

## Notes

### Hairy St. John's-wort (*Hypericum hirsutum* L.) in the Toronto Area, New to North America

PAUL A. HEYDON<sup>1</sup>, GAVIN C. MILLER<sup>2</sup>, and MICHAEL J. OLDHAM<sup>3</sup>

<sup>1</sup>Grow Wild Native Plant Nursery and Biological Consulting, 3784 Highway 7, Omemee, Ontario K0L 2W0 Canada; email: info@grow-wild.com

<sup>2</sup>Toronto and Region Conservation Authority, 5 Shoreham Drive, Downsview, Ontario M3N 1S4 Canada; email: gmiller@trca.on.ca

<sup>3</sup>Ontario Natural Heritage Information Centre (NHIC), Ontario Ministry of Natural Resources, 300 Water Street, 2<sup>nd</sup> Floor, North Tower, P.O. Box 7000, Peterborough, Ontario K9J 8M5 Canada; email: michael.oldham@ontario.ca

Heydon, Paul A., Gavin C. Miller, and Michael J. Oldham. 2011. Hairy St. John's-wort (*Hypericum hirsutum* L.) in the Toronto area, new to North America. *Canadian Field-Naturalist* 125(3): 248–251.

Hairy St. John's-wort (*Hypericum hirsutum* L.) is newly reported for Canada and North America based on two collections from the Toronto, Ontario, area. This perennial Eurasian herb has a large natural range from western Europe to western China. It grows in moist successional, edge, and meadow habitats. It should be looked for in such habitats elsewhere in eastern North America.

Key Words: Hairy St. John's-wort, *Hypericum hirsutum*, Hypericaceae, herbs, first records, range expansion, Ontario, eastern Canada, North America.

Biological inventories by the Toronto and Region Conservation Authority in 2008 and 2011 led to the discovery of Hairy St. John's-wort (*Hypericum hirsutum* L.), a new record for the North American continent.

On 2 October 2008, while conducting a vegetation survey adjacent to the Pickering Nuclear Generating Station, P. A. H. (at that time a staff biologist with the Toronto and Region Conservation Authority) discovered two patches of an unfamiliar species of *Hypericum* (St. John's-wort) in Pickering, Durham Regional Municipality, Ontario (43.813, -79.053). It could not be identified at that time using literature on local and regional floras. Seeds were collected in 2008 and grown at Grow Wild Native Plant Nursery in Omemee, Ontario. A voucher specimen was prepared in September 2011 from the cultivated material (*M. J. Oldham & P. Heydon 39413*; CAN, DAO, HAM, MICH, NHIC, TRT, UWO) (herbarium acronyms follow Thiers 2011\*). The Pickering site was revisited on 19 September 2011 by P. A. H. and M. J. O., and no plants were found during a brief search. However, the site is quite overgrown and it is possible the species still persists at that location.

On 20 July 2011, G. C. M. discovered and photographed the same species at the Guild Inn property in Scarborough (east Toronto), Ontario (43.748, -79.190), approximately 18 km west of the Pickering site. On 13 September 2011, a voucher specimen was collected from the Scarborough population (*G. Miller 131*; CAN). The species was tentatively identified as *Hypericum hirsutum* by G. C. M., and photographs were sent to Peter Ball (University of Toronto) and Anton Reznicek (University of Michigan), both of whom

agreed with this identification. Norman Robson (Natural History Museum, London, U.K.) provided final confirmation based on these photographs.

Hairy St. John's-wort has not been previously reported from Ontario (Morton and Venn 1990; Newmaster et al. 1998), Canada (Scoggan 1978-1979; Gillett and Robson 1981; Brouillet et al. 2011\*), or North America (Kartesz 1999; Robson, in preparation). A 19th-century North American reference (Strong 1850) fits the description of the plant only in part and is likely spurious and based on another *Hypericum* species. *Hypericum hirsutum* will be placed in the family Hypericaceae in the upcoming Flora of North America treatment (Robson, in preparation). *Hypericum hirsutum* is placed in section Taeniocarpium and is native to China, Europe (except the Mediterranean region), northwestern Africa, and southwestern Asia (Xiwen and Robson 2007; Robson 2010). Section Taeniocarpium consists of 28 Eurasian and North African *Hypericum* species, none of which has previously been reported from North America (Robson 2010).

Superficially, *Hypericum hirsutum* is similar to Common St. John's-wort (*H. perforatum*) and Spotted St. John's-wort (*H. punctatum*), but it can be distinguished from these and from other North American *Hypericum* species by its combination of conspicuously hairy stems and leaves (Figure 1) and stalked, black glands on the sepals and petals (Figure 2). *Hypericum hirsutum* is a perennial with stems to 1 m and yellow petals 15 to 22 mm across.

Both of the sites in Ontario where *Hypericum hirsutum* was found were fairly disturbed but there was no evidence of deliberate planting or escape from adjacent



FIGURE 1. Stem and leaves of Hairy St. John's-wort (note conspicuously pubescent stems and leaves), Guild Inn, Toronto, 20 July 2011. Photo: Gavin Miller.

gardens (the species is not known to be in cultivation in southern Ontario). Of the two patches at Pickering, one was in a hedgerow with associated species, including Trembling Aspen (*Populus tremuloides*), Common Buckthorn (*Rhamnus cathartica*), Bell's Honeysuckle (*Lonicera × bella*), Red-osier Dogwood (*Cornus stolonifera*), Smooth Brome (*Bromus inermis*) and Tall Goldenrod (*Solidago altissima*). The other patch was in an adjacent old-field meadow dominated by Tall Goldenrod and Smooth Brome, with associated species such as Red-osier Dogwood, asters (*Symphyotrichum* spp., especially *S. ericoides*, White Heath Aster), and Purple Crown-vetch (*Securigera varia*).

In Scarborough, about 30 plants of *H. hirsutum* were found in a strip about 15 m long at the edge of a young forest dominated by Red Ash (*Fraxinus pennsylvanica*). The shrub layer in the vicinity is largely Common Buckthorn and Choke-cherry (*Prunus virginiana*). Ground vegetation consists of Yellow Trout-lily (*Erythronium americanum*), Dog-strangling Vine (European Swallow-wort) (*Cynanchum rossicum*), and Garlic Mustard (*Alliaria petiolata*). Common St. John's-wort, Heal-all (*Prunella vulgaris*), Wood Avens (*Geum urbanum*), and Erect Hedge-parsley (*Torilis*

*japonica*) are also present. The soils in the vicinity of the Scarborough site were moderately moist silty clay loams.

In the British Isles, where it is native, *H. hirsutum* grows in semi-wooded successional areas, riverbanks, and damp grasslands (Stace 1997).

The origin of the Ontario populations of *Hypericum hirsutum* is unknown. *Hypericum perforatum* is abundant in eastern North America and is frequently used for its medicinal properties. It is possible that *H. hirsutum* is also occasionally used for such purposes, deliberately or accidentally mixed or confused with *H. perforatum*. The plant is possibly overlooked and could be present in other locations in the region or elsewhere in North America, where it should be watched for.

As a new introduced exotic species, this plant should also be assessed for invasive potential. It did not appear to be aggressively spreading in the two locations in the Toronto area where it was observed, but it was well established and was spreading locally at the Scarborough site, which is municipally owned. The Pickering population does produce viable seed, as approximately 70% of the seed germinated after a period of 90 days of moist-cold stratification.



FIGURE 2. Inflorescence of Hairy St. John's-wort (note stalked black glands on the sepals), Guild Inn, Toronto, 20 July 2011. Photo: Gavin Miller.

We hope that *Hypericum hirsutum* will not become a major threat to ecosystems, but invasiveness can sometimes manifest itself only after a long latency period. For example, *Cynanchum rossicum*, which is one of the worst invasive species in natural areas in southern Ontario, became evident as a problem only decades after it had first appeared (Kricsfalusy and Miller 2008; Miller and Kricsfalusy 2008\*). Cappuccino (2004) attributed this to a positive feedback situation (the Allee effect), whereby plant vigour and competitive ability increase as populations increase.

#### Voucher specimens

ONTARIO, Durham Regional Municipality, Pickering, Montgomery Park Road, adjacent to Pickering Nuclear Generating Station, overgrown old field dominated by *Solidago canadensis*, *Symphytichum lanceolatum*, *S. novae-angliae* (New England Aster), *Vicia cracca* (Tufted Vetch), *Epilobium parviflorum* (Small-flowered Willowherb), *Securigera varia*, and *Poa pratensis* (Kentucky Bluegrass), plant grown from seed collected in 2008 by Paul Heydon, 4 or 5 plants orig-

inally seen at site in 2008, 43.813, -79.053, 19 September 2011, *M. J. Oldham & P. Heydon 39413* (CAN, DAO, HAM, MICH, NHIC, TRT, UWO); Metropolitan Toronto, Scarborough, Guild Inn/Guildwood Park (Scarborough Waterfront block 'B'), about 30 plants seen at edge of somewhat disturbed forest of Red Ash by parking lot, with *Fraxinus pennsylvanica*, *Rhamnus cathartica*, *Cynanchum rossicum*, *Torilis japonica*, *Hypericum perforatum*, 43.748, -79.190, 13 September 2011, *G. Miller 131* (CAN).

#### Acknowledgements

The authors thank Natasha Gonsalves, Allison Scovill, and Sue Hayes of the Toronto and Region Conservation Authority for assisting with field work and Peter Ball, Norman Robson, and Anton Reznicek for confirming our identification. Luc Brouillet, Paul Catling, and Bruce Ford provided helpful comments which improved the manuscript. The Toronto and Region Conservation Authority and Ontario Natural Heritage Information Centre, Ontario Ministry of Natural Resources, supported publication costs.



**Documents Cited** (marked \* in text)

**Brouillet, L., F. Coursol, M. Favreau, M. Anions, P. Bélisle, and P. Desmet.** 2011. VASCAN, the Database of Vascular Plants of Canada. <http://data.canadensys.net/vascan> (consulted on 20 September 2011).

**Miller, G. C., and V. V. Kricsfalusy.** 2008. Dog-strangling vine – *Cynanchum rossicum* (Kleopow) Borhidi: A review of distribution, ecology and control of this invasive exotic plant. Toronto and Region Conservation Authority and Rouge Park, Toronto. [http://www.rougepark.com/unique/reports/RP\\_DSV\\_Report\\_Feb08.pdf](http://www.rougepark.com/unique/reports/RP_DSV_Report_Feb08.pdf) (consulted on 28 January 2012).

**Thiers, B.** 2011. Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. <http://sciweb.nybg.org/science2/IndexHerbariorum.asp>.

**Literature Cited**

**Cappuccino, N.** 2004. Allee effect in an invasive alien plant, pale swallow-wort *Vincetoxicum rossicum* (Asclepiadaceae). *Oikos* 106(1): 3-8.

**Gillett, J. M., and N. K. B. Robson.** 1981. The St. John's-worts of Canada (Guttiferae). National Museum of Natural Sciences Publications in Botany 11. 44 pages.

**Kartesz, J. T.** 1999. A synonymized checklist and atlas with biological attributes for the vascular flora of the United States, Canada, and Greenland. *In* Synthesis of the North American Flora. Edited by J. T. Kartesz and C. A. Meacham. First edition. Version 1.0. North Carolina Botanical Garden, Chapel Hill, N.C.

**Kricsfalusy, V. V., and G. C. Miller.** 2008. Invasion and distribution of *Cynanchum rossicum* (Asclepiadaceae) in the Toronto region, Canada, with remarks on its taxonomy. *Thaiszia Journal of Botany* 18: 21-36.

**Morton, J. K., and J. M. Venn.** 1990. A checklist of the flora of Ontario vascular plants. University of Waterloo Biology Series No. 34. University of Waterloo, Waterloo, Ontario. 218 pages.

**Newmaster, S. G., A. Lehela, P. W. C. Uhlig, S. McMurray, and M. J. Oldham.** 1998. Ontario plant list. Forest Research Information Paper No. 123, Ontario Forest Research Institute, Ontario Ministry of Natural Resources, Sault Ste. Marie, Ontario. 550 pages + appendices.

**Robson, N. K. B.** 2010. Studies in the genus *Hypericum* L. (Hypericaceae) 5(2). Sections 17. *Hirtella* to 19. *Coridium*. *Phytotaxa* 4: 127-258.

**Robson, N. K. B.** In preparation. *Hypericum* L., in Flora of North America Editorial Committee (eds.). Flora of North America Vol. 6. Missouri Botanical Garden Press, St. Louis.

**Scoggan, H. J.** 1978-1979. The flora of Canada: Parts 1-4. National Museum of Natural Sciences Publications in Botany No. 7 (1-4), Ottawa, Ontario. 1711 pages.

**Stace, C.** 1997. New Flora of the British Isles. Second edition. Cambridge University Press, U.K. 1130 pages.

**Strong, A. B.** 1850. The American Flora, or History of Plants and Wildflowers. Green and Spencer, New York. 190 pages.

**Xiwen, L., and N. K. B. Robson.** 2007. *Hypericum*. Pages 2-35 in Vol. 13. of the Flora of China. Edited by Z. Y. Wu and P. H. Raven. Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis.

Received 2 December 2011

Accepted 29 January 2012