Note

Cream Pincushions (*Scabiosa ochroleuca*; Dipsacaceae), a New Established Exotic Plant in Eastern Canada

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An established population of Cream Pincushions (Scabieuse jaune pâle, *Scabiosa ochroleuca* L.) in the Ottawa Valley approximately 16.5 km southeast of Arnprior is new to the flora of Ontario and eastern Canada. Other Canadian reports include a non-persisting occurrence in Victoria, British Columbia, in 1908 and a recent occurrence from Keremeos in southcentral British Columbia. Identification and ecology of this species are discussed. In the Ottawa Valley, the plant occurs with introduced Heath Snail (*Xerolenta obvia*), which also originates in eastern Europe.

Key Words: Cream Pincushions; Scabieuse jaune pâle; *Scabiosa ochroleuca*; Dipsacaceae; flora; Ontario; Canada; exotic species

Cream Pincushions (Scabieuse jaune pâle, *Scabiosa ochroleuca* L.), in the Teasel Family (Dipsacaceae), has been reported from Victoria, British Columbia, where it was collected in a vacant lot by John Macoun in 1908 (specimen at the Canadian Museum of Nature, Boivin 1966: 1026; Scoggan 1979: 1431), but was excluded from the British Columbia flora by Douglas *et al.* (2002) because "it does not persist." More recently, it has been reported from Keremeos in southcentral British Columbia where it was observed in 2015 (Curtis Bjork, personal communication, November 2015). Although the species is occasionally cultivated for its unusual flowers, there are no other records of its occurrence outside of cultivation in Canada, based on a review of the literature and specimens in various Canadian herbaria (including Acadia University, University of Alberta, Canadian Museum of Nature, Agriculture and Agri-Food Canada, Université de Montréal, the Nova Scotia Museum, Université Laval, University of Saskatchewan, and University of British Columbia). In late October 2015, it was found by RAL in the Ottawa Valley of Eastern Ontario, approximately 16 km southeast of Arnprior (Figure 1). At this site, there were at least 500 flowering plants and hundreds of non-flowering rosettes scattered over an area of scraped alvar at least 0.8 ha in extent. It appeared to be well established at this site and is, thus, new to the flora of Ontario and eastern Canada (Ontario eastward).

Voucher specimens: Canada. Ontario. Ottawa, 45.3408°N, 76.1932°W, approximately 16.5 km southeast of Arnprior, west of Panmure Road, south of the Trans-Canada Highway, open scraped alvar, 22 October 2015, *P. M. Catling & R. A. Layberry s.n.,* (DAO, MICH, QFA).

Identification

A number of other similar Canadian species — including Field Scabious (*Knautia arvensis* (L.) Coulter), Marsh Devil's-bit (*Succisa pratensis* Moench), Southern Succisella (*Succisella inflexa* (Kluk) G. Beck), and Giant Yellow Scabious (*Cephalaria gigantea* (Ledebour) Bobrov) — all once included in the genus *Scabiosa,* may be separated from *S. ochroleuca* as follows (Cannon 1976; Moore 1976):

1a.	Calyx setae (6)8–16(24), receptacle hairy	*Knautia arvensis*
1b.	Calyx setae 4–5 or none, receptacle scaly	2
2a.	Marginal florets with 1 longer petal lobe so that the flowers are more or less radiate; corolla 5-lobed	*Scabiosa ochroleuca*
2b.	Marginal and central florets with lobes subequal; corolla 4-lobed	3
3a.	Involucral bracts in more than 3 rows	*Cephalaria gigantea*
3b.	Involucral bracts in 1–3 rows	4
4a.	Calyx setae 4–5	*Succisa pratensis*
4b.	Calyx setae none	*Succisella inflexa*

Seven species and 6 genera (those listed above and the familiar *Dipsacus* L.) in the Dipsacaceae are now known in the wild in Canada. No other species are known in the wild within the genus *Scabiosa* Martinov in Canada. The following characteristics are cumulatively distinctive for this genus. The plants are perennial, with leaves of non-flowering rosettes dentate or crenate and shortly white-hairy with a denser covering of hair

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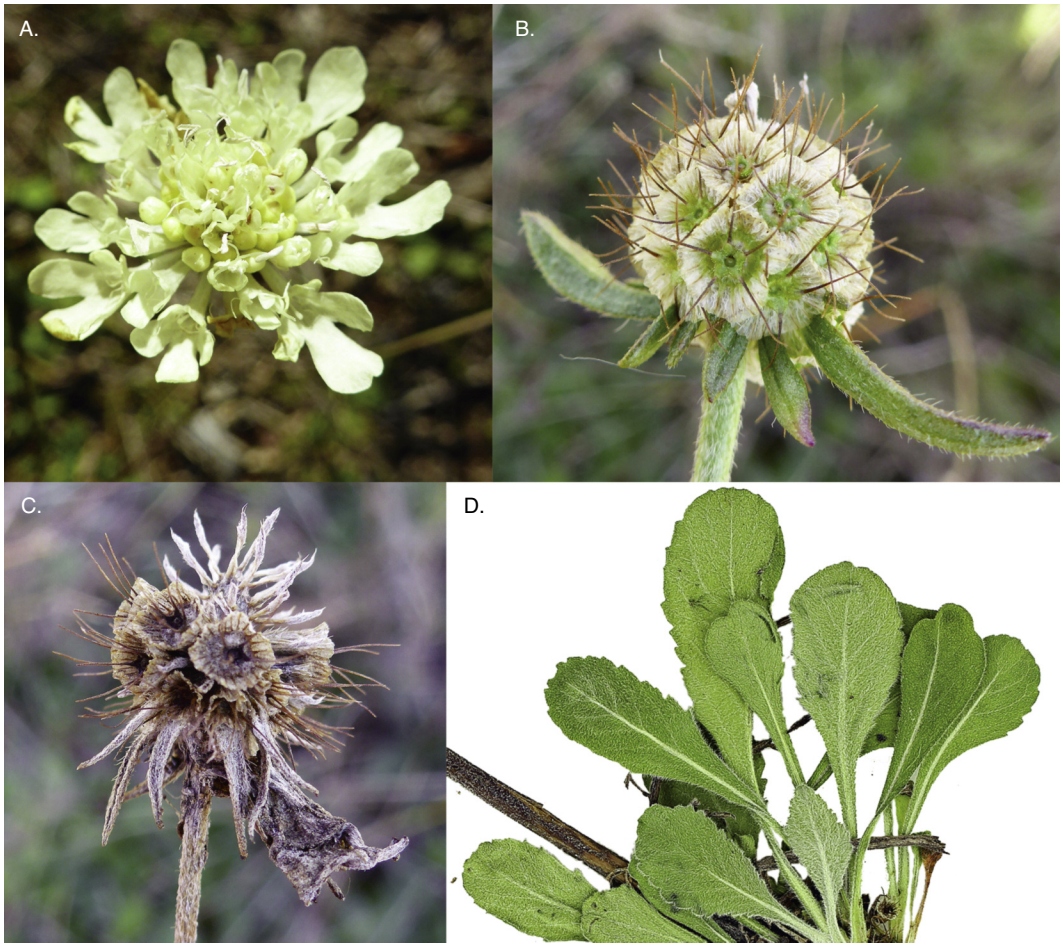

FIGURE 1. Cream Pincushions (Scabieuse jaune pâle, *Scabiosa ochroleuca* L.) photographed approximately 16.5 km southeast of Arnprior, Ontario, on 23 October 2015. A. Inflorescence showing outer flowers with a longer basal petal. B. Infructescence showing young fruit with setae 2–3 times as long as the corona. C. Older inflorescence showing persistent bracts at the top of the receptacle. D. Serrate or crenate rosette leaves with a covering of short white hair. Photos: P. M. Catling.

than the stem leaves, involucel–tube longitudinally sulcate, corona with 20–24 veins, setae 2–3 times as long as the corona, and corolla cream coloured. Although the stem leaves are pinnate, the basal stem leaves and rosette leaves are not (Cannon 1976; Jasiewicz 1976; Moore 1976).

Distribution and Ecology

The habitat at the Ontario site was open and included native species of open alvar (Catling and Brownell 1995) and introduced species of disturbed situations. The soil where *S. ochroleuca* was growing was mostly less than 3 cm deep over limestone rock and was alkaline and calcareous. Major plant associates included: Canada Bluegrass (*Poa compressa* L.), Spotted Knapweed (*Centaurea stoebe* L.), Tall Hawkweed (*Pilosella piloselloides* (Villars) Soják), and Wild Carrot (*Daucus carota* L.). Also present were Balsam Groundsel (*Packera paupercula* (Michaux) Á. Löve & D. Löve), Black Medick (*Medicago lupulina* L.), Butter-and-eggs (*Linaria vulgaris* Miller), Common Juniper (*Juniperus communis* L.), Common Viper's Bugloss (*Echium vulgare* L.), Gray-stemmed Goldenrod (*Solidago nemoralis* Aiton), and Umbellate Sedge (*Carex umbellata* Schkuhr ex Willdenow). The abundant rosette leaves on this site with pinnate and distinctively glandular leaves are those of Spotted Knapweed (*Centaurea stoebe* L.), which is a frequent associate.

The native distribution of *S. ochroleuca* includes southeast and east-central Europe (Jasiewicz 1976). In Europe, it occurs in native declining limestone grasslands that are rich in species, as well as in old limestone quarries (Illyés *et al.* 2007; Rahmonov *et al.* 2014). An unusual feature of the Ottawa Valley site is the abundance of the rarely encountered, introduced Heath Snail

(*Xerolenta obvia*), which shares with *S. ochroleuca* an origin in eastern Europe (Forsyth *et al.* 2015). It is not clear how these invaders reached this site.

Scabiosa ochroleuca may expand in the Ottawa Valley and/or spread elsewhere. In North America, it has also been reported in Massachusetts, where it was found in a gravel pit in 1914 (Sorrie 2011). Calcareous alvar landscapes are widespread in southern Ontario and are available to the south and from Kingston west to Manitoulin Island in Lake Huron. At the Ottawa Valley site, most of the disturbed area is dominated by Spotted Knapweed, but *S. ochroleuca* is also dominant in some smaller areas. The plants form patches up to 3 m by 3 m, where they are dominant and up to 1 m tall, but all places where they have been seen to date are more or less disturbed by bulldozing. The potential impact on native alvar vegetation requires more study as alvars are considered a high conservation priority (Catling *et al.* 2014).

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