

CARNIVOROUS PLANTS OF THE NORTHWEST TERRITORIES

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During the summers of 1997 and 1998 I had the unique opportunity to conduct my field research in the Mackenzie Delta near Inuvik, in the Northwest Territories, Canada. During my time there, I encountered a great variety of animal and plant life. As an intrepid carnivorous plant enthusiast, I searched high and low for the carnivorous plants which grow within this region. This is an account of my quests.

Inuvik's climate is extreme. Temperatures in the winter frequently dip below the -40°C (-40°F) mark, while summer temperatures can rise well into the 30's (approximately 95°F), occasionally making it Canada's hot spot. Precipitation is extremely low, with the majority falling as snow. Freezing temperatures can occur any day of the year. There are about six days of rain throughout the summer months (June to August), barely enough to rinse the dust off your boots—but a welcome respite from the Vancouver rains.

Even though the climate appears less than ideal for carnivorous plants, there are other factors which allow them to grow with great gusto! First, the entire region is situated over a layer of permafrost. Precipitation does not readily soak into the earth—it just sits there along with permafrost melt-waters. This provides a very wet, humid environment low in nutrients, perfect for the native species of carnivorous plants! In fact, a walk out on the tundra quickly reveals the majority of the ground to be covered with *Sphagnum*. Second, all that water means an ideal environment for insects, of which there are literally billions. Every horror story you have heard about the insects in the north are true, believe me! Finally, at latitudes north of 66.5° the summer means 24 hours of sun. Continuous sunlight occurs over the majority of the growing season, and the plants take full advantage of it. If you ever have the opportunity to visit this wonderful region, do not hesitate! There is so much to see, including carnivorous plants.

The carnivorous plant genera found in this region include *Utricularia*, *Drosera*, and *Pinguicula*. The most exciting carnivorous plant here is *P. villosa* which is restricted to far north regions, including the Canadian tundra. All species are capable of surviving this harsh climate through the formation of winter resting stages; turions and hibernacula. For anyone attempting to grow specimens from here, heed their dormancy requirements. If your winters do not go below freezing, you will likely have to make room in the freezer. Seeds should definitely be stratified for several months before sowing.

By far, the most common carnivorous plant occurring within the Inuvik region is *U. macrorhiza*. I found this in great quantities in the lakes I was working in, tangled among *Equisetum* and other emergent macrophytes. Water chemistry analysis indicated low (but present) nutrients and slightly alkaline pH. Strands I picked out of the water were at least one meter long or longer, although interestingly older sections appeared to be previous seasons' growth. All the bladders were full of insect larvae and small aquatic crustaceans. By the end of July 1998, I was treated to a show of blooms. Pictures of this flower do not do it justice! The small yellow flowers with the three red lines on the large upper palate are amongst the most beautiful I have seen, although I am biased towards carnivorous plants! By mid-August, the

large, walnut sized turions form and flowers die rapidly, another season being finished. While other species have been recorded as occurring within the lakes, I have never seen them.

To find the other carnivorous genera in this region you must head out towards the tundra. The tundra is thickly covered with willow (*Salix* spp.) and the ground is very hummocky, making walking difficult and treacherous. Combining this with the facts that mosquitoes are constantly trying to feast on your precious blood and the willows are just tall enough to hide grizzly bears, expeditions here are as exciting as searching for *Nepenthes* in rainforests anyway! Due to time constraints and difficulty hiking in this terrain, I was only able search for the remaining genera twice.

During my hikes, I came across the pretty *Drosera rotundifolia* growing wherever the *Sphagnum* grew (which is everywhere). Many leaves were curled tightly around their prey, and flowers were in full bloom. A small sense of satisfaction came from knowing they had trapped a few of the many biting insects.

To see the two *Pinguicula* species, one has to travel to the nearby Caribou foothills either by boat or by helicopter. There are no roads leading to this region, and hiking would require some mountaineering skills. I had arranged with the local helicopter company to take some pictures of my research area and then land in the foothills so I could search for *Pinguicula*. Unfortunately, this was not meant to be as wildfires ran rampant the summer of 1998 and required the attention of the region's small aircraft. However, I did get a first-hand account from a local naturalist who was conducting surveys. He noted that *P. vulgaris* was found in any wet depression, the soil being somewhat alkaline and calcareous. He described the scene as butterworts everywhere, about 5cm in diameter—true giants!

The carnivorous plant I dearly wanted to find was *P. villosa*. However, I believe both summers I arrived too late for flowers. The tiny rosettes are only a few millimeters in diameter and often buried in *Sphagnum* or other vegetation making locating them out of flowering season nearly impossible. However, herbarium specimens from the Inuvik Research Centre, indicate they are definitely in the area—a fine reason to head north some future summer.

I hope this article inspires you to search for carnivorous plants. There are many types, and they live in many different habitats. Perhaps your own backyard is a good place to start your search!



Figure 1: The Caribou foothills region, habitat for *P. vulgaris* and *P. villosa*.