

# Notes

## Serviceberry, *Amelanchier intermedia*, Escaped from Cultivation in Eastern Ontario

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Catling, Paul M., and Gisele Mitrow. 2007. Serviceberry, *Amelanchier intermedia*, escaped from cultivation in eastern Ontario. *Canadian Field-Naturalist* 121(1): 89–91.

Although not generally recognized as a cultivated plant, *Amelanchier intermedia* is widely cultivated in eastern Ontario under the incorrect name, *A. canadensis*. Wild plants referable to *A. intermedia* in old fields south of Ottawa are likely to be escaped from cultivation. *Amelanchier intermedia* likely originated as a hybrid involving *A. canadensis* and *A. laevis*. A key to the Canadian species of *Amelanchier* with glabrous ovaries is provided.

Key Words: Saskatoon, Juneberry, Serviceberry, Shadbush, *Amelanchier intermedia*, status, cultivation, hybrid, Ontario.

Fernald (1950) and Kartesz and Meachum (1999) reported *Amelanchier intermedia* Spach from Newfoundland to Minnesota and south to North Carolina. It was not included in Michigan by Voss (1985), but Cinq-Mars (1971) showed a relatively extensive distribution in southern Quebec. Although within the general range outlined by Fernald (1950) and frequent in adjacent Quebec (Cinq-Mars 1971), *A. intermedia* was not reported in Ontario by Soper and Heimburger (1982) or McKay (1973). Although it was listed for Ontario by Newmaster et al. (1998\*), the listing was without ranking indicating a lack of information on its status. Over several years of examining populations of *Amelanchier* in Ontario we have found plants that correspond to the description of *A. intermedia* at only two locations in old field habitats south of Ottawa. Plants similar to these wild plants are widely cultivated but are never called *A. intermedia*.

Most eastern Ontario nurseries offering shrubs for sale offer Serviceberry (also called Juneberry, Shadbush and Saskatoon, *Amelanchier* spp.). The plants that are most frequently available are either multi-stemmed shrubs labelled as *A. canadensis* or they are named cultivars referable to *A. ×grandiflora* Rehder, a hybrid of *A. arborea* (Michx. f.) Fern. and *A. laevis* Wieg. The plants referred to as *Amelanchier canadensis* (L.) Medic. are particularly popular with companies providing landscaping for office buildings, whereas the larger small trees are increasingly popular for use as street trees under utility wires (Gerhold 1999).

### Identification of wild and similar cultivated plants

With petals 9–13 mm long and reddish-tinged leaves prominently acute at the tip, the plants growing in old

fields and woodland edges south of Ottawa (cited below) and similar plants labelled as *A. canadensis* in 10 local nurseries as well as many plants in Ottawa gardens could not be placed with *A. canadensis*, which has petals 3–10 mm long and green young leaves with leaf tips more or less rounded (Cruise 1964; Cinq-Mars 1971). They are not *A. laevis* because the leaves are tomentose at flowering instead of glabrous. Nor are they *A. arborea* because these are multi-branched shrubs with reddish-tinged leaves and flowers with a relatively broad hypanthium 4.5–5.5 mm across instead of single-trunked trees with green leaves and flowers with a relatively narrow hypanthium 2.5–3 mm across. They also differ from *A. arborea* in having sepals that are less reflexed and lanceolate with a concave outer edge instead of strongly reflexed at the base and oblong-lanceolate with the outer edge convex. In addition the berries of these shrubs are pleasant-tasting rather than insipid as in *A. arborea*. These plants do correspond to *A. intermedia* Spach of Fernald (1950) and Cinq-Mars (1971).

While it is clear that *A. intermedia* occurs both as a cultivated plant and outside of cultivation in eastern Ontario, it is not clear whether or not the wild plants are escapes from cultivation. It seems most likely that they are escaped since one of the parents, *A. canadensis*, does not occur in the local area and the similar widely cultivated plants have become increasingly popular over the past few decades and are currently widely available in nurseries and widely used by landscaping companies. A key to the group with glabrous ovaries is provided below.

Specimens referable to *A. intermedia* growing outside of cultivation in Ontario include: OTTAWA-CARLETON: open, sandy ground 3 km N of Herbert's Cor-

ners, Osgoode Twp., 45.2359°N, 75.5733°W, 17 May 2002, *P. M. Catling s. n.* (DAO); UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY: open old field, 2 km WNW of Ormond and about 5 km N of Winchester at 45.1552°N, 75.4173°W, 21 May 2005, *P. M. Catling 2005-41, 2005-42* (DAO). Cultivated specimens referable to *A. intermedia* collected as part of this study in Ottawa area gardens are also preserved in DAO (see DAO 798819, 801264, 801265, 801272, 801275, 801280, 801328, 801329, 801330, 801332) and vouchers obtained from nurseries are also in the collection (see DAO 800923, 800924, 800925, 801262, 801267, 801269, 801270, 801271, 801333, 801335).

### Taxonomic history and possible hybrid origin of *A. intermedia*

Jones (1946) included the name *intermedia* with his relatively narrowly defined *A. canadensis* showing a largely eastern coastal plain distribution. Wiegand (1920) used the name to represent a species related to *A. canadensis* which he defined narrowly. Later Fernald (1950) expanded the concept to include plants clearly intermediate between *A. canadensis* and *A. laevis* and this concept was maintained in the classic work of Cinq-Mars (1971).

*Amelanchier intermedia* may have arisen as a hybrid of *A. canadensis* and *A. laevis* as noted by various authors (e.g., Gleason and Cronquist 1991). Plants referable to *A. intermedia* have leaves that are only moderately pubescent and losing their pubescence at flowering. This and their purplish tinge suggests that one parent is a species with leaves purple-green and glabrous and unfolded at flowering. The only species with a glabrous ovary fitting this description is *A. laevis*. The relatively short petal lengths and also the widely open hypanthium of the putative hybrids suggest that the other parent may have short petals, barely reflexed sepals and a saucer-shaped hypanthium. This is true of *A. canadensis* but not *A. arborea* which has relatively long petals, prominently reflexed sepals and a rather narrow, campanulate hypanthium. Furthermore a cross of *A. arborea* and *A. laevis* would be expected to produce a more tree-like hybrid, one form of which, *A. xgrandiflora* Rehd. is well known. Other species of *Amelanchier* have pubescent ovary summits and/or rounded and more coarsely toothed leaves and are thus excluded from consideration as putative parents. *Amelanchier canadensis* × *laevis* hybrids have been reported to be common in some areas, whereas hybrids of *A. arborea* and *A. canadensis* are less common (Cruise 1964).

The only material that can be confused with *Amelanchier interior* that occurs in the lower Ottawa valley are depauperate specimens of *A. arborea* which differ in their early flowering with unexpanded and very hairy leaves and apparent hybrids of *A. laevis* and *A. spicata*

which differ in their broad spatulate petals and partially hairy ovaries. The typical habitat of these latter plants is dried and disturbed heath bogs where *A. spicata* also occurs. Such plants may have been the basis for reports of *A. intermedia* from edges of bogs in Minnesota (Nielsen 1939). Alternatively these reports may have been based on fruiting material of *A. interior* of the northwestern Great Lakes region which had lost some of the pubescence on the ovary (as found to be the case for reports of *A. intermedia* from northwestern Ontario). The following key will readily separate flowering *A. intermedia* from related Canadian species.

### Key to Canadian flowering *Amelanchier* with glabrous ovaries:

- 1a. Leaves glabrous and purple at flowering; petals 10-20 mm long; lowest pedicels 25-50 mm long ..... *A. laevis*
- 1b. Leaves tardily pubescent and green or purple-tinged at flowering; petals 3-15 mm long; lowest pedicels 8-35 mm long ..... 2
- 2a. Petals 3-10 mm long; leaves round-tipped ..... *A. canadensis*
- 2b. Petals 9-15 mm long; leaves pointed at tip ..... 3
- 3a. Leaves purple-tinged, more or less expanded and becoming glabrous beneath during flowering; shrubs ..... *A. intermedia*
- 3b. Leaves green, small and folded at flowering, pubescent beneath after flowering; trees ... *A. arborea*

### Acknowledgments

Brenda Kostiuik assisted with field studies. W. J. Cody provided useful comments on the manuscript.

### Document Cited (marked \* in text)

Newmaster, S. G., A. Lehela, P. W. C. Uhlig, S. McMurray, and M. J. Oldham. 1998. Ontario plant list. Ontario Forest Research Institute, Ontario Ministry of Natural Resources (Sault Ste. Marie, Ontario), Forest Research Information Paper 123. [www.uoguelph.ca/foibis](http://www.uoguelph.ca/foibis).

### Literature Cited

- Cinq-Mars, L. 1971. Le genre *Amelanchier* au Québec. *Le Naturaliste canadien* 98: 329-346.
- Cruise, J. E. 1964. Studies of natural hybrids in *Amelanchier*. *Canadian Journal of Botany* 42: 651-663.
- Fernald, M. L. 1950. Gray's manual of Botany. American Book Company, New York. 1632 pages.
- Gleason, H. A., and A. Cronquist. 1991. Manual of vascular plants of northeastern United States and adjacent Canada. 2<sup>nd</sup> edition New York Botanical Garden, Bronx, New York. 993 pages.
- Gerhold, H. D. 1999. Serviceberry cultivars tested as street trees: initial results. *Journal of Arboriculture* 25(4): 189-192.
- Jones, G. N. 1946. American species of *Amelanchier*. *Illinois Biological Monographs* 20(2): 1-126.
- Kartesz, J. T., and C. A. Meachum. 1999. Synthesis of the North American flora. Version 1.0. Biota of North America Program, University of North Carolina, Chapel Hill.



FIGURE 1. Flowering inflorescence of *Amelanchier intermedia* showing relatively long petals and pedicels and leaves pubescent below and more or less expanded at flowering time. Photo of a cultivated plant in Ottawa by P. M. Catling.

**McKay, S. M.** 1973. A biosystematic study of the genus *Amelanchier* in Ontario. M. Sc. thesis, University of Toronto. 241 pages.

**Nielsen, E. L.** 1939. A taxonomic study of the genus *Amelanchier* in Minnesota. *American Midland Naturalist* 22: 160-205.

**Soper, J. H., and M. L. Heimbürger.** 1982. *Shrubs of Ontario*. Royal Ontario Museum Publications in Life Sciences. 495 pages.

**Voss, E. G.** 1985. Michigan flora, part II. Dicots (Saururaceae – Cornaceae). *Cranbrook Institute of Science Bulletin* 59. 724 pages.

**Wiegand, K. M.** 1920. Additional notes on *Amelanchier*. *Rhodora* 22: 146-151.

Received 15 October 2005

Accepted 23 February 2007