Rubus silvae-bohemicae: a new species of bramble from Bohemia and Bavaria

***Rubus silvae-bohemicae* – nový druh ostružiníku z Čech a Bavorska**

Bohumil T r á v n í č e k[1] & Vojtěch Ž í l a[2]

[1]*Department of Botany, Palacký University in Olomouc, Faculty of Science 26, CZ-771 46 Olomouc, Czech Republic, e-mail: bohumil.travnicek@upol.cz;* [2]*Mládežnická 1227, CZ-386 01 Strakonice, Czech Republic, e-mail: zila@gymstr.cz*

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Rubus silvae-bohemicae is described as a new regional apomictic species belonging to the subgen. *Rubus* sect. *Rubus* ser. *Micantes* Sudre. It is a nemophilous bramble occuring in south-western and southern Bohemia (Czech Republic) and adjacent parts of Bavaria (Germany). It differs from the somewhat similar species, *R. indusiatus* Focke, by having no stellate hairs on the undersides of the leaves and a lower number of shorter stalked glands and lower number of prickles on first-year stems. An illustration of the new species (including a photograph of the type specimen), a list of localities and a distribution map are presented.

K e y w o r d s: batology, Bavaria, Czech Republic, distribution, new species, *Rosaceae*, *Rubus*, taxonomy

Introduction

Taxonomic research on apomictic groups in the Czech Republic over the last decade has led to the discovery of many new species. This especially applies to the genera *Taraxacum* Wigg. (for details see Øllgaard 2003, Vašut & Trávníček 2004, Vašut et al. 2005, Trávníček et al. 2008) and *Sorbus* L. (Lepší et al. 2008, 2009), but also the genus *Rubus* L. Modern taxonomic studies on the genus *Rubus* in the Czech Republic were started in the 1980s by Josef Holub (in cooperation with an outstanding batology specialist, Heinrich E. Weber). His monographic treatment of *Rubus* in the Flora of the Czech Republic (Holub 1995) is a good basis for further studies on the genus in the Czech Republic and adjacent regions. Josef Holub described 10 new species of the genus *Rubus* from the Czech Republic at the beginning of the 1990s (Holub 1991, 1992): *R. angustipaniculatus* Holub, *R. austromoravicus* Holub, *R. barrandienicus* Holub et Palek, *R. bohemiicola* Holub, *R. brdensis* Holub, *R. centrobohemicus* Holub, *R. crispomarginatus* Holub, *R. henrici-egonis* Holub, *R. perrobustus* Holub and *R. vratnensis* Holub. After his death in 1999, another 11 species from the Czech Republic were described by his collaborators and followers (see Weber 2000, Trávníček et al. 2005, Trávníček & Zázvorka 2005, Žíla & Weber 2005, Lepší & Lepší 2006, 2009a): *R. ambrosius* Trávníček et Oklejewicz, *R. austro-slovacus* Trávníček, *R. flos-amygdalae* Trávníček et Holub, *R. guttiferus* Trávníček et Holub, *R. josholubii* H. E. Weber, *R. kletensis* M. Lepší et P. Lepší, *R. parthenocissus* Trávníček et Holub, *R. pericrispatus* Holub et Trávníček, *R. perpedatus* Žíla et H. E. Weber, *R. portae-moravicae* Holub et Trávníček and *R. silvae-norticae* M. Lepší et

P. Lepší. Another three species were described with type localities outside the Czech Republic, however, they are also found in Bohemia or Moravia (Danner 2003, Zieliński & Trávníček 2004, Lepší & Lepší 2009b, Žíla 2009): *R. muhelicus* Danner (with the type from Austria), *R. bohemo-polonicus* Trávníček et Zieliński (Poland) and *R. passaviensis* Žíla (Bavaria). In addition to these taxa, there are other undescribed species of the genus *Rubus* in the Czech Republic, which are currently being studied.

In the course of field studies of brambles in the region of the mountain range of Český les (south-western part of Bohemia) in the 1990s, J. Holub repeatedly observed and collected a remarkable *Rubus* morphotype from the ser. *Micantes* Sudre, which he preliminarily named as *R. silvae-bohemicae* (nom. prov.). The recent study of this type indicates that it represents a new and hitherto undescribed apomictic bramble species. In addition, during field research in south-western and southern Bohemia and adjacent parts of Bavaria, this taxon was found at many other localities and to have a much broader area of occurrence. This taxon is mentioned under its invalid name in several papers (Holub 1999, Holub & Procházka 2000, Holub & Kučera 2001, Procházka 2001, Trávníček & Havlíček 2002). It is described as a new species and its provisional name is validated below.

Rubus silvae-bohemicae Holub ex Trávníček et Žíla, **spec. nova** (Figs 1–6)

D e s c r i p t i o: Frutex humilis usque mediocris, 30–80 (–100) cm altus. Turio plerumque humiliter arcuatus, autumno apice radicans, mediocriter crassus, (4–) 5–8 (–10) mm in diametro, angulatus cum faciebus ± planis (turio tenuis teretiusculus), in apricis expresse vinosus, sparse patenter pilosus [pilis interdum fasciculatis, usque 0.9 mm longis, in numero (3–) 7–15 (–25) pro cm lateris], glandulis stipitatis disperse obsitus [glandulae stipitatae usque 0.6 mm longae, in numero 5–10 (–20) pro cm lateris] atque mediocriter dense aculeatus, cum 10–22 aculeis pro 5 cm longitudinis; aculei conformes, ± aequilongi, ad basin dilatati [(2–) 3–5 mm lati], (3–) 4–7 mm longi, recti, paulo reclinati, ± rubro colorati apice flavescentes.

Folia turionis ternata, quaternata vel pedato-quinata, satis parva usque mediocria, ± firma (subcoriacea), ± plana, supra viridia usque obscure viridia, opaca, glabra vel subglabra, subtus pallide viridia, disperse patente piloso-pubescentia, ad tactum perceptibilibus pilosa, numquam tomentosa. Foliolum terminale sat breviter petiolulatum (longitudo petioluli = 25–33 % longitudinis laminulae); laminula 6–9 (–10) cm longa, late (usque rotundate) ovata vel obovata, 1.3–1.5plo longior quam lata, basi frequentissime subcordata, subabrupte in apice 8–15 mm longe attenuata, margine ± plana, subaequaliter usque paene periodice serrata e dentibus latioribus quam longis in apice acute attenuatis, incisurae 1.0–2.0 (–2.5) mm profundae. Foliola lateralia expresse minoria quam foliola terminalia, foliola infima 2–4(–5) mm longe petiolulata. Petiolus (4–) 5–7 (–8) cm longus, foliolis infimis plerumque longior [longitudo folioli = 75–90 (–100)% longitudinis petioli], supra planus usque (in parte inferiori) subsulcatus, patente pilosus, disperse glandulis stipitatis obsitus, cum aculeis (6–) 7–10 (–15) leviter curvatis reclinatisque munitus. Stipulae anguste lineares.

Inflorescentia paniculata, anguste pyramidalis, apice rotundata, 5–8 cm infra apicem efoliosa; rami inflorescentiae erecto-patentes usque (in parte superiori inflorescentiae) patentes. Folia inflorescentiae plerumque ternata (in parte superiori inflorescentiae 1–2 folia simplicia), supra glabra vel sparse appresse pilosa, subtus pallide viridia, piloso-pubescentia, numquam tomentosa. Foliolum terminale in foliis ternatis latiore ovatum vel obovatum, in apice breve triangulareque 5–7 mm longe attenuatum. Rhachis inflorescentiae ± flexuosa, satis dense patente pilosa, supra etiam sparse tomentosa, cum numerosis glandulis stipitatis rubris, usque 0.6 mm longis, item cum (7–) 10–15 aculeis pro 5 cm longitudinis; aculei graciles, recti vel leviter curvati, paulo reclinati, 3–5 mm longi, basi dilatati, (1.5–) 2,0–3.5 mm lati, flavescentes, basi ± rubro colorati. Pedicelli 5–12 mm longi, dense subappresse pilosi usque tomentosi, cum numerosis glandulis stipitatis obsiti (glandulis stipitatis pilis eglandulosis aequalis vel subaequalis), item cum 1–5 aculeis, aculei parvi aciculatique, recti vel leviter curvati, 0.5–1.0 (–1.5) mm longi.

Flores mediocres, (1.8–) 2.0–2.5 cm in diametro. Sepala acuminata, saepe appendiculata (appendices lineares), 7–10 mm longa, post anthesin reflexa, externe cano-viridia, breviter denseque pilosa, cum marginibus albo-tomentosis, disperse glandulis stipitatis obsita. Petala pallide rosea, anguste obovata usque obovata, 9.5–12.0 mm longa, 5–7 mm lata, non contingentia. Stamina stylos superantia. Filamenta alba; antherae glabrae.

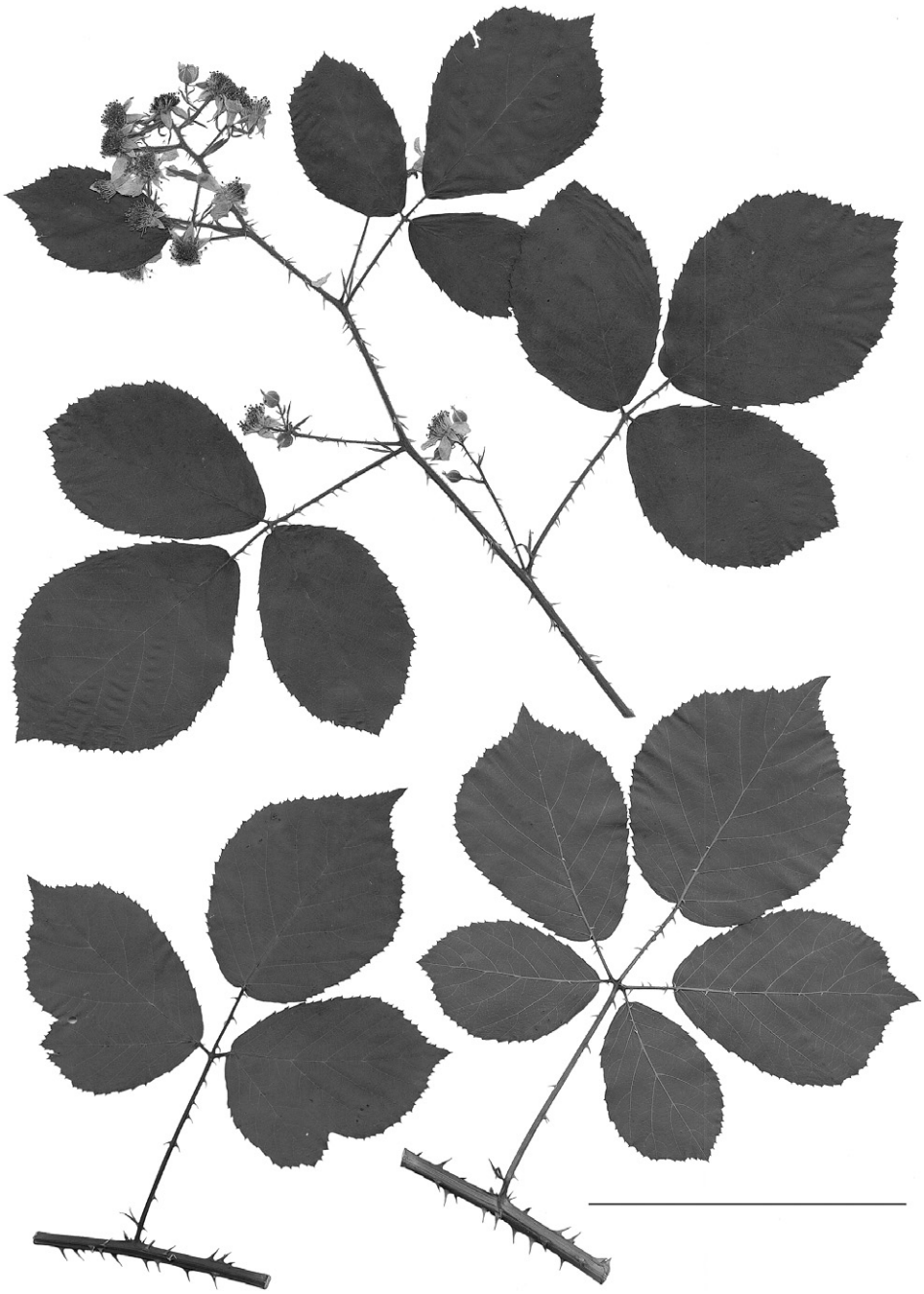


Fig. 1. – *Rubus silvae-bohemicae*, holotype; bar = 10 cm.

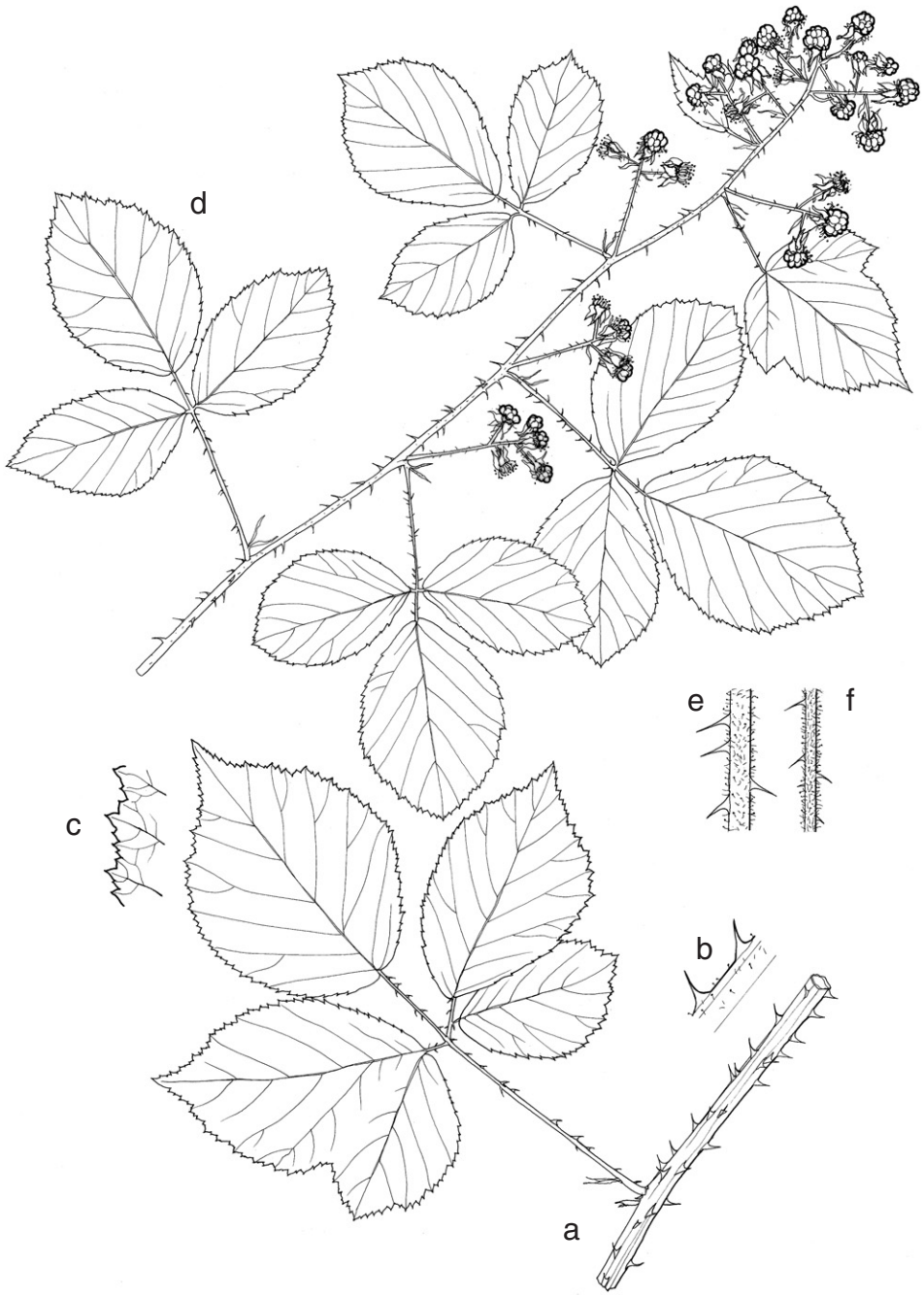


Fig. 2. – *Rubus silvae-bohemicae*: a – leaf; b – detail of first-year branch with prickles; c – margin of terminal leaflet showing indentations; d – infructescence; e – detail of inflorescence axis; f – detail of peduncle. Del. A. Skoumalová.



Fig. 3. – Inflorescence of *Rubus silvae-bohemicae* (locality: locus classicus).



Fig. 4. – Flowers of *Rubus silvae-bohemicae* (locality: locus classicus).

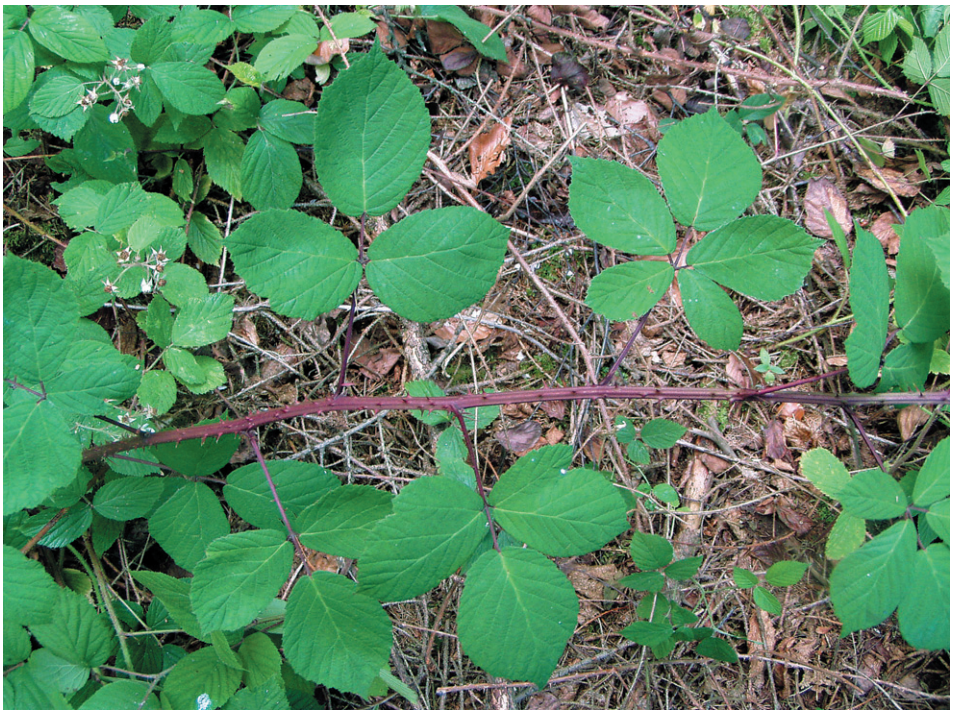


Fig. 5. – First-year branch of *Rubus silvae-bohemicae* (locality: locus classicus).



Fig. 6. – Detail of first-year branch of *Rubus silvae-bohemicae* (locality: SW Bohemia, village of Pivoň near town of Domažlice).

Ovaria apicibus satis longe pilosa, styli albicantes, basi rubescentes. Receptaculum breviter pilosum. Fructus semiglobosus usque globosus e 12–25 (–30) drupeolis compositus, niger, lucidus. Floret in Junio Julioque.

Species e sectione *Rubus* ser. *Micantes* Sudre. Crescit in Bohemia australi et austro-occidentali atque in Bavaria orientali.

Holotypus: Bohemia, urbs Domažlice, ad marginem silvae apud viam publicam oppidum Horšovský Týn versus, ca 1.3 km situ merid.-merid.-orient. a pago Třebnice, 560 m s.m. (49°28'17"N, 12°56'09"E), R 9/10, 8.7.2010, leg. B. Trávníček et V. Žíla, OL – Fig. 1. Isotypi: OL, CB.

Etymology: The species name is derived from the Latin name for the region of Český les (Silva bohemica), which is the centre of distribution of this species.

Diagnostic features

Shrub, which is usually up to 80 cm tall. First-year stems mainly low-arching, rooting at apex, angular with ± flat sides, mostly 5–8 (–10) mm in diameter, at sunny sites suffused distinctively vinaceous, with (3–) 7–15 (–25) hairs and 5–10 (–20) stalked glands (up to 0.6 mm long) per 1 cm per side of stem. Prickles 10–22 per 5 cm length of stem, ± uniform, straight, declining, (3–) 4–7 mm long, with a base (2–) 3–5 mm broad, suffused red, with a yellowish tip.

Leaves pedate, leaflets 3–5, ± flat, glabrous (or with several appressed hairs) above, pale green beneath, patently hairy to the touch, without stellate hairs. Terminal leaflet with relatively short petiolule (petiolule 25–33% as long as its lamina), broadly ovate or obovate, ± cordate at the base, ± abruptly narrowing into a 8–15 mm long apex. Leaf margins almost flat, indentation regular to slightly periodic, with incisions 1.0–2.0 (–2.5) mm deep. Petiolules on the lower leaflets are 2–4 (–5) mm long. Petiole usually 5–7 cm long, as a rule longer than the lower leaflets; leaflets 75–90 (–100) % as long as the petiole, with (6–) 7–10 (–15) slightly curved and declining prickles.

Inflorescence paniculate, narrowly pyramidal, with erecto-patent to (in upper part of inflorescence) almost patent branches, distal 5–8 cm leafless. Inflorescence leaves predominantly ternate (the uppermost 1–2 leaves simple), pale green beneath, without stellate hairs, terminal leaflet with short (5–7 mm) triangular apex. Inflorescence axis ± flexuous, patently hairy, with numerous stalked glands, with (7–) 10–15 prickles per 5 cm of inflorescence length, prickles ± slender, straight to slightly curved, declining, 3–5 mm long. Pedicels densely pubescent to loosely tomentose, with numerous stalked glands (± as long as hairs) and 1–5 acicular prickles.

Flowers of average size, (1.8–) 2.0–2.5 cm in diameter. Sepals 7–10 mm long, often with a linear appendix, reflexed after anthesis, greyish green on the back, with a white tomentose margin, and with scattered stalked glands. Petals pale pink, 9.5–12.0 mm long, 5–7 mm wide, not touching each other. Stamens longer than styles, filaments white, anthers glabrous. Ovaries with long hairs, styles reddish at the base. Receptacle shortly pilose. Fruit semiglobose to globose.

Taxonomy

Rubus silvae-bohemicae can be regarded as a member of ser. *Micantes* of the subgen. *Rubus* sect. *Rubus,* although the indumentum on its stems (with rather numerous stalked glands) also resembles species from the ser. *Radula* Focke. But it is not included in the ser.

Radula because it lacks stellate hairs on the leaves, which are also green beneath rather than greyish as in other members of the ser. *Radula*.

At first sight, *Rubus silvae-bohemicae* most resembles the species *R. indusiatus* Focke, of the ser. *Radula*, especially in the shape of the leaves on the first-year stems and in the inflorescence. The distributions of these species overlap. However, *R. indusiatus* differs from *R. silvae-bohemicae* in having leaves greyish beneath (with stellate hairs), more numerous and somewhat longer stalked glands and more numerous prickles. Also, it less frequently has ternate leaves on the first-year stems than *R. silvae-bohemicae*. Within ser. *Micantes*, *R. silvae-bohemicae* is somewhat similar to *R. chaerophyllus* Sag. et W. Schultze, but the latter species has fewer stalked glands on the stems (only 0–5 per 5 cm length of first-year stems), leaves with shimmering hairs beneath, pectinately arranged on the veins and white petals. Other slightly similar species are *R. epipsilos* Focke and *R. muhelicus* Danner (both from ser. *Radula*), which have leaves with stellate hairs beneath and also usually differ in lacking 3–4 foliolate leaves on the first-year stems. Moreover, *R. epipsilos* has more curved prickles than *R. silvae-bohemicae* and white petals; *R. muhelicus* differs in that the terminal leaflets have longer petiolules.

Ecology and geographical distribution

Rubus silvae-bohemicae is primarily a nemophilous species, usually prefering forest habitats. It grows along forest roads and paths, in clearings and at the margins of forests. Also, rarely, the species occurs outside forests, among shrubs in semiruderal places in half-shade. It usually prefers mesic acid soils. Localities are situated at ca 400 to ca 700 m above sea level.

This species occurs in the Czech Republic and Germany (see Fig. 7). It occurs in the south-western and southern parts of Bohemia and adjacent parts of Bavaria; the centre of its distribution is located in the southern part of the mountain range of the Český les/Oberpfalzer Wald. *Rubus silvae-bohemicae* is a regional species of bramble (in the sense of Weber 1996); its distribution area is approximately 150 × 70 km.

Herbarium specimens

The localities were arranged according to a map of grids 1/16 of the size of the basic field in the Central European grid mapping sensu Ehrendorfer & Hamann (1965). Geographic coordinates are listed according to the World Geodetic System 1984. For abbreviations of public herbaria, see Holmgren et al. (1990).

Czech Republic (Bohemia): 6342.31: Přimda village, the forest at the road between the village and the ruin of Apolena, 26.7.1990, leg. J. Holub (PRA). – 6343.33: Bělá nad Radbuzou, pagus Mířkov, in silva ad viam, ca 2 km situ bor.–occid. a pago (49°36'08,7"N, 12°51'19,5"E), 8.10.2000, leg. V. Žíla (herb. Žíla). – 6344.31: Hradišťany village, the forest W of the village, 1.8.1989, leg. J. Holub (PRA). – 6441.22: Bělá nad Radbuzou, pagus Smolov, ad marginem silvae apud viam, ca 2 km situ occid. a pago, 583 m s.m. (49°35'08,8"N, 12°38'31,6"E), 13.8.2001, leg. V. Žíla (herb. Žíla). – 6442.24: Horšovský Týn, pagus Hostouň, vicus Štítary, margo silvae ad viam publicam, ca 1.2 km situ occid. a vico, 460 m s.m. (49°33'58,2"N, 12°48'01,8"E), 14.9.2008, leg. V. Žíla (herb. Žíla). – 6442.24: Štítary, the forest 1.3 km W of the village, 460 m a.s.l. (49°33'58,2"N, 12°48'01,8"E), 14.9.2008, leg. B. Trávníček (OL). – 6442.33: Závist village, at the road 1.2 km N of the village, 18.8.1995, leg. J. Holub (PRA). – 6442.33: Rybník village, the crossroads between the villages of Rybník and Šidlákov, 5.9.1998, leg. J. Holub (PRA). – 6442.33: Rybník village, towards the crossroads between the villages of Rybník and Závist, S of the village of Rybník, 17.9.1994, leg. J. Holub (PRA). – 6442.33: Rybník village, the crossroads between the villages of Rybník, Závist and Poběžovice, 18.8.1995, leg. J. Holub (PRA). – 6442.33: Rybník village, the crossroads between the villages of Rybník and Závist, 17.9.1991, leg. J. Holub (PRA). – 6442.33: Domažlice, pagus Rybník, ad marginem

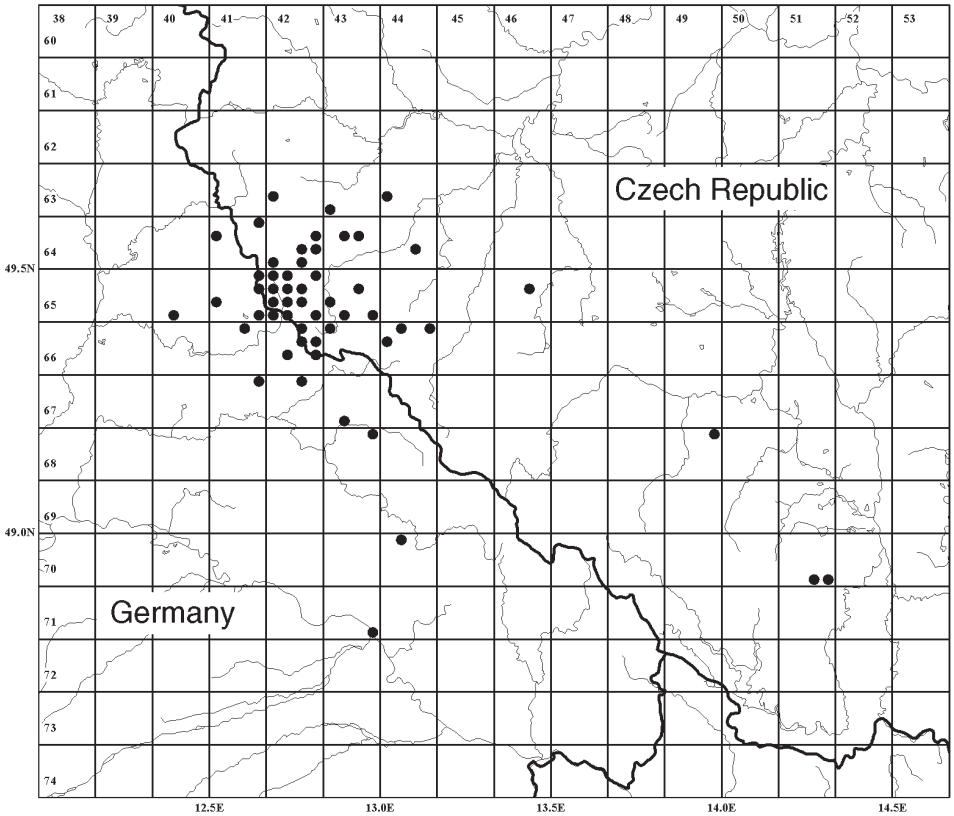


Fig. 7. – Distribution of *Rubus silvae-bohemicae*.

silvae apud viam inter pagos Rybník et Závist, ca 1 km situ merid.–merid.–orient. a pago Rybník (49°30'10"N, 12°41'00"E), 5.9.1998, leg. H. E. Weber, J. Holub et al. (herb. Žíla). – 6442.41: Mutěnín village, ca 1.8 km SE of the village, 450 m a.s.l. (49°32'14"N, 12°46'03"E), 7.7.2010, leg. M. Lepší & P. Lepší (CB no. 73940). – 6442.42: Poběžovice village, ca 2.7 N of the village, 450 m a.s.l. (49°32'03"N, 12°48'13"E), 7.7.2010, leg. M. Lepší & P. Lepší (CB no. 73942). – 6442.43: Poběžovice village, ca 1.6 km WNW of the village, near the crossroads of the forest road and the highway, 500 m a.s.l. (49°31'03"N, 12°46'58"E), 7.7.2010, leg. M. Lepší & P. Lepší (CB no. 73941). – 6442.43: Drahotín village, between the villages of Drahotín and Načetín, 18.8.1995, leg. J. Holub (PRA). – 6442.43: Poběžovice village, the hill of Drahotínský vrch, 26.7.1990, leg. J. Holub (PRA). – 6442.43: Poběžovice village, the forest of Drahotínský les, 18.8.1995, 4.10.1996, 14.10.1996, leg. J. Holub (PRA). – 6442.43: Poběžovice village, the forest of Drahotínský les NW of the village, 12.10.1998, leg. J. Holub (PRA). – 6443.14: Horšovský Týn, pagus Hašov, ad marginem silvae apud viam, ca 1 km situ orient. a pago, 8.10.2000, leg. V. Žíla (herb. Žíla). – 6443.23: Horšovský Týn, pagus Podražice, ad marginem silvae apud viam, ca 1 km situ orient. a pago (49°33'06,8"N, 12°56'52,1"E), 8.10.2000, leg. V. Žíla (herb. Žíla). – 6444.41: Staňkov, pagus Krchleby, ad marginem silvae apud viam, ca 0.3 km situ occid. a pago (49°32'44,0"N, 13°06'03,3"E), 8.10.2000, leg. V. Žíla (herb. Žíla). – 6541.22: in the extinct settlement of Záseky, 18.9.1994, leg. J. Holub (PRA). – 6541.22: at the road 0.2 km E of the extinct settlement of Švarcava (49°29'46"N, 12°39'01"E), 6.7.2010, leg. B. Trávníček (OL). – 6541.24: shrubbery in the extinct village of Hraničná (49°28'17"N, 12°39'33"E), 6.7.2010, leg. B. Trávníček (OL). – 6541.24: in the extinct village of Hraničná, 18.9.1994, leg. J. Holub (PRA). – 6542.11: Závist village, the forest N of the village, 18.10.1997, leg. J. Holub (PRA). – 6542.11: Závist village, between the extinct settlement of Liščí Domky and the village, 16.8.1995, leg. J. Holub (PRA). – 6542.11: Závist village, the forest E of the village, 4.10.1996, leg. J. Holub (PRA). – 6542.11: Závist village, NE village margin, 4.10.1996, leg. J. Holub (PRA). – 6542.11: Závist village, at the forest road 0.8 km SW of the village (49°29'22"N, 12°40'20"E), 6.7.2010, leg. B. Trávníček (OL). –

6542.11: Pivoň village, W of the mountain Lysá, 26.7.1990, leg. J. Holub (PRA). – 6542.12: Vranov village, the forest road near the village, 16.9.1994, leg. J. Holub (PRA). – 6542.12: Pivoň village, the locality of „U rybníčků", 5.9.1998, leg. J. Holub (PRA). – 6542.12: Pivoň village, the wood at the edge of the road E of the village, 18.10.1997, leg. J. Holub (PRA). – 6542.12: Domažlice, pagus Pivoň, ad marginem bor.–orient. pagi (49°29'20"N, 12°44'40"E), 5.9.1998, leg. H. E. Weber, J. Holub et al. (herb. Žíla). – 6542.13: between the extinct settlements of Lískovec and Křížova Huť, 17.8.1995, leg. J. Holub (PRA). – 6542.13: Nemanice village, at the road E of the extinct settlement of Lískovec, 17.8.1995, leg. J. Holub (PRA). – 6542.14: the ruin of Starý Herštejn, the crossroads towards the chapelle of Kaplička, 16.8.1995, leg. J. Holub (PRA). – 6542.14: at the ruin of Starý Herštejn, 16.8.1995, leg. J. Holub (PRA). – 6542.22: Domažlice, pagus Nový Kramolín, ad marginem silvae apud viam, ca 1 km situ occid. a pago, 512 m s.m. (49°28'30,4"N, 12°48'01,8"E), 13.8.2001, leg. V. Žíla (herb. Žíla). – 6542.23: Nemanice village, S slope of the edge of Haltrava, at the road below the mountain Škarmanka, 18.9.1994, leg. J. Holub (PRA). – 6542.23: Domažlice, Nový Kramolín, vicus Valtířov, ad marginem silvae apud viam publicam, situ occid. a vico, 710 m s.m. (49°28'10,9"N, 12°45'07,9"E), 28.8.2004, leg. V. Žíla (herb. Žíla). – 6542.23: Domažlice, Nový Kramolín, vicus Valtířov, ad marginem silvae apud viam publicam, situ occid. a vico, 680 m s.m. (49°28'14,9"N, 12°45'30,3"E), 27.8.2004, leg. V. Žíla (herb. Žíla). – 6542.31: Nemanice village, the valley between the extinct settlements of Pila and Mýtnice, 17.8.1995, leg. J. Holub (PRA). – 6542.32: Nemanice village, S–SW of the edge of Haltrava, 16.8.1995, leg. J. 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Souhrn

V práci je popsán nový druh ostružiníku, *Rubus silvae-bohemicae* Trávníček et Žíla, náležející do ser. *Micantes* Sudre z podrodu *Rubus* sekce *Rubus*. Jedná se o apomiktický druh s regionálním rozšířením zaujímajícím jihozápadní a jižní Čechy a přilehlé oblasti Bavorska. Od poněkud podobného druhu *R. indusiatus* Focke se popisovaný druh odlišuje listy bez hvězdovitých chlupů (na rubu zelenými) a jednoletými prýty s menším počtem kratších stopkatých žlázek a také s menším počtem ostnů. Práce přináší vyobrazení nového druhu, výčet jeho známých lokalit doložených herbářovými položkami a mapu jeho rozšíření.

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