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The Mayfly Newsletter

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The Mayfly Newsletter

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The Mayfly Newsletter is the official newsletter of the Permanent Committee of the International Conferences on Ephemeroptera

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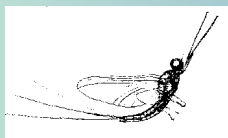
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Feature Photo



Greg Courtney, Department of Entomology, Iowa State University, continues his quest to photograph living aquatic insects both near his home and worldwide. This striking photo features *Caenis* sp. (Caenidae) at black light, Boone River, Iowa, 19 August 2021.



The Mayfly Newsletter is published (on-line) at <https://dc.swosu.edu/mayfly/>
(see link on Ephemeroptera Galactica: <http://www.ephemeroptera-galactica.com/>)

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2022 CONFERENCE MOVED TO VIRTUAL FORMAT

XVIth INTERNATIONAL CONFERENCE ON EPHEMEROPTERA AND XXIth INTERNATIONAL SYMPOSIUM ON PLECOPTERA 25-29 July 2022

Some of you have heard rumors that the meeting has changed to a virtual venue. That is true. Committees have been consulted and agreed to a virtual meeting.

A Rationale for Virtual Meeting

Conditions here still reflect a pandemic of the unvaccinated. The Delta Variant is sweeping the USA. Further vaccination (5-11 age now eligible) and boosters (older and health challenged eligible, and expanding) help the USA mitigate the epidemic. Still, hospitals in western states are overwhelmed with COVID-19 patients, including in parts of Colorado. There is no guarantee of timely medical attention for other afflictions in some places in the western states.

Other locations around the world are experiencing another wave of Delta Variant--Netherlands closed down for 3 weeks, Germany with a huge number of confirmed cases, and China with difficulties. Fall and winter seasons give us pause that the wave of infection will continue and possibly intensify. This leaves little time next year to have numbers subside before the July meeting.

The President of the USA has recently lifted restrictions for travelers from many countries. However, hosting an in-person meeting is still very risky given the uncertainty, and we don't wish to take on the risk of losing a lot of money because our colleagues either cannot travel or don't feel safe traveling.

Therefore, Boris and I have decided that we will not host a physical meeting next year. We have canceled arrangements made with Colorado State University and the Mountain Campus. We are planning a virtual meeting and we are not yet far along in this process. Ed has had discussions with staff who have arranged such meetings at small and large scales and received good advice.

Ed DeWalt, dewalt@illinois.edu; Boris Kondratieff, boris.kondratieff@gmail.com

What we know is this:

- We will host a virtual meeting of 2-3 days duration. Zoom seems to be the best option. Please save 25-29 July for the virtual conference.
- We will stagger meeting times to accommodate colleagues in different time zones.
- We will begin discussions with plenary speakers immediately.
- Poster and oral presentations will be accepted.
- Committees will be afforded time to meet.
- The program will be a pdf document.
- Proceedings will be published in Zoosymposium (Magnolia Press). Authors will be encouraged to pay open access fees to Magnolia Press, but this is optional.
- No registration costs will be charged.
- Watch for more details in February 2022. A notice will be sent to the 200 names in our list of possible participants, posted on the Plecoptera.species.org site, and provided in *Perla* and the *Mayfly Newsletter*.

Ed DeWalt (dewalt@illinois.edu) and Boris Kondratieff (boris.kondratieff@gmail.com)

Future Conference Proposals

The joint International Conference on Ephemeroptera and International Symposium on Plecoptera usually takes place every three years. However, the pandemic has forced us to change our plans. Thus, the next joint meeting will be virtual and take place in late July 2022. The following conference after the virtual meeting in 2022 will be a physical conference, although it should also be possible to follow online. As we have not been able to meet physically since Brazil in 2018, we suggest that the next meeting after the virtual meeting in 2022 is held in 2024.

Preliminary proposals to host the 2024 conference may be submitted from now onwards. Proposals should be presented at the virtual conference in 2022, and a final decision on the conference site will be made shortly afterwards by the joint committees.

A written copy of the proposal should be sent to the chair of each committee

- International Conferences on Ephemeroptera: Michel Sartori (michel.sartori@vd.ch)
- International Society of Plecopterologists: John Brittain (j.e.brittain@nhm.uio.no)

Proposals should be submitted by e-mail. This facilitates distribution of the proposal to the members of the two committees. Proposals should contain detailed information regarding plans to host the conference.

Contact either chair for additional information.

Request for Specimens

Inês M.A. Ribeiro, PhD
Max Planck Institute of Neurobiology

To all mayfly enthusiasts! I am looking for nymphs in the stage either immediately preceding or close to the subimago stage, and for winged adults in the subimago or the imago stages. I prefer the species *Ephemera danica*, *E. vulgata*, or *Cloeon dipterum*, but any Ephemeroptera species will do. I would like to look at the central nervous system of these amazing animals.

Please contact me, Inês MA Ribeiro, at ribeiroinesma@gmail.com, if you have mayflies that you can share. Thank you!

A New Reference for European Ephemeroptera

André Wagner & Michel Sartori

Museum of Zoology, Palais de Rumine, Place Riponne 6, CH-1014 Lausanne, Switzerland

The beginning of the 21st century was the time when several European funded initiatives were launched. Between 2000 and 2004, the Fauna Europaea project (EVR1-1999-20001) has been funded by the European Commission for a period of four years within the Fifth Framework Programme (5FP). As result of this project, the first lists and distribution maps per country of European mayflies were published in 2003 by C. Belfiore and A. Thomas as principal coordinators.

In 2006 the freshwaterecology.info-database was launched online. It is mainly maintained by the University of Natural Resources and Life Science (BOKU) in Vienna as well as the University of Duisburg-Essen and provides ecological and biological information on European freshwater fauna and flora. The species list for mayflies in this database was based on the work of an Ephemeroptera expert consortium, including A. Buffagni, M. Cazzola, M.J. López-Rodríguez, J. Alba-Tercedor, J. D.G. Armanini.

As happens often with this kind of projects like the Fauna Europaea, once the project is over and not funded any longer, things are not updated any more. So, since almost 20 years the reference for European mayflies is in a maze. More than 20 new species have been described meanwhile, new genera have been erected, new combinations and new synonymies have been proposed, affecting almost 60 species and their distribution.

During the Covid-19 pandemic, in spring 2020, we investigated the possibility to propose an updated distribution list of European mayflies to both mentioned databases. Our contacts with Fauna Europaea were not successful, so we approached Astrid Schmid-Kloiber (BOKU, Vienna), the coordinator for freshwaterecology.info, which resulted in a project to update the European mayfly list per countries, but also by Illies' ecoregions.

Thanks to the help of many local coordinators, we were able to compile a list of species per countries and ecoregions within one year. This updated list will be soon available on the freshwaterecology.info platform.



Biplane "Mayfly"

From the "Quite Interesting" Twitter site (@qikipedia)

"In 1910, Lillian Bland flew Ireland's first biplane and became the first woman to design, build, and fly her own plane. She was cautious about the attempt, and called the plane "Mayfly", explaining: "It may fly, it may not". "

How to Donate to the International Permanent Committee on Ephemeroptera Scholarship Fund

This fund (Canadian Tax Reg. No. BN 88915 1379 RR001) provides travel scholarships to assist upcoming scientists to attend our international conferences. You have several options to donate to the mayfly travel fund. The committee can accept a cheque, a wire transfer or you can use our PayPal account. More details are provided below.

1) Cheque. Please make cheque payable to: "International Permanent Committee on Ephemeroptera" and mail to Alexa at the address below.

2) Wire transfer. Wire transfer. By arrangement with the treasurer. Please email alexa@ecobmi.com

3) PayPal. Business account: International Permanent Committee for Ephemeroptera Scholarship Fund, <https://www.paypal.com/paypalme/Ephemeroptera>
Email: alexa@ecobmi.com.

Do let me know how I can help if any of this information is unclear.

Alexa C. Alexander Trusiak,

Permanent Committee Treasurer

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And a reminder to think about items to donate to the silent auction supporting meeting scholarships during the next meeting! More details on how to donate items will be available before the next "In Person" meeting.

PDFs for Ephemeroptera Galactica

Two questions:

Have you published a paper on mayflies?

If so, did you send a PDF to EG?

Ephemeroptera Galactica (EG) is a web site that was developed by Mike Hubbard and is now maintained by Arnold Staniczek. One of the great features of EG is the bibliography of mayfly literature at this site. PDFs of hundreds of mayfly articles are available. To keep this bibliography updated, please send a PDF of your articles on mayflies to Arnold (arnold.staniczek@smns-bw.de).

Mayfly researchers may also be interested in this new Plecoptera reference:

Hugh Feeley reports that the illustrated *Stoneflies of Ireland* book, by Hugh B. Feeley, Jan-Robert Baars and Mary Kelly-Quinn, is now available as a free download from the Biodiversity Ireland site: https://biodiversityireland.ie/app/uploads/2021/11/stoneflies-of-ireland-atlas_web.pdf



Call for nominations: Lifetime Achievement Award

Since 2008, The Permanent Committee of the International Conferences on Ephemeroptera have acknowledged the important contributions of mayfly workers by presenting to them a Lifetime Achievement award. This award is presented at the Joint International Ephemeroptera and Plecoptera meeting. There will be no award delivered in 2022, but the next ones will be presented at the 2024 meeting.

The previous recipients of these awards were:

2008 (Stuttgart): Ingrid Müller-Liebenau, Janice Peters, John Flannagan

2012 (Wakayama): Peter Malzacher, Pat W. McCafferty

2015 (Aberdeen): Elda Gaino, Tomas Soldan, Ian Campbell

2018 (Aracruz): John Brittain, Eduardo Dominguez, and Peter Grant

If you know a mayfly worker who has made important contributions to the study of mayflies, please contact Michel Sartori (michel.sartori@vd.ch), explaining your reasons for the nomination.

News and Notes

Here is a link to a recent paper containing some information about mayflies that might escape a literature search:

DePalma, R. A., Oleinik, A. A., Gurche, L. P., Burnham, D. A., Klingler, J. J., McKinney, C. J., Cichocki, F.P., Larson, P.L., Egerton, V.M., Wogelius, R.A., Edwards, N.P., Bergmann U. & Manning, P. L. (2021). Seasonal calibration of the end-cretaceous Chicxulub impact event. *Scientific reports*, 11(1), 1-9.

<https://www.nature.com/articles/s41598-021-03232-9>.

The authors are attempting to determine the season when the Chicxulub impact occurred. They used several sources of information, one of which was the finding of adult mayflies in a deposit, indicating a spring or summer occurrence.

Submitted by Peter Grant



Tales from the Field

"Tales from the Field" is a new feature in the Newsletter, with a goal of collecting some of the stories behind our collections and highlighting the human side of what we do. If you have a fun story of collecting, curating, or photographing mayflies that you would like to share in the Newsletter, contact the Editor, Donna Giberson (Giberson@upe.ca).

Collecting by Canoe

Mayfly and stonefly hunting in the Canadian Arctic

Donna Giberson
Professor Emerita, University of Prince Edward Island
Charlottetown, PE Canada

Some years ago, a group of us proposed to sample aquatic (and other) insects in some of the most remote areas of Canada's arctic region. Sampling in Canada's north is challenging, both due to the immense area involved and to the difficulty in getting around. Canadians use the term "arctic" rather loosely, so definitions vary. For example it may be defined geographically (e.g., as the area north of the 60th parallel, or the area north of the arctic circle, or the area north of the tree line, or the area overlying permafrost... all different), or politically (e.g., the area included in the three northern Territories: Yukon, Northwest Territories, and Nunavut). Canada covers 9.985 million km², and these three territories make up about 40% of Canada's land area. The tundra zone alone covers about 2.6 million km² (Figure 1). However it is defined, the region is huge, remote, and staggeringly difficult to access. With a population density of only 0.03 persons/km², communities are far apart, and many are only accessible only by air. Travel is time-consuming, difficult, and expensive, especially outside of the communities themselves, where sampling any type of biota usually requires chartering aircraft at huge expense.

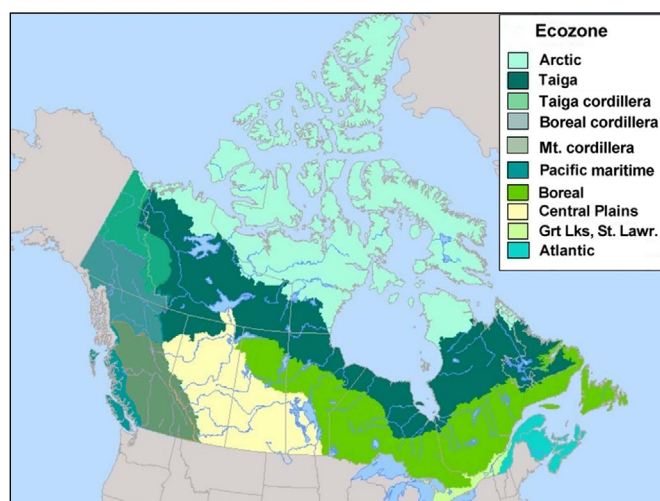


Figure 1. Ecozone map of Canada

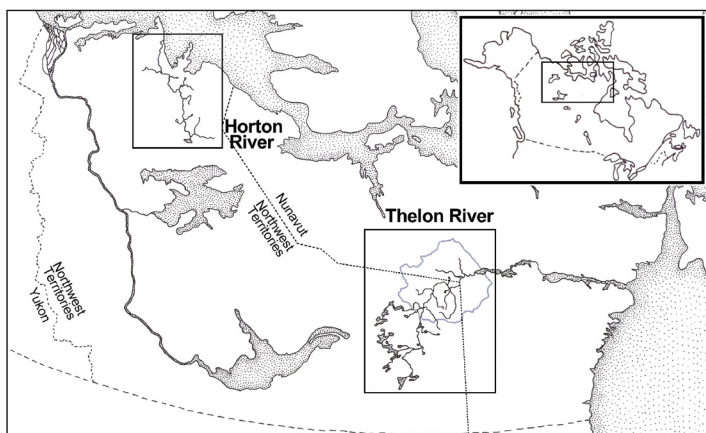


Figure 2. The Central Barrens area of Canada, showing locations of the Horton and Thelon Rivers.

Our project had its inception back in 1999, when Doug Currie (a Simuliidae specialist at the Royal Ontario Museum, Toronto) and I were relaxing after a meeting, and the conversation turned to these challenges in sampling isolated areas in the north. Doug mentioned an idea he had to reduce costs – rather than fly in and out every day, he proposed traveling by canoe down large northern rivers, where a research team could sample habitats along the length of the river. This, he said (excitedly), would allow collectors to cover a wide swath of territory, at minimal cost: Aircraft time would be restricted to just the insertion and exit points, and the rest of the time would be by human powered vehicle! His excitement was contagious, and before the meeting ended, we were starting to plan our first trips, to the Horton and Thelon Rivers, in the Northwest Territories and Nunavut (Figure 2). These trips opened the door to a decade and a half of northern travel and collecting from Yukon to Labrador and from the 60th parallel to nearly 82° North, to fill in some aquatic insect biodiversity

blanks (summarized for the mayflies in Giberson et al. 2017, and for other taxa in a number of reports to the Biological Survey of Canada: Currie et al. 2000; 2002; Giberson 2005, Giberson and Currie 2004; Giberson and Shorthouse 2011; Shaverdo and Giberson 2004). Here I'll focus on the trip that started it all for us: the Horton River.

We started by assembling a team. We decided on three canoes, with two people per canoe, and knew that we would need to charter flights (deHaviland Twin Otter aircraft that could land on the river or nearby tundra, and transport our canoes, gear, and ourselves to and from the river). A few phone calls resulted in a team mostly interested in Diptera: Doug

and his colleague Peter Adler (Clemson University) would collect black flies (Simuliidae), Mac Butler (North Dakota State University) collecting Chironomidae, and Brian Brown (Los Angeles County Natural History Museum) collecting Phoridae. I was the only woman on the team and the only non-dipterist – I would search for mayflies, stoneflies, and other aquatic insects. The 6th member of our team was our guide, Tim Gfeller.

Doug rightly anticipated that we should leave the trip logistics to a professional canoe trip planner, allowing us the freedom to concentrate on the science aspects of the trip, so we contacted an expedition company that had plenty of experience guiding canoe trips on northern rivers. Black Feather Adventures (<https://blackfeather.com>) set us up with Tim, a young but experienced arctic canoe guide, to plan our trip. The Horton is classified as an “advanced” river, which might have influenced our decision to begin our project there, had we known about this in our early planning. Several of us had only basic flatwater canoe skills, and little if any experience on whitewater. Luckily, we learned that the “advanced” label for the Horton River was due mainly to the length of the trip and extreme remoteness of the river, and our basic canoe skills would be sufficient. While we prepared for the collecting trip by raising funds, applying for permits from the territorial governments, communicating with local first nations groups for permission to collect on their lands, and assembling our gear, Tim and Black Feather organized the trip and the food for our planned 24-day trip (approximately 700 km) from Horton Lake to the Arctic Ocean (Figure 3).

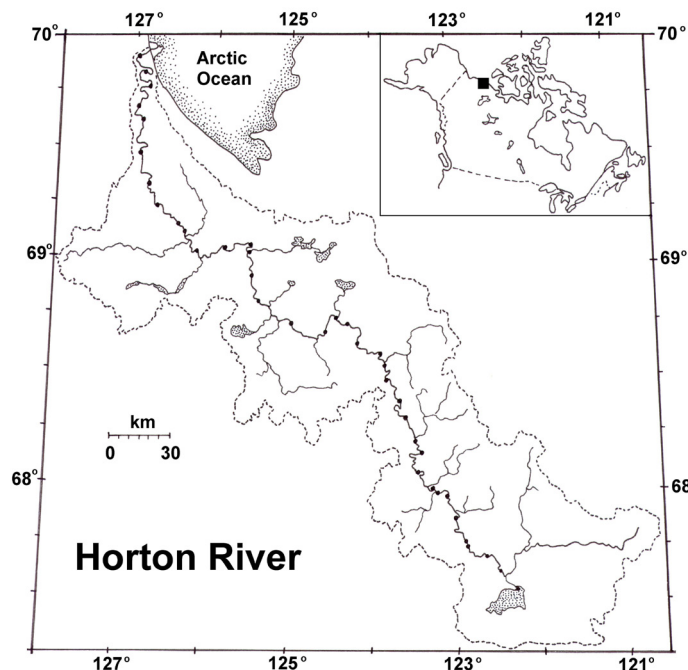


Figure 3. The Horton River watershed in northern Canada. Dots along the river indicate sampling locations.



Figure 4. Left: the research team, posing in front of the Twin Otter at Norman Wells. From left: Doug Currie, Donna Giberson, Mac Butler, Peter Adler, and Brian Brown. Right: Donna Giberson helping to load the food barrels into the Otter. Note that the red canoes have already been loaded into the plane.

T. Gfeller

D. Currie

The team assembled on 17 July 2000 in the small Northwest Territories hamlet of Norman Wells, located on the edge of the mighty Mackenzie River. There we loaded the bright yellow North Wright Air Twin Otter floatplane (Figure 4) with the three canoes and enough food, camping gear, and sampling gear for a month, and then squeezed ourselves into the plane for the 1.5 hr eastward flight to Horton Lake, where we would spend our first night. After unloading, Tim held our first “team meeting” to make sure we all knew what would be expected of us on the trip (Figure 5).

Figure 5. Left: Unloading the Otter at Horton Lake Right: Our first “Team Meeting” on the shores of Horton Lake.



D. Giberson

D. Giberson

The setting was idyllic. There were no trees anywhere around the lake, which we didn't expect, since the maps showed this part of the Horton as south of the tree line. In fact, the upper (southern) part of the Horton river wound in and out of the taiga forest edge. The lake was gorgeous and loaded with Grayling; Mac caught two in a matter of seconds (note that the grayling's guts were loaded with perlotid stonefly larvae). But Tim (our guide and chief cook) wasn't ready for us to start fishing, since he had packed some perishable meat that had to be eaten quickly. So we had burgers for supper and saved the fish for breakfast. Tim brought wine (really!), so we toasted the trip. Desert was strawberries with chocolate sauce.

This was our first indication that booking a guided trip was a somewhat different from what the fare might have been if the research team had been in charge of the menu! Enough food for 28 days was packed into several large blue plastic barrels (these were advertised as being bear-proof, but thankfully we didn't have to test that out) and the barrels were labelled by day and week, so that we could follow the precise menu Tim prepared for our trip. The treats of the first days gave way to canned protein and dried foods, but Tim amazed us the entire way by surprising us with fresh quick breads and baked deserts, made in a dutch oven and cooked over charcoal briquets that we also carried with us. Most of the cooking was done on a collapsible fire pit using driftwood for fuel when it was available, and briquets where driftwood was in short supply (Figure 6)



D. Giberson

Figure 6. Blackfeather river guide, Tim Gfeller, preparing a meal on the collapsible firepit. The blue barrels in the background were used to transport the food for the trip.



D. Currie

Figure 7. Left: Black flies (Simuliidae) were very abundant in some locales. This image shows Brian Brown's trousers covered in black flies near the beginning of our trip. Right: Donna Giberson sporting her "bug shirt" while filling out her daily log.

It was very windy when we arrived, but the wind died after supper and the bugs swarmed! Brian caught some flies and pinned them; Doug and Peter sampled the lake outflow and found 5 black fly species! I sampled the lake and the outflow, and found lots of large *Arcynopteryx* (Perlotidae). But by 10:30 the mosquitoes and black flies were very bad indeed and I retreated to my tent. The sound of mosquitoes and black flies hitting the tent sounded like a heavy rain despite the clear skies and 24-hour light. Biting flies were a major presence for the entire trip (Figure 7).

Next morning, we had breakfast and broke camp about 10:30 am, and started on a daily routine that changed little over the next 24 days. We would

load the canoes, making sure our sampling gear was accessible, as well as rain gear and clothing for most weathers. We aimed to paddle 30-40 kms per day to be sure of reaching our exit point on the river in time (allowing for rest days or days when we might be "weathered in") so we couldn't stop too often to sample. We agreed to choose a good sampling spot to stop for lunch, then possibly another for an afternoon break, and another for our nightly campspot, giving us up to three new localities (with multiple habitats) each day. The requirements for our nightly campspots (Figure 8) were a level spot for the tents, another level spot well away from our tents for the food and for cooking, and good habitat for all of us to sample.



D. Giberson

Figure 8. Examples of our nightly campspots along the Horton River. Note the low tundra shrub vegetation and scattered Black Spruce trees along the river.



Figure 9. Examples of the terrain along the upper sections of the river. The Horton River bordered the tree line in the upper reaches before giving way to true tundra near the Arctic Ocean. Small tributaries entering the river (often draining tundra ponds) providing habitat for black flies and nemourid stoneflies. Larger tributaries had similar species composition to the main river (see species lists at the end of the article)



D. Giberson

The Horton River flows mainly through the Northern Interior Plain region of the Mackenzie Lowlands which is characterized by low hills with many ponds and tributaries. The river was cut into the landscape, often giving high banks along its route. Upper sections (along the tree line) were a mix of black spruce taiga with lichen understory and low tundra vegetation (mainly sedges, willows, cottongrass, dwarf birch and labrador tea) or shrub tundra (dominated by dwarf birch, willows, alder, labrador tea, lapland rosebay, and arctic white heather; Figures 8,9). The taller vegetation (e.g., clumps of willow and alder) was found along creek valleys. Soils are calcareous loamy and sandy till overlying granitic Canadian Shield, and cliff faces showed dramatic layers of sedimentary rock (Figure 10 (left)). In contrast, the lower sections near the Arctic Ocean have quite different terrain, with higher hills and steep slopes and no tall vegetation at all). Here we also see the area known as the "Smoking Hills", where deposits of lignite spontaneously combust when exposed to oxygen (which occurs due to wind erosion of the hills), leading to columns of smoke emerging from fissures in the cliffs (Figure 10 (right)); ponds here were highly acidic.



D. Giberson

Figure 10. Examples of cliffs showing local geology. Left: a campspot located on the upper part of the Horton River, showing a cliff face near the river. Right: an eroding hillside on the lower Horton, in the region known as the "smoking hills", where lignite deposits spontaneously combust and produce columns of smoke that can be seen from great distances.

The river runs clear and swiftly near its source (Figure 9), but picks up and carries a lot of sediment towards the mouth, becoming very muddy (Figure 10 (right)). In places it was as narrow as 20-30 metres, but it widened to 100 m or more in lower-lying areas. About halfway through the trip, the river narrowed to pass through a spectacular canyon zone (Figure 11), including some exciting Class II to Class IV rapids. North of this canyon zone, the river got muddier and muddier as it picked up sediment from eroding shorelines (Figures 10 (right),12). We observed several muddy tributaries, and at least one instance of a section of cliff detaching and falling into the river as we paddled (Figure 12). Fishing (for fresh protein) was good in the clear zones, but proved to be more difficult as the water got cloudier.

The weather on the trip covered just about every type of weather possible. We had days of beautiful sunshine where temperatures could reach the high 20's (degrees Celsius), and also days of teeming rains and high winds that made it difficult to make any headway even traveling downstream! We developed a curious love-hate relationship with the wind – strong winds kept the biting flies at manageable levels, but frequent strong winds from the north made paddling very challenging.

Figure 11. About halfway along the river length, there is a short stretch of spectacular canyon where the river has cut deeply through the calcareous sediment.



D. Giberson



Figure 12. Examples of eroding hillsides along the Horton River in the summer of 2000. A large portion of the hillside in the photo at the left detached and fell into the water just as we were paddling by.

Our team had somewhat naively assumed that paddling downstream would make for easy days, mostly floating along with the current (Figure 13). We soon found that we had many long, hard days of paddling against the wind or navigating wide shallow river sections with little current. There was also the challenge of the rapids in the canyon stretches (Figure 14). Here we relied heavily on the skills of our guide to scout the rapids and determine the best way through. Luckily for us (because we had a lot of gear!) we didn't have to portage along the trip. However, we did line the canoes at some points and ran some of the rapids one canoe at a time with Tim steering in each case, and spray skirts on the canoes to protect our gear should we capsize. It provided some exciting moments!



Figure 13. One of the "good" paddling days, with little wind and consistent current to help with paddling.



Figure 14. Traversing the canyon zone of the river. Our guide Tim scouted each rapid on foot, then declared how we would tackle them. Some rapids were too dangerous to run but could be "lined", where the canoe is controlled by a rope attached to the bow to carefully guide it down the rapids (shown in the photo at left). Tim took the stern position and shouted out paddling instructions for the bow person for rapids that could be run, as shown in the photo at the right with Donna in the bow. Note the spray skirts on the canoes.

We encountered plenty of wildlife on the trip as well. At one point, we rounded a bend and saw a few caribou ahead of us, trotting down the hillside towards the water (Figure 15). It started with just a few animals, but more and more appeared, so that before long, there were hundreds of caribou crossing the river just in front of us. We needed to back-paddle strongly to avoid floating into them with the current, and made our way to shore to wait out the crossing. It was breathtaking!

After they crossed, we paddled through the area where the caribou had just been, and our guide Tim shouted out that we should just put our heads down and paddle as quickly as possible through the clouds of insects that had risen from the swimming caribou. Soon, though, as he looked around downstream of the caribou crossing, he realized that he was missing most of the team. When he looked back, we were still madly waving our nets through the cloud – it was a rare opportunity to associate biting flies with their hosts, after all!



D. Giberson



D. Giberson



M. Butler

Figure 15. Wildlife along the Horton. Photos at left and above show a large herd of caribou descending the river bank and entering the river in front of our canoes. The photo at right shows tundra grizzly and caribou tracks in the sand by the river. Thankfully, our sightings of grizzlies on this trip were all at a distance!

Other wildlife seen on our journey included many other caribou sightings, plus muskox, tundra grizzly, arctic wolves and foxes, and abundant bird life (these are detailed more fully in Currie et al. 2000).

One day, we were paddling on an unusually calm stretch, and we saw large greenish mayfly subimagos (probably heptageniids) emerging from the river. Despite my best efforts in trying to manoeuvre the canoe into place to catch some to confirm their IDs, I was unsuccessful. The same couldn't be said for the Arctic Terns, however – the highly acrobatic predators dove around us, picking off most of the mayflies as they rose from the water. (Mature heptageniid larvae and adults encountered around the same time in the river included *Cinygmula tarda*, *Heptagenia solitaria*, and *Rhithrogena* sp., see list at the end of this article)



D. Currie



D. Currie



D. Giberson

Figure 16. Sampling. Left: Donna collecting a kick sample in a shallow area of the Horton River. Middle: Donna sorting a sample during a lunch spot along the Horton River (Note how heavily loaded our canoes were!). Upper Right: Mac sampling a tundra pond along the lower sections of the Horton. Lower Right: Brian, Doug, and Peter setting up the malaise trap with canoe paddles for support.

Our sampling methods were as diverse as the group on the expedition, consisting of a hand collections, active net collection, and passive Malaise trap collection (Figure 16). I sampled shallow running water and pond habitats using a kick net and also by picking up and examining rocks in the water. "Team Black Fly" (Peter and Doug) generally collected directly from the rocks (Figure 9 (right)), supplemented by adult collections via sweep net and from those biting the research team.

We sorted and preserved samples in the field for later identification. Mac used a variety of nets, mainly in tundra ponds, to collect midges. Brian set up the Malaise trap wherever we stopped, even if it was only for an hour or so; he



D. Giberson

focused on phorid flies, but happily shared his by-catch with the rest of us. Brian was used to being able to use local trees for structural support for the malaise trap, so hadn't brought poles with him – a situation that became a problem on the tundra! Luckily, we had lots of duct tape and canoe paddles, which provided all the support the trap needed. I had hoped to collect adult mayflies by black-lighting in the evenings, but somehow forgot that at that time of year, it never got truly dark at night, so my black lighting was unsuccessful (See Giberson 2014). Interestingly, both mayflies and stoneflies appeared to be attracted to the bright yellow surface of our tents, so I was able to collect adults of both by just standing next to the tents. At least 11 species of mayfly and nine species of stonefly were collected during this trip (either as mature larvae or adults) during the 24-days between 17 July and 8 August (Figure 17). More details on the taxa collected by other members of the team can be found in Currie et al. (2000).

Our trip down the Horton River was a life-changing experience for me, granting me access to a remote wilderness location and beginning a project that continues today. The experience gained from this first trip was invaluable in planning our next trips, including another river trip two years later (on the Thelon River system) and more community-based trips over the next decade or so. This study and subsequent ones led to a broader understanding of the mayflies of Canada's north, summarized in Giberson and Burian (2014). The stonefly data were included in the important monograph on the Stoneflies (Plecoptera) of Alaska and Western Canada published in 2006 (Stewart and Oswood (2006). Both the mayflies and the stoneflies have been deposited in the Canadian National Collection of Insects in Ottawa, Canada.

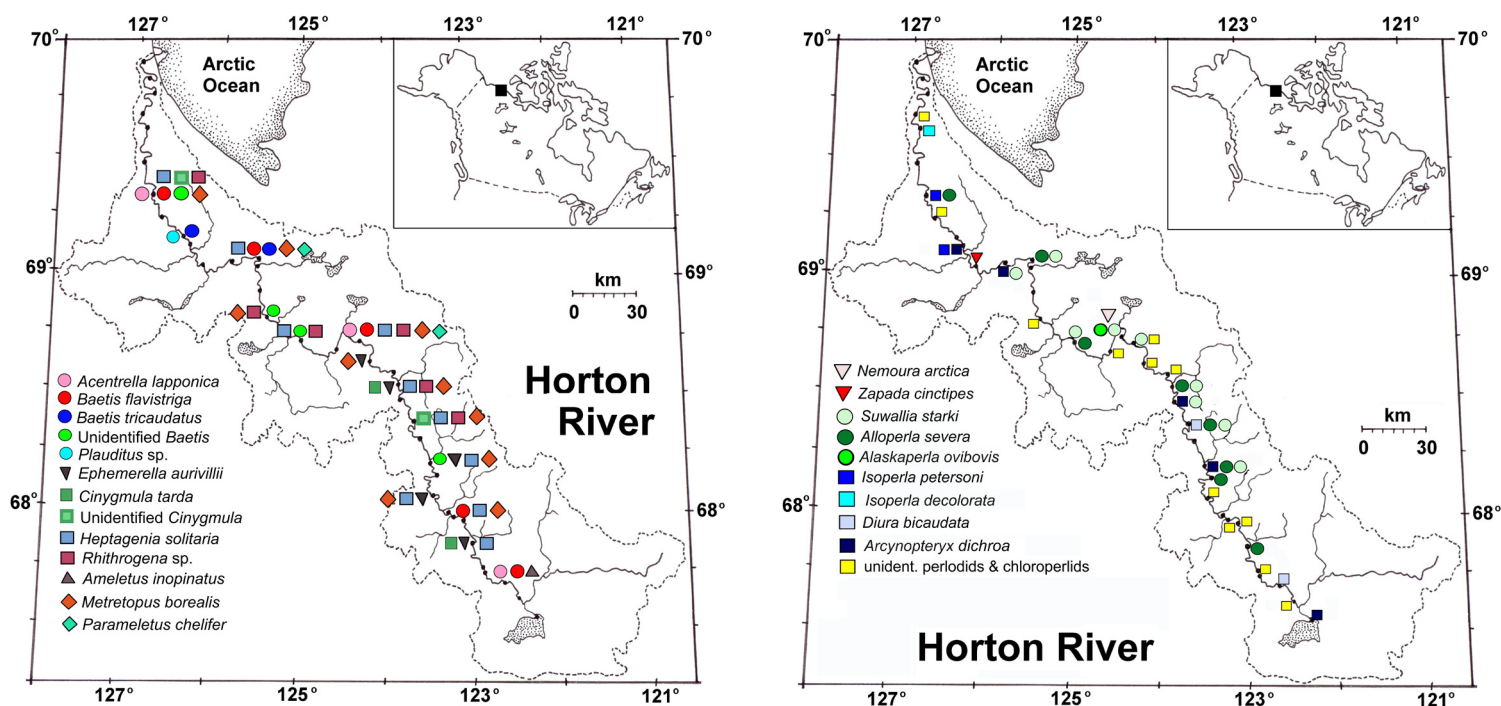


Figure 17. Mayfly (Ephemeroptera) and stonefly (Plecoptera) species collected along the Horton River, July/August 2000

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We're looking for submissions to the *Mayfly Newsletter*!

Do you have anything you'd like to share with your fellow ephemeropterists? In addition to the Notices, Mayfly Bibliography, and information about the upcoming International Meeting, we'd like to include project updates, book reviews, notices of upcoming meetings of interest to Ephemeroptera workers, requests for collaboration, and any interesting notes about mayflies.

So - my questions to you - Are you looking for collaborators on a project? Do you have some spectacular mayfly photos that you'd like to share with your colleagues? Is there a special collecting site or new collecting method whose details would be of interest to other mayfly workers? Have you ever had an adventure in collecting mayflies? We publish our data in our research papers, but sometimes the story behind the story is equally interesting!

Deadlines:

- June issue: May 15

- December issue: Dec. 7



Ametropus fragilis, collected during the Mackenzie Valley Pipeline Study (13 Sept. 1971, from the mainstem of the Mackenzie River near Inuvik, NWT, Canada). photo: D.Giberson

The *Mayfly Newsletter*

Starting with the Winter 2016 issue, the Mayfly Newsletter has been digital only. However, original copies of many of the printed issues are still available. Contact Peter Grant if you would like a set and he can arrange to send them to you: peter7grant@gmail.com

You will be able to find the link to the issues on the Digital Commons site: <https://dc.swosu.edu/mayfly/> (or see link on Ephemeroptera Galactica (<http://www.ephemeroptera-galactica.com>)). As of June 2021, the newsletter's 48 issues have been downloaded 5,414 times in 124 countries since we started uploading them 6/17/2016.

The *Mayfly Newsletter* is the official newsletter of the Permanent Committee of the International Conferences on Ephemeroptera and is published to facilitate communication among ephemeropterists.

Subscriptions to the Newsletter are free. To place your name on the e-mailing list or to contribute information for the next issue, contact:

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