



# Grande Grasslands Gathering: Dunvegan, July 2003

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A great group of grassland gurus (and entomologists) gravitated to the Grande Prairie during July 18-21 last year. Participants from Denmark, the USA, and across Canada met at Dunvegan Provincial Park in northwestern Alberta to explore remnant native grasslands in the Peace Region. Co-organized by local naturalist Margot Hervieux and Survey member Felix Sperling, the trip was timed to take in the late summer peak of endemic butterflies, as well as to draw in Lepidopterists winging their way to the Lepidopterists' Society Annual Meeting and the COSEWIC Lepidoptera Species Specialist Group meeting held in central Alberta the following week.

At the turn of the 20<sup>th</sup> century, between 435,000 and 1.1 million hectares of upland grassland covered the area around Grande Prairie, Spirit River and Fairview/Peace River. Most of the south-facing slopes of the Peace, from B.C down-



Felix Sperling on a Kleskun Hill badlands slope, with *Artemisia dracunculoides* (Wild Tarragon) plants in the exposed areas. (photo by T. Simonsen)

stream to as far north as Ft. Vermillion, also supported grassland vegetation. According to recent research by the Alberta Conservation Association (ACA), however, less than half of one percent of the upland prairie has survived human settlement. Large stretches of the river slopes are still intact although often heavily grazed.

Over the past three years, the ACA (a provincial conservation organization funded by revenue from hunting and fishing licenses) has conducted a detailed inventory of remnant upland prairie in the Peace region and initiated a landowner stewardship and education program. The survey found that most of the remaining grassland parcels are in private hands. The largest area of protected upland prairie lies within Kleskun Hill Natural Area (just northeast of Grande Prairie). Some native grassland is also contained in the newly established Dunvegan and Peace River Wildland Provincial Parks and Green Valley Provincial Park but most of the river slope areas remain within crown grazing leases. It is hoped that the additional biodiversity information collected during this survey (and by others in the future) will help strengthen support for additional protection of native grassland sites within the Peace region, including the upgrading of significant locations like Kleskun Hill.

The prairie areas of the Peace Region are thought to be remnants of the grasslands that covered much of central and northern Canada prior to the last ice age. These grasslands were pushed south by the ice and then expanded back into the Peace during the hot, dry Hypsithermal period 6000-9000 years ago. Over 400 km of boreal for-



est now separate the remaining grasslands from the prairie to the south. Previous work on butterflies in the area has identified at least eight prairie species with disjunct populations in the Peace region and there are also two known disjunct tiger beetles. Virtually nothing is known, however, about the distribution of other arthropod species. Participants on this trip collected moths (macro and micro), flies, diving beetles and earthworms and soil mites.

The primary goal of the July 2003 field trip was to sample for arthropods in these remnant native grassland sites. Most of the collecting was focused at three sites – two river-slope (Dunvegan Provincial Park and Highland Park Natural Area) and one upland (Kleskun Hill Natural Area). All three sites were explored during the day and lights were set up after dark at Dunvegan and Kleskun. Highlights of the survey included: finding excellent bugs and friendly entomologists (and vice versa), a ferocious thunderstorm, and much-appreciated showers and spaghetti at the Hervieux family home in Grande Prairie near the end of the trip.

Lepidopterists were well represented among Peace participants. Jean-François Landry, from the Canadian National Collection in Ottawa, found that Dunvegan and area prairie sites produced excellent collecting as far as Microlepidoptera were concerned. Three days collecting by Landry and Sperling at 10 different sites yielded a total of 328 micros, both at mercury-lights at night and sweeping during the day. All specimens were field pinned and spread, representing an initial count of 85 species, primarily in the Gelechioidea, Tineoidea, Yponomeutoidea and Tortricoidea. For micros, this is a very good catch, especially considering that we got a day of rainy weather and traversing some of the prairie sites was rather difficult due to the very steep terrain and slippery ground. Among the *Coleophora* that Landry currently studies, at least one Dunvegan species is undescribed.

Greg Pohl, from the Canadian Forest Service in Edmonton, and Landry found several microlepidoptera species that represent substantial range



Jean-François Landry sweeping for microlepidoptera at Highland Park, with Peace River canyon in the background. (photo by G. Pohl)

extensions to northern Alberta. In particular one species of Epermeniidae found at the Kleskun Hill site, *Ochromolopis ramapoella* Kearfott, was previously recorded only from the southern half of Alberta. Other records of interest are no doubt contained in the material collected. Dissections will be necessary to identify species in several groups, particularly the Gelechioidea for Landry and the poorly known tortricid tribe Cochylini for Pohl.

Reed Watkins, retired engineer and peripatetic plume moth taxonomist from New Jersey, was pleased to find five different Peace prairie pterophorids at Dunvegan. The two most common at that time have a wide distribution, but among experts there remains uncertainty as to the correct names due to geographic variation and the fact that the few North American workers have generally not examined the types in the British Museum. One very interesting specimen, of another species entirely unknown to Reed, requires further detailed study.

For Thomas Simonsen and Marie Olsen, entomology graduate students at the University of Copenhagen, the Peace River trip was the beginning of a month long jaunt across North America that included Florida, Las Vegas and Mexico. Their rental car got a good workout on Alberta's gravel roads, but they saw plenty of wildlife and Thomas was able to pick up material en route for



his PhD on *Boloria* butterflies. They are both keen to return to Alberta.

Cris Guppy had already spent most of the summer inventorying the butterflies of the “South” Peace River District in British Columbia, along with fellow environmental consultants Sandra Kindsey and Laird Law (Guppy et al. 2003). His day with the Biological Survey in Alberta provided an interesting comparison to the grassland habitats in the BC Peace River. It emphasized to him how much more dependent the BC grasslands are on fire, rather than lack of moisture, for maintaining the open shrub/grassland habitats.

Dipterists also joined the survey in goodly number, including Terry Wheeler, Stephanie Boucher, and Vincent Dion from the Lyman Museum, McGill University, Quebec. For Boucher, this was familiar territory, as she had been to the Fairview area in 1995 and 1997. Although she has not yet had time to identify all the material collected at Dunvegan, and the weather was rainy while they were there, she feels that the diversity of Diptera was good. The Agromyzidae were well represented, with some species showing interesting geographical range extensions. For example *Pseudonapomyza atra* (Meigen), previously known in Alberta from Onefour, was collected in Dunvegan for the first time in 2003, and this represents the northern geographic limit for this species. They also collected additional specimens of a new species of *Cerodontha*. Although the species is not restricted to Dunvegan, this is the northernmost record for the new species. The most exciting find was Boucher’s first specimen of Acroceridae (small headed flies – internal parasitoids of spiders), and was collected on a south-facing slope of the Peace River.

Derrick Kanashiro, with Agriculture and Agri-Food Canada in Lethbridge, Alberta, made good use of the Peace River foray to collect soil mites and earthworms. For these groups, almost every sample is sure to represent something new and interesting. So far he has identified about 78 species of soil oribatid mites from the Peace River trip. He collected 65 species from the Kleskun

Hills site and this represents the highest number of oribatid mite species recorded from a Canadian grassland area so far. There were several new species and new records for Canada. Kanashiro was also able to document new distribution areas for 3 species of earthworms.

For Rob Roughley, stalwart coleopterist from the University of Manitoba, the Peace River grassland trip has generated a lot of questions. With topographic relief and exposure to light as the primary factor distinguishing grassland from wooded sites, the area represents a series of nicely controlled ecological experiments. Linear distributions along rivers can also be compared to broken patches higher on the upland areas. Although the dytiscid beetles that Roughley collected did not yield new records, due largely to the prior work of Dave Larson, they did illustrate the pervasive importance of habitat structure to the Peace River fauna.

Rob Roughley will be the host of the 2004 Biological Survey grassland trip at Aweme Manitoba. He has been busy accumulating records for species at Aweme, Onah and Treesbank, with about 2,000 species from the greater Aweme area and with no real effort yet to look for museum records. Diptera and Coleoptera and to some extent Lepidoptera are not well represented in the historical database. Entomologists are sure to find plenty of worthwhile material. Stay tuned!

#### References:

- Guppy, C.S., S.J. Kinsey, and L.L. Law. 2003. Reconnaissance Inventory of the Butterflies of the South Peace. Submitted to Louisiana-Pacific Canada Ltd., Dawson Creek, BC. 104 pp. [and see p. 26]



Photo by T. Simonsen