

***Daphne alpina* L. subsp. *scopoliana* Urbani × *Daphne cneorum* L.
subsp. *cneorum* = *Daphne* × *savensis* nothosp. nov.,
a new spontaneous hybrid in the genus *Daphne* L.**

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Summary: A new taxon from the genus *Daphne* L. was found in the hills of central Slovenia (Zasavje). With most of its morphological traits it resembles the taxon *Daphne alpina* subsp. *scopoliana*, but is slightly bigger and has light pink flowers and less hairy stalk leaves. A smaller population of such specimens grow in an open, natural black pine forest (*Genisto januens-Pinetum sylvestris pinetosum nigrae*) on a rocky edge above the Sava River between Zagorje and Trbovlje, very close to the species *Daphne cneorum* subsp. *cneorum*. They were described as a new hybrid *Daphne* × *savensis* nothosp. nov. (*Daphne alpina* subsp. *scopoliana* × *D. cneorum* subsp. *cneorum*).

Keywords: *Daphne alpina* subsp. *scopoliana*, *Daphne cneorum* subsp. *cneorum*, *Daphne* × *savensis*, *Genisto januens-Pinetum*, Zasavje, Slovenia

On 18 May 2010 (Leg. I. Dakskobler) we spotted a daphne which was very similar to *Daphne alpina*, but had light pink flowers in a black pine forest (*Genisto januens-Pinetum pinetosum nigrae*) in Zasavje (Reber near the hamlet of Za Savo between Zagorje and Trbovlje), on the slopes above the left bank of the Sava River. In the vicinity, the garland flower (*Daphne cneorum* subsp. *cneorum*) grew on several spots in the same stand but only on one location we could also find the genuine Alpine daphne (*Daphne alpina* subsp. *scopoliana*) with white flowers. According to our findings, the locality in Reber above the Sava features a hybrid between *Daphne alpina* subsp. *scopoliana* and *Daphne cneorum*. As far as we can tell from the available resources, a hybrid between these two taxa has not yet been described. Some online sources on the genus of *Daphne* (http://it.wikipedia.org/wiki/Specie_di_Daphne; <http://www.tela-botanica.org/efflore/BDNFF/4.02/nn/21592/synthese>) mention a hybrid *Daphne* × *lavenieri* Correvon, which is supposed to be a hybrid between *D. alpina* and *D. cneorum*. In fact, the name *Daphne* × *lavenirii* Correvon 1930 (and not *D. ×lavenieri* Correvon) describes a hybrid between *Daphne caucasica* and *Daphne cneorum*. This hybrid occurred in 1919 or 1920 in the tree nursery Morel & Lavenir near Lyon-Vaise in France as an accidental hybrid between *D. caucasica* and *D. cneorum* that grew in the immediate vicinity of each other. Having seen the flowering plant, Henry Correvon named it after M. Lavenier and identified it as *D. lavenirii* in 1930. This name was never validly published, but has been used as the name for the cultivar (*Daphne* × *burkwoodii* 'Lavenirii'). For a reason unknown to us, Correvon indicated *D. alpina* and *D. cneorum* as parents, but M. Lavenier confirmed that the hybrid developed from the seed of *D. caucasica* that had evidently been pollinated by *D. cneorum* (BRICKELL & MATHEW 1976: 71–72). More recent conspectuses mention the name *Daphne* × *lavenirii* Correvon 1930 nom. nud. as a synonym for the hybrid *Daphne* × *burkwoodii* Turill (*Daphne cneorum* × *D. caucasica*) – HALDA (2001: 219), WHITE (2006: 110), database Tropicos (Tropicos.org, Missouri Botanical Garden, 02 Nov 2010 <http://www.tropicos.org>). With the colour of its flowers the hybrid from Zasavje very much

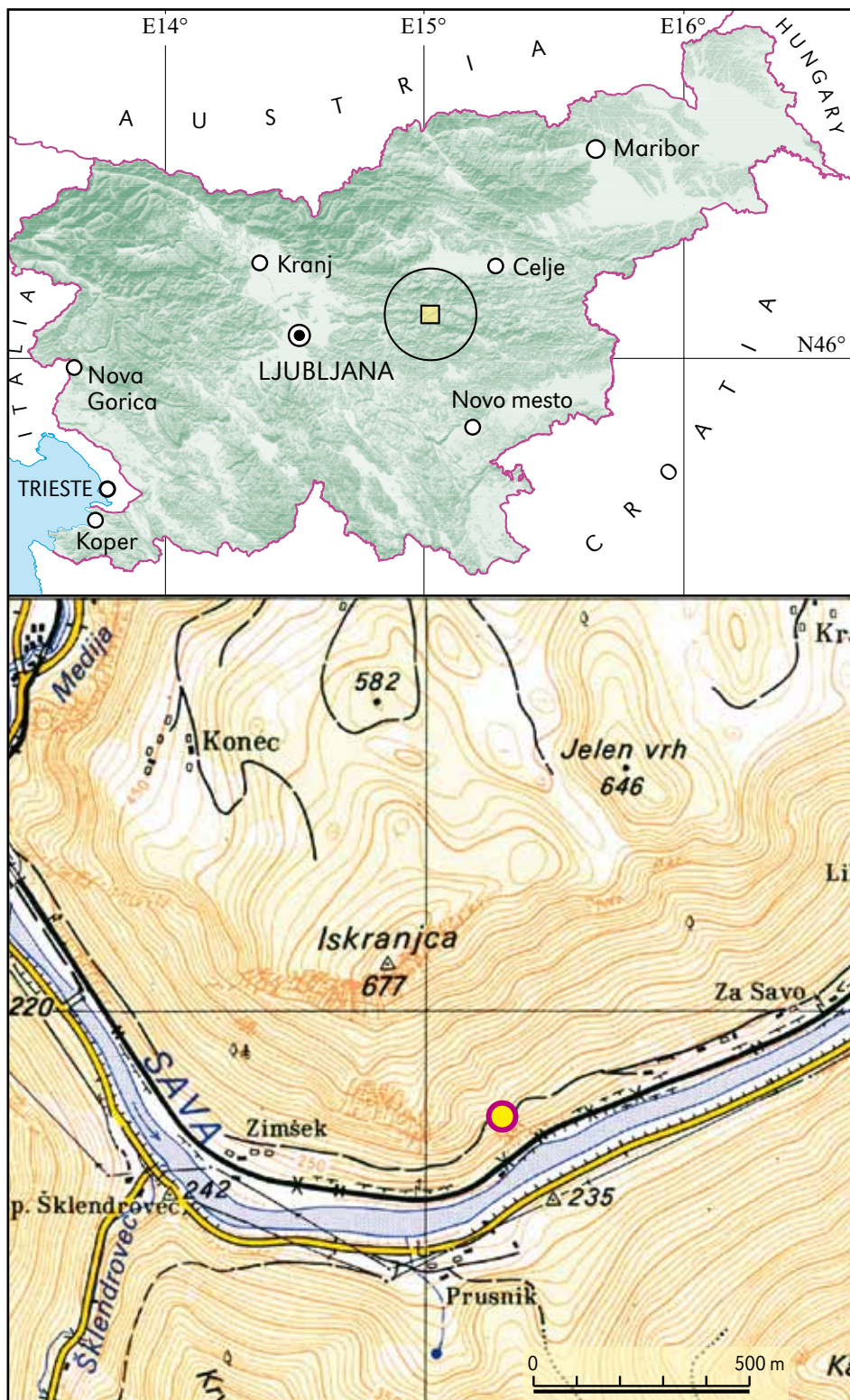


Figure 1. Locality of the hybrid *Daphne x savensis* in Reber above the Sava between Zagorje and Trbovlje (Source: Basic topographic map of the RS 1: 25,000, GURS – Surveying and Mapping Authority of the Republic of Slovenia).

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resembles the hybrid *Daphne × reichsteinii* Landolt & Hauser (= *Daphne alpina* × *D. petraea*) – see LANDOLT & HAUSER (1981) and AESCHIMANN et al. (2004: 965). They differ in size – new hybrid is bigger – and in leaf form. The leaves of the hybrid from Zasavje are less obviously rounded but more pubescent, they are not evergreen and the branches of apical ramifications are elongated and straight. The hybrid *Daphne × reichsteinii* was described along Lake Garda in northern Italy (LANDOLT & HAUSER, *ibid.*) and is probably a hybrid between the taxa *Daphne alpina* subsp. *alpina* and *Daphne petraea*, even though the authors in their original description mention as potential (but less likely) parent also *Daphne cneorum*.

Materials and methods

The flora and vegetation along the Sava River between Litija and Zidani Most were studied according to already established central-European methods (BRAUN-BLANQUET 1964, EHRENDORFER & HAMANN 1965). The floristic records and phytosociological relevés were entered into the FloVegSi database (SELIŠKAR et al. 2003). The nomenclature source for the names of taxa is the Mala flora Slovenije (MARTINČIČ et al. 2007), except for the taxa *Daphne caucasica* Pall., *Daphne cneorum* L. subsp. *cneorum*, *Daphne cneorum* L. subsp. *arbuscoloides* (Tuzson) Soò, *Daphne petraea* Leyb. For those we consider HALDA (2000). The nomenclature source for the names of syntaxa is THEURILLAT (2004).

Results

Site description

The new hybrid *Daphne × savensis* was found on the steep sunny side dolomite slopes of the hill Iskanjca on the left bank of the Sava between Zagorje and Trbovlje (Reber), near the hamlet of Za Savo (Fig. 1). The geological bedrock is Triassic dolomite, soil type is shallow rendzina. Steep slopes are overgrown by thermophilous beech forests (*Ostrya-Fagetum* M. Wraber ex Trinajstić 1972) and the rockiest sites (jags, prominences) by the basophilous black and red pine forest (*Genisto januensis-Pinetum sylvestris* Tomažič 1940 – for a detailed description of this association see TOMAŽIČ 1940). The climate is moderate continental with a mean annual temperature of approx. 9°C and mean annual precipitation of about 1450 mm (VRIŠER 2001: 73). The floristic composition and structure of natural black pine stands (*Genisto januensis-Pinetum sylvestris pinetosum nigrae* Tomažič 1940) in the Zasavje region are presented with three relevés in the Appendix. The second relevé in the Appendix shows the vegetation composition of the black pine forest on an expressive rocky jag above the Sava at the altitude of 290 m, which is also the site of the hybrid *Daphne × savensis*.

Description of the hybrid

In most of its morphological traits this hybrid resembles the taxon *Daphne alpina* subsp. *scopoliana* (URBANI 1992). The shrubs of the hybrid are erect, ascending or overhanging (on rocks), relatively tall – up to 105 cm (Fig. 2) (the taxon *Daphne alpina* is usually shorter and more descending, up to 50 cm tall) – and widely spreading with elongated lateral ramifications (Fig. 3). Branching is similar to *D. cneorum*. The diameter at the bottom of the lignified stem is 10–16 mm (on average 12 mm). The first ramification of the stem is between (3)8–18(22) cm from the bottom (on average 12 cm), the second ramification is between (16)22–40(48) cm from the bottom (on average 37 cm) (Fig. 4). The plant is deciduous. Leaves are simple, mostly obovate



Figure 2. *Daphne x savensis* – habitus.



Figure 3. *Daphne x savensis* – the youngest elongated lateral branches.

and obtuse, rarely with a very short point, only a few are lanceolate, some slightly obcordate, (1.2)1.8–2.5(2.8) cm long and (0.6)0.8–1.1(1.2) cm wide, the largest width just above the middle of the leaf, scarcely pubescent on either side of the leaf, some almost glabrous on the upper side, deciduous (leaves of the taxon *Daphne alpina* subsp. *scopoliana* are normally narrower, lanceolate with acute apex and more densely pubescent on the under and upper side). The flowers are fragrant, light pink (the most obvious differential trait in comparison with *Daphne alpina*), with a pubescent (woolly) calyx tube, (7)8–12 mm long, terminal. The capitate inflorescence consists of (2)4–5(7) flowers (Fig. 5). It flowers from the middle of May to the middle of June. No fruits were noticed in autumn (September and mid-November). The habitat is an open black pine forest on shallow rendzina.

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Holotypus: 9856/3 (UTM 33T WM00): Slovenia, Štajerska (Styria), Zasavje, in declivibus rupestribus Reber dictam ad vicum Za Savo in vicinitate opp. Zagorje et Trbovlje, in sylvis *Genisto januensis*-*Pinetum sylvestris pinetosum nigrae*, expositio: SSE, inclinatio: 5°–45°, solo dolomitico, 290 m.s.m. Leg. I. Dakskobler, 18. 5. 2010, Herbarium ZRC SAZU [LJS 11624] (Fig. 6).

Descriptio: Caulis erectus, ascendens vel deflexo-ascendens. Folia obovata vel oblongo-spathulata, rarissimo lanceolato-ovata, apice obtusa, retusa vel rarissimo breviter mucronata, basi angustata vel cuneata, sessilia vel rarissimo breviter petiolata, utrinque subtiliter pilosa

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Figure 4. *Daphne × savensis* – first and second stem ramification and length of ramification.



Figure 5. *Daphne × savensis* – inflorescence.

vel supra glabrescentia, ad 2(2.8) cm longa et 1(1.2) cm lata, decidua. Rami inflorescentiae ad (30)40 cm longi. Racemi capitati, (2)3–5(7) flori. Flores terminales, fragrantés, pallide roseo-albi, in tubo calicis dense pilosi (tomentosi). Floret inter mensem maium et junium. Sterilibus, drupam non vidi.

Diagnosis: Planta hybrida inter *Daphne alpina* L. subsp. *scopoliana* Urbani et *Daphne cneorum* L. subsp. *cneorum*. Affinis *Daphne alpina* subsp. *scopoliana* sed caulibus longioribus, ad 100 cm longis. *Daphne cneorum* subsp. *cneorum* ramificatione similis, foliis deciduis differt (non sempervirentibus).

Discussion

With consideration of its morphological traits (URBANI 1992) the species *Daphne alpina* growing in Slovenia (Fig. 7) is classified into the subspecies *Daphne alpina* subsp. *scopoliana*. This is a mostly eastern-Alpine-Illyrian taxon, distributed in northeast Italy, Slovenia, south Austria, Istria and Bulgaria (URBANI 1992: 213). *Daphne cneorum* is a south-European montane species (AESCHIMANN et al. 2004: 962), represented in Slovenia with two subspecies, the typical *Daphne cneorum* subsp. *cneorum* (distributed in the Alpine, pre-Alpine, Dinaric, sub-Mediterranean and sub-Pannonian region – most frequently in the hills of central Slovenia – the Zasavje Hills), and with the subspecies *Daphne cneorum* subsp. *arbusculoides* (Tuzson) Soò, known only from Prekmurje (Goričko). The subspecies *Daphne cneorum* subsp. *cneorum* is less common in Slovenia than *Daphne alpina* (Fig. 8) and the two species relatively rarely grow together (compare Figs 7 and 8). They grow on very similar rocky sites on shallow soil (rendzina, lithosol) from colline to altimontane, very rarely also subalpine belt. Although their sites and flowering seasons are very similar, there are few opportunities for hybridization between these two species. In addition,

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Figure 6. *Daphne* × *savensis* – holotype specimen at LJS.

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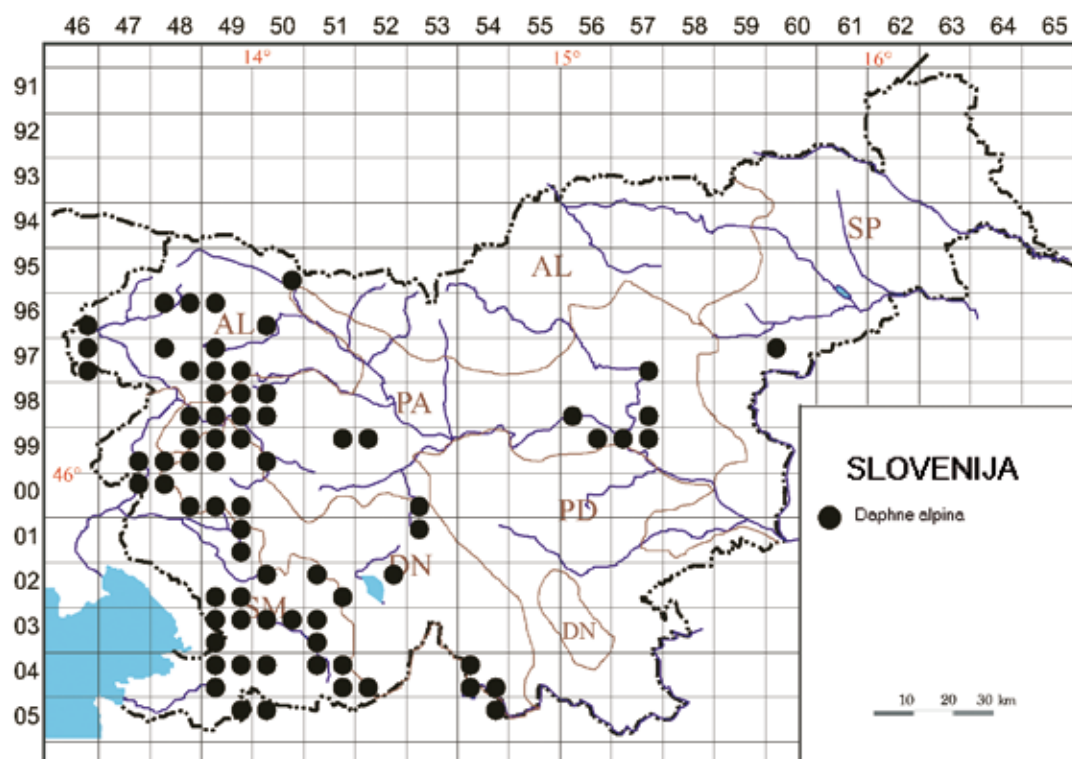


Figure 7. Distribution of *Daphne alpina* in Slovenia.

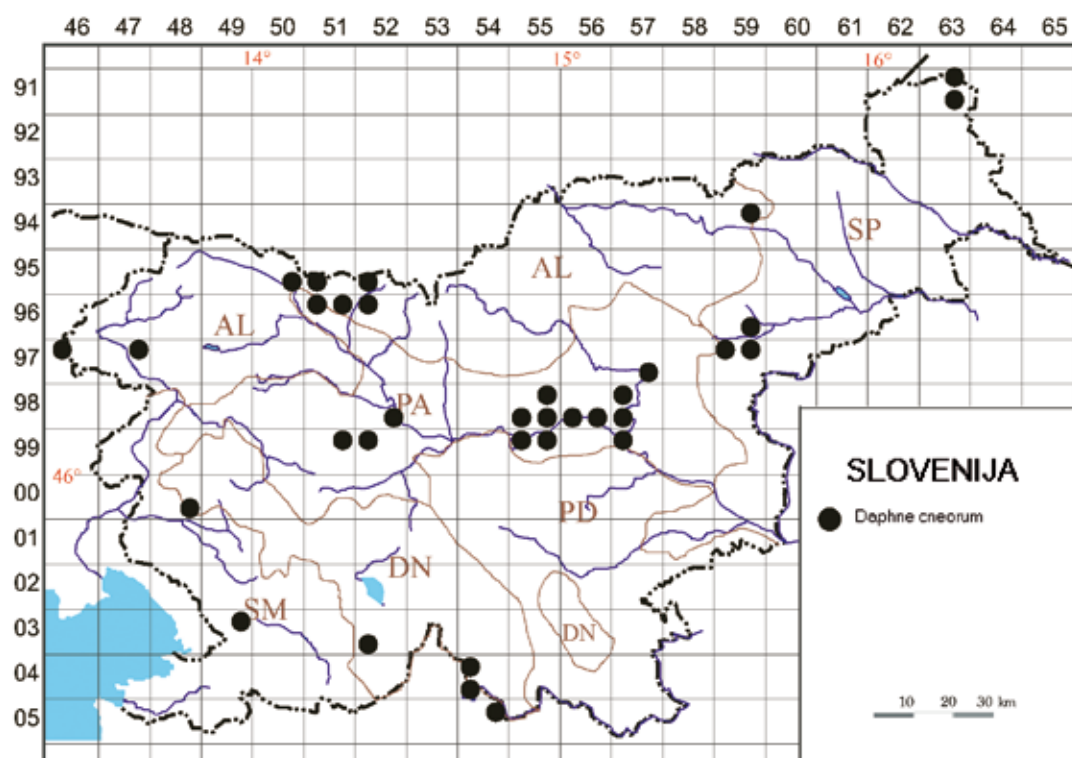


Figure 8. Distribution of *Daphne cneorum* s. lat. in Slovenia.

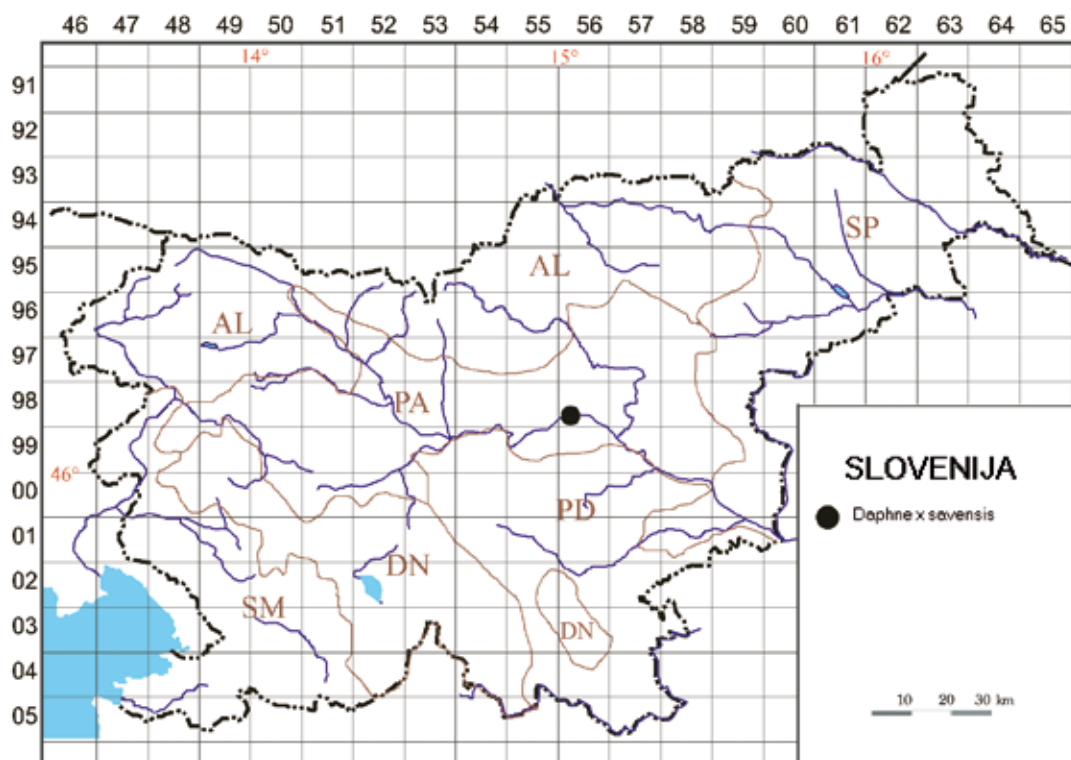


Figure 9. Distribution of the taxon *Daphne x savensis* in Slovenia.

spontaneous hybrids in the genus *Daphne* are generally very rare (HEGI 1926: 725). The taxon *Daphne alpina* subsp. *scopoliana* is most common in calcareous (limestone, dolomite) rocks. It grows in low-growth groves of hop hornbeam and flowering ash (*Ostryo-Fraxinetum orni* Aichinger 1933 = *Fraxino orni-Ostryetum* Aichinger 1933 corr. Franz 2002, *Amelanchiero ovalis-Ostryetum carpinifoliae* Poldini (1978) 1982) and chasmophytic communities from the alliance *Potentillion caulescentis*, which character species it is. *Daphne cneorum* subsp. *cneorum* grows on stony, sunny, grassy slopes in extrazonal dwarf pine stands in Alpine valleys (*Amelanchiero-Pinetum mugo* Minghetti and Pedrotti 1994), in scrub communities of hop hornbeam, flowering ash and pubescent oak (*Quercus-Ostryetum carpinifoliae* Horvat 1938) and in well-illuminated basophilous pine forests from the alliance *Erico-Pinion sylvestris* Br.-Bl. 1939 (= *Fraxino orni-Pinion nigrae-sylvestris* Zupančič 2007), which character species it is. The site of the new hybrid is therefore more similar to the sites of *Daphne cneorum* subsp. *cneorum* than to those of *Daphne alpina* and also the proportion of individuals of both species on the hybrid's site is in favour of *Daphne cneorum*. The other parent species, *Daphne alpina*, is present with only three specimens.

Because the new hybrid found in the central Slovenia is obviously very rare (Fig. 9) – there are only 14 shrubs on the described site – we propose that this locality or even the whole site should be properly protected with a strict prohibition against picking and removing these plants. There is also a highly frequented hiking trail that goes under Reber and connects two towns, Trbovlje and Zagorje in the vicinity. Near the rock jag where *Daphne x savensis* is growing, there is also a very nice lookout point. Eventual adverse anthropogenic activity poses an additional potential threat to the hybrid and its site.

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Appendix. *Genista januensis*-*Pinetum sylvestris pinetosum nigrae* Tomažič 1940, Zasavje, central Slovenia.

Number of relevé		1	2	3		
Working number of relevé		235772	235775	235793		
Altitude in m		290	290	330		
Aspect		SSE	SSE	SE		
Slope in degrees		40	5–45	35		
Parent material		D	D	D		
Soil		R	R	R		
Stoniness in %		20	30	20		
Cover in %						
Upper tree layer	E3b	60	40	70		
Lower tree layer	E3a	20	20	20		
Shrub layer	E2	20	30	30		
Herb layer	E1	80	70	70		
Moss layer	E0	10	2	5		
Relevé area (m²)		400	400	400		
Number of species		83	85	93		
		17.05.2010	18.05.2010	18.05.2010		
Date of taking relevé						
Locality		Mošenik, Reber	Za Savo: Reber	Za Savo: Reber		
Quadrant		9955/2	9856/3	9856/3		
Character species of the association					Pr	
EP	<i>Chamaecytisus purpureus</i>	E1	2	1	+	3
EP	<i>Genista januensis</i>	E1	1	+	+	3
EP	<i>Potentilla carniolica</i>	E1	.	+	.	1
Differential species of the subassociation						
EP	<i>Pinus nigra</i>	E3b	4	3	4	3
EP	<i>Pinus nigra</i>	E3a	.	.	1	1
EP	<i>Pinus nigra</i>	E2b	.	1	.	1
EP	<i>Pinus nigra</i>	E2a	+	1	+	3
EP	<i>Erico-Pinetea</i>					
	<i>Erica carnea</i>	E1	4	3	4	3
	<i>Polygala chamaebuxus</i>	E1	1	2	2	3
	<i>Amelanchier ovalis</i>	E2b	1	1	1	3
	<i>Amelanchier ovalis</i>	E2a	1	.	.	1
	<i>Leontodon incanus</i>	E1	1	1	+	3
	<i>Daphne cneorum</i>	E1	+	1	1	3
	<i>Rhamnus saxatilis</i>	E2a	+	1	+	3
	<i>Allium ericetorum</i>	E1	+	+	+	3
	<i>Aster amellus</i>	E1	+	+	+	3
	<i>Pinus sylvestris</i>	E3b	+	.	+	2
	<i>Pinus sylvestris</i>	E3a	1	.	.	1
	<i>Pinus sylvestris</i>	E2b	1	.	.	1
	<i>Pinus sylvestris</i>	E2a	+	.	+	2
	<i>Pinus sylvestris</i>	E1	+	.	.	1
	<i>Molinia caerulea</i> subsp. <i>arundinacea</i>	E1	+	.	+	2

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Appendix. cont.

	Number of relevé		1	2	3	Pr.
	<i>Cotoneaster tomentosus</i>	E2	.	+	+	2
	<i>Epipactis atrorubens</i>	E1	.	+	+	2
	<i>Daphne</i> × <i>savensis</i> nothosp. nov.	E2a	.	1	.	1
	<i>Calamagrostis varia</i>	E1	.	.	+	1
	<i>Carex ornithopoda</i>	E1	.	.	+	1
	<i>Asperula aristata</i>	E1	.	.	+	1
	<i>Rubus saxatilis</i>	E1	.	.	+	1
QP	<i>Quercetalia pubescentis</i>					
	<i>Ostrya carpinifolia</i>	E3	1	1	2	2
	<i>Ostrya carpinifolia</i>	E2b	1	1	1	3
	<i>Ostrya carpinifolia</i>	E2a	+	1	1	3
	<i>Fraxinus ornus</i>	E3	1	1	1	3
	<i>Fraxinus ornus</i>	E2	1	1	2	3
	<i>Fraxinus ornus</i>	E1	.	1	1	2
	<i>Chamaecytisus ratisbonensis</i>	E1	1	1	1	3
	<i>Sorbus aria</i>	E2b	+	+	1	3
	<i>Sorbus aria</i>	E2a	1	+	1	3
	<i>Mercurialis ovata</i>	E1	1	+	+	3
	<i>Lembotropis nigricans</i>	E2a	+	+	+	3
	<i>Campanula persicifolia</i>	E1	.	.	+	1
	<i>Cephalanthera rubra</i>	E1	.	.	+	1
	<i>Quercus pubescens</i>	E3a	.	+	.	1
	<i>Quercus pubescens</i>	E2	+	.	+	2
	<i>Quercus pubescens</i>	E1	.	.	+	1
	<i>Hierochloë australis</i>	E1	+	.	+	2
	<i>Clematis recta</i>	E1	.	+	+	2
	<i>Hypericum montanum</i>	E1	+	.	.	1
	<i>Euonymus verrucosa</i>	E1	+	.	.	1
	<i>Sorbus austriaca</i>	E2	.	+	.	
	<i>Convallaria majalis</i>	E1	.	.	+	1
	<i>Tamus communis</i>	E1	.	.	+	1
AF	<i>Aremonio-Fagion</i>					
	<i>Cyclamen purpurascens</i>	E1	+	+	1	3
	<i>Helleborus niger</i>	E1	.	+	.	1
	<i>Knautia drymeia</i>	E1	.	+	.	1
TA	<i>Tilio-Acerion</i>					
	<i>Acer platanoides</i>	E2a	.	.	+	1
	<i>Acer platanoides</i>	E1	.	.	+	1
	<i>Acer pseudoplatanus</i>	E2a	.	.	+	1
	<i>Acer pseudoplatanus</i>	E1	.	.	+	1
	<i>Ulmus glabra</i>	E1	.	.	+	1
FS	<i>Fagetalia sylvaticae</i>					
	<i>Tilia cordata</i>	E2	+	.	+	2
	<i>Melica nutans</i>	E1	+	.	+	2
	<i>Fagus sylvatica</i>	E2b	+	.	.	1
	<i>Prunus avium</i>	E1	+	.	.	1
	<i>Salvia glutinosa</i>	E1	.	.	+	1
	<i>Senecio ovatus</i>	E1	.	.	+	1
	<i>Brachypodium sylvaticum</i>	E1	.	.	+	1
	<i>Cephalanthera damasonium</i>	E1	.	.	r	1
QF	<i>Quercio-Fagetea</i>					
	<i>Quercus petraea</i>	E3a	.	+	.	1

Daphne × savensis, a new nothospecies

Appendix. cont.

	Number of relevé	1	2	3	Pr.	
	<i>Quercus petraea</i>	E1	+	+	3	
	<i>Hedera helix</i>	E1	+	+	3	
	<i>Carex digitata</i>	E1	+	.	1	2
	<i>Cephalanthera longifolia</i>	E1	+	.	+	2
	<i>Clematis vitalba</i>	E2b	+	.	+	2
	<i>Pyrus pyraeaster</i>	E2b	.	+	+	2
	<i>Melampyrum pratense</i>	E1	+	.	.	1
	<i>Corylus avellana</i>	E2a	+	.	.	1
	<i>Primula vulgaris</i>	E1	.	+	.	1
	<i>Acer campestre</i>	E2a	.	.	+	1
	<i>Veratrum nigrum</i>	E1	.	.	+	1
	<i>Euphorbia angulata</i>	E1	.	.	+	1
	<i>Festuca heterophylla</i>	E1	.	.	+	1
VP	Vaccinio-Piceetea					
	<i>Hieracium murorum</i>	E1	+	.	1	2
	<i>Solidago virgaurea</i>	E1	.	+	+	2
RP	Rhamno-Prunetea					
	<i>Berberis vulgaris</i>	E2a	+	+	+	3
	<i>Cornus sanguinea</i>	E2a	+	+	+	3
	<i>Rhamnus catharticus</i>	E2a	+	+	+	3
	<i>Crataegus monogyna</i>	E2	.	+	+	2
TG	Trifolio-Geranietea					
	<i>Polygonatum odoratum</i>	E1	+	1	+	3
	<i>Anthericum ramosum</i>	E1	+	+	+	3
	<i>Geranium sanguineum</i>	E1	+	+	+	3
	<i>Viburnum lantana</i>	E2a	+	.	+	2
	<i>Viola hirta</i>	E1	+	.	+	2
	<i>Laserpitium siler</i>	E1	.	1	1	2
	<i>Peucedanum cervaria</i>	E1	.	1	+	2
	<i>Thalictrum minus</i>	E1	.	+	+	2
	<i>Coronilla coronata</i>	E1	.	+	+	2
	<i>Vincetoxicum hirundinaria</i>	E1	.	+	+	2
	<i>Calamagrostis epigeios</i>	E1	+	.	.	1
	<i>Salvia pratensis</i> subsp. <i>saccardiana</i>	E1	+	.	.	1
	<i>Verbascum austriacum</i>	E1	+	.	.	1
	<i>Thesium bavarum</i>	E1	.	+	.	1
FB	Festuco-Brometea					
	<i>Carex humilis</i>	E1	2	2	1	3
	<i>Peucedanum oreoselinum</i>	E1	1	1	1	3
	<i>Buphthalmum salicifolium</i>	E1	1	+	+	3
	<i>Centaurea triumfettii</i>	E1	1	+	+	3
	<i>Inula ensifolia</i>	E1	+	1	+	3
	<i>Thymus praecox</i>	E1	+	+	+	3
	<i>Centaurea scabiosa</i> subsp. <i>fritschii</i>	E1	+	+	+	3
	<i>Stachys recta</i>	E1	+	+	+	3
	<i>Euphorbia cyparissias</i>	E1	+	+	+	3
	<i>Helianthemum nummularium</i> subsp. <i>obscurum</i>	E1	+	1	.	2
	<i>Hippocrepis comosa</i>	E1	+	+	.	2
	<i>Asperula cynanchica</i>	E1	+	+	.	2
	<i>Centaurea bracteata</i>	E1	+	+	.	2
	<i>Cirsium erisithales</i>	E1	+	.	+	2
	<i>Euphorbia verrucosa</i>	E1	.	+	+	2

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Appendix. cont.

	Number of relevé		1	2	3	Pr.
	<i>Teucrium chamaedrys</i>	E1	1	.	.	1
	<i>Teucrium montanum</i>	E1	+	.	.	1
	<i>Globularia punctata</i>	E1	+	.	.	1
	<i>Inula hirta</i>	E1	+	.	.	1
	<i>Anthyllis vulneraria</i>	E1	+	.	.	1
	<i>Brachypodium rupestre</i>	E1	+	.	.	1
	<i>Campanula glomerata</i>	E1	+	.	.	1
	<i>Dorycnium germanicum</i>	E1	+	.	.	1
	<i>Galium verum</i>	E1	.	+	.	1
	<i>Genista tinctoria</i>	E1	.	+	.	1
	<i>Melica ciliata</i>	E1	.	+	.	1
	<i>Prunella grandiflora</i>	E1	.	+	.	1
	<i>Scabiosa hladnikiana</i>	E1	.	+	.	1
	<i>Plantago media</i>	E1	.	r	.	1
	<i>Galium lucidum</i>	E1	.	.	+	1
MA	<i>Molinio-Arrhenatheretea</i>					
	<i>Lotus corniculatus</i>	E1	.	+	.	1
ES	<i>Elyno-Seslerietea</i>					
	<i>Sesleria caerulea</i> subsp. <i>calcaria</i>	E1	1	2	2	3
	<i>Globularia cordifolia</i>	E1	+	+	+	3
	<i>Leucanthemum heterophyllum</i>	E1	.	+	+	2
	<i>Acinos alpinus</i>	E1	.	+	.	1
	<i>Aster bellidiastrum</i>	E1	.	+	.	1
	<i>Carex mucronata</i>	E1	.	.	+	1
	<i>Phyteuma orbiculare</i>	E1	.	.	+	1
TR	<i>Thlaspietea rotundifolii</i>					
	<i>Hieracium bifidum</i>	E1	1	1	+	3
	<i>Campanula thyrsoidea</i> subsp. <i>carniolica</i>	E1	+	+	+	3
	<i>Fumana procumbens</i>	E1	+	+	.	2
	<i>Hieracium glaucum</i>	E1	+	+	.	2
	<i>Campanula cespitosa</i>	E1	.	+	+	2
	<i>Achnatherum calamagrostis</i>	E1	+	.	.	1
	<i>Biscutella laevigata</i>	E1	+	.	.	1
AT	<i>Asplenietea trichomanis</i>					
	<i>Hieracium saxatile</i>	E1	+	+	+	3
	<i>Seseli austriacum</i>	E1	+	1	+	3
	<i>Dianthus sylvestris</i>	E1	+	+	.	2
	<i>Asplenium ruta-muraria</i>	E1	+	.	+	2
	<i>Potentilla caulescens</i>	E1	.	+	+	2
	<i>Daphne alpina</i> subsp. <i>scopoliana</i>	E2a	.	+	.	1
	<i>Paederota lutea</i>	E1	.	+	.	1
	<i>Asplenium trichomanes</i>	E1	.	+	.	1
	<i>Hieracium austriacum</i>	E1	.	.	+	1
M	Mosses					
	<i>Scleropodium purum</i>	E0	2	+	.	2
	<i>Tortella tortuosa</i>	E0	+	.	.	1
	<i>Ctenidium molluscum</i>	E0	.	+	.	1

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