly understand how historical distributions of stoneflies in the Midwest have changed over the past two centuries. Preliminary methods using distribution modeling of four *Acroneuria* Pictet, 1841 species yielded promising results in estimating pre- and post-impairment distributions. Range contractions for two species corresponded with land conversion of the historic Grand Prairie to agriculture. This work was recently published in the joint mayfly and stonefly conference proceedings. The modeling workflow is being updated to accommodate all modellable species and refine both historical and contemporaneous estimates of the distribution of each species. In the next stage of this research, models will be developed under different climate change scenarios to identify species with the greatest risk for regional extirpation.

Phylogeographic analysis of the eastern Nearctic *Allocapnia* Claassen, 1924. Phillip Hogan. Phylogeographic study continues for eastern Nearctic *Allocapnia* Claassen, 1928. I will determine how a few members of the genus recolonized the upper Midwest post-Pleistocene using RADseq. During winter of 2022, targeted collections for three species (*A. granulata* (Claassen, 1924), *A. pygmaea* (Burmeister, 1839), and *A. rickeri* (Frison, 1942)) provided adequate coverage for the latter two species. Additional collections are planned for *A. granulata* this winter. DNA extraction and restriction site work will begin in spring 2024.

The stoneflies of West Virginia. Theodore Cook, MS student, University of Illinois, Department of Entomology. Much has been published about individual species from West Virginia (WV). Most of the papers are descriptions of new species and poorly documented checklists. My thesis will provide the first comprehensive analysis of stoneflies from West Virginia. I will compile the specimen data from borrowed material, literature and new collections, produce maps of each species, analyze the completeness of sampling, investigate factors related to species richness, and provide a first assessment of conservation status of

species. I am currently digitizing records borrowed from Colorado State University and Brigham Young University and am preparing my first foray into West Virginia for fall emerging *Leuctra*.

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Relationships of Brachypterae and identification of Nearctic larvae. This is a call for specimens! I've recently gone down a taxonomic rabbit hole with the Brachypterae Zwick, 1973. Identification of larval forms in the eastern Nearctic is difficult. For instance, the undescribed larva of the larva *Oemopteryx contorta* (Needham & Claassen, 1925) do not key out well, even vs from *Taenionema atlanticum* Ricker & Ross, 1975. Current genera and species groups were affirmed or proposed based on adult male morphology by Ricker & Ross (1975) and Baumann & Kondratieff (2009). I would like to examine these from a molecular and larval perspective. Presently, I have specimens and CO1 barcodes for all the Nearctic species of *Oemopteryx*, *Strophopteryx*, *Bolotoperla rossi* (Frison, 1942), *T. atlanticum* and *Taenionema pacificum* (Banks, 1900). I would love to examine larvae of more western Nearctic *Taenionema*, and non-Nearctic Brachypterae, especially *Brachyptera*. Adult specimens would also be useful for molecular association of adults and larvae. I hope to refine the Nearctic larval key, which may require elevating some species groups, but this can only be accomplished with careful consideration of non-Nearctic genera. If you are willing to donate or loan some specimens, or provide detailed photos or barcodes, please email me. Cheers!

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Other Images Submitted for the Cover Page



Helenoperla malickyi Sivec, 1997 (Perlidae). One of the rarest stoneflies in Europe. Zwick in 2004 mentioned it from only two rivers in Greece. Credit Tibor Kovács and Dávid Murányi. Now found in multiple locations in Albania. Soon to be published.



Diamphipnopsis virescentipennis (Blanchard, 1851) (Diamphipnoidae), Argentina. Credit, Luis Epele.



Alloperlina neglecta Frison, 1935 (Chloroperlidae). Grandfather Mountain, North Carolina, 2023.
Credit, Chris Verdone.



Brachyptera trifasciata (Pictet, 1832) (Taeniopterygidae). Credit, Arnold Stanizcek.



Cerconychia flectospina Wu, 1962, Ailao Mountain, Yunnan, China, 9 July, 2022. Credit Z. T. Chen.



Notoperla (Gripopterygidae) nymph. Argentina. Submitted, Pablo Pessacq. Photo credit, Riley C. Nelson, BYU.



Plecoptera painting. Submitted by, Romolo Fochetti.



Andiperla nymph (Grypopterygidae), Argentine Patagonia. Submitted, Pablo Pessacq. Credit, C. R. Nelson.