

The Wood Duck

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Alan Ernest gazing appreciatively at the first American Columbo discovered in the Cartwright Nature Sanctuary, April 2005. See page three for more information.

American Columbo (*Frasera caroliniensis*) in the Cartwright Nature Sanctuary

by Carl Rothfels

I did not think that the Cartwright Property would have any species rarer than the Red Hickories (*Carya ovalis* – see George's gentle comments on page 11 of this *Duck* for insight on the Red/Pignut issue) that Kim Barrett found last fall (confirmed by Paul O'Hara – see Ernest 2005). So I did not have particularly high expectations of our May 7th botanical inventory of the property. Yet we (Alan Ernest, Sachi Gibson, Margaret Troy, and myself) were not on the property for five minutes before Alan pointed to an odd-looking plant, "What's this?"

I could not believe my eyes – the floppy cabbage-like leaves belonged to American Columbo (*Frasera caroliniensis*), one of Ontario's rarest plants, which is on Canada's endangered species list as a Species of Special Concern.

American Columbo is a bizarre plant in the gentian family. It grows as a rosette of smooth leaves for several years, often in dry forest understories. There it gradually builds up energy and increases in size. Eventually (and this may take more than seven years), when the plant has sufficient reserves, it grows a tall flowering spike ("bolts"), blooms, produces seed, and then dies. Each plant only blooms once before dying, a strategy that is highly unusual for a perennial (some animals do this too – the most familiar example is several species of salmon).

Obviously, if one Columbo plant in a population blooms by itself, it won't be pollinated by another member of its species, and it won't get a chance to

try again! Somehow, the plants tend to bloom synchronously, at least partly. For example, in surveys of the Ontario populations of American Columbo in 2004, I saw hundreds of rosettes, but not a single blooming plant. This summer, one year later, every population I visited had multiple blooming plants, including the Cartwright population. No one knows what triggers a Columbo plant to bloom, although the "decision" to bloom is made several years before the flowers actually appear (it takes several years for the flowering tissues to mature before blooming).

American Columbo isn't particularly common anywhere in its range, and is not found in most of the field guides for eastern North America or Ontario. There are good sites for images on the web (for example, see 2bnthewild.com/plants/H193.htm), but the best local resource is our own *Head-of-the-Lake Pocket Nature Guide* (McIvor 2003). American Columbo is profiled in the "winter" section due to the conspicuous dead fruiting stalks that can last, upright, for a year or more, and are one of the easiest ways to locate Columbo patches.

We are privileged in the Hamilton/Halton area because we have more populations of this endangered species than any other area in Canada. There are approximately five separate populations in Halton (all in the Alder-shot area), two in Brant, one in Haldimand-Norfolk, and three in Niagara (Smith, Rothfels and Oberndorfer, in review). The Cartwright population is the



Above: Lorraine Roy being outcompeted by a bolting American Columbo. **Below:** An American Columbo rosette. All photos from the Cartwright Sanctuary by Alan Ernest.



second record for Hamilton, and possibly the only extant population here; the first population was small, perhaps only six plants, and has not been seen since its discovery in the Borer's Falls Conservation Area in 1989 (D.Kirk, pers. comm.).

The Cartwright population occupies the same general habitat as the other Hamilton and Halton populations: a gentle to steep, open, dry ravine slope below the Escarpment, usually on clay, with oaks and hickories. Unlike the Aldershot populations, many of the Cartwright plants are in fairly flat areas, and are on grey clay instead of the thick red clay more typical of this species locally.

The Cartwright population also fits geographically. It links the western local population in Borer's Falls to the Hendrie Valley, Snake Road, and Bridgeview populations at the western edge of the dense population cluster in Aldershot. It is doubtful whether it provides a functional link – meaning it is likely too distant to allow pollen transfer between the other populations. More likely, it is a relict of what probably was a continuous population in the ravines below the Escarpment from Dundas to beyond Aldershot.

It is still a significant population, however. We estimated there to be approximately 300 plants (70 of them bearing large rosettes) when we found the population in May. A thorough count in June tallied 287 plants, 24 of which were bolting (A.Ernest, pers. comm.).

The bottom line is that we are a lucky Club to have this jewel of a plant on our new sanctuary! Our stewardship work in Cartwright has barely begun and already the property has more than proven its worth from a natural heritage perspective. It was quite a surprise to find this plant, and it is a bonus

for Club members, both present and future, to have the opportunity to observe and conserve this important and unique element of Canada's biodiversity.

References:

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Blooming spike of American Columbo in the Cartwright Nature Sanctuary summer 2005. Photo: Alan Ernest.