

## Taxonomy of *Rubus* ser. *Discolores* in the Czech Republic and adjacent regions

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The current state of the taxonomy of *Rubus* ser. *Discolores* in the Czech Republic is summarized. Since 1995, when the group was treated in the Flora of the Czech Republic (Holub 1995), six new species have been recognized, some of which are also known from adjacent areas. They are described in the present study: *R. austroslovacus* Trávníček, *R. flos-amygdalae* Trávníček et Holub, *R. guttiferus* Trávníček et Holub, *R. parthenocissus* Trávníček et Holub, *R. pericrispatus* Holub et Trávníček and *R. portae-moravicae* Holub et Trávníček. The first five belong to the group of triploid species close to *R. montanus* Lej. and *R. grabowskii* Weihe, whilst *R. portae-moravicae* is related to *R. praecox* Bertol. Two additional species, originally recognized under provisional names, were found to be identical to species described earlier: *R. perperus* H. E. Weber and *R. phyllostachys* P. J. Mueller; the latter is also found in Slovakia. At present, 17 indigenous species, one naturalized alien (*R. armeniacus* Focke) and one rare garden escape (*R. ulmifolius* Schott) of the ser. *Discolores* are known to occur in the Czech Republic. Distribution data and a key for the identification of all the species are presented.

**Key words:** Central Europe, Czech Republic, chorology, *Rosaceae*, *Rubus*, ser. *Discolores*, taxonomy

### Introduction

*Rubus* ser. *Discolores* (P. J. Mueller) Focke, Spec. Rub. 3: 376, 1914, is a relatively natural and comparatively distinct group of brambles. It belongs to the subgen. *Rubus*, subsect. *Hiemales* E. H. L. Krause. The ser. *Discolores* is relatively easily distinguished from the other groups of the large subgen. *Rubus* by the following combination of characters: usually ± robust shrubs, often up to 2 m tall, with ± thick, angled to furrowed, glabrous to hairy first-year stems, prickles uniform, leaves usually palmate with five leaflets, often ± thick and hard to the touch. Leaves and calyx segments are abaxially covered with a distinct greyish or whitish tomentum usually of stellate hairs. The stellate, sometimes fasciculate hairs are also often found on pedicels and inflorescence branches, rarely on first-year stems. Simple hairs are present with variable frequency in the indumentum of the undersides of leaves, rarely on the upper surface. Simple hairs are usually also found on branches, particularly those bearing inflorescences. They occur on sterile first-year branches in some species. Glands, if present, are usually (in the material from the Czech Republic always) sessile or almost sessile (on very short stalks), on pedicels they are hidden in the tomentum.

Most of the species of the ser. *Discolores* are thamnophilous plants, i.e. plants of less shady habitats and therefore not so obligatorily confined to woodland. They are often found in clearings, woodland margins, along woodland tracks, amongst bushes, sometimes even in open landscapes outside forest. They most often prefer warmer regions and grow in usually drier mineral rich soils of a basic to slightly acidic nature. They avoid wet, strongly acid soils. Their distribution in C Europe has a slightly submediterranean character and they often grow in habitats that originally harboured oak-hornbeam forest.

The taxonomic study of the ser. *Discolores*, like that of other apomictic groups of *Rubus*, is burdened with past methodological errors (for details see Weber 1995, 1996b, Holub 1992) connected with an inappropriate species concept. Previous accounts of the group in the Czech Republic (Hruby 1928, 1941, 1942, Domin 1936, Dostál 1948–1950, 1989) have serious shortcomings and only very imperfectly reflect the real situation in nature. The latest evaluation of the ser. *Discolores* in the Flora of the Czech Republic (Holub 1995) is based on modern principles propagated and promoted by an outstanding specialist in batology, Heinrich E. Weber, and is a good basis for further studies on the series. A detailed investigation of the group by recently deceased J. Holub revealed four new species of *Discolores* (Holub 1991): *R. austromoravicus* Holub, *R. bohemiicola* Holub, *R. crispomarginatus* Holub and *R. henrici-egonis* Holub. J. Holub also recognized five previously described indigenous species (*R. bifrons* Vest, *R. praecox* Bertol. s.l., *R. elatior* Greml. s.l., *R. montanus* Lej. s.l. and *R. grabowskii* Weihe) and two alien species, *R. armeniacus* Focke and *R. ulmifolius* Schott (see Holub 1992, 1995). The account of *Rubus* in the Flora of the Czech Republic (Holub 1995) thus includes 11 species in the ser. *Discolores*.

In the course of examining brambles in the field in the Czech Republic it became clear that there are further species in this series, not known under published names. Therefore, special attention was paid to this group in 1994–2003, first by J. Holub, and later also his disciple, B. Trávníček. During the same period, the group was studied karyologically under the supervision of A. Krahulcová (Krahulcová & Holub 1997a, b, 1998). Holub and Trávníček recognized several new species in the ser. *Discolores* in the Czech Republic and the neighbouring countries, and accorded them provisional names: *R. austroslovacus*, *R. elegantior*, *R. flosamygdalae* (or *R. pseudopersicinus*), *R. guttiferus*, *R. parthenocissus*, *R. pericrispatus*, *R. portae-moravicae* and *R. verae*. The latter name (Holub 1995: 110) later proved to belong to the recently described *R. perperus* H. E. Weber, and the provisional name *R. elegantior* was tentatively assigned by B. Trávníček to the W European *R. phyllostachys* P. J. Mueller, which was recently confirmed by H. E. Weber and G. Matzke-Hajek (Weber 2000, pers. comm.). The remaining six provisional species names are validated below. This paper presents a general characterization of the ser. *Discolores* in the Czech Republic and provides a safer identification of the known species.

### Notes on the taxonomic relationships within the ser. *Discolores* in the Czech Republic

At present, 17 well known indigenous species of *Discolores*, which are considered “wide-spread” or “regional” are recognized in the Czech Republic (for an explanation of the distribution terms, see e.g. Holub 1991, Weber 1995, 1996b). The species may be divided into three groups.

The first group is represented by a single, distinct and considerably isolated species, *R. bohemiicola*. It is an important endemic species, not found outside the Czech Republic, and confined to Bohemia. It can be distinguished from the other Czech taxa of the series by very densely hairy first-year stems with smaller and slightly more numerous prickles, by its usually lower growth, stems decumbent, and by its more frequent occurrence in woodland habitats. The species is very specific in its karyology: it has 27 somatic chromosomes and a chromosome fragment (Krahulcová & Holub 1998).

Another group comprises tetraploid taxa (with 28 somatic chromosomes): *R. bifrons* and forms close to *R. praecox* (including the garden escape, *R. armeniacus*), see Krahulcová & Holub 1997a. In addition to the chromosome number, the species in this group are characterized by a very distinct, conspicuously grey-white thin tomentum on the lower surface of leaves, with sparse short patent simple hairs, by usually stouter and more frequent prickles on first-year stems and inflorescences, by often robust inflorescences, very sharp indentation of leaflet margins, stems (at least young) with scattered fasciculate or stellate hairs, and by usually well developed, large (globose to ovoid) fruit. The shrubs of the members of this group are frequently dense, and their stands almost impenetrable.

The last group is the richest in species. They are all triploid (Krahulcová & Holub 1997a, b, 1998). Their leaves often have a less conspicuous (usually greyish to greyish green) tomentum, sometimes with more frequent longer patent simple hairs, prickles are usually smaller, often less frequent, the leaflet indentation is sometimes blunter, stems are glabrous or (less often) hairy, there are often few drupelets per fruit, and the fruit is often semiglobose.

### Tetraploid species

*Rubus bifrons* represents a relatively easily distinguishable and distinct tetraploid species of *Discolores*; it is scattered to locally common in warmer regions (it is rare or completely missing in the northern and particularly northwestern parts of the Czech Republic). It differs from the other species of the group *R. praecox* s.l. in having distinctly pedate, quinate or (on thinner stems) only 3–4-nate leaves, usually less robust growth and inflorescence prickles almost straight, relatively slender, slightly declined. A similar type of prickle to that in the inflorescence of plants of the *R. praecox* agg. is found only in the alien *R. armeniacus*.

In addition to the naturalized alien species of Caucasian origin, *R. armeniacus* (see also the identification key in the appendix), the group *R. praecox* s.l. is represented by indigenous populations in the Czech Republic. These were studied in detail over the last few years. In the Flora of the Czech Republic (Holub 1995), *R. praecox* is understood in the wider sense, and is reported to occur both in Moravia and Bohemia. Later examination of *R. praecox* s.l. has shown that the group is almost confined to Moravia. At least some previous reports of the occurrence of *R. praecox* in Bohemia refer to other species, usually to extremely robust individuals of some triploid species. The distribution of populations of *R. praecox* s.l. in Bohemia should be revised; most probably, they are restricted to rare sites in S Bohemia. In Moravia, the species is scattered, and the populations of *R. praecox* s.l. can be divided in two distinct forms.

One of them is found in C and N Moravia (Moravská brána basin, Opava region, Ostrava region) and is characterized by the following features (see also Figs 1–2, 4–5):

stems most often bluntly angled, sometimes slightly convex between angles, dull, grey-green, in sunny places less conspicuously suffused red-brown, usually with denser and almost appressed indumentum of fasciculate to stellate hairs, with (30–) 45–100 (–150) hairs per 1 cm of stem side, terminal leaflet broad, usually almost orbicular with distinctly cordate base, often with slightly convex surface and the tip curved downwards, with principal teeth broadly rounded in outline, its petiolule is long, about (30–) 38–50% as long as the lamina, with many [(8–) 9–15 (–17)] prickles, conspicuously greyish hairy; petiole is usually 65–80 mm long, usually distinctly longer than lower leaflets (lower leaflets as long as 3/4–4/5 of the petiole), with 14–18 (–22) curved to hook-like recurved prickles; inflorescence branches thick, patent at least in the upper half of inflorescence, conspicuously greyish hairy, prickles on the inflorescence rhachis strongly curved to hook-like, peduncles short, (5–) 7–15 mm long, thick, with 3–10 (–13) prickles; upper part of inflorescence often conspicuously dense and distinctly truncate at the end; calyx segments often with one to several pricklets on the abaxial surface.

The other form (see Fig. 3), mainly confined to S Moravia (regions of Hodonín, Kyjov, Chřiby hills, Bílé Karpaty Mts and Zlínské vrchy hills), has stems acutely angled to slightly furrowed, with sparse fasciculate patent hairs, later glabrescent to almost glabrous, often suffused dark purple on sunny places; terminal leaflet most often ovate to broadly elliptical to obovate from rounded to slightly cordate base, and, as a rule, with undulate margins, with a more acute indentation, its petiolule is shorter (most often 30–40% as long as the lamina), with fewer prickles [usually 6–9 (–12)], less distinctly hairy; petiole is shorter, usually as long as or slightly shorter than lower leaflets, with fewer (7–14) prickles; branches of inflorescence (in fruit) are relatively thin, often slightly forward-pointing, less densely hairy, inflorescence rhachis with less distinctly curved prickles, peduncles usually with as few as 2–7 prickles, fruiting inflorescence is sparser, truncate at the end or often also rounded; calyx segments without pricklets.

While the former type is known only from C and N Moravia, from where it extends into southernmost Poland (Raciborz, between Czyżowice and Gorzyce), the latter, the S Moravian taxon, is also known to occur in the neighbouring part of Slovakia (reaching the Zemplínské vrchy hills in the east). Very close to the latter form are plants from Lower Austria, the Wienerwald area (studied at five sites there). An isolated finding from S Bohemia (Helfenburk Castle near Bavorov) may be referable to this form.

The taxonomy of the *R. praecox* group was recently studied by Weber (1986: 225–229) who studied the original material of Bertoloni's *R. praecox* in herbarium BOLO and selected the lectotype (a specimen from the vicinity of Bologna, N Italy). He compared the Italian type plants with samples from other parts of the geographical range of *R. praecox* and found them to be identical. The plants were from France, Luxembourg, Germany (Bavaria, the Black Forest and Westphalia), Switzerland, Austria (Vorarlberg and Wienerwald), Slovakia, F. Y. R. Macedonia and Crimea. The illustrations published or referred to by Weber (Weber 1986: 227, 229 – plants from Westphalia; 1995: Plate 10, 1996a: 120 – Osnabrück vicinity; Leute & Maurer 1977: 304 – from Kärnten in Austria, as *R. procerus* P. J. Mueller) show plants that seem to be identical with or very close to those from S Moravia, but clearly different from specimens from C and N Moravia. From the colour scan reproduction of *R. praecox* Bertol. lectotype (BOLO) it is evident that the C and N Moravian plants are of different species. Also the descriptions published by Weber (1995: 372) and Matzke-Hajek (1993: 83–84) correspond only to the plants from

S Moravia, Slovakia and Lower Austria and not the C and N Moravian taxon. As the other names placed in the group *R. praecox* belong to plants from W Europe or W part of C Europe, it seems appropriate to use a newly proposed name for the plants from C and N Moravia and S Poland, *R. portae-moravicae*.

The above raises a question, what is the taxonomic status of the plants from S Moravia, classified here as *R. praecox* Bertol. Our *R. praecox* (excluding *R. portae-moravicae*) is still a relatively heterogeneous taxon. Weber (1986: 226) pointed out that there is variation in the anther indumentum in plants from different parts of the range of *R. praecox*. We have also found differences between plants from S Moravia and Lower Austria (the Slovak samples seem to be identical with those from S Moravia). Whilst the S Moravian plants have strongly glabrescent to almost glabrous stems and pink flowers, plants from Wienerwald often have more hairy stems and white flowers.

The overall distribution of *R. praecox* is comparatively large (Weber 1986, 1995, 1996a): it extends from Spain and Portugal, through France, The Netherlands, Luxembourg, W and S Germany (to the Osnabrück region in the north), Switzerland, Italy, Austria, Czech Republic, Slovakia, Hungary, Romania, the Balkans (F. Y. R. Macedonia) to Crimea in the east. It remains to be shown that the differences found among populations of *R. praecox* in different geographic regions are stable and distinct enough to allow further subdivision of this taxon into separate microspecies.

***Rubus portae-moravicae* Holub et Trávníček, spec. nova**

Figs 1–2, 4–5

Syn.: *R. praecox* auct. p. p., non Bertol.: Holub, 1995: 106, 107.

**Descriptio:** Frutex mediocris usque altus glandulis stipitatis nullis obsitus vel interdum stipulae atque pedicelli cum glandulis subsessilibus instructae. Turio semialtiarcuatus vel altiarcuatus, robustus, 6–10 (–14) mm in diametro, angulatus, cum faciebus planis vel leviter convexis (in sicco raro subsulcatis), opacus, canoviridis vel (in partibus insolatis) fusco-rubescens, pilis stellulatis pilisque fasciculatis breviter sed conspicue obsitus, pro 1 cm lateris (30–) 45–100 (–150) pilis. Aculei turionis latiores, leviter vel distincte curvati usque subrecti vel paulo reclinati, (5–) 6–9 (–11) mm longi basi (5–) 6–10 (–12) mm lati in numero (3–) 4–8 ad 5 cm longitudinis. Folia turionis digitato– vel subpedato quinata, satis parva, supra glabra (rarissime pilis singulis obsita) opace griseo-viridia, subtus pilis stellulatis valde griseotomentosa usque albo-canescente tomentosa insuper pilis patentibus longioribus obsita (ad tactum parum perceptibilibus pilosa). Petiolus 65–80 mm longus, foliolis infimis plerumque multo longior [longitudo folioli = 75–80% (rarissime usque 100%) longitudinis petioli], patente denseque pilosus a pilis fasciculatis et simplicis, cum aculeis 14–18 (–22) distincte curvatis usque uncinatis munitus. Stipulae anguste lineares usque filiformes 0.4–0.6 mm latae. Foliolum terminale plerumque longe petiolulatum (longitudo petioluli (30–) 38–50% longitudinis laminulae), petiolulus aculeis (8–) 9–15 (–17) armatis. Laminula in statu vivo paulo convexa apice deorsum deflexa, rarius paene plana, plus minusve rotundata vel orbicule-ovata, basi subcordata vel saepe cordata, pro maxima parte 70–90 mm longa, in apicem (8–) 10–18 mm longa subabrupte vel abrupte attenuata, margine plana vel paulo undulata periodiceque serrata cum dentibus principalibus latioribus obtuse subrotundatis, incissurae (2.0–) 2.5–4.0 (–4.5) mm profundae. Foliola lateralia expresse minoria quam foliola terminalia, foliola infima (3–) 4–6 (–7) mm longe petiolulata. Inflorescentia paniculata, anguste pyramidalis, in parte superiori plerumque cylindrica conspicueque densa, apicem truncata, 7–15 cm infra apicem efoliosa. Rami inflorescentiae grossi, rami superiori patentibus. Folia in parte superiori inflorescentiae ternata usque simplicia, folia media praecipueque in inferiore parte inflorescentiae saepe quinata foliolis terminalibus leviter ovatis usque rotundatis. Rhachis plus minusve tomentosa insuper pilis patentibus longioribus dense obsita, aculei (3–) 4–8 (–11) pro 5 cm longitudinis, distincte curvati usque uncinati, basi dilatati, 3–10 mm lati, 3–5 (–7) mm longi. Pedicelli breves, pro maxima parte (5–) 7–15 mm longi, grossi, tomentosi insuper pilis longioribus patentibus villosi cum 3–10 (–13) aculeis, aculei leviter curvati, plerumque inaequales, (0.5–) 2.5–3.0 mm longi. Sepala externe albo-canescente tomentosa, plerumque parce aculeata, post anthesin reflexa, (breviter) acuminata sed non lanceolata appendiculata. Petala dilute usque distincte rosea, late vel rotundate elliptica, (8–) 10–12 (–14) mm longa. Stamina stylos albo-virides superantia. Antherae glabrae.



Fig. 1. – *Rubus portae-moravicae*, holotype; bar = 10 cm.

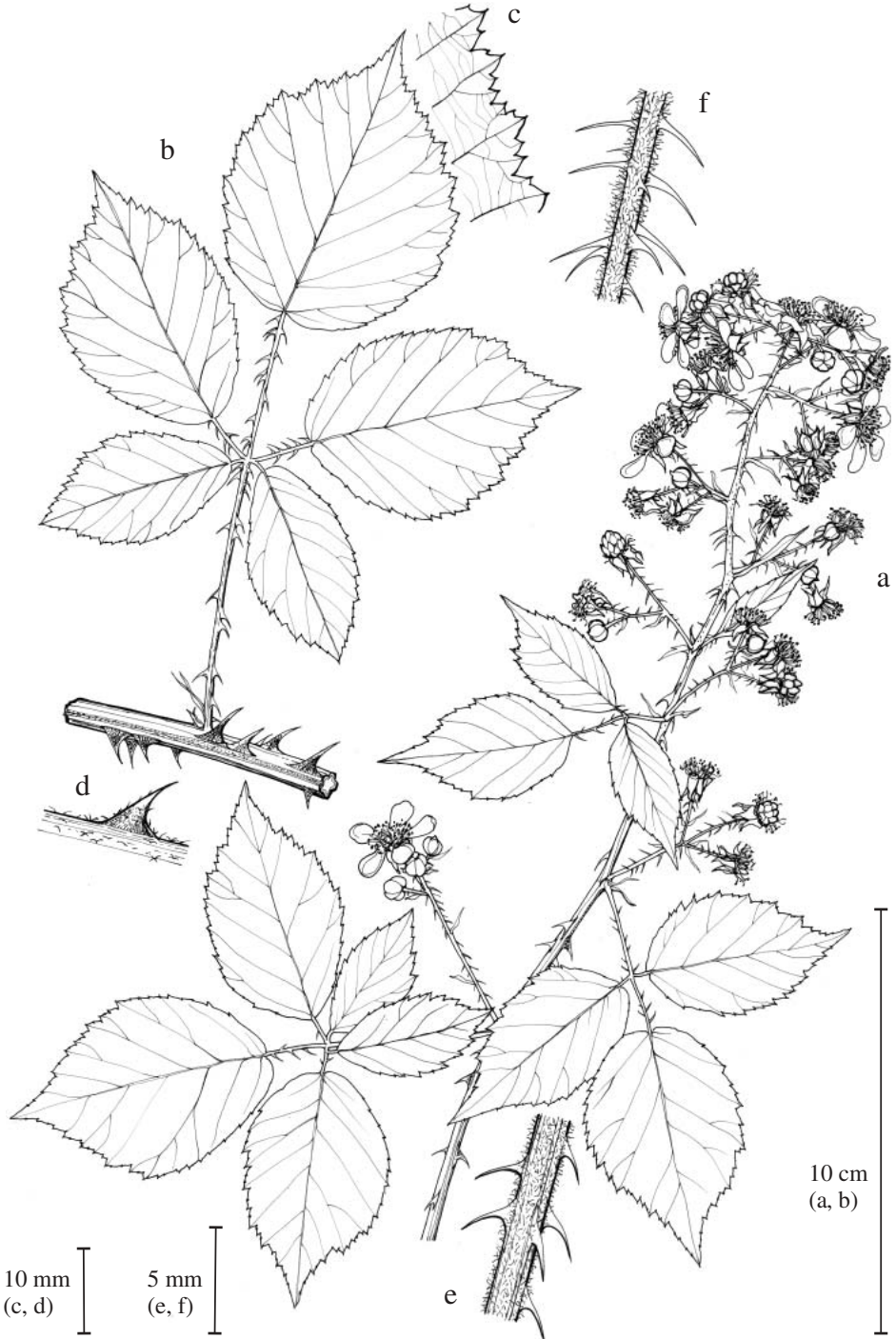


Fig. 2. – *Rubus portae-moravicae*: a – inflorescence; b – leaf; c – indentation on margin of the terminal leaflet; d – detail of sterile branch with prickles; e – detail of inflorescence axis; f – detail of peduncle. Del. A. Skoumalová.

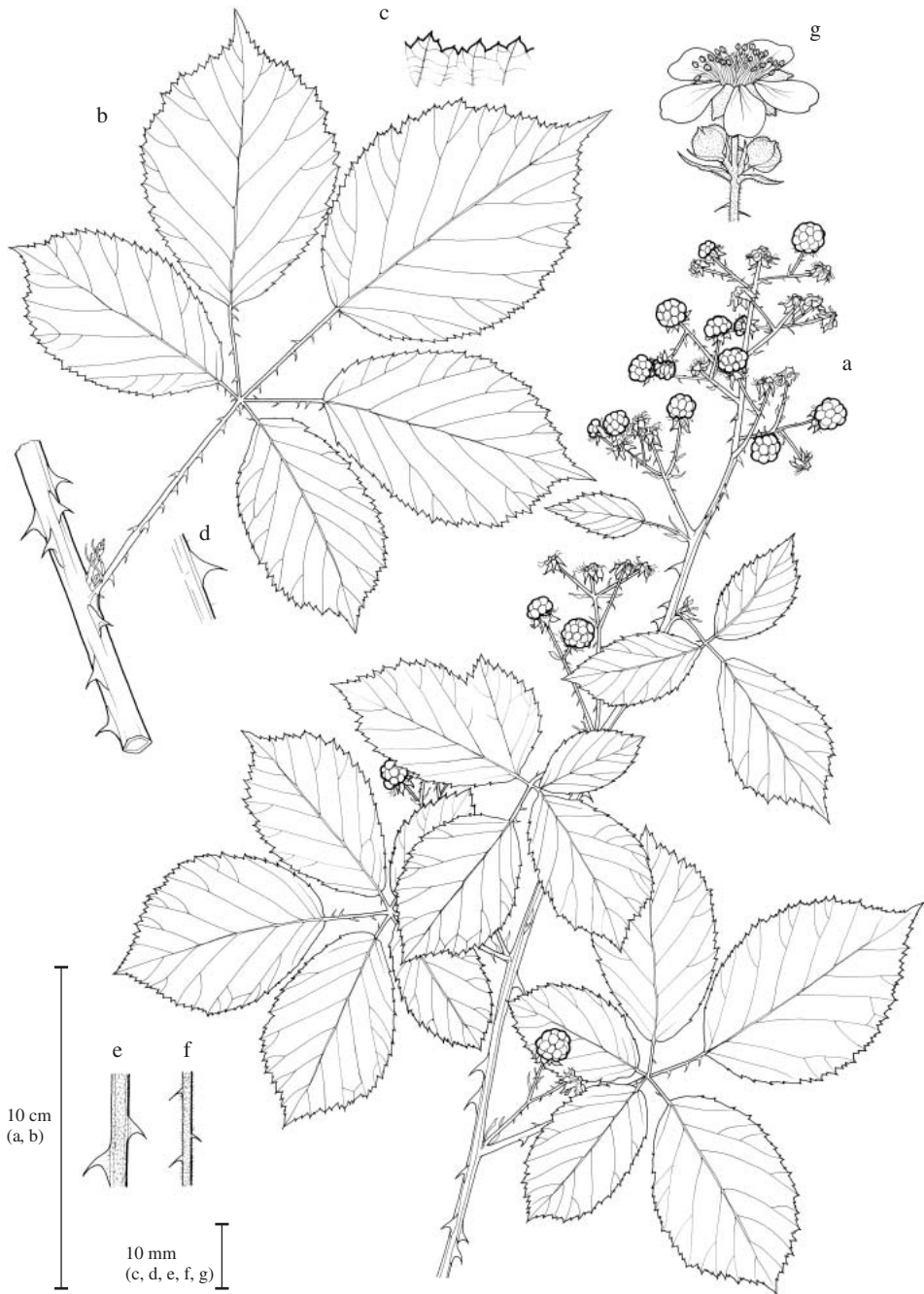


Fig. 3. – *Rubus praecox*: a – infructescence; b – leaf; c – indentation of terminal leaflet margin; d – detail of sterile branch with prickles; e – detail of inflorescence axis; f – detail of peduncle; g – flower. Del. A. Skoumalová.





Fig. 4. – Sterile branch of *Rubus portae-moravicae* (locality: N Moravia, Ludgeřovice near Ostrava).

Filamenta alba usque pallide rosea. Ovaria plerumque parce pilosa. Receptaculum pilosum. Fructus bene evolutus, globosus usque late ovoideus e 10–30 (–35) drupeolis compositus. Floret (VI–) VII (–VIII).

H o l o t y p e : Czech Republic; N Moravia, town Ostrava, wood margins along the road between the villages of Děhylov and Dobroslavice, 320 m a.s.l. (R 144/98), coll. B. Trávníček, 8.8.1998, OL (Fig. 1).

E t y m o l o g y : The species name is derived from the Latin name of the region of Moravská brána basin (*Porta moravica*) which connects central Moravia and northern (Silesian) Moravia. In this region the species occurs and was first collected there.

In the Flora of the Czech Republic (Holub 1995: 105), there is an accurate drawing of *R. portae-moravicae* under the name of *R. praecox*. As there is no picture of the true *R. praecox* from the Czech Republic we provide a drawing (Fig. 3) of plants from S Moravia.

*R. portae-moravicae* is a regional species closely related to the much more widely distributed *R. praecox* s. str. The two species share the following characters: stems with broad prickles, distinct grey-white tomentum on lower leaf surface with relatively sparse and short patent simple hairs, voluminous fruiting inflorescence usually with well developed large fruits. They also have the same chromosome number. *R. portae-moravicae* is conspicuously different (for differences, see above) from the Moravian populations of *R. praecox* and is easily distinguishable from other brambles in its geographical range (C and N Moravia, S Poland). It is a typical thamnophilous species able to grow outside forests and does not avoid relatively open habitats. Quite often it forms dense and impenetrable fringes around woods, it also occurs along tracks, margins of forest stands and more rarely in open patches in woodland.



Fig. 5. – Leaf of *Rubus portae-moravicae* (locality: N Moravia, Ludgeřovice near Ostrava).

Herbarium specimens examined (see Fig. 6 for the map of distribution)<sup>1</sup>

Czech Republic: **74b. Opavská pahorkatina:** Distr. Opava, in the wood between the villages of Vřesina and Pišř, 6075a (Holub, 6.8.1998, PRA). – Distr. Opava, Hař village, in the scrub along the path 0.2 km W of the church in the village, 6075c (Peřinka, 28.8.1999, OL). – Distr. Opava, Dolnř Beneřov town, at the path to gravel pit on the W periphery of the town, 6074d (Peřinka, 27.7.1999, OL). – Distr. Opava, Markvartovice village, in the scrubby sandpit 1 km NW of the church in Ludgeřovice village, 6075c (Peřinka, 30.7.1999, OL). – Hlučřn town, Sřdliřř housing estate, road verge at the bus stop, 6075c (Peřinka, 30.8.1999, OL). – Hlučřn town, sandpit on the left side of the road towards Ludgeřovice village, 6175a (Peřinka, 19.8.1999, OL). – Distr. Opava, Hrabyně village, in the wood E of the village, 6174a (Holub, 8.9.1998, PRA). – Distr. Opava, in the wood between the villages of Děhylov and Dobroslavice, 6174b (Holub, 21.7.1989, PRA; Trávnřček, 8.8.1998, OL [holotype]). – Distr. Opava, Děhylov village, in the wood W of the village, 6174b (Holub, 8.8.1998, PRA). – Distr. Ostrava, Zbyslavice village, in the wood along the road to Čavisov, 6174c (Trávnřček, 17.8.1999, OL). – Distr. Opava, Dolnř Lhota village, in the wood between the village and Mezihorř hill, 6174d (Holub, 23.7.1989, PRA). – Distr. Opava, Vřesina village, in the scrub between Rakovec wood and Mexiko settlement, 6174d (Trávnřček, 9.7.1999, OL). – Distr. Ostrava, Klimkovice village, in the scrub beside the road to Olbramice village, 0.2 km of the Klimkovice village, 6274b (Trávnřček, 9.7.1999, OL). – **75. Jesenické podhůřř:** Komárovecké Chaloupky village near Hradec nad Moravicř town, in the wood along the road to Raduň village, 0–0.7 km of the village, 6173b (Trávnřček, 13.8.1999, OL). – Distr. Opava, Hrabyně village, at the path to Rehabilitační ústav sanatorium, 6174a (Frank, 12.9.1995, PRA). – Joseřovice village near Hlučřn town, in the wood along the road on the SE edge of the village, 6174a (Trávnřček, 8.8.1998, OL). – Distr. Opava, in the wood between the villages of Zátiřř and Budiřovice, 6174a (Holub, 23.7.1989, PRA). – Distr. Opava, Kyjovice village, in the valley of Sezima brook,

<sup>1</sup> Note: The geographical regions used in the lists of localities follow the regional phytogeographical division of the Czech Republic (Skalický 1988). The phytogeographical regions in Slovakia follow the division used in Flora of Slovakia (Futák 1966). Quadrant numbers given at the localities of the Czech Republic refer to the grid system of Central European net mapping program (Niklfeld 1971).

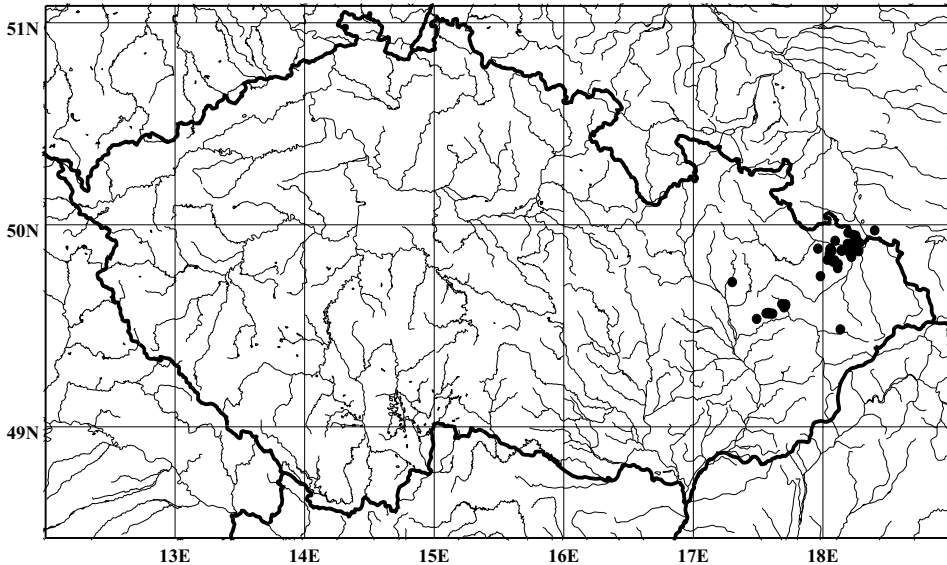


Fig. 6. – Distribution of *Rubus portae-moravicae*.

6174c (Holub, 23.7.1989, PRA). – Šternberk town, scrub in the garden plot on the SE edge of the town, 6269d (Trávníček, 14.8.1990, OL). – Potštát town, near the Tlustý Jan u Boňkova settlement, 6372c (Holub, 9.9.1985, PRA). – Distr. Přerov, Olšovec village, in the wood in the direction of Partutovice village, 6372c (Holub, 24.7.1989, PRA). – Distr. Přerov, above the village of Olšovec, 6372c (Holub, 14.8.1985, PRA; Holub, 9.9.1985 PRA). – Lhotka village near Hranice town, on the wood margin in the direction of Podlesný mlýn settlement, 6472a (Trávníček, 26.7.2000, OL). – Loučka village near Lipník nad Bečvou town, S(–SE) margin of the wood 1.5 km NW of the village, 6471a (Trávníček, 9.9.1990, OL). – Loučka village near Lipník nad Bečvou town, along the road NWN of the village, 6471b (Trávníček, 26.10.1995, OL). – Bohuslávky village near Lipník nad Bečvou town, in the scrub 0.7 km NW of the village, 6471a (Trávníček, 9.9.1990, OL). – **76a. Moravská brána vlastní:** Bravinné village near Fulnek town, in the wood along the road towards Bílov village, SE of the village of Bravinné, 6273d (Trávníček, 6.9.2000, OL). – Loučka village near Lipník nad Bečvou town, in the scrub along the road 1 km N of the village, 6471b (Trávníček, 9.9.1990, OL). – Loučka village near Lipník nad Bečvou town, in the wood along the road towards Podhoří village, 6471b (Trávníček, 26.7.2000, OL). – **76b. Tršická pahorkatina:** Veselíčko village near Lipník nad Bečvou town, on the wood margin at the path W of the village in the direction of Výkleky village, 6470d (Holub, 25.7.1989, PRA; Trávníček, 25.7.1989, OL; Trávníček, 26.10.1995, OL). – **80b. Veřovické vrchy:** Rožnov pod Radhoštěm town, on Láz hill, at the woodland path 0.5 km N of the top, 6574b (Vašut, 25.9.1999, OL). – **83. Ostravská pánev:** Distr. Opava, Šilheřovice village, on the wood margin in the direction of Štípký settlement, 6075c (Holub, 20.7.1989, PRA). – Distr. Opava, Šilheřovice village, in the Černý les wood close to the village, 6075d (Holub, 5.8.1998, PRA). – Distr. Opava, Vrablovec village, wood margin along the road on NE edge of the village, 6175a (Pečinka, 11.8.1999, OL). – Ludgeřovice village near Hlučín town, along the road in N part of the village, 6175a (Trávníček, 5.8.1998, OL). – Ludgeřovice village near Hlučín town, at the woodland path NE of the village, in the boundary between the villages of Ludgeřovice and Petřkovic, 6175b (Pečinka, 30.7.1999, OL). – Bobrovníky village near Hlučín town, in the wood W of the village, 6175a (Holub, 20.7.1989; PRA; Holub, 5.8.1998, PRA; Trávníček, 5.8.1998, OL). – Bobrovníky village near Hlučín town, in the wood of Ludgeřovický les, 6175a (Holub, 5.8.1998, PRA). – Bobrovníky village near Hlučín town, in the wood on SE edge of the village, 6175a (Trávníček, 5.8.1998, OL). – Distr. Ostrava, Lhotka village, in the wood of Ludgeřovický les, 6175a (Holub, 5.8.1998, PRA). – Distr. Ostrava, Petřkovic village, on Landek hill, 6175b (Holub, 18.7.1989, PRA; Holub, 4.8.1998, PRA; Trávníček, 4.8.1998, OL). – Distr. Ostrava, Hošťálkovic village, in the wood on NW edge of the village, 6175a (Trávníček, 5.8.1998, OL). – Distr. Ostrava, Hošťálkovic village, in the wood along Odra river, 6175c (Holub, 5.8.1998, PRA).

P o l a n d : **Śląsk:** SE of Racibórz town, between the villages of Czyżowice and Gorzyce (Holub, 25.8.1994, PRA).

### Triploid species (the broader group of *R. montanus* and *R. grabowskii*)

The core of this taxonomic group in the Czech Republic consists of the most common triploid species, *R. montanus* and *R. grabowskii*, and allied taxa *R. phyllostachys*, *R. henrici-egonis*, *R. guttiferus* ined., *R. pericrispatus* ined., and perhaps also *R. elatior* (which differs in having hairy stems) and *R. austroslovacus* ined. The species *R. perperus*, *R. crispomarginatus*, *R. parthenocissus* ined. and *R. austromoravicus* occupy a more marginal position. The latter is closest morphologically to the species of the tetraploid group (the distinct grey-white tomentum on lower leaf surface, similar leaflets, sometimes slightly larger prickles) and in some characters also *R. perperus*, which has more robust prickles on the inflorescence and more conspicuous tomentum on the undersides of the leaflets. Another close taxon is *R. parthenocissus* ined., which has more acute leaflet teeth and shortly acuminate leaflets, higher numbers of prickles and a more robust inflorescence. There is another, not yet satisfactorily known, more robust triploid taxon, previously (e.g. Holub 1995: 107) mistaken for tetraploid taxa of the *R. praecox* group. It occurs scattered in C Bohemia and at two sites in Lower Austria; it was accorded a provisional name “*R. peripragensis*”. Although this taxon requires further study, it apparently represents another undescribed species of the ser. *Discolores*.

A further remarkable taxon, perhaps also triploid according to its morphological characters, occurs in E Moravia. In its general habit it superficially resembles *R. henrici-egonis*. It differs from other Czech members of the ser. *Discolores* in having leaves the above surfaces of which are densely (to softly) hairy. This form was given the provisional name “*R. mollifrons*” and is known from six localities in the Zlínské vrchy hills and a single site in the Ždánický les hills, and requires further study.

### New triploid species of the ser. *Discolores*<sup>2</sup>

#### *Rubus flos-amygdalae* Trávníček et Holub, spec. nova

Figs 7–10

Syn.: *R. montanus* auct. p. p., non Lej.: Holub 1995: 110, 112. – *R. pseudopersicinus*, nom. nud. (nom. provis.) in Holub et al. 1995: 11, etc. (see below).

**Descriptio:** Frutex altus glandulis stipitatis nullis obsitus vel stipulae atque pedicelli raro cum glandulis subsessilibus instructae. Turio altiarcuatus, 6–9 (–11) mm in diametro, glaber, angulatus, cum faciebus planis vel subsulcatis, opace viridis insuper irregulariter sordide-violaceo maculosus, in partibus insolatis atrovinosus. Aculei turionis leviter curvati (raro paene recti) (4–) 5–8 (–9) mm longi basi 5–8 (–9) mm lati in numero (0–) 1–3 (–5) ad 5 cm longitudinis. Folia turionis digitato- vel subpedato quinata, saepe plus minusve plana, supra glabra vulgo opace-viridia, subtus pilis stellulatis griseotomentosa vel (in locis umbrosis) griseo-viride tomentosa praeterea pilis patentibus paulo longioribus pilosa (ad tactum parum perceptibilibus pilosa). Petiolus longitudinis foliorum infimorum vel foliolis infimis paulo brevior, pleurumque 55–75 mm longus, sparse pilosus vel (basi) glabrescens, cum aculeis (4–) 5–9 (–11) distincte curvatis munitus. Stipulae anguste lineares usque filiformes, brevior, 0.3–0.7 (–1.0) mm latae. Foliolum terminale modice longe petiolulatum [longitudo petioluli (24–) 30–40 (–43)% longitudinis laminulae]. Laminula plerumque anguste obovata, interdum obovata vel elliptica, saepe aliquanto rhombica, basi subcordata, rarius rotundata vel truncata, subabrupte acuminate vel triangulate (5–) 10–17 (–20) mm longe attenuata, margine paene plana periodiceque serrata cum dentibus principalibus obtusis, incissurae (2.0–) 2.5–4.0 (–5.0) mm profundae. Foliola lateralia vulgo expresse minoria quam foliola terminalia, foliola infima 2–4 (–5) mm longe petiolulata. Inflorescentia paniculata, anguste pyramidalis usque paene cylindrica, 5–12 (–16) cm infra apicem efoliosa. Rami inflorescentiae tenues, arcuato ascendentes. Folia

<sup>2</sup> Species of this group were analyzed karyologically by A. Krahulcová



Fig. 7. – *Rubus flos-amygdalae*, holotype; bar = 10 cm.

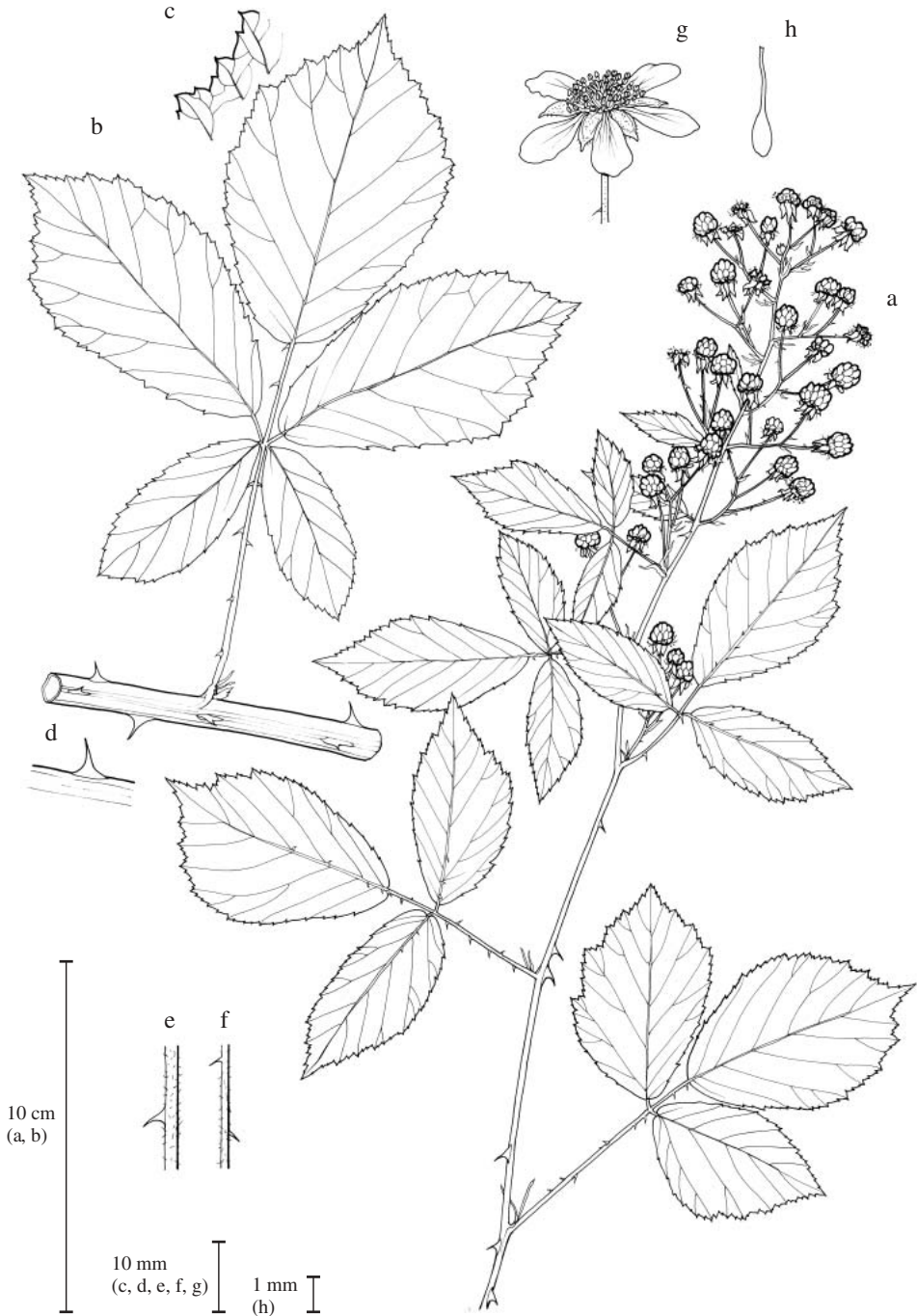


Fig. 8. – *Rubus flos-amygdalae*: a – infructescence; b – leaf; c – indentation on the margin of the terminal leaflet; d – detail of sterile branch with prickly; e – detail of inflorescence axis; f – detail of peduncle; g – flower; h – detail of pistil. Del. A. Skoumalová.

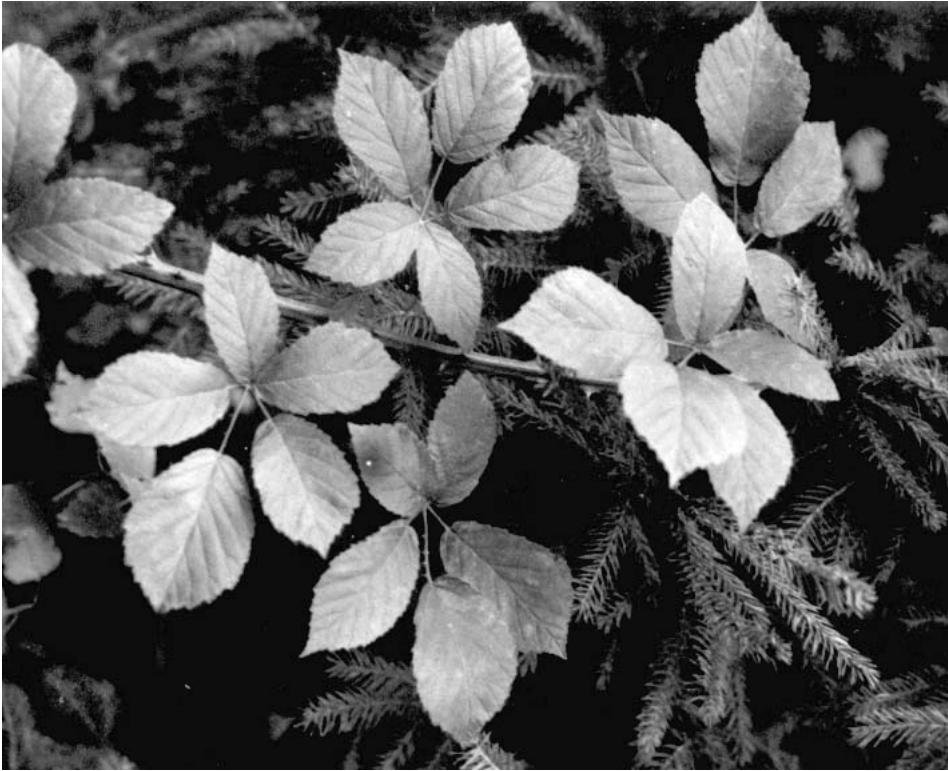


Fig. 9. – Sterile branch of *Rubus flos-amygdalae* (locality: Central Moravia, Kostelany near Kroměříž).

inflorescentiae simplicia usque (praedominante) ternata foliolis terminalibus anguste rhomboideo-obovatis, raro usque ellipticis. Rhachis subtomentosa insuper pilis patentibus longioribus pauce pilosa, aculei 0–3 (–5) pro 5 cm longitudinis, distincte curvati, 3–5 (–6) mm longi basi 3–7 (–8) mm lati. Pedicelli arcuato ascendentes, (9–) 12–20 (–25) mm longi, tomentosi insuper pilis longioribus patentibus sparse instructi cum 0–3 (–5) aculeis armati, aculei recti vel leviter curvati (0.5–) 1.0–2.0 (–2.5) mm longi. Sepala externe canescente-tomentosa, pilis patentibus nullis vel sparsis obsita, inermia, post anthesin reflexa, pro maxima parte non lanceolate appendiculata. Petala dilute usque distincte rosea, interdum fere alba, plerumque distincte angusta, anguste elliptica usque obovata, 7–10 (–11) mm longa 3.0–5.0 (–5.5) mm lata. Stamina stylos superantia. Antherae glabrae. Filamenta rosea, raro alba. Ovaria glabra vel apicibus cum pilis singulis raro obsita, styli albo-virescentes basi interdum erubescens. Receptaculum pilosum. Fructus subglobosus vel globosus e (0–) 8–18 (–25) drupeolis compositus. Floret (VI–) VII (–VIII).

**H o l o t y p e :** Czech Republic; N Moravia, Vidnava, path in the wood 1.5 km SES of the railway station, 250 m a.s.l. (R 124/01), coll. B. Trávníček, 26.7.2001. OL (Fig. 7).

**E t y m o l o g y :** The name is derived from the resemblance of flowers of almond tree (*Amygdalus*) to those of our bramble.

Main diagnostic features (see also Figs 7–10): stems glabrous, angled to slightly furrowed, distinctly dirty violet spotted in half-shady habitats, suffused very dark (dirty) purple in sunny places, only with (0–) 1–3 (–5) prickles per 5 cm; leaves glabrous above, usually dark green, most often (whitish) grey to grey-green below with indumentum of stellate hairs, slightly hairy to the touch, leaflets with almost flat margins, usually not undulate, terminal leaflet narrowly obovate or obovate or almost angular-ovate, tip usually ± not



Fig. 10. – Leaf of *Rubus flos-amygdalae* (locality: SW Moravia, Železné near Tišnov).

pronounced, short, often triangular, the leaflet margins not parallel; marginal indentation distinctly periodic with principal teeth  $\pm$  blunt in outline and incisions (2.0–) 2.5–4.0 (–5.0) mm deep; inflorescence usually a cylindrical (to narrowly cylindrical) panicle, with thinner, usually upwardly curved branchlets and peduncles, the latter with 0–3 (–5) prickles; petals usually (vivid) pink (rarely white), relatively small, narrow, with long claws, stamens of the same (or even deeper) colour as petals (i.e. deep pink in pink-flowered plants); ovaries glabrous, rarely with solitary hairs.

The species *R. flos-amygdalae* bore another provisional name for a long time: *R. pseudopersicinus* (Holub et al. 1995: 11, Trávníček & Hájek 1996: 30, Holub & Trávníček 1998: 602, Holub 1999: 7). This latter name expresses a certain relationship to another pink-flowered taxon described as *R. persicinus* from Tirol, Austria, by A. Kerner (1872). Kerner's taxon, however, is considered as a local type and not accepted as a species. Moreover, according to the description given by Kerner, *R. persicinus* represents a taxon quite different from *R. flos-amygdalae* and perhaps belonging to the *R. praecox* group [or even to the ser. *Rhamnifolii* (Bab.) Focke?]. The inappropriate provisional name, *R. pseudopersicinus*, was therefore rejected.

*R. flos-amygdalae* is morphologically close to the widespread *R. montanus*; it was even included in the latter in the Czech literature (Holub 1995: 112, Note 2). It was probably also misidentified in neighbouring countries where *R. flos-amygdalae* occurs. According to our opinion, both illustrations under the name *R. montanus* in the latest *Rubus* account in Hegi,



Illustrierte Flora von Mitteleuropa (Weber 1995: 380) may belong to our, probably overlooked species. On the other hand, illustrations in other works (Weber 1986: 241; Holub 1995: 111; Leute & Maurer 1977: 286, as *R. candicans*) seem to be in a good agreement with the type of the name *R. montanus* deposited at BR (a colour photograph of the type was seen by us).

Recently, another taxon close to *R. montanus* was described: *R. montanus* f. *macromontanus* H. E. Weber (Weber 1989). It was later regarded as a variety by J. Holub, and named *R. montanus* var. *macromontanus* (H. E. Weber) Holub, Preslia 64: 129 (1993), or even as a separate species, *R. macromontanus* (H. E. Weber) Vannerom in De Langhe et al., Fl. Belg., ed. 4, 988 (1993). This taxon was described from the neighbourhood of Vamberk, E Bohemia, the Czech Republic, and is reported to differ from the typical *R. montanus* f. *montanus* by the following traits: inflorescence rhachis with stouter (7–9 mm long) and more numerous prickles (3–6 per 5 cm of rhachis length), peduncles with more numerous (3–7) and longer (2.5–3.0 mm long) prickles, first-year stems with more numerous (3–6 per 5 cm) and longer (7–10 mm) prickles, leaves indistinctly pedate, terminal leaflet with longer petiolule (33–50% as long as the lamina) and more elongated apex, inflorescence not leafy 10–15 cm below the apex. The form *R. \*macromontanus* is considered as taxonomically identical with *R. montanus* s. str. here; the first author is of the opinion that it includes exceptionally robust specimens of this very plastic species and occurs scattered within the distribution range of *R. montanus*.

As *R. montanus* and *R. grabowskii*, *R. flos-amygdalae* also belongs to the most widespread triploid species of the ser. *Discolores* in the Czech Republic. It often grows at the same localities as the former two taxa. From the most similar species, *R. montanus*, it differs in the shape of terminal leaflet, which is usually narrowly obovate to slightly angular-ovate (while *R. montanus* has a narrowly elliptical terminal leaflet with  $\pm$ parallel margins), and in its narrower and usually pink (rarely white) petals. In the prevailing pink-flowered plants, stamens are also conspicuously pink and the flower resembles an almond-tree flower. Stems of plants in sunny places are often darker coloured than those of *R. montanus*, and stem parts not exposed to sun are always distinctly spotted (dirty) violet. Inflorescence branchlets of *R. flos-amygdalae* are often thinner than those of *R. montanus* and usually curved upwards (ascending). Our species can be distinguished from *R. grabowskii* by its usually narrower terminal leaflet, which is widest distally (usually broadly ovate in *R. grabowskii*), lower number of stem prickles, usually only 1–3 (–4) per 5 cm, narrower petals, glabrous gynoecium and inflorescence of cylindrical shape (pyramidal in *R. grabowskii*).

*R. flos-amygdalae* is less likely to be mistaken for other triploid species: *R. henrici-egonis*, *R. guttiferus* and *R. pericrispatus*, and perhaps also *R. parthenocissus* and *R. austroslovacus*. Misidentification is possible in the case of a quite similar C Bohemian type, provisionally called "*R. peripragensis*". All the differences are summarized in the key below.

*R. flos-amygdalae* is a widespread, probably Central European species, which has been found in Germany (NW Bavaria, Lower Saxony), the Czech Republic, S Poland, Lower and Upper Austria and Slovakia (see also Holub & Trávníček 1998, under the provisional name *R. pseudopersicinus*).

In the Czech Republic, it is scattered to moderately frequent in nearly all the warmer regions of Bohemia and Moravia, on nutrient  $\pm$  rich, usually medium basic soils. It often grows in clearings in woods and along forest paths, tracks and forest margins, more rarely in open places in woodland. As in *R. henrici-egonis* (but less often), the species suffers from mosaic yellowing of leaf parts (probably a virus infection).

## Herbarium specimens examined (Fig. 11)

Czech Republic: **1. Doupovská pahorkatina:** Klášterec nad Ohří town, beside the road in direction of Petlety village, near the crossroads N of the town, 5645a (Bílek, 18.7.2000, herb. Bílek). – **2b. Podbořanská kotlina:** Distr. Rakovník, Petrohrad village, in the wood on Kozinec hill S of the village, 5846d (Holub, 24.9.1988, PRA). – **3. Podkrušňohorská pánev:** Žandov village near Krupka town, wood along the road 0.5 km NEE of the village, 5249d (Havlíček, 6.10.2001, PRC). – Distr. Teplice, road verge near Hrob-Mlýny village, in the direction of Košťany village, 5348a (Havlíček, 18.10.2001, PRC). – Dubí village near Teplice town, wood clearings beside the road 0.6 km W of the village, 5348b (Havlíček, 18.10.2001, PRC). – Běhánky village near Teplice town, by the water-station, 5348b (Holub, 9.10.1996, PRA). – Osek village near Litvínov town, beside the road in the wood close to the railway on the W margin of the village, 5348c (Havlíček, 18.10.2001, PRC). – **4c. Úštěcká kotlina:** Liběšice village near Úštěk town, pine wood N of the road 2.4 km SE of the centre of the village, 5451b (Havlíček, 20.9.2001, PRC). – **5b. Roudnické písky:** Travčice village near Terežín town, in the pine-robinia wood S of the village, E of the road, 5551a (Havlíček, 13.10.2001, PRC). – Černěves village near Roudnice nad Labem, pine wood 0.7 km E of the village, 5551b (Havlíček, 7.10.2001, PRC). – Dobříň village near Roudnice nad Labem town, in the wood beside the road 1.1 km E of railway station, 5551d (Trávníček, 7.7.1993, OL). – Distr. Litoměřice, in the wood between the villages of Dobříň and Račice, 5551b (Holub, 24.10.1998, PRA). – Distr. Litoměřice, Předonín village, wood near the village, 5551d (Holub, 24.10.1998, PRA). – **6. Džbán:** Lhota village (near Měcholupy village), along the way 0.3 km S of the village, 5747b (Trávníček, 23.8.2000, OL). – Distr. Žatec, Třeskonice village, wooded slopes on Výrov hill S of the village, 5747b (Žíla, 12.9.1998, herb. Žíla). – Sádek village, in the place “V hatích” near Lhota settlement, 5747b (Holub, 10.9.1988, PRA). – Distr. Louny, Nečemice village, in the wood *Ve falci* S of the village, 5747d (Holub, 10.9.1988, PRA). – Distr. Rakovník, Kounov village, woodland between the places of Malé Hradisko and Na Rovinách, 5748c (Holub, 29.8.1987, PRA). – Distr. Rakovník, wood along the road 1 km SES of the settlement of Dřevíč near Kozojedy village, 5749c (Havlíček, 16.9.1999, PRC). – Distr. Rakovník, Přerubence village, between the hills of Vošková and Obora, 5748d (Holub, 11.9.1996, PRA). – Distr. Rakovník, Milý village, settlement of Bor, in the direction of the settlement of Dřevíč, 5749c (Holub, 11.7.1988, PRA). – Distr. Rakovník, Třtice village, in the wood near Bucek pond, 5849a (Holub, 21.10.1995, PRA). – Nové Strašecí town, E slopes of Žalý hill, 5849a (Holub, 29.10.1996, PRA). – Kvílce village near Slaný town, in the wood S of Bajrovka game-keeper's lodge, 5749d (Holub, 20.10.1990, PRA). – Kladno town, Kozova hora hill S of the town, 5850d (Holub, 12.7.1995, PRA). – **7c. Slánská tabule:** Zlosyň village near Mělník town, wood E of the village (Holub, 11.10.1998, PRA; Trávníček, 25.8.2000, OL). – **7d. Bělohorská tabule:** Kladno town, in the wood 1.5 km SEE of the suburb Kladno-Dubí, N of Poldi steelworks, 5850b (Havlíček, 6.9.2001, PRC). – **8. Český kras:** Třebotov village near Prague, in the wood 0.4 km SW of the settlement of Kala, 6051b (Havlíček, 15.9.2000, PRC). – Vonoklasy village near Prague, in the wood 0.5 km SEE of the centre of the village, 6051d (Havlíček, 15.9.2000, PRC). – **9. Dolní Povltaví:** Dolínec village near the village of Odolena Voda, wood margin along the road 0.9 km SE of the Dolínec village, 5752d (Trávníček, 25.8.2000, OL). – Panenská Břežany village near Prague, in the wood N of the village, 5752d (Holub, 14.7.1999, PRA). – **11a. Všetatské Polabí:** Vavřineč village near Mělník town, in the wood of Míkov, 5653c (Trávníček, 5.7.1993, OL; Holub, 3.8.1994, PRA). – Borek village near Stará Boleslav town, at the Spálené pece woodland path, 5753d (Holub, 22.7.1999, PRA). – Konárovice village near Kolín town, the cottage settlement of Včelín, 5957c (Holub, 11.11.1995, PRA). – **11b. Poděbradské Polabí:** Semice village near Lysá nad Labem town, pine wood 1.6 km NWW of the centre of the village, 5855a (Havlíček, 12.10.2000, PRC). – Kostelní Lhota village near Sadská town, pine wood 0.6 km SW of the centre of the village, 5856c (Havlíček, 5.9.2000, PRC). – Distr. Nymburk, Poříčany village, in the wood above the village near Pískový vrch hill, 5855d (Holub, 27.9.1997, PRA). – Distr. Kolín, Vrbová Lhota village, wood along the road 0.7 km SE of the village, 5856c (Havlíček, 5.9.2000, PRC). – Kolín town, in woods 0.5 km NE of Kolín-Záláb suburb, 5957c (Havlíček, 28.9.2001, PRC). – Kolín town, in the wood along the road towards Veltruby on the northern periphery of the town, 5957c (Havlíček, 28.9.2001, PRC). – Vinaře village near Čáslav town, wood E of the road NE of the village, 6059c (Havlíček, 12.9.2001, PRC). – **12. Dolní Pojizeří:** In Borek wood N of Chloumek village, 3 km NEN of Mělník town, 5653a (Trávníček, 3.7.1993, OL). – Lhotka village near Mělník town, in the wood close to the settlement of Čepička, 5653a (Holub, 10.11.1995, PRA). – Distr. Mělník, Hostín village, between places of “V lukách” and “V kloučkách”, N of the village, 5653b (Holub, 8.10.1988, PRA). – Distr. Mělník, wood W of Hostín village, in the direction of Mělnická Vrutice village, 5653c (Holub, 8.10.1988, PRA). – Distr. Mělník, Čečelice village, in the Horní les wood SE of the village, 5753b (Holub, 1.8.1979, PRA). – Horní Slivno village near Benátky nad Jizerou town, wood 1.3 km NW of the village, 5654c (Havlíček, 8.8.2001, PRC). – Distr. Mělník, Dřísy village, in the Horní les wood N of the village, 5753b (1.8.1979, Holub, PRA). – Stará Boleslav town, wood 1.8 km NEE of Sudovo Hlavno village, 5754a (Havlíček, 7.8.2001, PRC). – Stará Boleslav town,

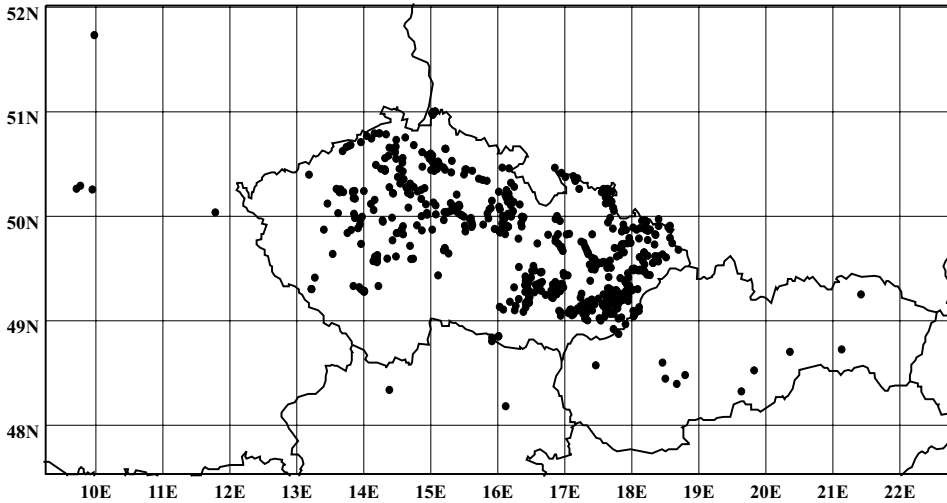


Fig. 11. – Distribution of *Rubus flos-amygdalae*.

wood margin between railway station and overpass above the highway SE of the railway station, 5754c (Trávníček, 3.7.2002, OL). – Stará Lysá village near Lysá nad Labem town, pine wood 1.3 km N of the village, 5754d (Havlíček, 7.8.2001, PRC). – Jiříce village near Benátky nad Jizerou town, young pine wood along the road 1.2 km E of the village, 5755a (Havlíček, 8.8.2001, PRC). – Distr. Mladá Boleslav, along the road S of Lipník village, 5755a (Holub, 22.10.1994, PRA). – **13a. Rožďalovická tabule:** Vlkov nad Lesy village near Městec Králové town, wood N of the village, 5758c (Havlíček, 29.9.2000, PRC). – Distr. Nymburk, on the Koží hůra hill S of Žehuň village, 5857d (Marek, 2.7.2002, PR). – Domanovice village near Chlumeck nad Cidlinou town, 5857d (Havlíček, 25.10.2001, PRC). – Kunderatice village near Chlumeck nad Cidlinou town, in the wood along the road SW of the village, 5858c (Trávníček, 21.8.1995, OL). – Kunderatice village near Chlumeck nad Cidlinou town, on the hill (247.8 m) NW of the village, 5858d (Marek, 2001, PR). – Kunderatice village near Chlumeck nad Cidlinou town, in the grove on the W edge of the village, 5958a (Marek, 2001, PR). – Distr. Kolín, in the wood between the villages of Rasochoy and Kunderatice, 5958b (Holub, 21.8.1995, PRA). – Bělušice village near Týnec nad Labem, in the wood along the road 0.5 km SW of the village, 5957b (Havlíček, 25.10.2001, PRC). – Konárovice village near Kolín town, along the road in the direction of Jelen settlement, 5957d (Trávníček, 21.8.1995, OL). – Lipeč village near Chlumeck nad Cidlinou town, at the wood margin on the SW edge of the village, 5958a (Marek, 2001, PR). – **13c. Bakovská kotlina:** Distr. Mladá Boleslav, clearing in the oak wood along the road 0.8 km N of Husí Lhota village, 5556c (Havlíček, 1.8.2001, PRC). – Sukorady village near Mladá Boleslav town, in the wood along the road close to the parking place 1.5 km NE of the village, 5556c (Havlíček, 7.7.2001, PRC). – Obruby village near Mladá Boleslav town, close to the sandpit SE of the village, 5556b (Holub, 11.10.1996, PRA). – Sobotka town, on the eastern periphery of the town, 5557a (Holub, 21.9.1991, PRA). – **14b. Hořícké chlomy:** Boháňka village near Hořice town, road verge 0.7 km SE of the village, 5660a (Havlíček, 10.8.2001, PRC). – **15a. Jaroměřské Polabí:** Distr. Náchod, in the wood between the villages of Habřina and Velichovky, 5660d (Holub, 5.8.1994, PRA). – Distr. Hradec Králové, wood margin and clearing 0.4 km NE of Jeříčky village, 5660d (Havlíček, 10.8.2001, PRC). – **15b. Hradecké Polabí:** Vysoký Újezd village near Třeběchovice pod Orebem town, along the woodland path 1 km SW of the village, 5762c (Trávníček, 2.8.2001, OL). – **15c. Pardubické Polabí:** Distr. Kolín, in the pine wood along the road between the villages of Týnec nad Labem and Labské Chřčice, 1.5 km NEE of Týnec nad Labem village, 5958c (Marek, 31.7.1989, OL). – Distr. Chrudim, along the railway on the W edge of Úhřetice village, 6061a (Havlíček, 22.10.2000, PRC). – Distr. Pardubice, in the wood 0.5 km SES of the Staročernsko village, 5961c (Havlíček, 27.10.2000, PRC). – Sezemice village near Pardubice town, 1.3 km NEE of the centre of the village, in the wood S of the road, 5961a (Havlíček, 27.10.2000, PRC). – Časy village near Holice town, in the wood 0.9 km N of the village, 5961a (Havlíček, 27.10.2000, PRC). – Holice town, in the wood on Hradce hill, 5962a (Holub, 12.8.1985, PRA). – Koudelka village, groves along the road in the direction of Poběžovice u Holic village, 5962a (Trávníček, 31.8.2000, OL). – Distr. Pardubice, in the wood

along the road E of Francina village, 5962c (Trávníček, 31.8.2000, OL). – **16. Znojensko-brněnská pahorkatina:** Tišnov town, in the wood on the S slope 1.8 km SEE of the railway station, 6664d (Trávníček, 25.7.2001, OL). – Ivančice village near Brno, in the wood along the road in the direction of the settlement of Stavení, 2 km SES of main railway station, 6964a (Trávníček, 6.8.2001, OL). – Distr. Brno-venkov, Biskoupky village, in the wood between Biskoupský kopec hill and the castle ruins of Templýtn, 6963b (Holub, 3.7.1990, PRA). – **19. Bílé Karpaty stepní:** Distr. Uherské Hradiště, in the wood Hluboček S of Míkovice village, 6971c (Holub, 27.7.1996, PRA). – Distr. Uherské Hradiště, Drslavice village, in the wood along the road near Obora gamekeeper's lodge, 6971d (Trávníček, 12.9.2000, OL). – Hluk village near Uherské Hradiště town, in the S part of Hluboček wood, 1.8 km NEN of centre of the village, 6971c (Trávníček, 21.8.2001, OL). – Bojkovice town, in the wood clearing 1.5 km S(-SES) of the railway station, 6972d (Trávníček, 6.9.1994, OL). – **20b. Hustopečská pahorkatina:** Lovčice village near Ždánice town, at the woodland path in Jordánek valley, 1.5 km NWN of the village, 6968a (Trávníček, 16.8.2000, OL). – Lovčice village near Ždánice town, in the wood along the road 1.5 km N of the village, 6968a (Havlíček, 20.7.2001, PRC). – Jestřabice village near Kyjov town, along the path 0.2 km NE of the railway station, 6968b (Trávníček, 15.8.1993, OL). – Bohuslavice u Kyjova village, along the woodland path 1 km W of railway station, 6968b (Trávníček, 15.8.1993, OL). – Distr. Uherské Hradiště, Ořechov village, in the wood above the brook 1.1 km SW of the village, 6969d (Trávníček, 27.8.2000, OL). – Moravský Písek village near Veselí nad Moravou town, in the wood along the road in the direction of Polešovice village, 6970c (Trávníček, 12.9.2000, OL). – **21a. Hanácká pahorkatina:** Otrokovice town, on the wood margin 0.7 km S of the bridge over the river Morava, on the NW periphery of the town, 6771c (Trávníček, 10.9.2001, OL). – **21b. Hornomoravský úval:** Distr. Kroměříž, Chropyně town, in the wood of Rasina 2 km NE of the railway station, 6670a (Trávníček, 17.9.1994, OL). – **25b. Libouchecká plošina:** Distr. Ústí nad Labem, Liboucheč village, road verge 0.7 km N of the centre of the village, 5250a (Havlíček, 22.9.2000, PRC). – **31a. Plzeňská pahorkatina vlastní:** Kaznějov village near Plzeň town, at the railway station of Obora, 6146a (Holub, 27.7.1990, PRA). – Klatovy town, beside the road towards Svrčovec village in the SE part of the woodland, 6545d (Trávníček, 2.8.1999, OL). – Distr. Strakonice, Strážov village, along the way to Blata village, 6645c (Holub, 13.8.1996, PRA). – **32. Křivoklátsko:** Distr. Kladno, Svárov village, on the Prostřední vrch hill (394 m) SWW of the village, 5950b (Marek, 11.7.2002, PR). – Distr. Rakovník, Všesulov village, in the wood along the road 1.2 km S of the village, 5947d (Havlíček, 18.9.2001, PRC). – Distr. Rakovník, Velká Buková village, above Višňová settlement, 5949c (Holub, 1.7.1999, PRA). – Distr. Rakovník, Karlova Ves village, beside the road towards Branovská vrata gamekeeper's lodge, 6049a (Holub, 4.10.1991, PRA). – Distr. Rakovník, Karlova Ves village, along the woodland path S of the village, 6049a (Holub, 2.7.1999, PRA). – Distr. Rakovník, Karlov village, in the wood of Přední Hrobc, 6049a (Holub, 17.9.1992, PRA). – Distr. Beroun, Nižbor village, near the gamekeeper's lodge Lísa, 6049b (Holub, 2.10.1992, PRA). – Distr. Beroun, Hudlice village, in the wood on Hudlický vrch hill near the gamekeeper's lodge Krušná hora, 6049b (Holub, 21.7.1988, PRA). – Zdice town, in the woodland between the crossing V potocích and Vraní skála hill, 6049d (Holub, 11.11.1984, PRA). – Chludstina village near Žebrák town, SE slopes 1.1 km SW of the village, 6149a (Trávníček, 10.7.2001, OL). – Týček village near Rokycany town, in the wood of Pinkavice, 6148b (Holub, 1.10.1992, PRA). – Plískov village near Rokycany town, on the Bukov hill E of the village, 6148d (Holub, 8.9.1997, PRA). – **34. Plánický hřeben:** Opálka village near Nýrsko town, on the wood margin 1 km W of the village, 6645c (Žíla, 13.8.1996, herb. Žíla). – **35a. Holoubkovské Podbrdsko:** Milínov village near Blovice town, on the wood margin along the road 1.5 km W of the village, 6347c (Žíla, 16.8.2000, herb. Žíla). – **35c. Příbramské Podbrdsko:** Řevnice village near Praha, in the wood above the sharp bend of the road S of the village, 6053c (Holub, 21.8.1997, PRA). – Distr. Příbram, in the wood margin between the villages of Malý Drahlín and Drahlín, 6249d (Holub, 26.9.1992, PRA). – **35d. Březnické Podbrdsko:** Distr. Strakonice, Přešťovice village, in the wood 0.7 km NE of Slatina settlement, 6750a (Trávníček, 17.8.1996, OL; Žíla, 17.8.1996, herb. Žíla). – **36b. Horažďovicko:** Distr. Strakonice, Zadní Zborovice village, at the wood margin on the NW edge of the village, 6649c (Žíla, 15.8.1996, herb. Žíla). – **37e. Volyňské Předšumaví:** Distr. Strakonice, Slatina village, in the wood near the village, 6749b (Holub, 17.8.1996, PRA). – **37f. Strakonické vápence:** Distr. Strakonice, in the village of Radomyšl, 6649d (Žíla, 27.8.1996, OL). – Distr. Strakonice, Rohozná village, on Chlum hill W of the village, 6649d (Žíla, 30.7.1999, herb. Žíla). – **41. Střední Povltaví:** Prague, Praha-Komořany suburb, in the wood 1 km SE – 0.5 km E of the village, 6052b (Havlíček, 17.9.2000, PRC). – Distr. Benešov, Krňany village, in the wood along the road 1 km SE of the village, 6152d (Trávníček, 9.9.1998, OL). – Venšov village near Týnec nad Sázavou town, in the wood along the road 1.3 km NW – 0.8 km SW of the village, 6153c (Havlíček, 13.8.2001, PRC). – Týnec nad Sázavou town, wood clearing along the road towards Chářovice, 0.7 km SWW of the ruin, 6153d (Havlíček, 13.8.2001, PRC). – Distr. Benešov, in the village of Nebřich, 6252b (Holub, 1.7.1996, PRA). – Hlubeč settlement near Sedlčany town, in the wood beside the road SW of the village, 6452a (Havlíček, 19.8.2001, PRC). – Distr. Příbram, Solenice village, in the wood near Kolčava gamekeeper's lodge, 6350d (Holub, 15.8.1988, PRA). – Distr. Příbram, Solenice village, U altánu hill,

6351c (Holub, 3.7.1996, PRA). – Distr. Příbram, in the village of Solenice, 6351c (Holub, 4.7.1996, PRA). – Distr. Příbram, the cottage settlement of Lavičky near Orlík nad Vltavou village, 6450b (Holub, 21.8.1997, PRA; Trávníček, 21.8.1997, OL). – Distr. Příbram, Klenovice village near Orlík nad Vltavou, beside the path near Bárta settlement, 6451a (Trávníček, 22.8.1997, OL; Havlíček, 15.9.1999, PRC). – Distr. Příbram, Písečná hill near the settlement of Bárta, 6451a (Holub, 22.8.1997, PRA). – Distr. Příbram, Podholušice village, cottage settlement near Orlická přehrada reservoir, 6450b (Holub, 4.7.1996, PRA). – Klučnice village near Milevsko town, on the wood margin NW–NWW of Na ovčíně settlement, 1.5 km NW of the village, 6451a (Havlíček, 15.9.1999, PRC). – Kostelec nad Vltavou town, road verge on the E margin of the town, 6651c (Havlíček, 29.10.2000, PRC). – Dojetřice village near Sázava town, in the wood along the road 0.8 km SW of the village, 6155a (Trávníček, 8.9.1998, OL). – Chotěměřice village near Ledeč nad Sázavou town, in the scrub by the brook Želivka 1.3 km SW of the village, 6357a (Trávníček, 27.7.1998, OL). – Zahájí village near Zruč nad Sázavou town, beside the path towards Sázava river, NWN of the village, 6357a (Trávníček, 28.7.1998, OL). – Hněvkovice village near Ledeč nad Sázavou town, in the wood at the W margin of the village, 6357a (Trávníček, 27.7.1998, OL). – Hněvkovice village near Ledeč nad Sázavou town, grove along the way, close to the S margin of the village, 6357a (Trávníček, 27.7.1998, OL). – **42a. Sedlčansko-milevská pahorkatina:** Distr. Benešov, Lístěnek village, wood along the road 0.5 km S of the village, 6254c (Havlíček, 17.8.2001, PRC). – Jesenice village near Sedlčany town, road verge N of the village in the direction of Mezné settlement, 6352d (Havlíček, 20.8.2001, PRC). – **42b. Tábořsko-vlašimská pahorkatina:** Barčov village near Votice town, pine wood along the road 0.5 km SWS of the village, 6454a (Havlíček, 22.9.2001, PRC). – Distr. Benešov, Javor village near Neustupov, pine wood along the road 0.4 km NE of the village, 6454a (Havlíček, 22.9.2001, PRC). – **45a. Lovečkovické středohoří:** Distr. Děčín, in the village of Horní Jílové, 5250d (Holub, 30.8.1994, PRA). – Distr. Česká Lípa, Bořetín village, road verges S of the village, 5352b (Havlíček, 5.9.2001, PRC). – Distr. Česká Lípa, Kolné village, woodland by the brook 0.3 km SW – 1.5 km S of the village, 5352d (Trávníček, 9.7.1998, OL). – Janovice village near Kravaře town, groves beside the road 0.9 km S – 0.3 km SE of Bobří vrch hill, 5352a (Trávníček, 9.7.1998, OL). – **45b. Českokamenická kotlina:** Distr. Děčín, Markvartice village, wood margins along the way S of the road, 2.7 km W of the centre of the village, 5251b (Havlíček, 20.9.2000, PRC). – **46a. Děčinský Sněžník:** Distr. Děčín, Čechy village, by the water-station above the village, 5250b (Holub, 31.8.1994, PRA). – **46b. Kaňon Labe:** Horní Žleb village near Děčín town, road verge 0.5 km N of the railway station, 5251a (Havlíček, 21.9.2000, PRC). – Dolní Žleb village near Děčín town, close to the railway station, 5251a (Havlíček, 21.9.2000, PRC). – **49. Frýdlantská pahorkatina:** Distr. Liberec, Černousy village, on the wood margin beside the road 0.6 km E of the village, 4956c (Havlíček, 30.9.2001, PRC). – Distr. Liberec, in the wood between villages of Černousy and Habartice, 4956c (Holub, 14.7.1992, PRA). – Distr. Liberec, Višňová village, near the railway crossing, 5056a (Holub, 14.7.1992, PRA). – Distr. Liberec, Višňová village, in the settlement of Filipovka, 5056a (Holub, 11.10.1996, PRA). – **50. Lužické hory:** Slunečná village near Nový Bor, road verge 0.7 km S of the village, 5252d (Havlíček, 5.9.2001, PRC). – **51. Polomené hory:** Ostré village near Ústěk town, in the pine wood beside the road 0.3 km SW of the village, 5452a (Havlíček, 7.10.2001, PRC). – Distr. Česká Lípa, Pavličky village, below the ruin of Čáp, 5452d (Holub, 19.8.1989, PRA). – Distr. Česká Lípa, Vrchovany village, in the wood near the rock with Starý Bernštejn castle, NE of the village, 5453a (Trávníček, 8.7.1998, OL). – Distr. Česká Lípa, Beškov village, in the Beškovský důl valley, 5453c (Holub, 3.7.1989, PRA). – Distr. Mělník, Sitenský důl valley between the villages of Sitné and Dolní Vidim, 5553a (Holub, 1.9.1990, PRA). – Distr. Mělník, N of the Kokořinský Důl village, 5553c (Holub, 16.9.1989, PRA). – **52. Ralsko-bezděžská tabule:** Ralsko military area, on the wood margin along the road 1.3 km NW of the former village of Jablonec, 5355c (Havlíček, 31.8.2000, PRC). – Distr. Mladá Boleslav, at the grassy edge of the wood along the road to Čistá village, 1 km W of Bítouchov village, 5555a (Hadinec, 21.10.2000, PRC). – **53a. Českolipská kotlina:** Noviny pod Ralskem village near Mimoň town, wood margin along the road 0.7 km S – 1.3 km SWS of the village, 5354a (Havlíček, 30.9.2001, PRC). – Distr. Česká Lípa, Holany village, on S woodland edge along the road 1–1.9 km W of the village, 5352d (Havlíček, 1.9.2000, PRC). – **53b. Ploučnické Podještědí:** Cvikov town, at the foothill of Ortel hill, 5253b (Holub, 6.7.1989, PRA). – **53c. Českodubská pahorkatina:** Distr. Mladá Boleslav, wood margin close to the road between the valleys of Mohelka and Malá Mohelka brooks SES of Rostkov village, 5455b (Hadinec, 22.10.2000, PRC). – **55b. Střední Pojizří:** Distr. Liberec, path verges 0.5 km SE of the Sedlisko village, 5355d (Havlíček, 9.8.2001, PRC). – Distr. Mnichovo Hradiště, along the way 0.5 km SES of Sychrov village, 5455d (Havlíček, 9.8.2001, PRC). – Distr. Mnichovo Hradiště, road verges on the W edge of Sychrov village, 5455b (Havlíček, 9.8.2001, PRC). – Distr. Turnov, spruce forest 0.3 km SWS of Jirsko village, 5456a (Havlíček, 9.8.2001, PRC). – **55d. Trosecká pahorkatina:** Distr. Mnichovo Hradiště, Olšina village, wood margin along the road SWW of the village, 5456c (Havlíček, 1.8.2001, PRC). – Český ráj protected area, SW of Přhrady village, place “Hrdinka” between the crossroads Černá Louže and Smrkovec hill, 5456c (Holub, 28.9.1991, PRA). – Distr. Mnichovo Hradiště, Zásadka village, road verges 0.2 km N of the village, 5456c (Havlíček, 1.8.2001, PRC). – Český ráj protected

area, Žehrov village, near Bellevue settlement, 5456d (Holub, 7.8.1996, PRA). – Distr. Turnov, Skokovy village, pine wood along the road 1 km S of the village, E of Bellevue settlement, 5456d (Havlíček, 1.8.2001, PRC). – Český ráj protected area, in the wood between the villages of Žehrov and Podkost, 5456d (Holub, 29.7.1987, PRA). – Distr. Mladá Boleslav, in the village of Čížovka, 5556b (Havlíček, 1.8.2001, PRC). – Český ráj protected area, Kamenice village, in the wood between the village and the crossroads in the direction of Kost castle, 5556b (Holub, 13.7.1992, PRA). – Český ráj protected area, Podkost village, in the valley of Kostecký důl, 5556b (Holub, 17.11.1995, PRA). – Distr. Mladá Boleslav, Dobšín village, in the wood along the road NW of the village, 5556b (Havlíček, 7.7.2001, PRC). – Distr. Jičín, Pařezská Lhota village, wood clearing beside the path 1–2 km W of the village, 5556a (Hadinec, 1.8.2001, PRC). – **55e. Markvartická pahorkatina:** Zajakury village near Sobotka town, in the wood along the road SW of the village, 5557c (Havlíček, 7.7.2001, PRC). – Distr. Jičín, Podhradí village, on the W edge of the village close to the football pitch, 5557d (Hadinec, 25.9.1999, PRC). – **56a. Železnobrodské Podkrkonoší:** Líšný village near Železný Brod town, on the railway embankment in the Líšný railway station, 5357c (Hadinec, 24.9.2000, PRC). – Závřší village near Železný Brod town, in spruce wood close to the village, 5357c (Hadinec, 24.9.2000, PRC). – **56b. Jilemnické Podkrkonoší:** Distr. Semily, in the wood between the villages of Dráčov and Bítouchov, 5457d (Holub, 16.7.1992, PRA). – **56e. Červenokostecké Podkrkonoší:** Stolín village near Červený Kostelec town, at the wood margins 0.4 km SWW of the village, 5562a (Havlíček, 31.10.2001, PRC). – **57a. Bělohradsko:** Hřídelec village near Nová Paka town, along the path 1–2 km W of the village, 5559c (Holub, 30.7.1987, PRA; Hadinec, 25.9.2000, PRC). – Hřídelec village near Nová Paka town, N margin of Okrouhlík wood SW of the village, 5559c (Hadinec, 25.9.2000, PRC). – **57b. Zvičina:** Vřesník village near Nová Paka town, southern slopes of Dubovec wood W of the village, 5559d (Hadinec, 29.8.2000, PRC). – Distr. Jičín, Konecchlumí village, in the woodland of Mlázovický chlum 5558d (Holub, 22.9.1991, PRA). – **58b. Polická kotlina:** Slavíkov village near Hronov town, road verges close to the spruce wood 0.6 km E of the village, 5562b (Havlíček, 29.10.2001, PRC). – **59. Orlické podhůří:** Sudín village near Dobruška town, grove beside the road 1.3 m S of the village, close to the crossroad, 5763a (Trávníček, 23.8.1995, OL). – **60. Orlické opuky:** Distr. Rychnov nad Kněžnou, between the villages of Ohnišov and Val, 5663c (Holub, 23.8.1995, PRA; Trávníček, 23.8.1995, OL). – Voděradý village near Dobruška town, wood NE of the village, 5762d (Holub, 24.8.1995, PRA; Trávníček, 24.8.1995, OL). – Lično village near Kostelec nad Orlicí town, in the wood along the road leading to Ledská village, 5863a (Trávníček, 24.8.1995, OL). – Tutleky village near Kostelec nad Orlicí town, wood beside the road on the NW edge of the village, 5863c (Trávníček, 8.9.2000, OL). – **61a. Křivina:** Malá Záhornice village near Opočno town, in the wood along the road 1 km N of the village, 5762b (Trávníček, 2.8.2001, OL). – Vyhnanice village near Týniště nad Orlicí town, at the woodland path 0–1.2 km NW of the village, 5762d (Trávníček, 12.9.1997, OL). – Křivice village near Týniště nad Orlicí town, at the woodland path 1.3 km SE–1 km E of the village, 5862b (Trávníček, 12.9.1997, OL). – Křivice village near Týniště nad Orlicí town, at the woodland path 1 km E – 1.2 km NEN of the village, 5862b (Trávníček, 12.9.1997, OL). – **61b. Týništský úval:** Olešnice village near Kostelec nad Orlicí town, at the woodland path on Malý Chlum hill, SWS of the village, 5862d (Trávníček, 31.8.2000, OL). – Kostelec nad Orlicí town, along the road towards Čermná nad Orlicí village, near Mírov village, 5863c (Štěpánek, 21.8.1984, PRA). – Rajec village near Choceň town, in the wood near the crossroads 0.7 km SW of the village, 5963a (Trávníček, 8.9.2000, OL). – Skořenice village near Choceň town, in the wood along the road 1.3 km N(–NEN) of the village, 5963c (Trávníček, 8.9.2000, OL). – **61c. Chvojenská plošina:** Distr. Pardubice, Hoděšovice village, on the woodland edge N of the road 0.6 km W of the village, 5861c (Havlíček, 26.10.2001, PRC). – Újezd u Chocně village, wood margin 0.7 km SWS – 1 km SWW of the village, 5962d (Trávníček, 21.8.1996, OL). – Sruby village near Choceň town, at the woodland path 1.2 km NE – 1.2 km N of the village, 5963c (Trávníček, 21.8.1996, OL). – **62. Litomyšlská pánev:** Choceň town, along the woodland path 0–1.5 km W of the town, 6063a (Trávníček, 21.8.1996, OL). – Vraclav village near Choceň town, in the wood 1.3 km NE of the village, 6062b (Trávníček, 22.7.2000, OL). – Vraclav village near Choceň town, in the wood along the road 1 km NW of the village, 6062a (Trávníček, 9.8.2000, OL). – Mravín village near Vysoké Mýto town, in the wood along the road to Pěšice village, S–SES of the village, 6062c (Trávníček, 9.8.2000, OL). – Zádolí village near Vysoké Mýto town, in the wood along the road N of the village, 6062d (Trávníček, 31.8.2000, OL). – Javorník village near Litomyšl town, in the wood along the road to Džbánov village, 6162b (Trávníček, 28.8.2000, OL). – Javorník village near Litomyšl town, in the wood along the road 1.2 km N of the village, 6062d (Havlíček, 25.7.2001, PRC). – Distr. Ústí nad Orlicí, between the villages of Vlčkov and Člupek, 6064c (Holub, 4.10.1997, PRA). – Libecina village near Vysoké Mýto town, in the wood 1 km W of the village, 6162b (Trávníček, 28.8.2000, OL). – **63a. Žambersko:** Merklovice village near Vamberk town, along the way 0.8 km E – 1 km NE of the village, 5863d (Trávníček, 11.9.1997, OL). – **63b. Potštejnské kopce:** Klopoty village near Brandýs nad Orlicí town, road verges 0.5 km NEE of the village, 6064a (Havlíček, 23.7.2001, PRC). – **63c. Střední Poorlicí:** Ústí nad Orlicí town, 0.5 km N – 1.5 km NWN of the main railway station, 6064a (Trávníček, 11.9.1997, OL). – **63d. Kozlovská vrchovina:** Horní Sloupnice village, in the wood in direction of

Řetůvka village, 6064c (Holub, 3.8.1988, PRA). – **63e. Poličsko:** Distr. Litomyšl, in the wood between the villages of Trstěnice and Dolní Újezd, close to Trstěnice village, 6263b (Trávníček, 28.8.2000, OL). – **63f. Českotřebovský úval:** Distr. Ústí nad Orlicí, Dolní Libchavy village, along the road W of the village, 6064a (Holub, 22.9.1996, PRA). – **63j. Lanškrounská kotlina:** Boršov village near Moravská Třebová town, at the woodland path 0.7 km SW–W of the village, 6265d (Trávníček, 24.8.2001, OL). – **64a. Průhonická plošina:** Prague, Praha-Klánovice suburb, in Vidrholc wood, 5953b (Holub, 20.8.1977, PRA; Holub, 23.9.1984, PRA). – **64b. Jevanská plošina:** Ondřejov village, in the wood in the direction of Kostelní Střímelice, 6054d (Trávníček, 8.9.1998, OL). – Distr. Benešov, Krhanice village, in the direction of Horní Požáry settlement, 6153a (Holub, 5.8.1984, PRA). – Distr. Benešov, Krhanice village, near Lediny gamekeeper's lodge, 6153a (Holub, 18.8.1984, PRA). – **64c. Černokostelecký perm:** On the slopes between Kostelec nad Černými lesy town and Dolní Peklov village, 5955c (Holub, 14.10.1995, PRA). – Lipany village near Kouřim town, groves along the road leading to the mound SW of the village, 5955d (Havlíček, 28.9.2001, PRC). – Království village near Kouřim town, in the wood W–NW of the village, 5955d (Havlíček, 28.9.2001, PRC). – **65. Kutnohorská pahorkatina:** Kocanda settlement near Plaňany village, road verges 0.5 km NEN of the village, 5956c (Havlíček, 28.9.2001, PRC). – Distr. Kutná Hora, Opatovice village, in the orchard 0.3 km S of the village, 6057a (Havlíček, 28.9.2001, PRC). – Zvěstovice village near Golčův Jeníkov town, on the orchard edge along the road 0.7 km N of the village, 6159a (Havlíček, 12.9.2001, PRC). – **66. Hornosázavská pahorkatina:** Staňkovice village near Uhlířské Janovice town, on the spruce-wood edge along the road 0.4 km SES of the village, 6156a (Havlíček, 11.9.2001, PRC). – **67. Českomoravská vrchovina:** Kamenná Lhota village near Ledeč nad Sázavou town, along the road 1 km SW of the village, 6357d (Trávníček, 28.7.1998, OL). – Distr. Pelhřimov, Čížkov village, on the wood margin along the road 1.5 km SW of the village, 6556d (Žíla, 29.10.2001, herb. Žíla). – Lesoňovice village near Bystrice nad Pernštejnem town, on the wood margin along the road 0.7 km SE of the village, 6463d (Trávníček, 21.7.2001, OL). – Nýrov village near Letovice town, in the wood along the road towards Rudka village, 6465c (Trávníček, 8.8.2000, OL). – Distr. Blansko, Kunice village, in the wood along the road 1.3 km E of the village, 6565a (Trávníček, 31.7.2000, OL). – Synalov village near Tišnov town, in the wood along the road 1.2 km S of the village, 6564c (Trávníček, 12.9.2001, OL). – Břežské village near Tišnov town, in the wood along the road 1.2 km SES of the village, 6663c (Trávníček, 12.9.2001, OL). – **68. Moravské podhůří Vysočiny:** Distr. Blansko, in the wood at the W edge of Voděrády village, 6565a (Trávníček, 21.7.2000, OL). – Újezd u Boskovic village, in the wood along the road NWN of the village, 6565b (Trávníček, 21.7.2000, OL). – In the Bělá wood between the villages of Lhota Ropotina and Újezd u Boskovic, 6565b (Hrbáč, 30.7.1996, PRA). – Distr. Blansko, Zhoř village, wood along the road towards Brňov village, 6564d (Trávníček, 21.7.2000, OL). – Blansko town, on the wood margin along the road to Českovice, 0.5 km of the town, 6665b (Trávníček, 14.9.2001, OL). – Hořice village near Blansko town, wood margin, 6665b (Hrbáč, 5.8.1993, herb. Hrbáč). – Hořice village near Blansko town, wood at the W edge of the village, 6665b (Trávníček, 14.9.2001, OL). – Olešná village near Blansko town, at the woodland path 1 km NW of the village, 6665d (Trávníček, 5.8.1993, OL). – Lipůvka village near Blansko town, in the woods 1 km NWN of the village, 6665c (Trávníček, 25.7.2001, OL). – Lelekovice village near Brno, in the woods 0.4–1.4 km NE of the village, 6665d (Trávníček, 26.8.1997, OL). – Distr. Blansko, Adamov village, along the road 1.6 km SW of railway station, 6765b (Trávníček, 22.7.1993, OL). – Ochoz u Brna village, in the wood along the road 1 km SWW of the village, 6766c (Trávníček, 29.7.1999, OL). – N of Lomnice u Tišnova village, 6564c (Holub, 22.8.1985, PRA). – Řepka village near Tišnov town, on the wood margins above the road 1.3 km S of the village, 6664a (Trávníček, 12.9.2001, OL). – Tišnov town, in the wood between the villages of Železná and Hajánky, 6664b (Holub, 6.9.1996, PRA). – Železná village near Tišnov town, wood clearing beside the way 1 km NE of the village, 6664b (Trávníček, 6.9.1996, OL). – Tišnov town, at the hiking trail W of the village, E of Kozi brada hill, 6664c (Trávníček, 17.7.1996, OL). – Tišnov town, along the woodland path 1 km SW of railway station, 6664c (Trávníček, 18.10.1996, OL). – Distr. Brno-venkov, Lažánky village, in the wood beside the road to Veverská Bítýška, 1.2 km SEE of the village, 6764a (Trávníček, 25.7.2001, OL). – Chudčice village near Brno, wood margin above the cemetery, 6764b (Hrbáč, 16.7.2001, herb. Hrbáč). – Jinačovice village near Brno, beside the way 1.2 km NE of the village, 6765a (Trávníček, 23.7.1993, OL). – Brno town, Žebětín suburb, in the wood along the hiking trail 1 km SWS of Říšova studánka spring, 6764d (Trávníček, 17.7.1999, OL). – Brno town, Podkomorské lesy woodland, near the crossroads U Huberta, 6764d (Hrbáč, 2.7.2001, herb. Hrbáč). – Brno town, Brno-Žebětín suburb, in the wood 1 km of the crossroads, in the direction of Helenčina studánka spring, 6764d (Trávníček, 17.7.1999, OL). – Příbram village near Rosice town, wood along the road behind the gamekeeper's lodge 1.2–1.5 km NEN of the village, 6763d (Trávníček, 5.9.1996, OL). – Kývalka village near Brno town, close to the overpass of the highway, 1.5 km in the direction of Tetčice village, 6864b (Trávníček, 16.8.1994, OL). – Distr. Brno-venkov, in the wood along the road between the villages of Omice and Troubsko, 6864b (Trávníček, 16.8.1994, OL). – Distr. Brno-venkov, in the wood E of Omice village, 6864b (Holub, 5.7.1988, PRA). – Valeč village near Náměšř nad Oslavou town, wood along the road 1.5 km SWS of the village, 6862c (Trávníček,

27.7.2001, OL). – Distr. Třebíč, beside the road E of Hrotovice village, 6862c (Holub, 18.9.1995, PRA; Trávníček, 18.9.1996, OL). – Březník village near Náměšř nad Oslavou town, at the woodland path 1.9 km NW of the crossroads in the village, 6863a (Trávníček, 6.8.2001, OL). – Tetčice village near Rosice town, at the woodland path 0.5–1 km SE of the village, 6864a (Trávníček, 4.9.1996, OL). – Distr. Brno-venkov, Čučice village, woodland path W of the village, 6863d (Holub, 27.7.1996, PRA). – Hlína village near Ivančice town, in the wood beside the road 1.7 km NW of the village, 6864c (Trávníček, 6.8.2001, OL). – Lukov village near Znojmo town, upper part of the way towards the mill below the ruin of Nový hrádek, 7161c (Holub, 27.8.1992, PRA). – Znojmo town, at the woodland path NEN of Králův Stolec hill, 7162c (Trávníček, 4.9.1992, OL). – Znojmo town; along the path in the wood 1.8–2.2 km WSW of Hradiště settlement on the SW periphery of the town, 7162c (Trávníček, 4.9.1992, OL). – **69a. Železnohorské podhůří:** Chvaletice village near Pardubice town, S of the village, 5958c (Holub, 19.9.1987, PRA). – Distr. Pardubice, beside the quarry W of Zdechovice village, 5958d (Holub, 11.7.1989, PRA). – Zdechovice village near Pardubice town, wood clearing S of the village, 5958d (Holub, 7.10.1995, PRA). – In the woodland of Litošické polesí near Morašice village, 6058b (Holub, 27.8.1988, PRA). – Chrtníky village near Přelouč town, wood margin 0.8 km NWW of the village, 6059b (Trávníček, 11.9.2000, OL). – Distr. Pardubice, Urbanice village, beside the woodland path 0.8 km E of the village, 6059a (Trávníček, 11.9.2000, OL). – Stojice village near Heřmanův Městec town, wood along the road 1.3 km SWS of the village, 6059d (Trávníček, 11.9.2000, OL). – Podhůra village near Chrudim town, on the wood margin on the SW periphery of the village, 6060d (Havlíček, 7.8.2000, PRC). – Distr. Chrudim, in the wood beside the road 0.5 km S of Chacholice village, 6161b (Trávníček, 11.9.2000, OL). – Distr. Chrudim, Zbožňov village, in the wood along the road towards Bělá village, 6162a (Trávníček, 9.8.2000, OL). – Distr. Chrudim, Zbožňov village, in the wood along the road to Hněvčovice village, 6162c (Trávníček, 9.8.2000, OL). – Distr. Chrudim, Zbožňov village, in the wood along the road 1.5 km SE of the village, 6162c (Havlíček, 27.7.2001, PRC). – Zderaz village near Skuteč town, on the edge of the meadow beside the road 0.5 km E of the village, 6162d (Havlíček, 25.7.2001, PRC). – **69b. Sečská vrchovina:** Vyžice village near Heřmanův Městec town, in the wood beside the road 0.7 km S of the village, 6059d (Trávníček, 11.9.2000, OL). – Distr. Chrudim, Míčov village, beside the woodland path 0.7 km SES of the village, 6159b (Trávníček, 11.9.2000, OL). – **71a. Bouzovská pahorkatina:** Distr. Šumperk, Vlčice village, on the wood margin along the road to Jeřmaň, close to the Vlčice village, 6267c (Trávníček, 28.8.2002, OL). – Distr. Olomouc; in the wood edge close to road 1.4 km NE of Olešnice village, 6267d (Trávníček, 29.8.1993, OL). – Olešnice village near Loštice town, wood margin 1 km N of the village, 6267d (Trávníček, 29.8.1993, OL). – Olešnice village near Loštice town, beside the woodland path 0.7 km SEE of the village, 6367b (Trávníček, 29.8.1993, OL). – Kovářov village near Litovel town, wood 0.7 km N of the village, 6367b (Trávníček, 28.8.2002, OL). – **71b. Drahanská plošina:** Distr. Vyškov, in the wood between the villages of Podomí and Senetářov, 6666d (Holub, 1.8.1986, PRA). – **71c. Drahanské podhůří:** Distr. Olomouc, in the wood along the road between the villages of Slavětín and Loučka, 6367b (Holub, 27.7.1989, PRA; Trávníček, 28.8.2002, OL). – Distr. Prostějov, Žárovice village, beside the road in the valley 0.5 km SW of the village, 6567b (Trávníček, 10.9.1993, OL). – Distr. Prostějov, between the villages of Krumsín and Prostějovičky, 6567d (Holub, 14.7.1994, PRA). – Distr. Prostějov, Prostějovičky village, beside the woodland path 0.7 km NW of the village, 6567d (Trávníček, 14.7.1994, OL). – Distr. Prostějov, Alojzov village, woodland 0–2 km N of the village, 6568c (Trávníček, 2.9.1994, OL). – Distr. Vyškov, Březina village, wood margin along the road 1.4 km S(–SWS) of the village, 6667b (Trávníček, 25.8.2002, OL). – Distr. Vyškov, Kulířov village, in the wood along the road SE of the village, 6667a (Trávníček, 10.7.2000, OL). – Distr. Vyškov, between the villages of Studnice and Rychtářov, 6667a (Holub, 1.8.1986, PRA). – Distr. Vyškov, Rychtářov village, in the wood along the road to Studnice village, close to Rychtářov village, 6667c (Trávníček, 10.7.2000, OL). – Pařezovice village, in the wood N of the village, 6667d (Trávníček, 10.7.2000, OL). – Distr. Vyškov, Dědice village, along the road in the direction of Věšpěrk settlement, 6667d (Trávníček, 10.7.2000, OL). – Distr. Vyškov, Ježkovice village, in the wood 0.8 km SWS of the village, 6767a (Trávníček, 22.7.1999, OL). – Distr. Vyškov, Drnovice village, in the wood along the road to Ježkovice, 6767b (Holub, 1.8.1986, PRA; Trávníček, 22.7.1999, OL). – Olšany village near Rousínov town, at the woodland path 1 km NE–NEE of the village, 6767a (Trávníček, 29.7.1999, OL). – Distr. Vyškov, Bukovinka village, in the wood along the road towards Lhotky settlement, 6766b (Trávníček, 22.7.1999, OL). – Distr. Blansko, Pozořice village, in the wood along the road to Hostěnice village, 0.3–1.1 km of the Pozořice village, 6766d (Trávníček, 29.7.1999, OL). – Viníčnė Šumice near Rousínov town, at the woodland path 0–0.6 km NE of the N edge of the village, 6766d (Trávníček, 29.7.1999, OL). – **72. Zábřežsko-uničovský úval:** Komárov village near Sternberk town, in the wood 0.7 km SES(–S) of the village, 6269a (Trávníček, 29.7.2002, OL). – **73a. Rychlebská vrchovina:** Česká Ves village near Jeseník town, on the wood margins along the road by Lubina brook 1 km N of railway station, 5769a (Trávníček, 26.7.2001, OL). – **73b. Hanušovická vrchovina:** Distr. Šumperk, Hostice village, at the woodland path 0.8 km N of the village, 5967c (Trávníček, 3.8.2001, OL). – Distr. Šumperk, Olšany village, on the edge of the wood 1.1 km NEN of the crossroads in Doubravice village, 6067a



(Trávníček, 7.8.2001, OL). – Bludov town, at the woodland path 0.9 km W of the settlement of Zámeček, 6067b (Trávníček, 7.8.2001, OL). – Slavoňov village near Zábřeh town, in the grove 1.3 km NE–N of the village, 6167c (Trávníček, 3.9.1998, OL). – Petrušov village near Česká Třebová town, along the woodland path 1.1 km NE of the centre of the village, 6166c (Trávníček, 22.8.2001, OL). – Distr. Šumperk, Klopina village, wood 0.6 km NEE(–NE) of the N edge of the village, 6168c (Trávníček, 29.7.2002, OL). – Distr. Olomouc, Nová Hradečná village, in the wood 0.7 km SW of railway station, 6168c (Trávníček, 29.7.2002, OL). – Mírov village near Mohelnice town, at the woodland path 1.3 km SE of the centre of the village, 6267a (Trávníček, 28.8.2002, OL). – Líšnice village near Mohelnice town, in the wood 1.6 km NWW of the village, 6267a (Trávníček, 28.8.2002, OL). – **74a. Vidnavsko-osoblažská pahorkatina:** Distr. Jeseník, in the village of Horní Hoštice, 5567d (Trávníček, 17.7.2000, OL). – Distr. Jeseník, Horní Fořt village, beside the road W of the village, 5668a (Trávníček, 17.7.2000, OL). – Horní Heřmanice village near Vidnava town, along the woodland path 1.4 km SEE of railway station, 5668b (Trávníček, 26.7.2001, OL). – Distr. Jeseník, Velká Kraš village, along the road to Habitova Bouda settlement, 5668b (Trávníček, 21.8.1998, OL). – Vidnava town, at the woodland path 1.5 km SE of the railway station, 5669a (Trávníček, 26.7.2001, OL) [holotype]. – Vidnava town, by the hut of Chata Mír, 5668b (Holub, 13.8.1985, PRA). – Distr. Jeseník, Kobylá village, beside the woodland path 0.3 km E – 1.2 km NE of Smolný vrch hill, 5668d (Trávníček, 21.8.1998, OL). – Distr. Bruntál, Jindřichov village, along the road towards Trěmešná village, between the edge of the village and railway underpass, 5771c (Trávníček, 9.8.1999, OL). – Vysoká village, SE part of the wood 1 km W of the village, 5771a (Trávníček, 18.8.1999, OL). – Distr. Bruntál, Životice village, on the wood margin on the foothill of Bor hill N of the village, 5771b (Holub, 29.7.1980, PRA). – Sádek village near Osoblaha town, beside the road in the woodland 0.7 km NW of the village, 5771b (Trávníček, 7.8.1998, OL). – Distr. Bruntál, Bohušov village, in the wood along the road to Dolní Povelice, 5772c (Trávníček, 9.8.1999, OL). – Distr. Bruntál, between the villages of Váno and Piskořov, 5871b (Holub, 3.8.1980, PRA). – Distr. Bruntál, in the wood near the bend of the road 0.8 km NWN of Biskupice village, 5871b (Trávníček, 7.8.1998, OL). – **74b. Opavská pahorkatina:** Krnov town, between the town and Mariánské Pole church, 5972a (Holub, 11.8.1988, PRA). – Krnov town, on the hill of Cvilín, 5972a (Holub, 25.7.1988, PRA; Pečinka & Dočkalová, 15.9.1999, OL; Trávníček, 18.7.2000, OL). – Distr. Bruntál, Úvalno village, in the wood on Strážišť hill NW of the village, 5972a (Pečinka, 2.10.1999, OL). – Distr. Bruntál, Malé Heraltice village, wood margin on the SW edge of the village, 6072a (Pečinka & Dočkalová, 20.7.1999, OL). – Distr. Opava, Branka village, on the wood margin along the road 1 km NWN of the Hradec nad Moravicí railway station, 6173a (Pečinka, 7.9.2000, OL). – Distr. Opava, Žimrovce village, by the river of Moravice, 6173a (Holub, 6.8.1980, PRA). – Distr. Opava, Otice village, Kamenná hora hill on the W edge of the village, 6073c (Pečinka & Dočkalová, 25.9.1999, OL). – Distr. Opava, in the wood between the villages of Vřesina and Pišř, 6075a (Holub, 6.8.1998, PRA). – Vřesina village near Hlučín town, in the wood 1.7 km NE – 1.4 km NEN of the village, 6075a (Trávníček, 16.9.1997, OL). – Distr. Karviná, Závada village, in the wood W of the village in the direction of Bohuslavická myslivna 6074b (Holub, 2.8.1980, PRA). – Hať village near Hlučín town, tip of the wood N of the pond close to the W edge of the village, 6075c (Trávníček, 6.8.1998, OL). – Hlučín town, at the railway station, 6075c (Pečinka, 28.7.1999, OL). – Distr. Opava, in the wood between the villages of Dobroslavice and Chabičov, 6174b (Trávníček, 8.8.1998, OL). – Distr. Ostrava, Olbramice village, grove in the valley of the brook 1 km E of the village, 6274b (Trávníček, 9.7.1999, OL). – Hlučín town, sand pit on the left side of the road in the direction of Ludgeřovice village, close to the E edge of the town, 6175a (Pečinka, 19.8.1999, OL). – **75. Jesenícké podhůří:** Distr. Bruntál, Hošťálkovy village, on the E margin of the wood 1.5 km N of the village, 5871d (Pečinka & Dočkalová, 16.9.1999, OL). – Distr. Bruntál, Staré Heřminovy village, E margin of the wood beside the road to Svobodné Heřmanice village, 1 km NE of the village, 6071d (Pečinka & Dočkalová, 24.7.1999, OL). – Distr. Opava, Mladecko village, along the road towards Moravice village, 1.5–2.5 km of the village, 6172a (Pečinka & Dočkalová, 25.9.1999, OL). – Bohuřovice village near Hradec nad Moravicí town, in the wood along the road 1 km NW of the village, 6173a (Trávníček, 13.8.1999, OL). – Distr. Opava, in the wood between the villages of Hrabyně and Nové Sedlice, 6174a (Holub, 22.7.1989, PRA). – Josefovice village near Hlučín town, in the wood along the road on the SE edge of the village, 6174a (Trávníček, 8.8.1998, OL). – Distr. Nový Jičín, Stará Ves village, on Lazy hill near Ohrada settlement, 6273b (Holub, 23.7.1989, PRA). – Vrchy village, in the wood along the road to Fulnek town, S of the village, 6273c (Trávníček, 6.9.2000, OL). – Moravské Vítkovice village near Fulnek town, on the woodland edge 1.2 km N of the crossroads in the village, 6273c (Trávníček, 6.9.2000, OL). – Distr. Nový Jičín, Odry town, wood along the road to Pohoř village E of the town, 6373a (Trávníček, 6.9.2000, OL). – Distr. Nový Jičín, Pohoř village, on the edge of the wood along the road to Odry 1.5 km NWW of the village, 6373a (Pečinka, 8.9.2000, OL). – Distr. Nový Jičín, Mankovice village, at the woodland path 2.3 km NEN of railway station, 6373a (Trávníček, 29.8.1992, OL). – Distr. Nový Jičín, Spálov village, on the edge of the wood along the road towards the crossroads to Jakubčovice nad Odrou village, 6372a (Pečinka, 8.9.2000, OL). – Vítočka village near Odry town, in the wood 1.1 km N of the village, 6272d (Trávníček, 6.9.2000, OL). – Vítočka village, in

the wood along the road to Heřmanice u Oder village, 6372b (Trávníček, 6.9.2000, OL). – Veselý village near Hranice na Moravě town, in the wood along the road to Hynčice village, 6372d (Trávníček, 26.7.2000, OL). – Nejdek village near Hranice na Moravě town, near the quarry on the edge of the village, 6372d (Trávníček, 26.7.2000, OL). – Dolní Újezd village near Lipník nad Bečvou town, in the scrub 0.5 km NE of the village, 6471a (Trávníček, 10.10.1996, OL). – Bohuslávky village near Lipník nad Bečvou town, in the scrub 0.8 km NWW of the village, 6471a (Trávníček, 9.9.1990, OL; Trávníček, 10.10.1996, OL). – Loučka village near Lipník nad Bečvou town, S(–SE) margin of the wood 1.5 km NW of the village, 6471a (Trávníček, 9.9.1990, OL). – Hlásnice village near Šternberk town, in the wood 1.3 km SW of the village, 6269d (Trávníček, 17.7.2002, OL). – Šternberk town, on the edge of the grove beside the gamekeeper's lodge of Aleš, 2 km S of the town, 6269d (Holub, 21.8.1992, PRA). – **76a. Moravská brána vlastní:** Vinary village near Přerov town, at the woodland path 0.5 km N of the village, 6570b (Trávníček, 18.9.1991, OL). – Lhota village near Lipník nad Bečvou town, in the wood along the road to Paršovice, 1.4 km NE of the village, 6471d (Trávníček, 17.7.2002, OL). – Jezernice village near Lipník nad Bečvou town, beside the asphalt way in the fields NEN of the village, 6471b (Trávníček, 26.7.2000, OL). – Milenov village near Lipník nad Bečvou town, wood margin NEN of the village, 6472a (Trávníček, 26.7.2000, OL). – Paršovice village near Hranice na Moravě town, on the wood margin N of the road towards Týn nad Bečvou village, 1.7 km NWW of Paršovice village, 6472c (Trávníček, 16.7.2002, OL). – Sovadina village, in the wood along the road to Bystřice pod Hostýnem town, 1.5 km S of the village, 6571d (Trávníček, 16.7.2002, OL). – Bravinné village near Fulnek town, in the wood along the road towards Bílov village, SE of the village of Bravinné, 6273d (Trávníček, 6.9.2000, OL). – Lukavec village near Fulnek town, in the wood 1.7 km SE of the village, 6273d (Trávníček, 6.9.2000, OL). – Distr. Nový Jičín, Závěšice village, on the edge of the wood 0.8 km SEE of the centre of the village, 6374d (Vašut, 12.9.2001, OL). – Lichnov village near Koprivnice town, on the wood margin at the S foothill of Červený kopec hill (690 m) 1 km N of the village, 6474b (Hlaváček, VII.1999, OL). – **76b. Tršická pahorkatina:** Bělkovice-Lašťany village near Olomouc town, in the wood 1.1 km N(–NEN) the village of Lašťany, 6369b (Trávníček, 17.7.2002, OL). – Dolany village near Olomouc town, beside the road N of the Kartouzka settlement, 6370a (Trávníček, 21.8.1992, OL; Trávníček, 15.7.1993, OL). – Dolany village near Olomouc town, in the wood along the road towards Věska village, 6370a (Holub, 21.8.1992, PRA; Pečinka, 9.9.2000, OL). – Distr. Olomouc, Radíkov village, wood clearing NW of the village, close to the Kopeček zoo, 6370c (Kusák, 12.8.1993, OL). – Distr. Olomouc, Mrsklesy village, S part of the wood 0.8 km E of the village, 6370c (Trávníček, 24.8.1994, OL). – Distr. Olomouc, Daskabát village, in Haplkoš wood 1.5 km N of the village, 6470b (Trávníček, 24.8.1994, OL). – Výkleky village near Lipník nad Bečvou town, in the wood along the road 1.2–2 km NE of the village, 6470b (Trávníček, 31.8.1996, OL). – Distr. Olomouc, Lazníky village, along the road beside the margin of the wood NE of the village, 6470d (Trávníček, 26.10.1995, OL). – Distr. Olomouc, Přestavky village, in the wood at the W margin of the village, N of the brook, 6470c (Trávníček, 17.7.2002, OL). – Distr. Přerov, Žeravice village, in the wood on the N margin of the village, 6570a (Trávníček, 17.7.2002, OL). – **77a. Ždánický les:** Distr. Hodonín, Uhřice village, in the wood 0.6 km W of the village, 6967d (Trávníček, 16.8.2000, OL). – Zdravá Voda village near Ždánice town, in the wood beside the asphalt way E of the main road 2 km NWN of the village, 6967b (Havlíček, 20.7.2001, PRC). – Kobečice u Brna village, wood clearing close to U bílého vlka gamekeeper's lodge, 1.5 km NEE of the village, 6967a (Trávníček, 22.9.1994, OL). – Nevojice village near Bučovice town, in the wood along the asphalt way 0–0.8 km E of the crossing “U kříže”, 6868c (Trávníček, 28.8.1997, OL). – Distr. Vyškov, Mouchnice village, in the wood along the asphalt way 1–2.5 km E of the crossroads “U kříže”, 6868d (Trávníček, 28.8.1997, OL). – Jestřabice village near Kyjov town, at the woodland path 1.4 km W of railway station, 6968b (Trávníček, 15.8.1993, OL). – Lovčice village near Ždánice town, at the woodland path 0.6 km NE of the edge of the village, 6968a (Trávníček, 16.8.2000, OL). – **77b. Litenečské vrchy:** Distr. Kroměříž, Hoštice village, along the woodland path 1.5 km NEN – 1.6 km NWN of the village, 6769c (Trávníček, 2.9.1998, OL). – Distr. Kroměříž, Tetětice village, wood 1.3 km S of the village, 6769a (Trávníček, 28.7.2002, OL). – **77c. Chřiby:** Bohuslavice u Kyjova village, along the way towards Zavadiłka village, 1–1.5 km NE of railway station, 6968b (Trávníček, 20.9.1992, OL). – Distr. Uherské Hradiště, Osvětimany village, wood clearing 1.9 km NE of the village, 6969b (Trávníček, 12.9.1993, OL). – Stříbrnice village near Uherské Hradiště town, groves 1.5 km N of the village, 6969b (Trávníček, 12.9.1993, OL). – Distr. Kroměříž, Koryčany village, 0.2 km NW of Česky settlement, 6969a (Trávníček, 17.9.1992, OL). – Distr. Kroměříž, Koryčanská přehrada reservoir, close to the branch of the way, 6869c (Holub, 14.7.1994, PRA). – Distr. Kroměříž, Koryčany village, along the woodland path leading to Koryčanská přehrada reservoir, 1 km NE(–NEE) of Vršava hill (500 m), 6869c (Trávníček, 14.7.1994, OL). – Distr. Kroměříž, Střílky village, by the motorway restaurant, 6869c (Holub, 13.7.1990, PRA). – Distr. Kroměříž, Cetechovice village, at the woodland path 0.2 km NEE of Vlčák settlement, 6869b (Trávníček, 18.9.1993, OL). – Distr. Uherské Hradiště, Staré Hutě village, at the woodland path 0.4 km NW of Buchlovský kámen hill, 6869d (Trávníček, 18.9.1993, OL). – Distr. Uherské Hradiště, Bunč village, along the woodland path between Kudlovická dolina valley and Bunč recreation

site close to Komínské skály hill, 6870a (Kusák, 4.9.1993, OL). – Distr. Uherské Hradiště, Bunč village, clearing beside the woodland path 0.5 km W of the village, 6870a (Trávníček, 4.9.1993, OL). – Distr. Uherské Hradiště, Bunč village, in the wood beside the asphalt way 1 km SW of the village, 6870a (Trávníček, 27.7.1997, OL). – Distr. Kroměříž, Kostelany village, in the wood 1–1.5 km E of the village, 6770c (Trávníček, 1.9.1996, OL). – Distr. Kroměříž, Lubná village, along the road 1.3 km SW of the Tabarky gamekeeper's lodge, 6770c (Trávníček, 15.9.1991, OL). – Distr. Uherské Hradiště, Kudlovce village, wood clearing 1.2 km NWN of Dolina settlement, 6870b (Trávníček, 4.9.1993, OL; Trávníček, 9.9.1993, OL). – Distr. Uherské Hradiště, Jankovice village, wood clearing 0.4 km SE of Komínky hill (523 m), 6870a (Trávníček, 4.9.1993, OL). – Distr. Uherské Hradiště, Jankovice village, in the wood along the road 0.8 km SW of the centre of the village, 6870c (Havlíček, 18.7.2001, PRC). – Distr. Uherské Hradiště, Jankovice village, beside the road near the the gamekeeper's lodge, 2 km S(–SES) of the village, 6870c (Trávníček, 22.9.1995, OL). – Salaš village near Buchlovce town, in the wood above the road 1 km W of Hrušov hill, 6870c (Trávníček, 1.9.1996, OL). – Velehrad village, wood along the road to Salaš village 1.5–1 km NWN of Velehrad village, 6870c (Trávníček, 1.9.1996, OL). – Buchlovce town, along the main road 2 km NW of the village, 6969b (Trávníček, 1.9.1996, OL). – Buchlovce town, along the woodland path, 6969b (Trávníček, 4.9.1994, OL). – Velehrad village, wood clearing at the woodland path NEE of Nový Dvůr settlement, 6870c (Trávníček, 28.8.1994, OL). – Distr. Uherské Hradiště, Modrá village, E part of the wood S of the village, 6970a (Trávníček, 12.9.2000, OL). – **78. Bílé Karpaty lesní**: Distr. Uherské Hradiště, Praxšice village, on the Lhotský vrch hill, 6971b (Holub, 2.8.1996, PRA). – Distr. Uherské Hradiště, Maršov village, in the wood of Rubaniska S of the village, 6972a (Holub, 2.8.1996, PRA). – Dobrkovice village near Luhačovice town, on the edge of the wood along the road 1.4 km W of the village, 6971b (Trávníček, 10.9.2001, OL). – Biskupice village near Luhačovice town, grove beside the road 0.9 km NEN of railway station, 6972a (Trávníček, 20.8.2002, OL). – Luhačovice town, in the wood along the road 2.1 km N of railway station, 6872d (Trávníček, 10.9.2001, OL). – Luhačovice town, Obětová hora hill, downhill to the town, 6872d (Holub, 12.7.1990, PRA). – Luhačovice town, in the wood of Obora, 6872d (Holub, 1.8.1996, PRA). – Pitín village near Bojkovice town, on the wood margins 0.7 km S of the village, in the direction of the railway station, 6973c (Trávníček, 28.7.1999, OL). – Brumov town, clearings in the woodland surrounding Brumov castle and ponds near the brewery, 6974a (Dančák, 23.8.2001, OL). – Nedašov village near Valašské Klobouky town, in the valley between the hills of Kaňúr and Průklesy, close to Na salaši settlement, 6974b (Dančák, 23.8.2001, OL). – Distr. Zlín, Svatý Štěpán village, on the slope E above the road towards Bylnice, N of the village, 6974a (Dančák, 23.8.2001, OL). – Distr. Zlín, Svatý Štěpán, at the woodland path towards the Okrajky settlement, near the quarry at the SW edge of the village, 6974c (Dančák, 23.8.2001, OL). – Distr. Zlín, Polichno village, in the wood 1.1 km E of the railway station, 6972a (Trávníček, 1.9.1993, OL). – Distr. Uherské Hradiště, Březová village, in the wood 1.3 km SW of the village, 7072c (Trávníček, 7.9.1994, OL). – **79. Zlínské vrchy**: Distr. Zlín, Fryšták village, along the path SWS of the village, NWW of Přehrada Fryšták reservoir, 6772a (Trávníček, 10.9.1995, OL). – Distr. Zlín, Hostišová village, in the wood along the road to Mysločovice 1 km W–SWW of the village, 6771a (Trávníček, 10.9.2001, OL). – Distr. Zlín, along the road between the villages of Racková and Mladcová, 6771b (Trávníček, 10.9.1995, OL). – Zlín town, 1.6–1.8 km NWW of Příluky village, 6772c (Trávníček, 7.9.1997, OL). – Zlín town, on the slope above the road between the villages of Příluky and Šťákovy Paseky, 6772c (Kusák, 29.8.1993, OL). – Distr. Zlín, Dešná village, at the woodland path 1 km SES of the village, 6773a (Trávníček, 14.8.1995, OL). – Distr. Zlín, Raková village, in the wood along the road 1 km SE of the village, 6772d (Trávníček, 10.9.2001, OL). – Distr. Zlín, Malenovice village, between the edge of the village and the crossing E of the village, 6771d (Trávníček, 18.9.1994, OL). – Želechovice nad Dřevnicí village near Zlín town, beside the way 0.7 km of the Obůrky settlement, 6772c (Trávníček, 21.7.1999, OL). – Zlín town, at the woodland path over Díly hill, E of Kudlov village, 6772c (Trávníček, 31.8.1997, OL). – Distr. Zlín, in the wood along the path N–NWN of the village Březnice, 6771d (Trávníček, 18.9.1994, OL). – Březnice village, along the road to Zlín town, 1.2–1.5 km N of the village, 6871b (Trávníček, 18.9.1994, OL). – Distr. Zlín, Komárov village, in the wood along the winding road 1.5 km NW of the village, 6871a (Trávníček, 10.9.2001, OL). – Distr. Zlín, Komárov village, at the woodland path 0.8 km S of the village, 6871c (Trávníček, 10.9.2001, OL). – Salaš village near Zlín town, in the wood along the road 0.9 km NW of the village, 6871b (Trávníček, 20.8.2002, OL). – Distr. Zlín, Lhota village, along the woodland path 1.6 km SW of the village, 6871a (Trávníček, 3.8.1993, OL). – Bohuslavice u Zlína village, near the village in the direction of Doubravy village, 6871b (Holub, 13.7.1994, PRA). – Bohuslavice u Zlína village, wood clearing 1.5 km SES of the village, 6871b (Trávníček, 15.9.1993, OL; Trávníček, 13.7.1994, OL). – Distr. Zlín, on the woodland edge along the road NE of Březolupy village, 6871d (Kusák, 3.8.1993, OL; Trávníček, 3.8.1993, OL). – Distr. Zlín, at the woodland path 1.2 km SW of Šarovy village, 6871d (Trávníček, 3.8.1993, OL). – Distr. Zlín, wood clearing 1.4 km NW of Zlámanec village, 6871d (Trávníček, 15.9.1993, OL). – Distr. Zlín, in the wood 1.1 km W of Svárov village, 6871d (Trávníček, 15.9.1993, OL). – Zlín town, at the woodland path over Díly hill, N–SE of Kudlov village, 6772c (Trávníček, 31.8.1997, OL). – Distr. Zlín, NW of village Březůvky, 6872a

(Holub, 1.8.1985, PRA). – Pozdýchov village near Zlín town, close to Bařova trař railway W of the village, 6773d (Černotřk, 13.6.2000, OL). – Hornı́ Lhota village near Luhařovice town, beside the road N of the village, 6872b (Holub, 13.7.1994, PRA; Trávniček, 13.7.1994, OL). – Vizovice town, beside the road 1 km NWN of Spálený vrch hill S of the town, 6873a (Trávniček, 25.8.1994, OL). – Vysoké Pole village near Vizovice town, in the wood along the road 1.4 km N of the crossroads in the E part of the village, 6873b (Trávniček, 10.9.2001, OL). – **80a. Vsetı́nská kotlina:** Poliřná village near Valařské Meziřı́čí town, in the wood along the road close to S edge of the Kotlina settlement, 6573b (Trávniček, 21.8.1999, OL). – Zařová village near Valařské Meziřı́čí town, 1.8 km SW of the top of Vlčı́ vrch hill, 6574a (Vařut, 5.9.1999, OL). – Valařské Meziřı́čí town, village Krhová, settlement Jehličná, along the way 0.8 km SW of the elevation of 508 m, 6574a (Vařut, 5.9.1999, OL). – Zařová village near Valařské Meziřı́čí town, in the place “Pod Žernovým”, 1.5 km NW of the centre of the village, 6574a (Vařut, 5.9.1999, OL). – Zařová village near Valařské Meziřı́čí town, in the place “Pod Hájem”, 1.5 km of the centre of the village, 6574a (Vařut, 5.9.1999, OL). – Rořnov pod Radhořtım town, wood clearing 1 km SWS of the top of Černá hora Mt, 6575a (Vařut, 18.10.1998, OL). – Rořnov pod Radhořtım town, at the woodland path 1.3 km SW of the top of Černá hora Mt, 6575a (Vařut, 18.10.1998, OL). – Mikulůvka village near Valařské Meziřı́čí town, on the edge of the wood 0.5 km N of U Papeřů settlement, 6573d (Trávniček, 21.8.1999, OL). – Jehličná village near Valařské Meziřı́čí town, in the grove E of the village, 6574a (Trávniček, 21.8.1999, OL). – Ratiboř village near Vsetı́n town, in the valley by the Holořinka brook and adjacent Borčı́ slopes SES of the village, 6673b (Trávniček, 6.8.1995, OL). – Prřno village near Vsetı́n town, at the woodland path 0.8 km N of Páleniska hill W of the village, 6673b (Trávniček, 6.8.1995, OL). – Syřákov village near Vsetı́n town, between the village and the road Vřemına – Liptál, 6773a (Trávniček, 14.8.1995, OL). – Ratiboř village near Vsetı́n town, bushes on Kosiska hill NW of the village, 6673a (Dančák, 31.8.2000, OL). – Kateřinice village near Vsetı́n town, in the valley of Březinka brook, 6673b (Holub, 13.8.1998, PRA). – Hornı́ Jasěnka village near Vsetı́n town, bushes W above the village, E of U Adámků settlement, 6673b (Dančák, 24.8.2001, OL). – Ratiboř village near Vsetı́n town, wood clearing in the valley of Hluboký 2 km SES of the centre of the village, 6673b (Dančák, 29.8.2001, OL). – Potůčky village near Vsetı́n town, above the road to Valařské Meziřı́čí town, 6673d (Dančák, 10.7.1999, OL). – Ústı́ u Vsetı́na village, in the valley Dlouhı́ S–SW of Babı́nek hill, 6774a (Dančák, 20.8.2000, OL). – Huslenky town, bushes above the railway at the W margin of the village, 0.5 km W of railway station, 6674d (Dančák, 20.10.2001, OL). – Leskovec village near Vsetı́n town, slope on NW edge of the village, 6773b (Dančák, 2.7.1999, OL). – **80b. Veřovické vrchy:** Valařské Meziřı́čí town, Krhová village, Kořové settlement, at the woodland path 2 km W of the top of Vlčı́ vrch hill, 6574a (Vařut, 5.9.1999, OL). – Zubřı́ town, road verge 1 km SWS of the top of Soliská hill, 6574b (Vařut, 1.10.1999, OL). – Zubřı́ town, Na Kopci settlement, on the wood margin 1.5 km SW of Úvı́z Mt, 6574b (Vařut, 1.10.1999, OL). – Zubřı́ town, Zemanky settlement, bulks 1.8 km SW of the summit of Úvı́z Mt, 6574b (Vařut, 1.10.1999, OL). – Rořnov pod Radhořtım town, Zahořanky village, road verges 1 km SWS of the summit of Úvı́z Mt, 6574b (Vařut, 25.9.1999, OL). – Frenřtát pod Radhořtım town, on Horečky hill (565 m), 6475c (Vařut, 25.9.1999, OL). – Distr. Kroměřı́ř, Rajnochovice village, wood margins on the edge of the village SE of the church, 6572d (Dančák, 6.9.2001, OL). – **81. Hostı́nské vrchy:** Semetı́n village near Vsetı́n town, on the slope at the SE foothill of the Ratibořský Grůň Mt, SW of the village, 6673d (Dančák, 19.9.2001, OL). – Přı́lepy village near Fryřták town, on the wood margins along the road between the village and Hadovna gamekeeper's lodge, 6671d (Trávniček, 4.8.1996, OL). – Distr. Zlın, Lukoveček village, wood margin between the NW edge of the village and Hadovna gamekeeper's lodge, 6671d (Trávniček, 4.8.1996, OL). – Fryřták town, at the woodland path on the N edge of the village, towards Lukoveček village, 6772a (Trávniček, 4.9.1996, OL). – Distr. Zlın, Velı́ková village, on the woodland edge along the road NW–NE of the village, 6772b (Trávniček, 14.8.1995, OL). – Distr. Zlın, Velı́ková village, along the woodland asphalt way on the NE edge of the village, 6772b (Trávniček, 17.10.1996, OL). – Distr. Zlın, in the wood between the villages of Lukov and Kařava, 6772b (Holub, 1.8.1985, PRA). – Distr. Zlın, Hrobice village, near the crossing NW of the village, 6772b (Trávniček, 14.8.1995, OL). – **82. Javornı́ky:** Distr. Zlın, Nedařova Lhota village, wood margins on the Zápeřovské sedlo saddle NE of the village, 6874d (Dančák, 23.8.2001, OL). – **83. Ostravská pánev:** Distr. Karviná, Dolnı́ Lutyné village, in the wood of Borek, 1.1 km SSW of the railway station, 6076c (Trávniček, 4.8.1998, OL). – Petrovice u Karviné village, along the way W of the village, SW of the railway station, 6177a (Holub, 4.8.1998, PRA; Trávniček, 4.8.1998, OL). – Louky nad Olřı́ village, Kempy settlement, on the wood margin near road overpass of the railway W of the village, 6277a (Trávniček, 5.10.1995, OL). – Ostrava town, in the settlement Kempy near Prřtná village, 6077c (Holub, 28.7.1988, PRA). – Bobrovnı́ky village near Ostrava town, in the wood close to the W edge of the village, 6175a (Trávniček, 5.8.1998, OL). – Karviná town, in the wood of Borek NE of the town, 6177a (Holub, 28.7.1988, PRA). – Ostrava town, Petřkovice village, on the top of Landek hill, 6175b (Holub, 28.7.1988, PRA). – Ostrava town, Lhotka village, on the wood margin along the road towards Petřkovice village, 6175a (Trávniček, 5.8.1998, OL). – Ostrava town, in the wood between the villages of Radvanice and Michalkovice, 6176c (Trávniček, 4.8.1998, OL). – Ostrava town, Radvanice suburb, in the wood above the village of Radvanice, 6176c

(Holub, 4.8.1998, PRA). – Stará Bělá village near Ostrava town, S part of the wood NE of the village, 6275a (Trávníček, 9.9.2000, OL). – **84a. Beskydské podhůří:** Kateřinice village near Příbor town, on the margin of Hájek wood, 2 km S of the centre of the village, 6375a (Vašut, 19.10.2001, OL). – Kateřinice village near Příbor town, in the wood along the road to Hájov village, S of Kateřinice village, 6375a (Trávníček, 9.9.2000, OL). – Distr. Frýdek-Místek, along the road between the villages of Hukvaldy and Kozlovice, 1 km E of Hukvaldy village, 6375c (Vašut & Vašutová, 4.11.2001, OL). – Frýdek-Místek town, Frýdecký les wood SE of Řepišť village towards the village of Sedlišť, 6276c (Holub, 26.7.1992, PRA). – Metylovice village near Frýdek-Místek town, SE slopes of Metylovická hůrka hill, 6376c (Holub, 23.7.1992, PRA). – Janovice village near Frýdek-Místek town, on the W slope of Velký pahorek hill, 6376c (Holub, 23.7.1992, PRA). – Distr. Frýdek-Místek, Vyšní Lhoty village, on the wood margin close to the S edge of the village, 6376d (Vašut, 26.9.2000, OL). – Distr. Frýdek-Místek, Čeladná village, E slope of Ondřejník hill, 6475b (Holub, 23.7.1982, PRA). – Distr. Frýdek-Místek, Čeladná village, on the hill of Opálená, 6475b (Holub, 21.7.1992, PRA). – Český Těšín town, on the grove margin 1.4 km W of the railway station, 6277d (Trávníček, 30.7.1989, OL). – Třinec town, near the quarry in Jahodná nature reserve, 6378a (Trávníček, 23.8.1989, OL; Holub, 25.7.1992, PRA; Trávníček, 25.7.1992, OL; Trávníček, 5.10.1995, OL). – **98. Nízký Jeseník:** Distr. Bruntál, on the wood margin on the left side of the road between the villages of Dětrichov nad Bystřicí and Moravský Beroun, 1.5–2 km SE of railway station, 6170c (Pečinka, 9.9.2000, OL). – **99a. Radhošské Beskydy:** Distr. Vsetín, Dolní Bečva village, U Smočků settlement, abandoned meadow 1.6 km of junction of Rožnovská Bečva river and Hornorozpitský potok brook, 6575c (Vašut & Vašutová, 13.8.2001, OL). – Distr. Vsetín, Dolní Bečva village, Na fojtství settlement, on the wood margin 0.8 km W of junction of Rožnovská Bečva river and Kněhyně brook, 6575d (Vašut & Vašutová, 18.7.2001, OL). – Malenovice village near Frýdlant nad Ostravicí town, along the path on the N slope 1.5 km N of the top of Ostrá hora Mt (783 m), 6476a (Vašut, 6.9.2000, OL). – Distr. Frýdek-Místek, Morávka village, on the wood margin on the right bank of Morávka river, 3.5 km SWW of the top of Ropička Mt (918 m), 6377c (Vašut, 16.8.2000, OL).

**Slovakia:** **2. Ipelsko-rimavská brázda:** Lučenec town, in the scrub along the road 2–2.5 km NEN of Kypťáč hill on the SW periphery of the village (Trávníček, 7.7.2003, OL). – **9. Biele Karpaty (južná časť):** Nová Bošáca village (Holub, 30.7.1985, PRA). – **10. Malé Karpaty:** Jablonica village near Senica town, on the woodland edge along the main road towards Trnava town, 5 km SE of the village (Trávníček, 5.7.2003, OL). – **12. Trábeč:** Veľké Uherce village near Partizánske town, in the valley of the brook 1 km SW of Stráž hill (485 m), SES of the village (Trávníček, 7.7.1994, OL). – **14a. Pohronský Inovec:** Jedľové Kostofany village near Zlaté Moravce town, in the scrub along the road above the Osná dolina valley NW of Cerov hill S of the village (Trávníček, 6.7.2003, OL). – **14e. Štiavnické vrchy:** Voznica village near Banská Štiavnica town, along the road in the valley of Richnava brook 2 km SEE of the village (Trávníček, 9.7.1997, OL). – Brehy village near Banská Štiavnica town, along the road in the valley 1.5–2 km SEE of the village, SW of Chlm hill (Trávníček, 6.7.2003, OL). – **15. Slovenské rudohorie:** Zlatno village, on the wood margin along the road towards Kokava nad Rimavicou, 1 km N of the village (Trávníček, 8.7.2003, OL). – Distr. Rožňava, Roštár village, wood margin beside the road to Henckovce village, 2.5 km NE of Roštár village (Trávníček, 9.7.2003, OL). – Nižný Klátov village near Košice town, in the scrub near the branch of the road towards Bukovec reservoir, 0.8 km SWW of the village (Trávníček, 9.7.2003, OL). – **27a. Biele Karpaty (severná časť):** Starý Hrozenkov village, in the wood clearing 0.7 km SEE of Boky settlement E of the village (Trávníček, 6.9.1994, OL). – **30c. Nízke Beskydy:** Poliakovce village near Bardejov town, in the quarry beside the road towards Kurima village, 1 km E of Poliakovce village (Trávníček, 10.7.2003, OL).

**Poland:** **Śląsk:** Małolino village E of Kłodzko town, in the wood W of the village (Trávníček, 11.9.1999, OL). – Radynia village near Głubczyce town, near the crossings of woodland paths 2 km NWW of the village (Trávníček, 12.9.1999, OL). – Pietrowice village SW of Głubczyce town, on the slope along the railway on the E edge of the village (Trávníček, 12.9.1999, OL). – Racibórz town, between the villages of Czyżowice and Gorzyce (Holub, 25.8.1994, PRA).

**Austria:** **Oberösterreich:** Linz town, in the wood along the road from Mittertreffling village towards Gallneukirchen village (Žíla, 25.8.2002, herb. Žíla). – **Niederösterreich:** Niederfladnitz village, beside the road 1.5 km NEE of the village (Trávníček, 7.9.1993, OL). – Niederfladnitz village, at the woodland path 1.7 km NE of the village (Trávníček, 7.9.1993, OL). – Wienerwald, beside the highway underpass near Wienerwaldsee lake, E of Pressbaum village (Trávníček, 29.8.1998, OL).

**Germany:** **Niedersachsen:** Hannover town, on the wood margin beside the highway near the village Kastel (Žíla, 13.9.2002, herb. Žíla). – **Bayern:** Rhön, between the villages of Bad Brückenau and Schmidthof (Holub, 27.8.1996, PRA). – Rhön, between the villages of Bad Brückenau and Ruprodien, in the SE direction towards Weissbach (Holub, 27.8.1996, PRA). – Rhön, between the villages of Bad Brückenau and Waldfenster (Holub, 30.8.1996, PRA). – Fichtelgebirge Mts, Frankhammer town, highway km 38, Panoramastrasse (Holub, 31.8.1996, PRA).

***Rubus pericrispatus* Holub et Trávníček, spec. nova**

Figs 12–15

**De s c r i p t i o:** Frutex altus glandulis stipitatis nullis obsitus. Turio altiarcuratus, (5–) 6–9 (–10) mm in diametro, glaber, viridis, in apricis dilute rubescens, angulatus cum faciebus planis vel sulcatis. Aculei turionis plus minusve graciles, patentes, paene recti vel leviter curvati (4–) 6–8 (–9) mm longi basi 5–7 (–8) mm lati in numero (3–) 4–6 (–8) ad 5 cm longitudinis. Folia turionis digitato- vel subpedato quinata, supra glabra, subtus pilis stellulatis griseo-viride tomentosa usque canotomentosa insuper pilis patentibus longioribus satis dense instructa (ad tactum perceptibilibus usque molliter pilosa). Petiolus 55–65 mm longus foliolis infimis plerumque brevior [longitudo petioli = 80% longitudinis foliolorum], basi glabratus, supra disperse (raro dense) pilosus, cum aculeis (8–) 9–13 (–16) distincte curvatis munitus. Stipulae anguste lineares 0.5–1.0 (–1.3) mm latae. Foliolum terminale modice longe vel breviter petiolulatum [longitudo petioluli (26–) 29–38 (–40) % longitudinis laminulae]. Laminula anguste vel latiore obovata (raro elliptica, ovata vel ovato-rotundata) basi (sub)cordata, rarius plus minusve rotundata, subabrupte usque abrupte (14–) 16–20 (–23) mm longe acuminata, margine (precipue in apricis) undulata saepe parum involuta, serratura plus minusve periodica cum dentibus latioribus apicibus cuspidatis, incisurae 2.0–3.5 (–4.0) mm profundae. Foliola lateralia plerumque expresse minoria quam foliola terminalia, foliola infima (3–) 4–6 (–8) mm longe petiolulata. Inflorescentia paniculata, compae brevis, pauper, anguste vel late pyramidalis (3–) 5–8 (–11) cm infra apicem efoliosa. Rami inflorescentiae erecto-patentes. Folia inflorescentiae 1–3 (–4)-nata foliolis terminalibus anguste usque late obovatis, raro usque ellipticis. Rhachis subtomentosa insuper pilis patentibus longioribus pilosa, aculei (1–) 2–5 (–6) pro 5 cm longitudinis, pluries leviter curvati, (3–) 4–5 (–6) mm longi basi 3–5 mm lati. Pedicelli (8–) 10–20 (–25) mm longi, tomentosi insuper pilis longioribus patentibus instructi cum (0–) 1–4 (–5) aculeis armati, aculei graciles, leviter curvati, (0.5–) 1.0–1.5 (–2.0) mm longi. Sepala post anthesin reflexa, inermia, externe cano-tomentosa insuper pilis patentibus sparse obsita, distincte acuminata, interdum lanceolate appendiculata. Petala alba vel (raro) dilute rosacea, late (usque rotundate) elliptica vel obovata, 9–12 mm longa 6–10 mm lata. Stamina stylos superantia. Antherae glabrae. Filamenta alba. Ovaria apicibus sparse pilosa vel subglabra, styli albo-virescentes. Receptaculum pilosum. Fructus subglobosus vel globosus (interdum usque ovoideus) e (0–) 5–15 (–25) drupeolis compositus. Floret (VI–) VII (–VIII).

**H o l o t y p e:** Czech Republic; E Bohemia, Vraclav near Vysoké Mýto, woods 1.3 km NE of the village Vraclav, 310 m a.s.l. (R 127/00), coll. B. Trávníček, 22.7.2000, OL (Fig. 12).

**E t y m o l o g y:** The species is named according to its undulate leaflet margins.

Main diagnostic features (see also Figs 12–15): stems glabrous, angled to slightly furrowed, usually green, or only slightly reddish even when exposed to sun, with (3–) 4–6 (–8) straight prickles per 5 cm; leaves usually  $\pm$  three-dimensional (with leaflets often  $\pm$  concave, with raised margins), glabrous above, usually deep (sometimes to light) green, (whitish) grey or white-grey beneath (covered with stellate hairs, mixed with numerous patent longer simple hairs), distinctly, sometimes almost softly hairy to the touch; leaflets (particularly in sunny places) with conspicuously undulating margins (as indicated by the name of the species), often with (irregularly) periodic, coarser indentation, with incisions between teeth 2.0–3.5 (–4.0) mm deep; terminal leaflet widest  $\pm$  in or above the middle, often obovate, most frequently shallowly cordate at base, with (14–) 16–20 (–23) mm long,  $\pm$  distinct (mucronate) apex; inflorescence usually shorter and with fewer flowers, sometimes almost broadly pyramidal, with relatively thinner, erecto-patent branches, inflorescence rhachis usually with slightly curved prickles 3–5 mm wide at base; leaves in the inflorescence (particularly in plants in sunny habitats) with slightly raised margins; petals white or more rarely (especially after drying) light pinkish; ovaries sparsely hairy to almost glabrous.

The species closest to *R. pericrispatus* is *R. guttiferus*. They can be distinguished by the different shape of the terminal leaflet of stem leaves: in *R. guttiferus* it is widest usually below the middle, often more gradually narrowed to the apex, only indistinctly cordate to rounded at base; usually young leaves are drop shaped. To the touch, leaves of *R. guttiferus* do not seem hairy beneath (i.e. apart from the tomentum, only with very sparse and short



Fig. 12. – *Rubus pericrispatus*, holotype; bar = 10 cm.

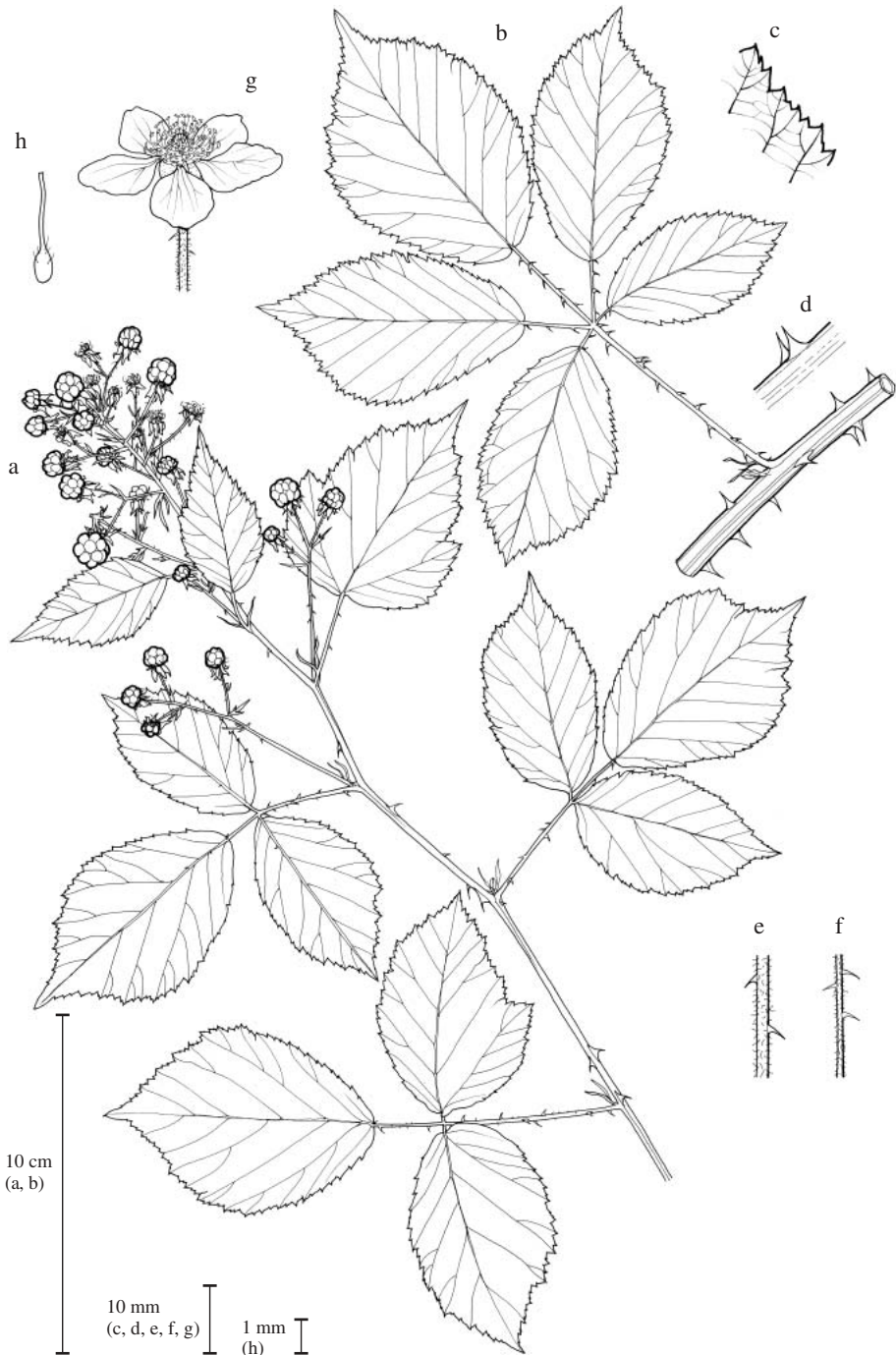


Fig. 13. – *Rubus pericrispatus*: a – infructescence; b – leaf; c – indentation on the margin of the terminal leaflet; d – detail of sterile branch with prickles; e – detail of inflorescence axis; f – detail of peduncle; g – flower; h – detail of pistil. Del. A. Skoumalová.





Fig. 14. – Sterile branch of *Rubus pericrispatus* (locality: Central Bohemia, Neveklov near Benešov).



Fig. 15. – Leaf of *Rubus pericrispatus* (locality: Central Bohemia, Neveklov near Benešov).

patent hairs), leaflet margins usually only slightly or not undulate (even when exposed to sun), the inflorescence more robust and more elongated, with thicker, and when in fruit almost patent branches distally, with usually more distinctly curved prickles slightly broader at base; gynoeceium is conspicuously hairy. Forms of *R. pericrispatus* with a narrower terminal leaflet may be confused with *R. montanus*, which, however, has distinctly red-brown coloured stems with a lower number of prickles [1–3 (–4) per 5 cm], leaves  $\pm$  flat, with margins not undulate or only slightly so, and the terminal leaflet with parallel margins. Another similar species, *R. grabowskii*, also differs from *R. pericrispatus* in its more distinctly red-brown stems,  $\pm$  flat leaves, not or slightly undulate leaflet margins, terminal leaflet broader (up to ovate-orbicular), gynoeceium more densely hairy and petals usually (in the Czech Republic always) bright pink. Diagnostic traits of the other similar species of the *Discolores* are given in the identification key below.

*R. pericrispatus* is a widely distributed Central European species. Up to now, it has been identified in Germany (Bavaria, see also Fürnrohr 1996, as *R. "pericrispatus"*), Czech Republic, Lower and Upper Austria and Slovakia (see also Holub & Trávníček 1998), where it may be more common than it appears. B. Trávníček examined herbarium material of J. Zieliński from SE Poland; in all likelihood, it also belongs to our species. A scattered occurrence in S Poland is very probable, and the species is likewise scattered in the border area of Moravian Silesia, with two localities only 2–5 km from the Polish border. It may also occur in N Hungary.

In the Czech Republic, *R. pericrispatus* grows at scattered localities in most of the warmer woodland regions of Bohemia and Moravia. As the other triploid species of the ser. *Discolores*, it is a thamnophilous species and prefers mineral rich soils, often those that are slightly basic. It avoids strongly acid or wet substrates. It is found by wood margins, in clearings and alongside paths, amongst bushes, more rarely in open patches in woodland.

Herbarium specimens examined (Fig. 16)

Czech Republic: **1. Doupovská pahorkatina:** Klášterec nad Ohří town, along the road towards Petlery village, between the town and the crossroads to Útočiště village, 5645a (Bílek, 18.7.2000, herb. Bílek). – **3. Podkrušnohorská pánev:** Distr. Ústí nad Labem town, Chlumec u Chabařovic village, near the railway station, 5249d (Holub, 9.10.1996, PRA). – Distr. Chomutov, Vysoká Pec village, along the road towards Jezeří castle, 1.5 km NEN of the village, 5446d (Bílek, 19.8.2000, herb. Bílek). – Distr. Chomutov, Málkov village, near the railway station, 5545d (Bílek, 8.8.2000, herb. Bílek). – **4b. Labské středohoří:** Ústí nad Labem, Povrly village, in the wood along the road 0.7 km N of the village, in the direction of Mašovice village, 5350b (Havlíček, 5.10.2001, PRC). – **6. Džbán:** Distr. Rakovník, Třeboč village, between the village and the wood "Na Hýži", NE of the village, 5748d (Holub, 8.9.1990, PRA). – **7d. Bělohorská tabule:** Distr. Kladno, Běloky village, in the wood 0.6 km W of the village, 5851c (Havlíček, 6.9.2001, PRC). – Přední Kopanina village near Prague, at the woodland path 1.4 km NE of the village, 5851d (Trávníček, 25.8.2000, OL). – Nebušice village near Prague, in the wood NE of the village, 5852c (Holub, 10.8.1994, PRA). – **10a. Jenštejnská tabule:** Prague, Praha-Bohnice suburb, in the E part of Čimický háj wood, 5852d (Holub, 29.10.1994, PRA). – Prague, Praha-Ďáblice suburb, in the E part of Ďáblický háj wood, 5852d (Holub, 3.8.1994, PRA). – **10b. Pražská kotlina:** Prague, Praha-Dolní Měcholupy suburb, in the yard of the gasworks "Výroba plynu", 5953a (Marek, VII.1989, OL). – **11a. Všetatské Polabí:** Distr. Mělník, in the S part of Míkov wood between the villages of Záboří and Vavřineč, 5653c (P. & M. Lepší, 25.9.2000, CB). – **11b. Poděbradské Polabí:** Distr. Kolín, Vrbová Lhota village, wood along the road 0.7 km SE of the village, 5856c (Havlíček, 5.9.2000, PRC). – Distr. Kutná Hora, Rohozec village, in the pine wood beside the road 0.5–1.5 km NEN of the village, 6058a (Havlíček, 12.9.2001, PRC). – Distr. Kutná Hora, Rohozec village, in the pine wood 0.5 km W of the village, 6058a (Havlíček, 12.9.2001, PRC). – Vinaře village near Čáslav town, in the wood E of the road NE of the village, 6059c (Havlíček, 12.9.2001, PRC). – **12. Dolní Pojizeří:** Mělník town, along the road between the town and Chloumek village, 5652b (Trávníček, 4.7.1993, OL; Holub, 3.8.1994,

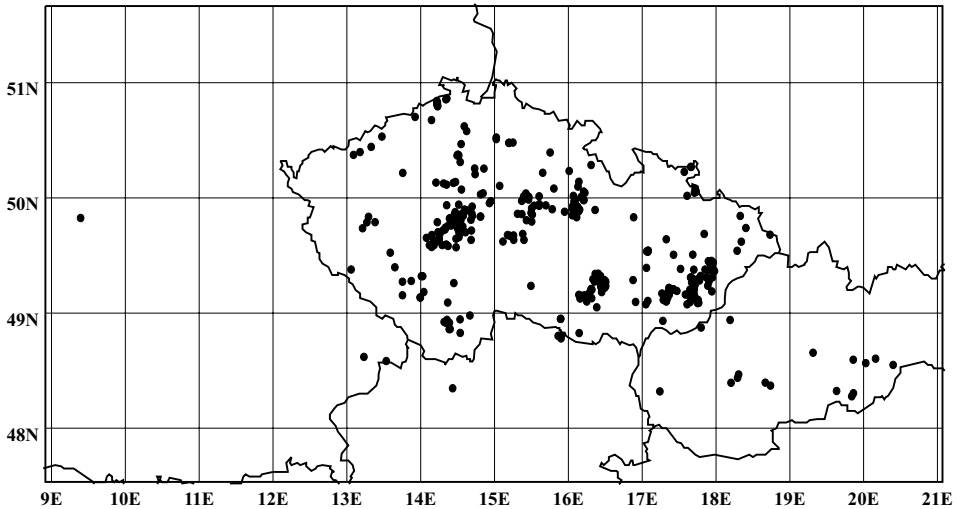


Fig. 16. – Distribution of *Rubus pericrispatus*.

PRA; Trávníček, 3.8.1994, OL; Holub, 3.11.1995 PRA). – In Borek wood N of Chloumek village, 3 km NEN of Mělník town, 5652b–5653a (Holub, 7.9.1991, PRA; Holub, 5.10.1991, PRA; Holub, 1.8.1992, PRA; Trávníček, 3.8.1994, OL; Holub, 10.11.1995, PRA). – Chloumek village near Mělník town, in the wood E–SE of the village, 5653a (Trávníček, 10.9.1992, OL; Holub, 10.11.1995, PRA). – Kostelní Hlavno village near Stará Boleslav town, on the edge of pine wood along the road 2.3 km E of the village, 5754a (Havlíček, 7.8.2001, PRC). – Otradovice village near Lysá nad Labem town, along the railway 0–1 km W of railway station, 5754c (Trávníček, 3.7.2002, OL). – Jiřice village near Benátky nad Jizerou town, pine wood along the road 1.2 km E of the village, 5755a (Havlíček, 8.8.2001, PRC). – **14a. Bydžovská pánev:** Kunčice village, in the wood in the direction of Hrádek u Nechanic village, 5759d (Holub, 21.8.1995, PRA; Trávníček, 21.8.1995, OL). – **15a. Jaroměřské Polabí:** Velehrádek village near Dvůr Králové nad Labem town, in the scrub along the road 0.3 km NW of the village, 5660b (Havlíček, 10.8.2001, PRC). – **15b. Hradecké Polabí:** Vysoký Újezd village near Třebechovice pod Orebem town, at the woodland path 1 km SW of the village, 5762c (Trávníček, 2.8.2001, OL). – **15c. Pardubické Polabí:** Chvaletice village near Pardubice town, in the wharf on the river of Labe, 5958d (Holub, 29.6.1995, PRA). – Veselí village near Přelouč town, in the wood along the road 1 km NWW of the village, 5959d (Trávníček, 11.9.2000, OL). – Pardubice town, in the wood of Kunětický les, 5960b (Holub, 14.7.1989, PRA). – Jaroslav village near Choceň town, in the wood along the road to Vysoká u Holic village, 5962c (Trávníček, 31.8.2000, OL). – Domanice village near Vysoké Mýto town, in the wood along the road 0.5 km SE of the village, 6062c (Trávníček, 9.8.2000, OL). – **16. Znojensko-brněnská pahorkatina:** Distr. Brno-venkov, Biskoupky village, in the wood between Biskoupský kopec hill and the castle ruins of Templýtýn, 6963b (Holub, 3.7.1990, PRA). – Distr. Znojmo, in the game preserve of Obora near Stavení settlement, 6964c (Holub, 21.8.1985, PRA). – Znojmo town, on the Kraví hora hill, 7162d (Holub, 26.8.1992, PRA). – **18b. Dolnomoravský úval:** Bzenec town, beside the railway 0.8 km SW of the Bzenec-Přívov railway station, 7069d (Trávníček, 31.7.1996, OL). – **20a. Bučovicická pahorkatina:** Distr. Kroměříž, Újezdsko village, in the wood along the road 0.6 km NWN of the village, 6770c (Trávníček, 16.7.2001, OL). – **20b. Hustopečská pahorkatina:** Lovčice village near Žďánice town, at the woodland path in Jordánek valley 1.5 km NWN of the village, 6968a (Trávníček, 16.8.2000, OL). – **21a. Hanácká pahorkatina:** Karlovice village near Holešov town, in the wood on the E edge of the village, 6671a (Trávníček, 16.7.2002, OL). – **29. Doupovské vrchy:** Distr. Karlovy Vary, Smilov village, beside the road 0.6 km W of the village, 5644b (Bílek, 11.7.2000, herb. Bílek). – **31a. Plzeňská pahorkatina vlastní:** Stýskaly village near Plzeň town, in the wood on the S edge of the village, 6145d (Žíla, 24.8.2001, herb. Žíla). – Dolní Vlkyš village near Plzeň town, on the wood margin along the road 1 km NW of the village, 6245b (Žíla, 3.11.2001, herb. Žíla). – Plzeň town, in the wood along the road towards Třebošná village, 6246a (Žíla, 24.8.2001, herb. Žíla). – Myslinka village near Nýřany town, on the wood margin along the road 1 km SWS of the

village, 6245c (Žíla, 3.11.2001, herb. Žíla). – **33. Branžovský hvozď:** Brnířov village near Kdyně town, on the wood margin 1 km SE of the village, 6644a (Trávníček, 3.8.1999, OL; Žíla, 3.8.1999, herb. Žíla). – **34. Plánický hřeben:** Srby village near Nepomuk town, on the wood edge near the railway station 1 km NW of the village, 6447d (Žíla, 11.9.1999, herb. Žíla). – Maňovice village near Horažďovice town, in the wood along the road 1 km SW of the village, 6647b (Žíla, 24.10.1999, herb. Žíla). – **35d. Březnické Podbrdsko:** Distr. Strakonice, in the site of Hradý between the villages of Brusy and Brloh, 6650c (Holub, 15.8.1988, PRA). – Distr. Strakonice, Brloh village, wood margin 1 km SE of the village, 6650c (Žíla, 1.8.1995, herb. Žíla; Žíla, 2.10.2000, herb. Žíla). – **37e. Volyňské Předšumaví:** Kladruby village near Horažďovice town, at the woodland path on Divoš hill, 6748b (Žíla, 16.8.1999, herb. Žíla). – On the edge of Dobrš village near Volyně town, 6848b (Žíla, 15.8.1999, herb. Žíla). – Netonice village near Bavorov town, W edge of the village, 6850a (Žíla, 28.9.2000, herb. Žíla). – Distr. Strakonice, near the small pond in the village of Koječín, 6849d (Holub, 31.7.1990, PRA). – Distr. Strakonice, on the foothill of Helfenburk hill near Koječín village, 6849d (Holub, 16.8.1996, PRA). – **37f. Strakonické vápence:** Dražejov village near Strakonice town, on the hill of Oupeřová NE of the village, 6749a (Holub, 15.8.1996, PRA; Hrbáč, 18.8.1996, herb. Hrbáč; Trávníček, 15.8.1996, OL; Žíla, 15.8.1996, herb. Žíla). – **37j. Blanský les:** Bohouškovice village near České Budějovice town, at the woodland path between the village and Kluk hill, 7051d (Trávníček, 5.7.2001, OL). – **37k. Křemžské hadce:** Distr. Český Krumlov, on the hill of Kašpárka near Mříč village, 7052c (Holub, 13.8.1989, PRA). – **37l. Českokrumlovské Předšumaví:** Distr. Český Krumlov, Krnín village, at the E foothill of Věncová hora hill 1.5 km SWS of the village, 7152a (Žíla, 9.10.1999, herb. Žíla). – Distr. Český Krumlov, Štětkvě village, on Věncová hora hill, 7152a (Trávníček, 6.7.2001, OL; P. Lepší, 11.9.2001, CB). – **37p. Novohradské podhůří:** Distr. České Budějovice, Staré Hodějovice village, in the wood SW of the village, 6053c (Holub, 12.8.1989, PRA). – Distr. České Budějovice, Staré Hodějovice village, in the wood of Srubecký les, 7053c (Holub, 12.8.1989, PRA). – Ločnice village near Trhové Sviny town, on the E edge of the village along the road in the direction of Něchov village, 7153c (Žíla, 23.10.1999, herb. Žíla). – **38. Budějovická pánev:** Zahájí village near Hluboká nad Vltavou town, beside the road on the N edge of the village, 6952a (Žíla, 27.10.1999, herb. Žíla). – Distr. České Budějovice, Lipí village, on the wood margin along the road 0.5 km S of the village, 7052c (Žíla, 9.10.1999, herb. Žíla). – Distr. České Budějovice, Vrábče village, on the wood margin 1 km SEE of the village, 7052c (Žíla, 7.8.1999, herb. Žíla). – **39. Třeboňská pánev:** In Vranín wood between the Slavošovice village and Třeboň town, 7054a (Holub, 30.9.1994, PRA). – **41. Střední Povltaví:** Jílovíště village near Prague, near the summit of Cukrák hill, 6052c (Trávníček, 10.9.1998, OL; Holub, 1.10.1998, PRA; Žíla, 22.8.2000, herb. Žíla). – Luka pod Medníkem village near Jílové u Prahy town, road verge 0.5 km N of the village, 6152b (Havlíček, 26.10.2000, PRC). – Distr. Benešov, Třebsín village, road verge near the crossroad S of the village, 6152b (Havlíček, 15.10.1999, PRC). – Stará Huť village near Dobříš town, in the wood along the road 1.7 km NEE of the village, 6251a (Havlíček, 8.7.2001, PRC). – Distr. Příbram, Jelence village, in the wood along the road 0.8 km NWN of the village, 6350b (Trávníček, 10.9.1998, OL). – Distr. Příbram, in the village of Nečín, 6251c (Žíla, 22.8.1996, OL). – Distr. Příbram, in the village of Přední Háje, 6351b (Žíla, 22.8.1996, OL). – Příbram town, Týtz village, at the woodland path between Háje settlement and Placy gamekeeper's lodge, 6350a (Holub, 15.8.1988, PRA). – Slapy village near Prague, in the wood near the cottage settlement of Letovisko N of the village, 6152c (Holub, 11.8.1995, PRA; Trávníček, 8.1995, OL; Holub, 20.10.1995 PRA). – Slapy village near Prague, near the cottage settlement of Na vyhlídce, 6152c (Holub, 11.7.1995, PRA). – Slapy village near Prague, close to the dam of Slapská přehrada reservoir, 6152d (Holub, 1.7.1996, PRA). – Rabyně village near the dam of Slapská přehrada reservoir, in the wood along the road at the right bank of the reservoir, 0.5 km N of the village, 6152d (Havlíček, 14.10.1999, PRC). – Vysoký Újezd village near Slapská přehrada reservoir, in the wood near the crossroads 0.8 km E of the village, 6152d (Trávníček, 9.9.1998, OL). – Hněvšín village near Slapská přehrada reservoir, in the wood close to Besedná settlement, NW of the village, 6252a (Trávníček, 10.9.1998, OL). – Nedvězí village near Slapská přehrada reservoir, road verge near the crossroads 0.5 km E of the village, W of Kopanina settlement, 6152d (Havlíček, 14.10.1999, PRC). – Živohošť village near Slapská přehrada reservoir, on the W edge of the village, 6252a (Holub, 15.7.1982, PRA; Holub, 2.7.1995, PRA; Holub, 28.10.1995, PRA). – Křeničná village near Slapská přehrada reservoir, between the village and the river of Vltava, 6252a (Holub, 28.10.1995, PRA). – Distr. Příbram, Mokrsko village, at the woodland path on the SE edge of the village, 6252c (Trávníček, 10.9.1998, OL). – Distr. Příbram, Cholín village, branch of the road towards Smilovice village, 6251d (Holub, 4.11.1995, PRA). – Distr. Příbram, between the villages of Bukevnic and Županovice, 6251d (Holub, 3.7.1996, PRA). – Kamýk nad Vltavou town, along the river of Vltava, 6351d (Holub, 22.8.1997, PRA). – Kamýk nad Vltavou town, along the road on the left bank of Nádrž Kamýk reservoir 1.5–0.5 km SWS of the bridge over the Vltava river, 6351c (Trávníček, 22.8.1997, OL). – Kamýk nad Vltavou town, in the pine wood on the right bank of Nádrž Kamýk reservoir NE of Sosní settlement, 1.6 km SW of the centre of the village, 6351c (Havlíček, 17.9.1999, PRC). – Distr. Příbram, Nepřejev village, in the wood along the road towards Větrov village, S of Nepřejev village, 6351c (Holub, 22.8.1997, PRA; Trávníček, 22.8.1997, OL). –

Distr. Příbram, Solenice village, along the road NW of Větrov village, 6351c (Holub, 4.7.1996, PRA). – Distr. Příbram, Solenice village, W edge of the village, 6351c (Holub, 4.7.1996, PRA). – Hlubeč settlement near Vysoký Chlumeč village, in the wood along the road SW of the settlement, 6452a (Havlíček, 19.8.2001, PRC). – Distr. Příbram, Klenovice village, in the wood along the road near the settlement of Písečná, close to Loužek parking place 1.7 km NW of the village, 6451a (Havlíček, 15.9.1999, PRC). – Krašovice village near Krásná Hora nad Vltavou town, on the wood margin along the road 1 km NW of the village, 6451b (Havlíček, 19.8.2001, PRC). – Distr. Příbram, in the wood between the villages of Hatě and Cetyně, 6450b (Holub, 25.9.1993, PRA). – Distr. Příbram, in the cottage settlement of Lavičky near Orlík nad Vltavou village, 6450b (Holub, 21.8.1997, PRA; Trávníček, 21.8.1997, OL). – Distr. České Budějovice, Pašovice village, in the wood along the way to Nový Dvůr settlement NE of the village, 6452a (Holub, 9.9.1994, PRA). – Distr. Benešov, Horní Tužina village, road verge beside the parking place 0.8 km NWN of the village, 6154c (Havlíček, 17.8.2001, PRC). – Loutí village near Slapská přehrada reservoir, in the wood along the road E of the village, 6252b (Trávníček, 9.9.1998, OL). – Distr. Benešov, between the villages of Loutí and Nedvězí, 6152d (Holub, 5.11.1994, PRA). – Zaječí village near Neveklov town, on the edge of the pine wood along the road 1 km N of the village, 6253a (Havlíček, 13.8.2001, PRC). – Stranný village near Neveklov town, in the wood along the road 0.6 km SW of the village, 6252d (Trávníček, 9.9.1998, OL). – Distr. Benešov, in the wood along the road between the villages of Záhoří and Neveklov, NW of Záhoří village, 6253c (Trávníček, 9.9.1998, OL). – Distr. Benešov, N of Strážovice village, 6253c (Holub, 13.10.1995, PRA). – Pyšely village near Čerčany town, in the wood along the road SE of the village, 6154a (Havlíček, 17.8.2001, PRC). – Distr. Benešov, Krhanice village, near the quarry W of the village, 6153a (Holub, 4.8.1984, PRA). – Distr. Benešov, Chrst nad Sázavou village, on the edge of pine wood 1 km NW of the village, 6153c (Marek, 28.9.1989, OL). – Čerčany town, in the oak wood beside the road 0.8 km S of the railway station, 6154c (Havlíček, 17.8.2001, PRC). – Distr. Benešov, Vensov village, in the wood along the road 1.3 km NW – 0.8 km SW of the village, 6153c (Havlíček, 13.8.2001, PRC). – Distr. Benešov, Ostředek village, beside the road leading along the highway W of the village, 6154d (Holub, 13.10.1995, PRA). – Distr. Benešov, in the wood between the villages of Mžižovice and Bělčice, 6154d (Holub, 13.10.1995, PRA). – Distr. Benešov, Dunávice village, in the wood beside the road 0.4 km S of the village, 6153c (Havlíček, 13.8.2001, PRC). – Chotěměřice village near Ledeč nad Sázavou town, beside the cart road above small pond 0.9 km SW of the village, 6357a (Trávníček, 27.7.1998, OL). – Kožlí village, in the wood along the road towards Ledeč nad Sázavou town, 6357b (Trávníček, 28.7.1998, OL). – Habrovčice village near Ledeč nad Sázavou town, on the bank of Přehradní nádrž Želivka reservoir 0.5 km SW of the village, 6357a (Trávníček, 27.7.1998, OL). – **42a. Sedlčansko-milevská pahorkatina:** Líštěnc village near Benešov town, in the wood along the road 0.5 km S of the village, 6254c (Havlíček, 17.8.2001, PRC). – Hodětice village near Neveklov town, in the wood and road verge 0.5 km S of the village, 6353a (Havlíček, 19.8.2001, PRC). – Strnadice village near Neveklov town, road verge in the wood 1 km SW of the village, 6353a (Havlíček, 19.8.2001, PRC). – Božkovice village near Votice town, in the wood clearing along the road 1.2 km NW of the village, 6253d (Havlíček, 19.8.2001, PRC). – Kosova Hora village near Sedlčany town, in the wood along the road 1 km SES of the village, 6352d (Havlíček, 20.8.2001, PRC). – Vojkov village near Sedlčany town, in the pine wood N of the village, in the direction of Sedlečko settlement, 6353a (Havlíček, 20.8.2001, PRC). – Dolní Mladějov village near Sedlec-Prčice town, in the wood along the road E of the village, 6452b (Havlíček, 20.8.2001, PRC). – **42b. Táborsko-vlašimská pahorkatina:** Distr. Benešov, Petrova Lhota village, in the wood beside the road 0.4 km N – 1.1 km NWN of the village, 6356d (Havlíček, 1.10.2001, PRC). – **43b. Miličinská vrchovina:** Neustupovské Otradovice village near Votice town, road verge in the wood 0.4–1 km S (–SES) of the village, 6354c (Havlíček, 17.8.2001, PRC). – **46b. Kaňon Labe:** Podskalí village near Děčín town, wood margin on the slope along the road N of the village, 5151c (Havlíček, 21.9.2000, PRC). – Labská Stráň village near Děčín town, in the wood on the slope above the road on the right bank of the river Labe, 0.5 km SW of the village, 5151c (Havlíček, 21.9.2000, PRC). – Dolní Žleb village near Děčín town, road verge along the railway 1.5 km SES of the church, 5151c (Havlíček, 21.9.2000, PRC). – Prostřední Žleb village near Děčín town, in the valley of the river Labe, 5151c (Holub, 26.7.1993, PRA). – Distr. Děčín, between the villages of Prostřední Žleb and Čertova Voda, in the valley of the river Labe, 5151c (Holub, 11.10.1996, PRA). – Horní Žleb near Děčín town, road verge in the wood 0.5 km N of the railway station, 5251a (Havlíček, 21.9.2000, PRC). – **46d. Jetřichovické skalní město:** Distr. Děčín, Vysoká Lípa village, 5152a (Holub, 26.7.1993, PRA). – Distr. Děčín, Vysoká Lípa village, in the scrub 0.2 km W of the village, 5152a (Havlíček, 20.9.2000, PRC). – **40a. Písecko-hlubocký hřeben:** Netěchovice village near Bechyně town, on the wood margin along the road 1.2 km SWS of the village, 6752b (Žíla, 9.9.2001, herb. Žíla). – **51. Polomené hory:** Staré Splavy village near Máchovo jezero reservoir, in the cottage settlement of Selské rokle, 5453b (Kusák, 24.8.1993, OL). – Kokořín village, between the Šemánovický důl valley and Spálený vrch hill, 5553a (Holub, 1.9.1990, PRA). – **53a. Českolipská kotlina:** Distr. Česká Lípa, Provodín village, along the railway 1 km NW of Jestřebí railway station, 5353d (Trávníček, 25.7.1994, OL). – **55d. Trosecká pahorkatina:** Ruin Valečov near

Mnichovo Hradiště town, 5456c (Holub, 10.9.1992, PRA; Trávníček, 10.9.1992, OL). – Dneboh village near Mnichovo Hradiště town, road verge and orchard 0.5 km SE of the village, 5456c (Havlíček, 1.8.2001, PRC). – Stéblovce village near Sobotka town, road verge in the oakwood 0.2 km SW of the village, NE of Ryje settlement, 5557a (Havlíček, 1.8.2001, PRC). – Stéblovce village near Sobotka town, road verge 1 km S of the village, 5557a (Hadinec, 26.9.2000, PRC). – Mladějov village in the Český ráj protected area, along the hiking trail 1.5 km SEE of the village, 5557b (Hadinec, 26.9.2000, PRC). – **59. Orlické podhůří:** Distr. Rychnov nad Kněžnou, Šediviny village, in the wood along the road W of the road to Strakovec village, 5763b (Holub, 25.8.1995, PRA). – **61b. Týnišťský úval:** Olešnice village near Kostelec nad Orlicí town, at the woodland path on Malý Chlum hill SWS of the village, 5862d (Trávníček, 31.8.2000, OL). – Kostelecké Horky village near Choceň town, at the woodland path 0.5 km NEN(–N) of the village, 5963a (Trávníček, 8.9.2000, OL). – Skořenice village near Choceň town, in the wood beside the road 1.3 km N (–NEN) of the village, 5963c (Trávníček, 8.9.2000, OL). – **61c. Chvojenská plošina:** Šachov village near Kostelec nad Orlicí town, in the wood along the road towards Zdelov, 5962b (Trávníček, 31.8.2000, OL). – Sruby village near Choceň town, at the woodland path 1.2 km NE – 1.2 km N of the village, 5963c (Trávníček, 21.8.1996, OL). – Choceň town, in the wood between the crossing “Nad Hlubokou” and the town, 5963c (Hrbáč, 1.8.1998, herb. Hrbáč). – **62. Litomyšlská pánev:** Choceň town, on Chlum hill S of the town, 6063a (Trávníček, 21.8.1996, OL; Holub, 20.9.1996, PRA). – In the wood between the Choceň town and Dvořisko village, 6063a (Holub, 20.9.1996, PRA). – Vraclav village near Choceň town, in the wood 1.3 km NE of the village, 6062b (Trávníček, 22.7.2000, OL) [holotype]. – Vraclav village near Choceň town, in the wood along the road 1 km NW of the village, 6062a (Trávníček, 9.8.2000, OL). – Mravín village near Vysoké Mýto town, in the wood along the road to Pěšice village, SES of the Mravín village, 6062c (Trávníček, 9.8.2000, OL). – Distr. Ústí nad Orlicí, in the wood along the road between the villages of Brteč and Lhůta, 6062d (Trávníček, 31.8.2000, OL). – Zádolí-Stříhanov village near Vysoké Mýto town, in the wood along the road N of the village, 6062d (Trávníček, 31.8.2000, OL). – Javorníček village near Vysoké Mýto town, in the wood along the road S of the village, 6162b (Havlíček, 25.7.2001, PRC). – Javorník village near Vysoké Mýto town, in the wood along the road to Džbánov village, 6162b (Trávníček, 28.8.2000, OL). – Javorník village near Vysoké Mýto town, in the wood along the road 1 km N of the village, 6162b (Havlíček, 25.7.2001, PRC). – Distr. Ústí nad Orlicí, in the village of Člupek, 6164a (Holub, 25.7.1982, PRA). – **64b. Jevanská plošina:** Distr. Praha-východ, Kamenice village, close to Olešovické polesí gamekeeper's lodge, 6153b (Holub, 15.11.1997, PRA). – Distr. Praha-východ, Ládví village, along the path on the E periphery of the village, 6153b (Marek, 3.10.1989, OL). – Všešimý village near Říčany town, road verge E of the village, in the direction of the highway, 6054c (Havlíček, 17.8.2001, PRC). – **64c. Černokostelecký perm:** Mrzky village near Český Brod town, in the wood clearing 1.2 km SES of the village, 5954d (Havlíček, 14.8.2001, PRC). – Distr. Kolín, in the wood along the road between the villages of Předhovzdí and Tucharaz, 5955c (Holub, 14.10.1995, PRA). – Distr. Kolín, Krymlov village, E edge of the village, 6055b (Holub, 9.10.1993, PRA; Holub, 26.10.1996, PRA). – Distr. Kolín, Ždánice village, short cut of the road between the village and Monument W of the village, 6055b (Holub, 1.11.1997, PRA). – **65. Kutnohorská pahorkatina:** Zehuby village near Čáslav town, in the wood along the road in the valley of Doubravka brook 0.8 km E of the village, 6158b (Havlíček, 12.9.2001, PRC). – Třebonín village near Čáslav town, in the wood along the road 0.8 km S of the village, 6157b (Havlíček, 13.9.2001, PRC). – Adamov village near Čáslav town, in the oakwood on the SW edge of the village, 6158a (Havlíček, 12.9.2001, PRC). – Zvěstovice village near Golčův Jeníkov town, in the orchard along the road 0.7 km N of the village, 6159a (Havlíček, 12.9.2001, PRC). – **66. Hornosázavská pahorkatina:** Nasavrky village near Golčův Jeníkov town, in the wood along the road 0.5–1.3 km SE of the village, 6259a (Havlíček, 28.10.2001, PRC). – Římovice village near Golčův Jeníkov town, in the wood along the road 0.7 km W of the village, 6158d (Havlíček, 13.9.2001, PRC). – Žebrákov village near Světlá nad Sázavou town, in the wood along the road 0.6 km E of the village, close to Lány settlement, 6358a (Havlíček, 13.9.2001, PRC). – **67. Českomoravská vrchovina:** Kamenná Lhota village near Ledeč nad Sázavou town, along the road 1.5–2 km SWS of the village, 6357d (Trávníček, 28.7.1998, OL). – Radostovice village near Lipnice nad Sázavou town, 6358c (Holub, 8.8.1988, PRA). – Sedlejev village near Třešť town, on Májovec hill 1 km N of the village, 6758d (Žíla, 29.8.1996, herb. Žíla). – Branšíkov village near Brno town, on the wood margin W of the village, 6764a (Hrbáč, 10.7.1996, PRA). – **68. Moravské podhůří Vysočiny:** Tišnov town, in the wood beside the hiking trail W of the village, E of Kozí brada hill, 6664c (Trávníček, 17.7.1996, OL). – Úsuší village near Tišnov town, between the Pasník hill and the village, 6664c (Trávníček, 17.7.1996, OL). – Hradčiny village near Tišnov town, NW part of the wood on the SW edge of the village, 6664d (Trávníček, 25.7.2001, OL). – Maršov village near Veverská Bitýška town, in the woodland along the road towards the valley of Bílý potok 1.1 km S of the village, 6764a (Trávníček, 25.7.2001, OL). – In the wood along the road between the villages of Lažánky and Veverská Bitýška, 1.2 km SEE of Lažánky village, 6764a (Trávníček, 25.7.2001, OL). – In the wood between the villages of Veverská Bitýška and Lažánky, 1 km NNW of Veverská Bitýška village, 6764b (Trávníček, 25.7.2001, OL). – Moravské Knínice village near Kuřim town, at the woodland path 1.5 km

SW of the crossroads in the village, 6764b (Trávníček, 12.9.2001, OL). – Moravské Knínice village near Brno town, wood clearing in the direction of Na lesní horce wood, 6764d (Hrbáč, 22.6.2002, herb. Hrbáč). – In the wood of Senařov between the villages of Moravské Knínice and Jinačovice, 6765a (Hrbáč, 12.7.2001, herb. Hrbáč). – Brno town, Brno-Rozdrojovice suburb, on the edge of the wood in the direction of Trnůvka village, 6765a (Hrbáč, 6.8.2001, herb. Hrbáč). – Brno town, Chudčice village, on the road margin in the wood in the direction of the place of Břenčák, 6764b (Hrbáč, 29.7.2001, herb. Hrbáč). – Rozdrojovice village near Brno town, on the edge of the grove on the SW periphery of the village, 6765a (Trávníček, 12.9.2001, OL). – Brno, Brno-Žebětín suburb, Podkomorské lesy woodland, Kočičí žleb valley near Brněnská přehrada reservoir, 6764d (Holub, 6.7.1988, PRA). – Brno town, Podkomorské lesy woodland, near the crossing of Vrtačka, 6764d (Hrbáč, 28.8.1999, herb. Hrbáč). – Brno town, Podkomorské lesy woodland, in the valley of the brook of Veverka between Vápenice and Říšova studánka spring, 6764d (Hrbáč, 11.8.2001, herb. Hrbáč). – Brno town, Podkomorské lesy woodland, Brněnská přehrada reservoir, close to the Pohoda cottage near Kozí horka hill, 6765c (Hrbáč, 29.6.2001, herb. Hrbáč). – Brno town, Podkomorské lesy woodland, 1 km NW of Helenčina studánka spring, 6764d (Hrbáč, 11.8.2001, herb. Hrbáč). – Brno town, Brno-Bystřec suburb, along the woodland path SE of Chvalovka hill, 6764d (Trávníček, 17.7.1999, OL). – Zbraslav village near Brno town, at the woodland path between the hills of Svině and Jelen, 6763d (Holub, 5.9.1996, PRA). – Příbram village near Rosice town, in the wood along the path close to gamekeeper's lodge 1.2–1.5 km NEN of the village, 6763d (Trávníček, 5.9.1996, OL). – Příbram village near Rosice town, in the wood along the road to Zastávka village 1.3 km NE of Příbram village, 6763d (Trávníček, 5.9.1996, OL). – Omice village near Brno town, along the hiking trail 1.5 km N of the village, 6864b (Trávníček, 16.8.1994, OL). – Vysoké Popovice village near Brno town, in Čeleška wood S of the village, 6863b (Holub, 5.9.1996, PRA). – Lukovany village near Rosice town, in the wood along the road towards Vysoké Popovice, 6863b (Trávníček, 5.9.1996, OL). – Sedlec village near Náměšť nad Oslavou town, in the wood along the road 1.4 km SW of the village, 6862b (Trávníček, 27.7.2001, OL). – Kuroslepy village near Náměšť nad Oslavou town, at the woodland path 0.9 km E of the village, 6863a (Trávníček, 6.8.2001, OL). – Distr. Třebíč, Kladeruby nad Oslavou village, between the settlements of Vlčí Kopec and Skřípský mlýn, 6863c (Holub, 2.7.1990, PRA). – Distr. Brno-venkov, Oslavany village, along the road to Ketkovice village, W of Oslavany village, 6863d (Holub, 5.9.1996, PRA; Trávníček, 5.9.1996, OL). – Distr. Třebíč, Kramolín village, in the wood along the road towards Mohelno village, 6862d (Holub, 21.8.1985, PRA). – Distr. Znojmo, Vranovská Ves village, on the wood margin along the road 1.6 km SW of the village, 7061c (Trávníček, 20.9.1995, OL). – Distr. Znojmo, Vranovská Ves village, Kraví hora hill, in the wood along the road 1.5 km SW of the centre of the village, 7061a (Vašut, 24.8.2000, OL). – **69a. Železnohorské podhůří:** Distr. Kutná Hora, close to Bernardov village, 5958c (Holub, 29.6.1995, PRA; Holub, 31.8.1997, PRA). – Distr. Pardubice, beside the quarry W of Zdechovice village, 5958d (Holub, 11.7.1989, PRA; Holub, 5.8.1994, PRA). – Zdechovice village near Pardubice town, in the wood S of the village, 5958d (Holub, 7.10.1995, PRA). – Svobodná Ves village near Pardubice town, above the settlement of Vinice, 6058b (Holub, 7.10.1995, PRA). – Distr. Chrudim, Podhořany u Ronova, road curve on the S periphery of the village, 6059c (Holub, 27.9.1996, PRA). – Stojice village near Heřmanův Městec town, in the wood beside the road 1.3 km SWS of the village, 6059d (Trávníček, 11.9.2000, OL). – Distr. Chrudim, in the wood between the villages of Vlastějov and Licoměřice, 6059d (Holub, 22.9.1990, PRA). – Chotěnice village near Heřmanův Městec town, road verge on the E edge of the village, 6060c (Havlíček, 9.8.2000, PRC). – Distr. Chrudim, Slatiňany village, close to Perný pond SW of the village, 6060d (Holub, 12.7.1989, PRA). – Distr. Chrudim, Chacholice village, in the wood beside the road 0.5 km S of the village, 6161b (Trávníček, 11.9.2000, OL). – Zderaz village near Skuteč town, in the wood along the road towards Nové Hradky village, close to Zderaz village, 6162d (Trávníček, 9.8.2000, OL). – Brdo village near Skuteč town, in the wood along the road towards Hluboká village, 6162a (Trávníček, 9.8.2000, OL). – Zhoř village near Skuteč town, in the wood along the road SES of the village, 6162c (Trávníček, 9.8.2000, OL). – **71c. Dražanské podhůří:** Slatinky village near Prostějov town, at the woodland path 1.1 km SW of the village, 6468c (Trávníček, 28.7.2002, OL). – Slatinky village near Prostějov town, on Velký Kosíř hill W of Vápenice nature reserve, 6468c (Holub, 19.8.1992, PRA). – Stařechovice village near Prostějov town, in the wood above Na Ulmance quarry, 6468c (Trávníček, 1.10.1992, OL). – Stařechovice village near Prostějov town, in the overgrown orchard on the S slopes 1.7 km E of the village, 6468c (Trávníček, 29.7.1988, OL). – Otaslavice village near Prostějov town, in the wood NW of the village, 6668a (Trávníček, 2.9.1994, OL). – Distr. Vyškov, Račice village, in the wood on the NE edge of the village, 6767a (Trávníček, 22.7.1999, OL). – **73b. Hanušovická vrchovina:** Slavoňov village near Zábřeh town, in the woodland 1.7 km NWN of the village, 6167c (Trávníček, 3.9.1998, OL). – **74a. Vidnavsko-osoblažská pahorkatina:** Hlinka village near Osoblaha town, grove along the road 0.6 km SW of the village, 5771b (Trávníček, 18.8.1999, OL). – Damašek village near Osoblaha town, SW part of the wood 0.4 km NE of the NE edge of the village, 5771c (Trávníček, 18.8.1999, OL). – Osoblaha town, in the wood on the hill N of Městský les wood, 5771b (Holub, 29.7.1980, PRA). – **74b. Opavská pahorkatina:** Krnov town, between the town and the

church of Mariánské Pole, 5972a (Holub, 11.8.1988, PRA). – Krnov town, on the N slope of Zadní Cvilínský kopec hill, 5972a (Pečinka & Dočkalová, 15.9.1999, OL). – Distr. Bruntál, Úvalno village, in the wood on the top of Strážišťe hill on NW edge of the village, 5972a (Pečinka, 2.10.1999, OL). – Úvalno village near Krnov town, in the wood along the road towards Bykov village, 5972c (Trávníček, 6.8.1998, OL). – Zátor village near Krnov town, in the grove N of the road to Lichnov, 0.7 km of the village, 5971d (Trávníček, 13.9.2001, OL). – **75. Jesenícké podhůří:** Tošovice village near Odry town, in the wood along the road SWS of the village, 6373a (Trávníček, 6.9.2000, OL). – **76a. Moravská brána vlastní:** Paršovice village near Hranice town, on the wood margin N of the road to Týn nad Bečvou village, 1.7 km NWW of the village, 6472c (Trávníček, 16.7.2002, OL). – Branky village near Valašské Meziříčí town, in the wood 1.1 km SW of the railway station, 6573a (Trávníček, 21.8.1999, OL). – **76b. Tršická pahorkatina:** Tověř village near Olomouc town, E of the village, 6369d (Trávníček, 9.9.1991, OL). – Zábeštní Lhota village near Přerov town, at the woodland path 0.7 km SWS of the village, 6470d (Holub, 18.9.1991, PRA; Trávníček, 18.9.1991, OL). – **77a. Ždánický les:** Nevojičky village near Bučovice town, in the wood along the asphalt way 0–0.8 km E of the crossing “U kříže”, 6868c (Trávníček, 28.8.1997, OL). – Kobeřice u Brna village, wood clearing close to U bílého vlka gamekeeper's lodge, 1.5 km NEE of the village, 6967a (Trávníček, 22.9.1994, OL). – **77c. Chříby:** Staré Hutě village near Buchlovce town, along the main road close to the parking place 2 km SE of the village, 6869d (Trávníček, 1.9.1996, OL). – Buchlovce town, along the hiking trail N of Chrástě hill, 6869d (Trávníček, 4.9.1994, OL). – Buchlovce town, 0.4 km NW of Chrástě hill, 6869d (Trávníček, 4.9.1994, OL). – Salaš village near Buchlovce town, in the wood clearing 1.5 km SW of the village, 6870c (Trávníček, 4.9.1994, OL). – Distr. Uherské Hradiště, Jankovice village, along the road 1.5 km NW of the village, 6870a (Trávníček, 25.8.1992, OL; Trávníček, 22.9.1995, OL). – Distr. Uherské Hradiště, Bunč village, along the woodland path between Bunč recreation site and Komínské skály hill, 6870a (Kusák, 4.9.1993, OL). – Distr. Uherské Hradiště, Bunč village, along the road 0.6 km E of the village, 6870a (Trávníček, 4.9.1993, OL). – Distr. Kroměříž, Cetechovice village, at the wood margin 0.5 km SE of the village, 6869b (Trávníček, 1.9.1991, PRA). – Distr. Kroměříž, Nová Dědina village, along the road close to Tabarky gamekeeper's lodge, 6770d (Trávníček, 15.9.1991, OL, PRA; Trávníček, 22.9.1995, OL). – Distr. Kroměříž, Lubná village, along the road in the woodland 2 km SE of the village, 6770c (Trávníček, 15.9.1991, PRA). – Žlutava village near Otrokovice town, in the wood along the road 1.3 km SW of the village, 6870b (Trávníček, 12.9.2000, OL). – **78. Bílé Karpaty lesní:** Distr. Uherské Hradiště, Prakšice village, on the Lhotský vrch hill, 6971b (Holub, 2.8.1996, PRA). – Dobrkovice village near Luhačovice town, on the edge of the wood along the road 1.4 km W of the village, 6971b (Trávníček, 10.9.2001, OL). – Luhačovice town, wood margin along the road towards Řetechov 1.6 km N of the railway station, 6872d (Trávníček, 20.8.2002, OL). – Luhačovice town, in Obora wood, 6872d (Holub, 1.8.1996, PRA). – Luhačovice town, close to the crossing of Bílý kříž, 6972b (Holub, 1.8.1996, PRA). – Luhačovice town, wood clearing 1.4 km S of railway station, 6972b (Trávníček, 1.9.1993, OL). – **79. Zlínské vrchy:** Distr. Zlín, Fryšták village, along the path SWS of the village, NWW of Přehrada Fryšták reservoir, 6772a (Trávníček, 10.9.1995, OL). – Kostelec village near Zlín town, wood margin close to the crossing 0.5 km SW of the village, 6772a (Trávníček, 31.8.1996, OL). – Zlín town, on the wood margin 1.6 km N – 1.8 km NEN of the village, 6772c (Trávníček, 7.9.1997, OL). – Zlín town, at the woodland path from Lazy suburb to the road leading to Březůvky village, close to Vršek hill (438 m), 6772c (Kusák, 29.8.1993, OL). – Zlín town, on the woodland edge along the road between the villages of Kudlov and Nové Paseky, SES of Kudlov village, 6872a (Trávníček, 31.8.1997, OL). – Zlín town, at the woodland path over Dílý hill, E of Kudlov village, 6772c (Trávníček, 31.8.1997, OL). – Distr. Zlín, grove close to SE edge of Jaroslavice u Zlína village, 6772c (Trávníček, 21.7.1999, OL). – Distr. Zlín, in the wood along the path N–NWN of Břežnice village, 6771d (Trávníček, 18.9.1994, OL). – Along the road between Břežnice village and Zlín town, 1.2–1.5 km N of the village, 6871b (Trávníček, 18.9.1994, OL). – Bohuslavice u Zlína village, in the wood clearing 1.5 km SES of the crossroads in the village, 6871b (Trávníček, 13.7.1994). – Bohuslavice u Zlína village, near the village in the direction of Doubravy village, 6871b (Holub, 13.7.1994, PRA). – Lhota village near Zlín town, at the woodland path 1.4 km SW of the village, 6871b (Trávníček, 3.8.1993, OL). – Distr. Zlín, Březůvky village, in the scrub beside the road towards Zlín town, 1 km NEN of the village, 6872a (Trávníček, 20.8.2002, OL). – Březůvky village near Zlín town, along the woodland asphalt way 1 km N – 0.8 km NWW of Kamenec hill, 6872a (Trávníček, 31.8.1997, OL). – Ludkovice village near Luhačovice town, in the wood beside the road along the Ludkovice reservoir N of the village, 6872c (Trávníček, 10.9.2001, OL). – In the village of Syrákov near Vsetín town, 6773a (Holub, 11.7.1990, PRA). – Distr. Zlín, Ublo village, in the wood 1 km NW of the village in the direction of Lutonina village, 6773c (Dančák, 1.9.2000, OL). – Vysoké Pole village near Vizovice town, in the wood along the road 1.4 km N of the crossroads in the E part of the village, 6873b (Trávníček, 10.9.2001, OL). – **80a. Vsetínská kotlina:** Poličná village near Valašské Meziříčí town, in the wood along the road close to S edge of the Kotlina settlement, 6573b (Trávníček, 21.8.1999, OL). – Distr. Vsetín, Jarcová village, on the slope above Bečva river between the village and Českův mlýn mill, 6573d (Dančák, 9.10.1999, OL). – Distr. Vsetín, Oznice village, on the



margins above the road close to the village, 6573d (Dančák, 12.9.1999, OL). – Mikulůvka village near Valašské Meziříčí town, on the edge of the wood 0.5 km N of U Papežů settlement, 6573d (Trávníček, 21.8.1999, OL). – Mikulůvka village near Valašské Meziříčí town, at the disused path towards Pržno village E of Mikulůvka village, 6573d (Dančák, 12.9.1999, OL). – Pržno village near Valašské Meziříčí town, at the disused path towards Mikulůvka village near U Kubíčků settlement, 6673b (Dančák, 12.9.1999, OL). – Ratiborůvka village near Vsetín town, bushes on Kosiska hill NW of the village, 6673a (Dančák, 10.10.1999, OL). – Ratiborůvka village near Vsetín town, in the valley of Bečva river, 6673b (Holub, 14.8.1998, PRA). – Vsetín town, close to the Dolní Vesní settlement N of the town, 6673b (Dančák, 24.8.2001, OL). – Lhota village near Vsetín town, along the path between cemetery and Lhotské Paseky settlement, 6673d (Dančák, 21.8.1999, OL). – **81. Hostýnské vrchy:** Hostýn hill, beside the road 0.5 km S of the summit, 6672a (Trávníček, 29.6.2001, OL). – Oznice village near Valašské Meziříčí town, on the edge of the meadow close to Paseky settlement, 6573c (Zatloukal, 22.7.1998, OL). – Hošťálková village near Vsetín town, 0.6–1 km SE of Bludný hill, NW of the village, 6673a (Trávníček, 6.8.1995, OL). – Držková village, along the road in the direction of Hošťálková village, 6672d (Dančák, 3.8.2000, OL). – Distr. Zlín, Lukoveček village, wood margin between the NW edge of the village and Hadovna gamekeeper's lodge, 6671d (Trávníček, 4.8.1996, OL). – Distr. Zlín, Lukoveček village, close to Skalka gamekeeper's lodge NW of the village, 6671d (Trávníček, 31.8.1996, OL). – Trnava village near Vizovice town, at the woodland path 0.6 km W of Dvořisko settlement, 6673c (Trávníček, 10.9.2001, OL). – Fryšták town, at the woodland path on the N edge of the village, towards Lukoveček village, 6772a (Trávníček, 4.9.1996, OL). – Distr. Zlín, in the wood between the villages of Lukov and Kašava, 6772b (Holub, 11.7.1990, PRA; Trávníček, 31.8.1996, OL). – Distr. Zlín, Hrobice village, near the crossing NW of the village, 6772b (Trávníček, 14.8.1995, OL). – **83. Ostravská pánev:** Slezská Ostrava town, in the grove between the railway and crossroads 0.6 km of Hladnov zoo, 6175d (Trávníček, 31.8.2001, OL). – **84a. Beskydské podhůří:** Distr. Frýdek-Místek, Špluchov village, on the wood margin along the road towards Bruzovice, S of Špluchov village, 6276c (Trávníček, 9.9.2000, OL). – Metylovice village near Frýdek-Místek town, SE slopes of Metylovická hůrka hill, 6376c (Holub, 23.7.1992, PRA). – Vendryně village near Třinec town, beside the road in the valley 1.5 km NWW of Ostrý hill, 6378a (Vašut, 15.8.2000, OL). – Kunčice pod Ondřejníkem village, road margin in the settlement Pod Ondřejníkem, 1.5 km SW of Skalka hill, 6475d (Vašut, 10.9.1999, OL).

**Slova k i a:** **2. Ipěsko-rimavská brázda:** Lučenec town, in the scrub along the road 2–2.5 km NEN of Kypťáč hill on the SW periphery of the town (Trávníček, 7.7.2003, OL; Žíla, 7.7.2003, herb. Žíla). – Fiřakovo town, beside the path towards the quarry 1 km NEE of the town (Trávníček, 31.7.1993, OL). – Bulhary village near Fiřakovo town, at the crossing of woodland paths 0.5 km SW of Velký Bučený hill (524 m) NE of the village (Trávníček, 8.7.2003, OL; Žíla, 8.7.2003, herb. Žíla). – **3. Slovenský kras:** Plešivec town, trackage in the railway station (Trávníček, 7.8.1991, OL, PRA). – **9. Biele Karpaty (južná časť):** Nová Bošáca village (Holub, 30.7.1985, PRA). – **10. Malé Karpaty:** Along the road between the towns of Pezinok and Malacky (Žíla, 27.7.2002, herb. Žíla). – **12. Trábeč:** Zlatno village near Zlaté Moravce town, beside the woodland path 0.8 km NWW of the village (Trávníček, 6.7.2003, OL; Žíla, 6.7.2003, herb. Žíla). – Velčice village near Zlaté Moravce town, along the path 1–2 km NWW of the village (Trávníček, 6.7.2003, OL). – Jelenec village near Nitra town, at the woodland path 0.8 km NWW of Jelenec reservoir NW of the village (Trávníček, 5.7.2003, OL). – **13. Strážovské a Súľovské vrchy:** Malý Kolačín village, at the woodland path N–NWN of Markovica hill (592 m) SE of the village (Trávníček, 2.7.2003, OL). – **14d. Poľana:** Hrochof village, beside the road 0.8 km SES of the village (Trávníček, 8.7.1997, OL). – **14e. Štiavnické vrchy:** Brehy village near Banská Štiavnica town, along the road in the valley 1.5–2 km SEE of the village, SW of Chlm hill (Trávníček, 6.7.2003, OL). – Pukanec town, in the scrub along the road towards Brehy village, 2 km N of the village (Trávníček, 6.7.2003, OL). – **15. Slovenské rudohorie:** Klenovec village, wood margin along the road to Kokava nad Rimavicou, in Chorepa saddle 2.5 km W of the village (Trávníček, 8.7.2003, OL; Žíla, 8.7.2003, herb. Žíla). – Brádko village, wood margin along the road to Jelšava town, 0.8 km E of the village (Trávníček, 8.7.2003, OL). – In the scrub along the road between Rákoš village and Jelšava town, 1 km NEE of the village (Trávníček, 8.7.2003, OL).

**A u s t r i a:** **Oberösterreich:** Unterweikersdorf village between the towns of Linz and Freistadt, 2 km NE of the village (Žíla, 9.8.2001, herb. Žíla). – **Niederösterreich:** Niederfladnitz village, at the woodland path 1.7 km NE of the village (Trávníček, 7.9.1993, OL). – Niederfladnitz village, wood clearing at the woodland path 2 km W of the village (Trávníček, 7.9.1993, OL). – Hofern village near Retz, in the wood beside the road 1.8 km SES of the village (Trávníček, 28.8.1998, OL).

**G e r m a n y:** **Bayern:** Spessart, at the woodland path 1 km SEE of Altenbuch village (Žíla, 8.9.2000, OL). – Passau town, beside the railway along the Donau river, SE of Kernmühle settlement, 5 km E of Passau (Holub, 6.9.1995, PRA). – Passau town, Windorf village NWW of the town, near Königshof settlement (Holub, 6.9.1995, PRA).

***Rubus guttiferus* Trávníček et Holub, spec. nova**

Figs 17–20

**Descriptio:** Frutex altus glandulis stipitatis nullis obsitus. Turio altiarcuratus, 6–9 (–12) mm in diametro, glaber, viridis, (dilute) violaceo-rubescens in apricis, angulatus cum faciebus planis vel subsulcatis. Aculei turionis leviter curvati (raro paene recti) (4–) 6–7 (–9) mm longi basi (5–) 6–8 (–10) mm lati in numero 3–6 ad 5 cm longitudinis. Folia turionis digitato-quinata cum laminulis in statu vivo deflexis, supra glabra, subtus pilis stellulatis tenue (griseo-viride) tomentosa insuper pilis patentibus brevibus disperse obsita (parce pilis ad tactum paene non perceptibilibus pilosa). Petiolus 55–75 mm longus foliolis infimis plerumque brevior [longitudo petioli = 80% (rarissime usque 100%) longitudinis foliorum], disperse pilosus usque glabrescens, cum aculeis (7–) 9–12 (–15) distincte curvatis munitus. Stipulae anguste lineares usque filiformes 0.5 (–1.0) mm latae. Foliolum terminale modice longe petiolulatum (longitudo petioluli 30–40 (–45)% longitudinis laminulae). Laminula in statu vivo in media parte deflexa anguste vel latiore ovata (raro elliptica vel obovata) basi rotundata vel truncata (raro latiore cuneata vel subcordata), subabrupte 17–23 mm longe acuminata (acumen saepe assymetrice recurvum), paene periodice vel aequaliter serrata dentibus latioribus apicibus cuspidatis, margine a dentibus densibus paulo undulata, incissurae (1.5–) 2.0–3.0 (–3.5) mm profundae. Foliola lateralia plerumque expresse minoria quam foliola terminalia, foliola infima (3–) 4–5 (–8) mm longe petiolulata. Inflorescentia paniculata, pyramidalis vel anguste pyramidalis in parte superiori plerumque paene cylindrica, (2–) 5–8 (–12) cm infra apicem efoliosa. Rami inflorescentiae erecto-patentes vel patentis. Folia inflorescentiae 1–3 (–5)-nata foliolis terminalibus ovatis, raro ellipticis usque obovatis. Rhachis subtomentosa insuper pilis patentibus longioribus obsita, aculei (2–) 3–5 (–7) pro 5 cm longitudinis, leviter vel distincte curvati, (3–) 4–5 (–6) mm longi basi 4–6 mm lati. Pedicelli (5–) 10–15 (–20) mm longi, tenue tomentosi insuper pilis longioribus patentibus (usque dense) instructi cum (1–) 2–5 (–7) aculeis armati, aculei graciles, leviter curvati 1–2 mm longi. Sepala post anthesin reflexa, inermia, externe canescente-tomentosa insuper pilis plus minusve patentibus obsita, conspicue cuspidata vel apicibus in appendices brevibus prolongati. Petala alba, late elliptica usque obovata, 9–12 mm longa 5–8 mm lata. Stamina stylos superantia. Antherae glabrae. Filamenta alba. Ovaria apicibus dense pilosa, styli albo-virescentes. Receptaculum pilosum. Fructus subglobosus vel globosus interdum usque late ovoideus e (0–) 10–20 (–25) drupeolis compositus. Floret (VI–) VII (–VIII).

**Holotype:** Czech Republic; SW Bohemia, Černíkov near Kdyně, wood margin along the road 1.3 km NWN of the village Černíkov, 570 m a.s.l. (R 205/99), coll. B. Trávníček, 5.8.1999, OL (Fig. 17).

**Etymology:** The species is named according to the terminal leaflet usually having the shape of a drop.

Main diagnostic features (see also Figs 17–20): stems glabrous, angled to slightly furrowed, with 3–6 prickles per 5 cm, usually (in sunny sites) only paler suffused purplish; leaves usually three-dimensional (with leaflets slightly concave and arcuate), glabrous and deep green above, with a thin whitish-grey tomentum below, with very short and sparse patent simple hairs (i.e. almost glabrous to the touch), older leaves and leaves of shaded plants usually almost not tomentose at first sight, almost green; terminal leaflet most often narrowly to broadly ovate,  $\pm$  gradually narrowed at apex 17–23 mm long, often drop shaped when young, sometimes with a rather asymmetrically bent apex, base usually rounded to indistinctly cordate, lamina widest below the middle; marginal indentation relatively acute, most often almost regular, with incisions (1.5–) 2–3 (–3.5) mm deep, leaflet margins sometimes slightly undulate due to dense teeth; inflorescence narrowly pyramidal, almost cylindrical terminally, with comparatively thick and short erecto-patent to almost patent branches; petals white; ovaries densely hairy above.

The differences between *R. guttiferus* and the similar *R. pericrispatus* are summarized in the subchapter dealing with the latter. Another very similar species is *R. austroslovacus*, which can be distinguished from *R. guttiferus* by usually (on sunny sites) darker red-brown coloured stems with slightly more slender and almost patent prickles, which are fairly flat (especially when dry), leaves more distinctly (almost grey-white) tomentose, terminal leaflet widest at or slightly distal to the middle, with a shorter, (5–) 8–15 (–18) mm long apex, inflorescence usually sparser, with longer and usually erecto-patent branchlets and peduncles. Another rather similar species, *R. grabowskii*, differs from



Fig. 17. – *Rubus guttiferus*, holotype; bar = 10 cm.

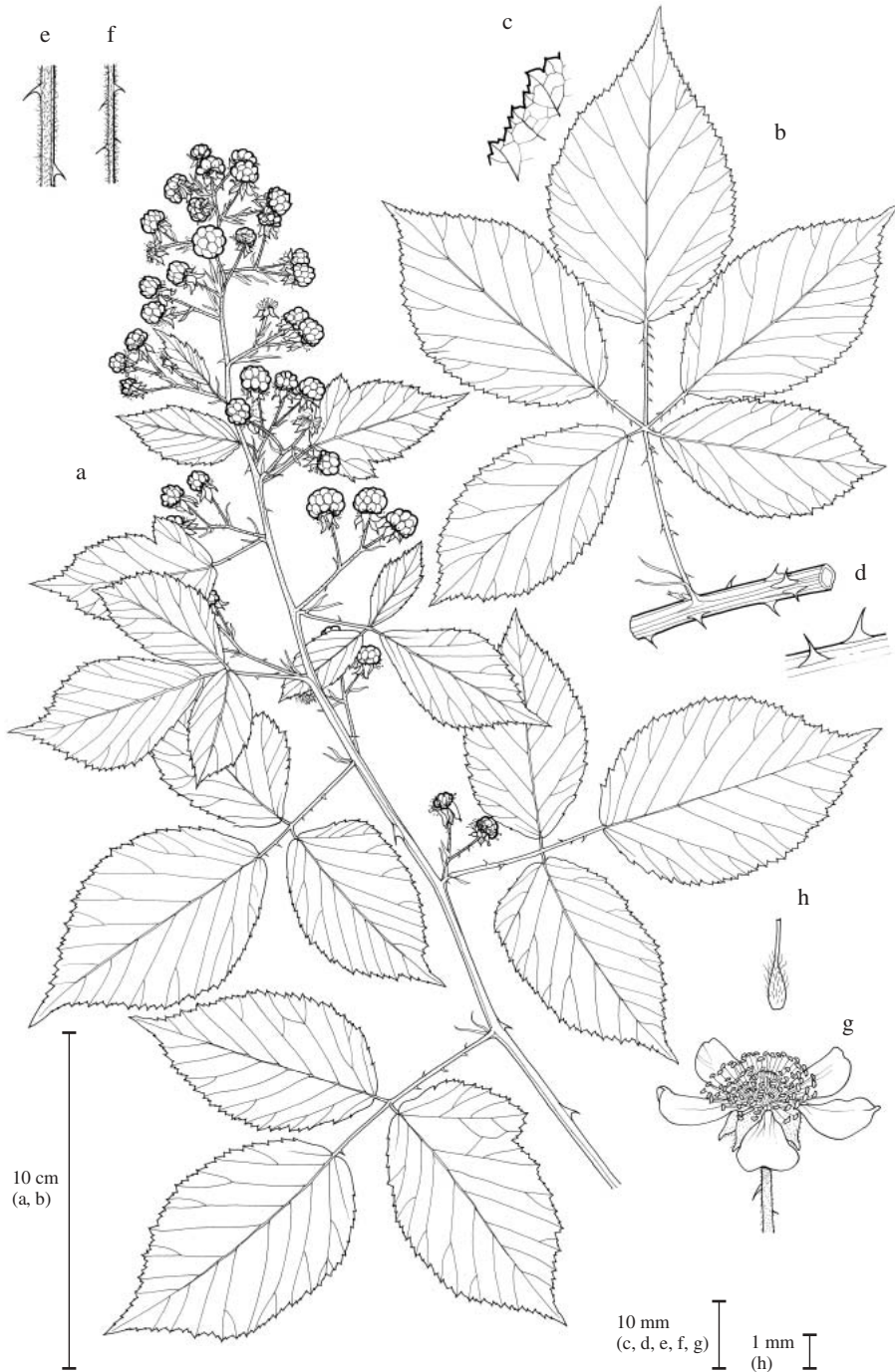


Fig. 18. – *Rubus guttiferus*: a – inflorescence; b – leaf; c – indentation on the margin of the terminal leaflet; d – detail of sterile branch with prickles; e – detail of inflorescence axis; f – detail of peduncle; g – flower; h – detail of pistil. Del. A. Skoumalová.

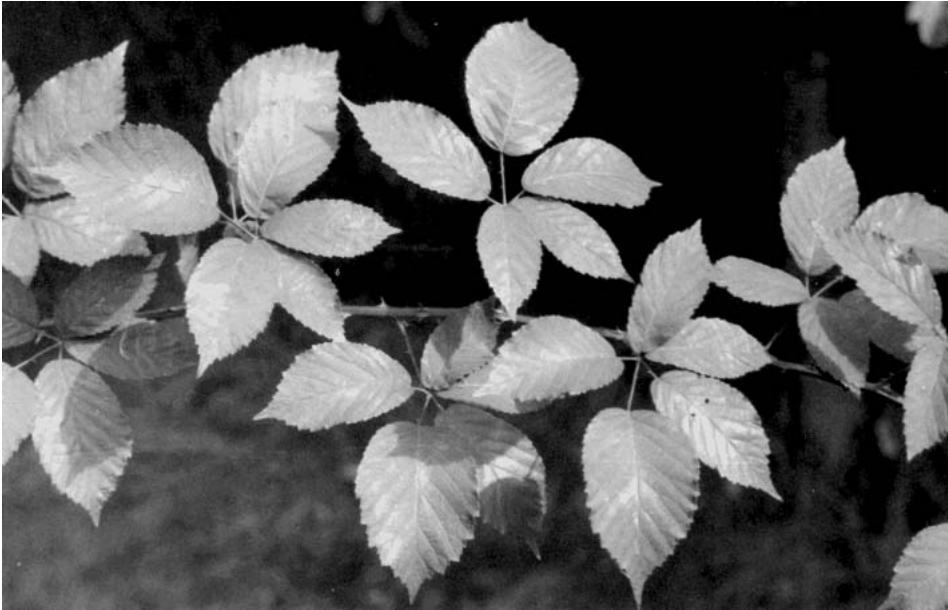


Fig. 19. – Sterile branch of *Rubus guttiferus* (locality: Central Bohemia, Čelina near Nový Knín).

Fig. 20. – Leaf of *Rubus guttiferus* (locality: SW Moravia, Říčky near Rosice).



*R. guttiferus* in having  $\pm$  flat leaves, terminal leaflet broader, almost rounded-ovate, with shorter and more abrupt apex, and petals bright pink. *R. montanus* also has  $\pm$  flat leaves and darker coloured stems on sunny sites, terminal leaflet with  $\pm$  parallel margins and usually entirely glabrous gynoecium. The arcuate leaflets of  $\pm$  three-dimensional leaves of *R. guttiferus* resemble those of *R. phyllostachys* but the latter has distinctly hairy first-year stems and gynoecium usually almost glabrous. The shape of terminal leaflet, including the slightly laterally bent apex in some leaflets, might point to *R. crispomarginatus*. However, the latter species can be distinguished by its conspicuously periodic leaflet indentation, with incisions to 3–5 (–6) mm deep and leaflets closer together, i.e. with the terminal leaflet on a petiolule only 22–35% as long as the lamina, and lower leaflets with petiolules only 1–2 (–4) mm long. Leaves of *R. crispomarginatus* beneath are usually more conspicuously tomentose and stems often more deeply furrowed. Further confusion can be caused by *R. perrobustus* Holub, which is often regarded as a member of the subsection *Rubus* (= sect. *Suberecti* Lindl.) and like *R. constrictus* P. J. Mueller et Lefèvre occupies an intermediate position between subject. *Rubus* and ser. *Discolores*. *R. perrobustus* differs from *R. guttiferus* in that the lower surfaces of its leaves are less tomentose to non-tomentose (green) and have a more distinctly periodic indentation, usually bright pink petals and glabrous gynoecium.

The geographical distribution of *R. guttiferus* may be characterized as widely regional to widespread. The species has been found in the Czech Republic, Lower Austria (including Wienerwald), Slovakia (see also Holub & Trávníček, 1998; quite rare, as far as known, but may be more common) and S Poland. It may occur in Germany (especially in the SE part) and N Hungary. The species was first recognized in SW Moravia, and the knowledge of its much more extensive distribution is a result of later explorations.

In the Czech Republic, it is found scattered in warmer wooded regions of Bohemia and Moravia. It is probably absent from (or very rare in) NW Bohemia and SE Moravia. In Bohemia, it is more common in the middle Vltava region, in Moravia chiefly in its W part, along the margins of Bohemian Massif. *R. guttiferus* is a thamnophilous species obviously preferring nutrient rich, slightly acidic to basic, damp soils. It occurs along margins of woods, in open patches in forests, in clearings and amongst shrubs.

Herbarium specimens examined (Fig. 21)

Czech Republic: **3. Podkrušnohorská pánev:** Distr. Teplice, Přítkov village, in the wood close to the village, 5348b (Holub, 12.7.1991, PRA). – **4b. Labské středohoří:** Povrvly village near Ústí nad Labem town, in the wood margin and clearing along the road 0.7 km N of the village, in the direction of Mašovice village, 5350b (Havlíček, 5.10.2001, PRC). – **8. Český kras:** Želkovic near Zdice town, wood 1 km SWS of the village, 6150a (Havlíček, 12.7.2001, PRC). – Křižatky village near Beroun town, along the road 0.7 km E of the village, 6050c (Trávníček, 9.7.2001, OL). – **12. Dolní Pojizeří:** In Borek wood N of Chloumek village, NEN of Mělník town, 5653a (Holub, 7.9.1991, PRA; Trávníček, 3.7.1993, OL; Trávníček, 24.8.2000, OL). – Chloumek village near Mělník town, in the grove E of the village, 5653a (Holub, 5.10.1991, PRA; Holub, 10.11.1995, PRA). – Otradovice village near Lysá nad Labem town, along the railway 0–1 km W of the railway station, 5754c (Trávníček, 3.7.2002, OL). – In the wood between the villages of Sojovice and Stará Lysá, 5754d (Holub, 22.10.1988, PRA). – **15a. Jaroměřské Polabí:** Vilantice village near Dvůr Králové nad Labem town, pine wood along the road NWW of the village, 5660b (Havlíček, 10.8.2001, PRC). – **15b. Hradecké Polabí:** Vysoký Újezd village near Třebechovice pod Orebem town, along the woodland path 1 km SW of the village, 5762c (Trávníček, 2.8.2001, OL). – **16. Znojensko-brněnská pahorkatina:** Ivančice village, wood along the road towards Stavení village 2 km SES of the main railway station, 6964a (Trávníček, 6.8.2001, OL). – Moravský Krumlov town, close to Stavení gamekeeper's lodge, 6964a (Holub, 5.7.1988, PRA). – **30b. Rakovnická kotlina:** Olešná village near Rakovník town, in the woodland N of the village, 5848c (Holub,

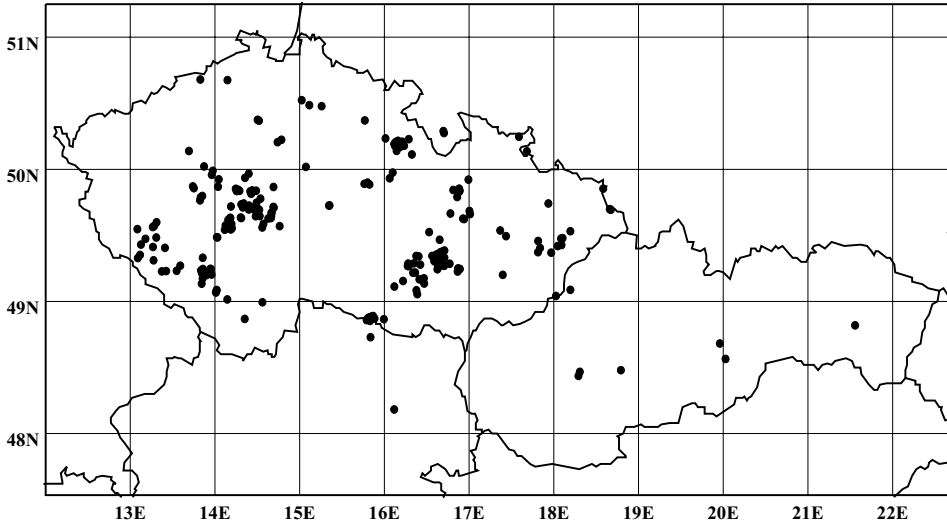


Fig. 21. – Distribution of *Rubus guttiferus*.

19.10.1996, PRA). – **31a. Plzeňská pahorkatina vlastní:** Přeštice town, in the wood between Přeštice-Zastávka railway station and Dolní Lukavice village, 6345d (Holub, 31.7.1989, PRA). – Oplot village near Přeštice town, on the wood margin 1 km SES of the village, 6445b (Žíla, 7.10.2001, herb. Žíla). – Horušany village near Přeštice town, in the wood E of the village, 6445b (Holub, 22.10.1996, PRA). – Staňkov town, on the northern periphery of the town, along the road towards Krchleby village, 6444d (Žíla, 8.10.2000, herb. Žíla). – Distr. Klatovy, Třebýcinka village, in the wood along the road towards Švihov village, SWW of the village Třebýcinka, 6545b (Trávníček, 2.8.1999, OL). – Klatovy town, SE part of the woodland along the road to Svrčovec village, 6545d (Trávníček, 2.8.1999, OL). – **32. Křivoklátsko:** Roztoky u Křivoklátské village, above the railway station, 5949c (Holub, 30.7.1979, PRA). – Distr. Beroun, Otročiněves village, on the edge of the wood W of the road 1 km N of the chapel, 6049b (Havlíček, 8.10.1999, PRC). – Distr. Beroun, Hudlice village, in the margin close to Hudlická skála hill on the SW edge of the village, 6049b (Havlíček, 8.10.1999, PRC). – Zbiroh town, on Světovina hill, 6148a (Holub, 16.9.1992, PRA). – In the village of Švabín near Zbiroh town, 6148b (Holub, 7.10.1989, PRA). – **33. Branžovský hvozď:** Chudenice village, on the wood margin along the road to Býšov village, 6545a (Trávníček, 5.8.1999, OL). – Černíkov settlement near Chudenice village, in the wood along the road 1.3 km N–NWN of the village, 6544d (Trávníček, 5.8.1999, OL) [holotype]. – Distr. Domažlice, NW of Pocinovice village, 6644b (Holub, 4.10.1996, PRA). – Distr. Domažlice, in the village of Orlovce, 6644d (Holub, 2.9.1998, PRA). – **34. Plánický hřeben:** Distr. Klatovy, Kroměždice village, close to the sand-pit E of the village, 6546c (Holub, 14.10.1997, PRA). – Distr. Klatovy, Lukavice village, close to the village, 6645d (Holub, 4.10.1996, PRA). – Petrovice village near Sušice town, on the wood margin beside the road 1.5 km NW of the village, 6746d (Žíla, 21.10.2001, herb. Žíla). – **35a. Holoubkovské Podbrdsko:** Zaječov village near Hořovice town, on the hill above the village, 6248b (Holub, 3.8.1989, PRA). – **35b. Hořovická kotlina:** Distr. Beroun, Komárov village, by the brook of Jalový potok S of the village, 6249a (Holub, 25.7.1978, PRA). – Jivina village near Hořovice town, on Jivina hill, 6248b (Holub, 25.7.1978, PRA). – Distr. Písek, Slavkoviccká Hora village, on the edge of the wood close to the village, 6550a (Trávníček, 4.8.1999, OL; Žíla, 4.8.1999, herb. Žíla). – **35d. Březnické Podbrdsko:** Distr. Písek, between the villages of Slavkovice and Slavkoviccká Hora, 6550a (Holub, 19.8.1988, PRA). – **36a. Blatensko:** Distr. Strakonice, Třebohostice village, on the wood margin beside the road close to the village, 6649c (Žíla, 1.10.1998, herb. Žíla). – **37b. Sušicko-horažďovické vápence:** Čepice village near Horažďovice town, in the wood on the slope of Čepičná hill, 6747b (Žíla, 1.9.2000, herb. Žíla). – Sušice town, on the hill of Kalovy, 6747c (Holub, 9.9.1983, PRA). – Sušice town, on the E periphery of the town, in the direction of Albrechtice village, 6746c. (Žíla, 1.9.2000, herb. Žíla). – **37d. Čkyňské vápence:** Nahořany village near Čkyně town, beside the road in the wood of V hájích 1–1.5 km SE of the village, 6849c (Žíla, 26.9.1997, herb. Žíla). – **37e. Volyňské**

Předšumaví: Podsrp village near Strakonice town, in the wood N of the main road, 1–1.4 km SEE of the village, 6749d (Trávníček, 16.8.1996, OL; Žíla, 16.8.1996, herb. Žíla). – Drachkov village near Strakonice town, wood margin 1 km SWS of the village, 6749c (Žíla, 25.9.1997, herb. Žíla). – Drachkov village near Strakonice town, at the W margin of the wood 1 km NE of the village, 6749c (Žíla, 29.10.1999, herb. Žíla). – Drachkov village near Strakonice town, in the wood of Kamenná Bába along the road 1 km of the village towards Sousedovice village, 6749c (Žíla, 29.10.1999, herb. Žíla). – Sousedovice village near Strakonice town, on the wood edge beside the road towards Drachkov village, 0.4 km NW of the Sousedovice village, 6749c (Žíla, 27.9.1996, herb. Žíla). – Distr. Strakonice, on the wood margin between the villages of Libětice and Úlehle, 6749c (Žíla, 24.8.1999, herb. Žíla). – Distr. Strakonice, Libětice village, on Kbíl hill W of the village, 6749c (Holub, 2.8.1990, PRA). – Distr. Strakonice, Němětice village, on Zámek hill NW of the village, 6749c (Holub, 17.8.1996, PRA; Trávníček, 17.8.1996, OL; Žíla, 17.8.1996, herb. Žíla; Holub, 3.10.1996, PRA; Holub, 23.9.1997, PRA). – Distr. Strakonice, Kuřimany village, on the hill of Kuřimanský vrch W of the village, 6749d (Žíla, 16.9.1997, herb. Žíla). – Distr. Strakonice, Nová Ves village (near Miloňovice village), at the SW margin of Lipovice wood 0.7 km of the village, 6749d (Žíla, 17.9.1997, herb. Žíla). – Distr. Strakonice, Hoštice, on Kalný vrch hill NWN of the village, 6849a (Žíla, 12.9.1997, herb. Žíla). – Volyně town, in the wood of Obecní les beside the road to Doubravice village, 2 km NWW of the town, 6849a (Žíla, 17.8.1996, herb. Žíla). – **37h. Prachatické Předšumaví:** Distr. Prachatice, Budkov village, on the edge of the wood 1.8 km NEN of the village, 6950a (Trávníček, 16.8.1996, OL; Žíla, 16.8.1996, herb. Žíla). – Distr. Prachatice, Budkov village, on Spálený vrch (Dub) hill, 6950a (Holub, 16.8.1996, PRA). – Distr. Prachatice, in the village of Budkov, 6950a (Holub, 3.10.1996, PRA). – **37i. Chvalšinské Předšumaví:** Distr. Prachatice, Lhenice village, close to Velký Hrádeček settlement, 6950d (Holub, 12.8.1996, PRA). – **37k. Křemžské hadce:** Plešovice village near Zlatá Koruna town, on the wood margin close to the quarry NW of the village, 7152a (Žíla, 18.9.1999, herb. Žíla). – **37p. Novohradské podhůří:** Distr. České Budějovice, Jívno village, wood margin 1 km E of the village, 7053a (Žíla, 28.9.2001, herb. Žíla). – **41. Střední Povltaví:** Pyšely village near Čerčany town, in the mixed forest along the road SE of the village, 6154a (Havlíček, 17.8.2001, PRC). – Prague, Praha-Zbraslav suburb, road verge along the railway on the right bank of the river Vltava 0.6 km SE of the railway station, 6052a (Havlíček, 15.10.1999, PRC). – Jíloviště village near Prague, on the wood margin beside the highway close to the summit of Cukrák hill, 6052c (Trávníček, 10.9.1998, OL). – Stříbrná Lhota village near Mníšek pod Brdy town, on the wood margin SE of the road 1.2 km S of the village, 6151a (Havlíček, 8.7.2001, PRC). – Mníšek pod Brdy town, in the wood of Včelník near the railway station, 6151d (Holub, 16.11.1991, PRA). – Nová Ves pod Pleší village near Mníšek pod Brdy town, near the top of Pleš hill, 6151d (Holub, 16.11.1991, PRA). – Nová Ves pod Pleší village near Mníšek pod Brdy town, in the valley by the brook 0.2 km NW of the village, 6151d (Štěpánek, 1.9.1983, PRA). – Distr. Příbram, Skalice village, in the wood along the road at the NE edge of the village, 6251c (Trávníček, 10.9.1998, OL). – Distr. Benešov, Krňany village, in the wood along the road 1 km SE of the village, 6152d (Trávníček, 9.9.1998, OL). – Třebenice village near Praha, in the wood between the village of Třebenice and Kolna woodland, 6152c (Holub, 19.7.1990, PRA). – In the wood between the villages of Svatý Ján and Třebenice, 6152d (Holub, 2.11.1991, PRA). – Rabyně village near the dam of Slapská přehrada reservoir, in the wood along the road at the right bank of the reservoir, 0.5 km N of the village, 6152d (Havlíček, 14.10.1999, PRC). – Distr. Benešov, Nová Rabyně village, along the road N of the village, 6152d (Holub, 20.10.1995, PRA). – Distr. Příbram, Mokrsko village, in the wood close to the village, 6252c (Holub, 15.7.1982, PRA). – Distr. Příbram, Čelina village, on the wood and road margin 1.3 km NWW of the village, 6251d (Trávníček, 10.9.1998, OL). – Distr. Benešov, Ouštice village, at the edge of pine wood beside the road 0.5 km SWS of the village, 6253a (Havlíček, 13.8.2001, PRC). – Stranný village near Neveklov town, in the wood along the road 0.6 km SW of the village, 6252d (Trávníček, 9.9.1998, OL). – Křečovice village near Sedlčany town, on the wood margin beside the road 1 km E of the village, 6252d (Trávníček, 9.9.1998, OL). – Křečovice village near Sedlčany town, Sukova vyhlídka belvedere E of the village, 6252d (Holub, 13.10.1995, PRA). – Hrazany village near Sedlčany town, beside the woodland path 0.5 km E – 0.8 km SES of the village, 6252c (Trávníček, 9.9.1998, OL). – Nalžovické Podhájí village near Sedlčany town, in the nature reserve of Drbákovské skály, 6252c (Holub, 18.8.1990, PRA). – Radíč village near Sedlčany town, beside the woodland path S of Úsuší gamekeeper's lodge, 6252c (Holub, 18.8.1990, PRA). – Křepeň village near Sedlčany town, in the scrub beside the road between the bridge and the settlement of V Pekle NW of the village, 6251d (Trávníček, 9.9.1998, OL). – Kňovice village near Sedlčany town, in the wood beside the asphalt way 1.3 km N of the village, 6352a (Trávníček, 22.8.1997, OL). – Sedlčany town, road verge W–S of the settlement V Dolících, 6252d (Havlíček, 19.8.2001, PRC). – Osečany village near Sedlčany town, in the wood beside the road 1.4 km NEE of the village, 6252d (Trávníček, 9.9.1998, OL). – Prosenická Lhota village near Sedlčany town, pine wood beside the road 1 km NW of the village, 6352b (Havlíček, 19.8.2001, PRC). – Svatý Jan village near Kamýk nad Vltavou, beside the road 0.7 km S of the village, 6351d (Trávníček, 22.8.1997, OL). –



Distr. Příbram, in the wood between the villages of Brzina and Svätý Jan, 6351d (Holub, 22.8.1997, PRA). – Distr. Příbram, Nepřejov village, along the road in the wood S of the village, 6351c (Holub, 22.8.1997, PRA). – Distr. Příbram, Větrov village, in the wood beside the road towards Nepřejov village, 0.7 km NW of Věrov village, 6351c (Trávníček, 22.8.1997, OL). – Distr. Příbram, Smolotely village, between Maková hora hill and Kolčava gamekeeper's lodge, 6350d (Holub, 15.8.1988, PRA). – Podhlušice village near Orlická přehrada reservoir, in the wood beside the asphalt way by the brook 1–1.5 km NEE of the village, 6450b (Trávníček, 21.8.1997, OL). – Kozárovice village near Orlík nad Vltavou, in the wood beside the asphalt way 1.7 km SE of the village, 6450d (Trávníček, 21.8.1997, OL). – Distr. Příbram, Klenovice village near Orlík nad Vltavou, grove along the road near Bárta settlement, 1.5 km NW of the village, 6451a (Trávníček, 22.8.1997, OL). – Distr. Příbram, Písečná hill near Bárta settlement, 6451a (Holub, 4.7.1996, PRA; Holub, 22.8.1997, PRA). – Distr. Příbram, Klenovice village, in the wood along the road near the settlement of Písečná, 6451a (Havlíček, 15.9.1999, PRC). – Kamenice village near Orlík nad Vltavou, along the road in the wood 0.8 km NW of the village, 6451a (Trávníček, 22.8.1997, OL). – Klučnice village near Milevsko town, on the wood margin NW–NWW of the settlement of Na ovčíně, 1.5 km NW of the village, 6451a (Havlíček, 15.9.1999, PRC). – Klučnice village near Milevsko town, in the wood along the road on the right bank of the river Vltava, 3.4 km W of the village, 6450b (Havlíček, 15.9.1999, PRC). – Klučnice village near Milevsko town, in the wood W of the village in the direction of Vltava river, 6451a (Holub, 22.8.1997, PRA). – Voltýřov village near Kostelec nad Vltavou town, beside the road margin 1 km NWW of the village, 6451c (Havlíček, 15.9.1999, PRC). – **42a. Sedlčansko-milevská pahorkatina:** Distr. Benešov, Líštěnc village, wood along the road 0.5 km S of the village, 6254c (Havlíček, 17.8.2001, PRC). – Hodětice village near Neveklov town, spruce forest beside the road 0.5 km S of the village, 6353a (Havlíček, 19.8.2001, PRC). – Kosova Hora village near Sedlčany town, wood beside the road 1 km SES of the village, 6352d (Havlíček, 20.8.2001, PRC). – Vojkov village near Sedlčany town, spruce forest beside the road 0.3–1.2 km SE of the village, 6353c (Havlíček, 20.8.2001, PRC). – **42b. Táborsko-vlašimská pahorkatina:** Moraveč village near Mladá Vožice town, road verge 0.4 km SWW of the village, 6454b (Havlíček, 22.9.2001, PRC). – **43b. Milíčinská vrchovina:** Jestřebice village near Votice town, in the wood beside the road 1.1 km NE of the village, 6353d (Havlíček, 22.9.2001, PRC). – Distr. Benešov, Jinošice village, on Žebrák hill, 6254c (Holub, 19.8.1980, PRA). – Budenín village near Votice town, at the E margin of the wood on the Čefeňská hora hill, 6353d (Holub, 12.10.1991, PRA). – Votice town, in the wood close to the Lysá village, 6353d (Holub, 24.10.1987, PRA). – Mokřany village near Votice town, in the wood in the valley near the village, 6353b (Holub, 12.10.1991, PRA). – Distr. Benešov, between the villages of Mokřany and Ouběnice, near the places Pod Kačínou and Na Plecháci, 6354a (Holub, 12.10.1991, PRA). – Distr. Benešov, Heřmaničky village, in the wood on Vápenka hill S of the village, 6453a (Holub, 26.8.1989, PRA). – Distr. Benešov, Rohov, pine wood beside the road 0.5 km SW of the village, 6453a (Havlíček, 20.8.2001, PRC). – **55d. Trosecká pahorkatina:** Dneboh village near Mnichovo Hradiště town, road verge 0.5 km SW of the village, 5456c (Havlíček, 1.8.2001, PRC). – Dobšín village near Sobotka town, in the wood along the road NW of the village, 5556b (Havlíček, 7.7.2001, PRC). – Střeleč village near Sobotka town, in the wood at the woodland path 0.5 km S–SE of the village, 5557b (Havlíček, 1.8.2001, PRC). – **59. Orlické podhůří:** Distr. Rychnov nad Kněžnou, between the villages of Hraštice and Skuhrov nad Bělou, 5763d (Holub, 25.8.1995, PRA). – **60. Orlické opuky:** Voděradý village near Dobruška town, wood NE of the village, 5762d (Holub, 24.8.1995, PRA; Trávníček, 24.8.1995, OL). – Byzhradec village, in the wood beside the road towards Solnice village 1.5 km SEE of Byzhradec village, 5763c (Trávníček, 2.8.2001, OL). – Distr. Rychnov nad Kněžnou, Lično village, in the wood beside the road on the hill of Hradiště, 5863a (Holub, 24.8.1995, PRA; Trávníček, 24.8.1995, OL). – Distr. Rychnov nad Kněžnou, Domašín village, wood along the road on the E edge of the village, 5863a (Trávníček, 8.9.2000, OL). – **61a. Křivina:** Nová Ves village near Dobruška, in the wood towards Voděradý village, E of the Nová Ves village, 5762d (Holub, 24.8.1995, PRA; Trávníček, 24.8.1995, OL). – Vyhnanice village near Týniště nad Orlicí town, at the woodland path 0.2–1.2 km S of the village, 5862b (Trávníček, 12.9.1997, OL). – Křivice village near Týniště nad Orlicí town, at the woodland path 1.3 km SE – 1 km E of the village, 5862b (Trávníček, 12.9.1997, OL). – Křivice village near Týniště nad Orlicí town, at the woodland path 1 km E – 1.2 km NEN of the village, 5862b (Trávníček, 12.9.1997, OL). – **61b. Týnišťský úval:** Olešnice village near Kostelec nad Orlicí town, at the woodland path on Malý Chlum hill, SWS of the village, 5862d (Trávníček, 31.8.2000, OL). – **62. Litomyšlská pánev:** Vraclav village near Choceň town, in the wood 1.3 km NE of the village, 6062b (Trávníček, 22.7.2000, OL). – Mravín village near Vysoké Mýto town, in the wood along the road to Pěšice village, S–SES of the village, 6062c (Trávníček, 9.8.2000, OL). – **63a. Žamberko:** Merklovice village near Vamberk town, along the way 0.8 km E – 1 km NE of the village, 5863d (Trávníček, 11.9.1997, OL). – **65. Kutnohorská pahorkatina:** Kocanda settlement near Plaňany village, road verges 0.5 km NEN of the village, 5956c (Havlíček, 28.9.2001, PRC). – **66. Hornosázavská pahorkatina:** Horní Nezdín village near Ledeč nad Sázavou town, in the wood 0.9 km NE of the village, 6258c (Havlíček, 13.9.2001, PRC). – Vikanov village near

Ledeč nad Sázavou town, in the wood of Borovina N of the village, 6258c (Holub, 17.10.1984, PRA). – **67. Českomoravská vrchovina:** Nýrov village near Letovice town, in the wood along the road towards Rudka village, 6465c (Trávníček, 8.8.2000, OL). – Distr. Třebíč, Přibyslavice village, in the wood NE of the village, 6763b (Holub, 6.9.1996, PRA; Trávníček, 6.9.1996, OL). – Velká Bíteš town, near the parking place of Devět křížů beside the Praha – Brno highway, 6763b (Holub, 9.7.1990, PRA). – Devět křížů near Brno, beside the motorway restaurant, 6763b (Holub, 6.9.1996, PRA). – Distr. Brno-venkov, Lesní Hluboké village near Praha – Brno highway, in the wood beside the road W of the village, 6763b (Trávníček, 6.9.1996, OL). – Distr. Brno-venkov, in the orchard between the villages of Braniškov and Maršov, 6764a (Hrbáč, 9.7.1996, herb. Hrbáč). – **68. Moravské podhůří Vysočiny:** Újezd u Boskovic village, in the wood along the road NWN of the village, 6565b (Trávníček, 21.7.2000, OL). – Blansko town, on the S periphery of the town, 6665b (Holub, 11.7.1980, PRA). – Veselice village near Blansko town, in the wood beside the road 1.3 km S of the village, 6666a (Trávníček, 14.9.2001, OL). – Obůrka village near Blansko town, along the woodland road to Českovice NWW of the village, 6666a (Trávníček, 14.9.2001, OL). – Blansko town, on the wood margin along the road to Českovice, 0.5 km of the town, 6665b (Trávníček, 14.9.2001, OL). – Hořice village near Blansko town, wood at the W edge of the village, 6665b (Trávníček, 14.9.2001, OL). – Olešná village near Blansko town, beside woodland path 1 km NW of the village, 6665d (Trávníček, 5.8.1993, OL). – Lipůvka village near Blansko town, in the woodlands 1 km NEE–NE of the village, 6665c (Trávníček, 25.7.2001, OL). – Vranov village near Adamov town, at the woodland path 0.5–1.5 km NWW of the village, 6665d (Trávníček, 26.8.1997, OL). – Distr. Brno-venkov, Útěchov village, by the fence behind the yard, 6765b (Hrbáč, 29.6.2002, herb. Hrbáč). – Distr. Brno-venkov, Útěchov village, wood clearing above the Dlouhé vrchy crossroads between the villages of Útěchov and Adamov, 6765b (Hrbáč, 22.8.1998, herb. Hrbáč). – Distr. Brno-venkov, Útěchov village, on the edge of the wood above U buku well S of the village, 6765b (Hrbáč, 24.7.1997, herb. Hrbáč). – Distr. Brno-venkov, Útěchov village, on the edge of Malužín wood, along the woodland path to Bílovice nad Svitavou, 6765b (Hrbáč, 8.7.1994, herb. Hrbáč). – Lelekovice village near Brno, at the woodland path 1.4 km NE – 2.5 km NEN of the village, 6665d (Trávníček, 26.8.1997, OL). – Adamov town, along the road 1.5 km SW of railway station, 6765b (Trávníček, 22.7.1993, OL). – Adamov town, beside the road to Útěchov village 1.8 km SWW of the railway station, 6765b (Trávníček, 22.7.1993, OL). – Soběšice village near Brno, in the wood along the road 1.3 km SES of the village, 6765d (Trávníček, 25.7.2001, OL). – Tišnov town, at the woodland path W of the village, E of Kozí brada hill, 6664c (Trávníček, 17.7.1996, OL). – Nelepeč village near Tišnov town, at the woodland path N of the village, 6664c (Trávníček, 17.7.1996, OL). – Veverská Bitýška town, in the wood along the road to Lažánky village 1 km NWW of the village, 6764b (Trávníček, 25.7.2001, OL). – Litošrov village near Brno, woodland between the village and Mariánské údolí settlement, 6764c (Holub, 7.7.1992, PRA). – Říčky village near Brno, in the wood S of the road towards Říčany village, 6764c (Holub, 5.9.1996, PRA; Trávníček, 5.9.1996, OL). – Tetčice village near Rosice town, at the woodland path 0.5–1 km SE of the village, 6864a (Trávníček, 4.9.1996, OL). – Omice village near Brno, valley in the wood parallel to the Omice – Troubsko road, 0.8 km NWN of Šibeník hill, 6864b (Trávníček, 16.8.1994, OL). – Radostice village near Brno, in the wood 0.5 km W of the village, 6864d (Trávníček, 4.9.1996, OL). – Kurošlepy village near Náměšň nad Oslavou town, at the woodland path 0.9 km E of the village, 6863a (Trávníček, 6.8.2001, OL). – Distr. Třebíč, in the wood between the Dalešická přehrada reservoir and Slavětice village, 6862d (Holub, 18.9.1995, PRA). – Distr. Znojmo, Lesná village, at the woodland path 2 km S of the village, 7161a (Trávníček, 2.9.1992, OL). – Distr. Znojmo, Vranov nad Dyjí village, at the woodland path S of the village, close to Braitava woodland, 7160b (Holub, 19.9.1995, PRA). – Distr. Znojmo, Vranov nad Dyjí village, Braitava woodland, beside road near the Austrian border, 7160b (Trávníček, 19.9.1995, OL). – Distr. Znojmo, Vranov nad Dyjí village, along the hiking trail NW of Ledové sluje cave, 7161a (Holub, 27.8.1992, PRA). – Distr. Znojmo, Čížov village, in the wood along the road between the village and Ledové sluje cave 1–2.5 km NWW of the village, 7161a (Trávníček, 19.9.1995, OL). – Čížov village near Znojmo town, in the wood clearing along the road 1.5 km SE of the village, 7161a (Trávníček, 3.9.1992, OL). – Mašovice village near Znojmo town, in the wood NE of the village, 7161b (Holub, 19.9.1995, PRA). – **69a. Železnohorské podhůří:** Škrovád village near Chrudim town, road verge near the crossroads 0.8 km SW of the village, 6160b (Havlíček, 7.8.2000, PRC). – Smrkový Týnec village near Chrudim town, road verge 0.4 km S of the village, 6160b (Havlíček, 7.8.2000, PRC). – Libáň village near Chrudim town, in the wood beside the road 0.2–0.8 km N of the village, 6160b (Havlíček, 7.8.2000, PRC). – **70. Moravský kras:** Rudice village near Blansko town, in the wood along the road towards Olomučany village 1.2 km SW of Rudice village, 6666c (Trávníček, 14.9.2001, OL). – Kanice village near Adamov town, in the wood along the road towards Babice nad Svitavou village, 6766a (Trávníček, 22.7.1999, OL). – **71a. Bouzovská pahorkatina:** Nová Ves village near Litovel town, in the wood along the road 0.9 km NW–NWW of the village, 6368a (Trávníček, 28.8.2002, OL). – **71b. Drahanská plošina:** Nectavské údolí valley, on the wood margin 0.9 km N of Nectava railway station, 6366b (Trávníček, 13.9.1992, OL). – Hačky village near Konice, on the wood

margin along the road to Hvozď 0.8 km NW of the village, 6367d (Trávníček, 28.8.2002, OL). – Hačky village near Konice, on the wood margin above the village, 6367d (Vašut, 24.9.1999, OL). – **71c. Dražanské podhůří:** Loučka village near Olomouc, on the wood margin close to the NE edge of the village, 6368a (Trávníček, 10.9.1991, OL, PRA). – Distr. Vyškov, Březina village, wood margin along the road 0.5 km E of the northern edge of the village, 6667b (Trávníček, 22.7.1999, OL). – Olšany village near Rousínov town, wood margin close to the village, 6767a (Trávníček, 29.7.1999, OL). – Distr. Vyškov, Nemojany village, at the woodland path 0–0.8 km NW of Blatice settlement, 6767c (Trávníček, 29.7.1999, OL). – Distr. Vyškov, Habrovany village, wood 1 km NW of the village, 6767c (Trávníček, 29.7.1999, OL). – **73b. Hanušovická vrchovina:** Hynčina village near Zábřeh town, in the wood along the winding road E of the village, 6166d (Holub, 14.8.1987, PRA). – Jestřebí village near Zábřeh town, wood 0.8 km NEE of the village, 6167a (Trávníček, 3.9.1998, OL). – Zvole village near Zábřeh town, in the wood 2 km W of the village, 6167c (Trávníček, 3.9.1998, OL). – Slavoňov village near Zábřeh town, in the wood 1.7 km NWN of the village, 6167c (Trávníček, 3.9.1998, OL). – Mírov village near Mohelnice town, at the woodland path 1.3 km SE of the centre of the village, 6267a (Trávníček, 28.8.2002, OL). – Distr. Šumperk, Dlouhomilov village, in the wood beside the way 1 km NEN of the N edge of the village, 6067d (Trávníček, 7.8.2001, OL). – **74a. Vidnavsko-osoblažská pahorkatina:** Pitárné village near Osoblaha town, wood at the curve in the road W of the village, 5771d (Trávníček, 7.8.1998, OL). – **76a. Moravská brána vlastní:** Čekyně village near Přerov town, in the wood on the E edge of the village, 6570b (Trávníček, 17.7.2002, OL). – Lhota u Kelče village, in the wood surrounding the crossroads Kelč – Kunovice, 6572b (Dančák, 6.9.2001, OL). – Lukavec village near Fulnek town, in the wood 1.7 km SE of the village, 6273d (Trávníček, 6.9.2000, OL). – **76b. Tršická pahorkatina:** Přestavky near Olomouc, in the wood on the W edge of the village, 6470c (Trávníček, 17.7.2002, OL). – **77c. Chříby:** Distr. Kroměříž, Kostelany village, in the wood 1–1.5 km E of the village, 6770c (Trávníček, 1.9.1996, OL). – **78. Bílé Karpaty lesní:** Distr. Zlín, Svatý Štěpán village, at the woodland path towards the Okrajky settlement, near the quarry at the SW edge of the village, 6974c (Dančák, 23.8.2001, OL). – **80a. Vsetínská kotlina:** Distr. Vsetín, village Bystřička, along the road between the villages of Velká Lhota and Malá Bystřice, at the E margin of the Bystřička reservoir, 6574c (Dančák, 20.10.2001, OL). – Distr. Vsetín, Valašská Bystřice village, in the place Na Spině, near the elevation of 560 m, 6574d (Vašut, 18.8.2000, OL). – Distr. Vsetín, Bobrky village, on the slopes above the village in the direction of Vesník village, 6673b (Dančák, 20.7.1999, OL). – **80b. Veřovické vrchy:** Distr. Vsetín, Staré Zubří village, along the road 2.5 km SW of the Úvěz Mt, 6574b (Vašut, 25.9.1999, OL). – Distr. Vsetín, Zubří village, on the wood margin 1.3 km NWN of the centre of the village, 6574b (Vašut, 10.10.2001, OL). – **81. Hostýnské vrchy:** Rajnochovice village near Bystřice pod Hostýnem town, at the S foothill of Klíneck hill, near Waldhotel, SW of Bílová settlement, 6573c (Dančák, 6.9.2001, OL). – Rajnochovice village near Bystřice pod Hostýnem town, in the wood clearing close to the S margin of Košovy village, 6672b (Dančák, 6.9.2001, OL). – **83. Ostravský pánev:** Karviná town, in Borek wood, 6177a (Holub, 24.7.1992, PRA; Trávníček, 24.7.1992, OL). – **84a. Beskydské podhůří:** Třinec town, in the grove on Osůvka hill N of the village, 6377b (Trávníček, 25.7.1992, OL; Trávníček, 5.10.1995, OL). – Třinec town, in the grove NE of metal rolling mill, 6378a (Holub, 25.7.1992, PRA). – Frenštát pod Radhoštěm town, Horečky settlement, 2.8 km NEE of the top of Velký Javorník Mt, 6475c (Vašut, 13.9.1999, OL).

**S l o v a k i a :** **12. Trábeč:** Zlatno village near Zlaté Moravce town, beside the woodland path 0.8 km NWW of the village (Trávníček, 6.7.2003, OL; Žíla, 6.7.2003, herb. Žíla). – Velčice village near Zlaté Moravce town, along the path 1–2 km NWW of the village (Trávníček, 6.7.2003, OL). – **14e. Štiavnické vrchy:** Voznica village near Banská Štiavnica town, along the road in the valley of Richnava brook 2 km SEE of the village (Trávníček, 9.7.1997, OL). – **15. Slovenské rudohorie:** Tisovec town, along the cart road E of the village (Kusák, 7.7.1994, OL). – Brádno village, wood margin along the road to Jelšava town, 0.8 km E of Brádno village (Trávníček, 8.7.2003, OL). – **19. Slanské vrchy:** Banské village near Vranov nad Topľou town, along the road in the direction of Herľany village, 1.5 km SW of Banské village (Trávníček, 9.7.2003, OL). – **27a. Biele Karpaty (severná časť):** Červený Kameň village, in the wood close to Závlačná hill (635.5 m) E of the village (Trávníček, 3.7.2003 OL).

**P o l a n d :** **Śląsk:** Idzików village (Kłodzko), beside the cart road 0.8 km NEN of the centre of the village (Trávníček, 13.9.1999, OL). – Pławnica village (Kłodzko), on the wood margin NE of the village (Trávníček, 11.9.1999, OL). – Pietrowice village SW of Głubczyce town, on the wood margin 1 km W of the village (Trávníček, 12.9.1999, OL).

**Austria:** **Niederösterreich:** Hardegg village, beside the road 2.3 km NW–NWW of the village (Trávníček, 8.9.1993, OL). – Felling village, beside the road 1.7 km E of the village (Trávníček, 8.9.1993, OL). – Leodagger near Pulkau village, wood clearing beside the woodland road 1.5 km NW of the village (Trávníček, 29.8.1998, OL). – Wienerwald, along the road close to highway bridge near Wienerwaldsee lake, E of Pressbaum village (Trávníček, 30.8.1998, OL).

***Rubus austroslovacus* Trávníček, spec. nova**

Figs 22–25

**Descriptio:** Frutex altus glandulis stipitatis nullis obsitus. Turio altiarcuatus, 6–10 mm in diametro, glaber, vinosus in apricis, angulatus, cum faciebus planis vel (sub)sulcatis. Aculei turionis plus minusve graciles, patentes vel reclinati, recti vel paulo curvati (4–) 6–8 (–9) mm longi basi satis compressi 5–7 (–8) mm lati in numero 2–5 ad 5 cm longitudinis. Folia turionis digitato-quinata, plana, supra glabra, subtus pilis stellulatis cano-alba vel (in locis umbrosis) griseo-viride tomentosa preterea pilis paulo longioribus obsita (ad tactum parum perceptibilibus pilosa). Petiolus 55–75 mm longus foliolis infimis plerumque brevior [longitudo petioli = 80% (rarissime usque 100%) longitudinis foliorum], disperse pilosus usque glabrescens, aculeis (7–) 9–12 (–15) distincte curvatis munitus. Stipulae anguste lineares usque filiformes 0.5 (–1.0) mm latae. Foliolum terminale modice longe petiolulatum [longitudo petioli (26–) 30–40 (–45)% longitudinis laminulae]. Laminula anguste vel latiore elliptica usque (raro) elliptice-obovata basi rotundata vel truncata (raro latiore cuneata vel subcordata), abrupte tantum (5–) 8–15 (–18) mm longe acuminata, margine plana vel paulo undulata, paene peridice usque (raro) subaequaliter serrata e dentibus interdum latioribus quam longis, incisurae 2.0–3.5 (–3.5) mm profundae. Foliola lateralia paulo breviora foliolum terminalium, foliola infima (3–) 4–6 mm longe petiolulata. Inflorescentia paniculata, pyramidalis vel anguste pyramidalis raro late cylindrica, (5–) 8–15 cm infra apicem efoliosa. Rami inflorescentiae erecto-patentes. Folia inflorescentiae (1–) 3–5-nata foliolis terminalibus ellipticis usque elliptice-obovatis. Rhachis subtomentosa insuper pilis patentibus longioribus obsita, aculei (2–) 3–5 (–6) pro 5 cm longitudinis, recti vel leviter curvati, paulo reclinati (3–) 4–5 (–6) mm longi basi (2–) 3–5 (–6) mm lati. Pedicelli (8–) 12–20 (–25) mm longi, tomentosi insuper pilis longioribus patentibus (usque dense) pilosi cum (1–) 2–5 (–8) aculeis, aculei graciles, recti raro leviter curvati 1.0–2.5 (–3.0) mm longi. Sepala post anthesin reflexa, inermia, externe canescente-tomentosa insuper pilis patentibus disperse obsita, plerumque non lanceolate appendiculata. Petala alba vel subrosacea, late elliptica usque obovata, 8–11 mm longa 5–7 mm lata. Stamina stylos superantia. Antherae glabrae. Filamenta alba. Ovaria apicibus satis dense pilosa, styli albo-virescentes. Receptaculum pilosum. Fructus subglobosus vel globosus interdum usque ovoideus e (0–) 8–20 (–25) drupeolis compositus. Floret (VI–) VII (–VIII).

**Holotype:** Czech Republic; SE Moravia, Hluk near Uherské Hradiště, southern part of the wood Hluboček 1.8 km NEN of the village Hluk, 260 m a.s.l. (R 249/01), coll. B. Trávníček, 21.8.2001, OL (Fig. 22).

**Etymology:** According to the region where the species was first recognized (S Slovakia).

Main diagnostic features (see also Figs 22–25): stems angled to slightly furrowed, glabrous, suffused red-brown on sunny sites, with usually relatively slender and flat (especially in dry conditions), most often patent prickles with a relatively narrow, 5–7 (–8) mm wide base; leaves glabrous above, grey to grey-white tomentose beneath, with only slightly longer simple hairs beneath (slightly hairy to the touch); terminal leaflet narrowly to broadly elliptical, often with  $\pm$  parallel margins, sometimes broadly cuneate, usually with a relatively short, (5–) 8–15 (–18) mm long,  $\pm$  abrupt apex, margin indentation, as a rule, slightly periodic, with incisions 2.0–3.0 (–3.5) mm deep; lateral leaflets often quite large, only a little smaller than the terminal leaflet; inflorescence broadly cylindrical to ovoid-pyramidal, relatively sparse, with erecto-patent branches; petals white to pinkish; ovaries often quite densely hairy above.

As the leaf characters of *R. austroslovacus* are relatively plastic, it may be confused with several other triploid species. Forms with a narrower terminal leaflet resemble *R. montanus* whose terminal leaflet often also has parallel margins. The latter species can be distinguished from *R. austroslovacus* by glabrous gynoecium, terminal leaflets often cordate at the base, lower surface of leaves relatively less distinctly tomentose, a lower number (usually 1–3) of prickles per 5 cm, prickles slightly broader and more curved, and often slightly narrower and more patent inflorescence branchlets. The way it differs from *R. guttiferus* is mentioned in the subchapter dealing with the latter. The almost regular indentation and the relatively short apex of the terminal leaflet of *R. austroslovacus* may sometimes resemble similar features in *R. henrici-egonis*, which, however, differs in hav-



Fig. 22. – *Rubus austroslovacus*, holotype; bar = 10 cm.

ing the indentation with broader teeth and incisions only 1.0–1.5 mm deep, broader, (6–) 7–10 mm wide prickle bases on first-year stems, and thinner, less distinctly developed tomentum on lower surface of leaves; in addition, its leaflets are usually (on sunny sites) more distinctly convex, and stems suffused paler red-brown, with prickles often slightly

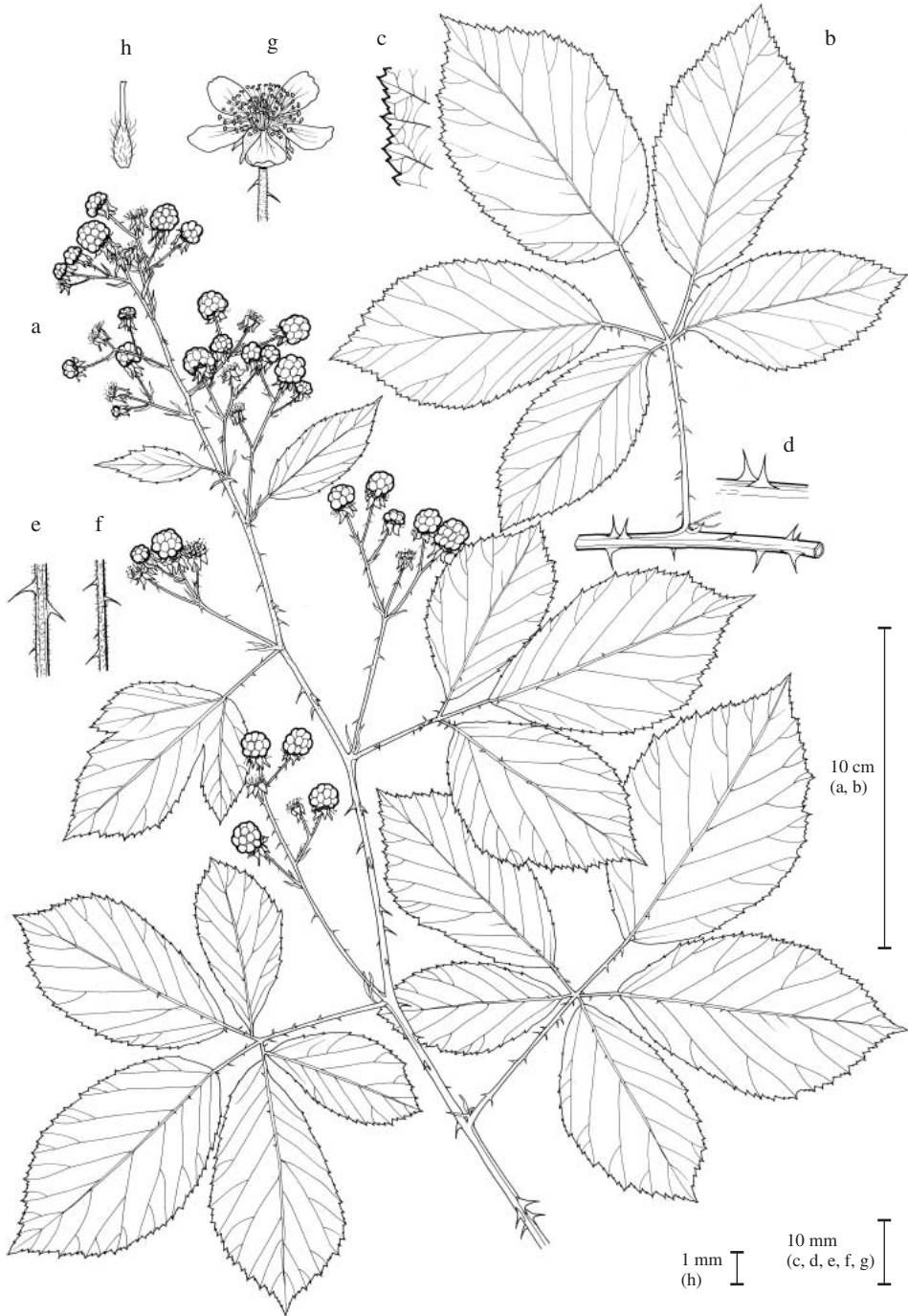


Fig. 23. – *Rubus austroslovacus*: a – inflorescence; b – leaf; c – indentation on the margin of the terminal leaflet; d – detail of sterile branch with prickles; e – detail of inflorescence axis; f – detail of peduncle; g – flower; h – detail of pistil. Del. A. Skoumalová.



Fig. 24. – Sterile branch of *Rubus austroslovacus* (locality: N Moravia, Piskořov near Město Albrechtice).

Fig. 25. – Leaf of *Rubus austroslovacus* (locality: N Moravia, Piskořov near Město Albrechtice).



reddish at base. The well developed, almost white tomentum on the leaflet undersides and sometimes also  $\pm$  truncate base of terminal leaflets in *R. austroslovacus* may resemble *R. austromoravicus*. The latter is characterized by a usually less elongated terminal leaflet, a more distinct indumentum of patent simple hairs (undersides of leaves are almost soft hairy to the touch), and glabrous gynoecium.

*R. austroslovacus* is a widespread species, hitherto known from Germany (SE part), the Czech Republic, Slovakia (Holub & Trávníček 1998), Lower Austria (Wienerwald) and S Poland. Its occurrence in N Hungary is very probable as it occurs only about two kilometres from the Hungarian border in S Slovakia.

The species was first recognized as a repeatedly occurring form in C part of S Slovakia (see Etymology), later it was found in SE Moravia and in the years 1998 to 2003, also in Bohemia, N Moravia, S Poland, Germany and Austria.

In the Czech Republic, it is more frequent in SE Moravia, and scattered in Moravian Silesia (N Moravia) and in E and C Bohemia. It is a thamnophilous species usually preferring  $\pm$  basic and drier mineral rich soils. It grows at the margins of forests, amongst shrubs and thickets, in open patches in woodland, in clearings and alongside paths.

Herbarium specimens examined (Fig. 26)

Czech Republic: **7a. Libochovická tabule:** Přestavky village near Roudnice nad Labem town, in the wood 1 km SEE of the village, 5551c (Havlíček, 14.10.2001, PRC). – Přestavky village near Roudnice nad Labem town, pine wood with admixed birch, 0.5 km SW of the village, 5551c (Havlíček, 14.10.2001, PRC). – **11b. Poděbradské Polabí:** Sokoleč village near Poděbrady town, pine wood S of the road on the NWN edge of the village, 5856d (Havlíček, 5.9.2000, PRC). – Sokoleč village near Poděbrady town, in the wood by the chapel on the E edge of the village, 5956b (Havlíček, 5.9.2000, PRC). – Lžovice village near Kolín town, close to the woodland path 0.5 km NWN – 0.7 km NW of the village, 5958c (Trávníček, 1.7.2002, OL). – **13a. Rožďalovická tabule:** Býchory village near Kolín town, on the wood margin along the road 1 km W of the village, 5957b (Havlíček, 25.10.2001, PRC). – Konárovice village near Kolín town, pine wood on the N margin of the village, along the road 0.8 km N of the village, 5957d (Havlíček, 25.10.2001, PRC). – In the wood Na borkách NW of Lžovice village near Kolín town, 5958c (Holub, 11.11.1995, PRA). – **15b. Hradecké Polabí:** Librantice village near Třebechovice pod Orebem town, in the wood E of the road 1.1 km SES of the village, 5761d (Havlíček, 16.8.2000, PRC). – Vysoká nad Labem village near Hradec Králové town, disused sandpit in the pine wood on the N edge of the village, S of the village Roudnička, 5860b (Havlíček, 15.8.2000, PRC). – **15c. Pardubické Polabí:** Koudelka village, groves along the road in the direction of Poběžovice u Holic village, 5962a (Trávníček, 31.8.2000, OL). – **18a. Dyjsko-svratecký úval:** Břeclav town, suburb Poštomá, along the road in the direction of the border crossing, 0.6 km SW of the railway station Boří les, 7267c (Trávníček, 1.9.2001, OL). – **18b. Dolnomoravský úval:** Ratíškovice village, in the wood beside the road curve in direction of Hodonín town, 1.3 km S–SWS of the village, 7068d (Trávníček, 27.8.2000, OL). – **19. Bílé Karpaty stepní:** Hluk village near Uherské Hradiště town, in the S part of Hluboček wood, 1.8 km NEN of centre of the village, 6971c (Trávníček, 21.8.2001, OL) [holotype]. – **20b. Hustopečská pahorkatina:** Moravský Písek village near Veselí nad Moravou town, in the wood along the road in the direction of Polešovice village, 6970c (Trávníček, 12.9.2000, OL). – **41. Střední Povltaví:** Stříbrná Lhota village near Mníšek pod Brdy town, on the wood margin SE of the road, 1.2 km S of the village, 6151a (Havlíček, 8.7.2001, PRC). – Kytín village near Mníšek pod Brdy town, in the wood S of the road, 1 km E of the village, 6151c (Havlíček, 8.7.2001, PRC). – Čisovice village near Mníšek pod Brdy town, in the wood along the road 1 km SE of the railway station, 6151b (Trávníček, 10.9.1998, OL). – Chocerady village near Čerčany town, in the wood beside the road towards Vestec village, 6154b (Trávníček, 8.9.1998, OL). – Bělokozly village near Sázava town, near the gamekeeper's lodge V soudném, 6155c (Holub, 29.9.1990, PRA). – Otryby village near Sázava town, on the edge of the wood beside the road in the direction of Zalíbená village, 6155d (Trávníček, 8.9.1998, OL). – **51. Polomené hory:** Štětí town, Špičák hill E of the town, 5552a (Holub, 26.8.1982, PRA). – Štětí town, in the wood by the Hrabčící kaple chapel, 5552d (Holub, 26.8.1982, PRA). – **57a. Bělohradsko:** Lázně Bělohrad spa near Jičín town, W margin of the mixed wood of Mlaka E of Brtev settlement, 5559d (Hadinec, 29.8.2000, PRC). – **60. Orlické opuky:** Podbřezí village near Dobruška town, in the wood beside the road 1–2 km W of the village, 5763a (Trávníček, 24.8.1995, OL). – Domašín village near Rychnov nad Kněžnou town, in the wood beside the road at the E margin of the village, 5863a (Trávníček, 8.9.2000, OL). – Distr. Rychnov nad Kněžnou, between the villages of



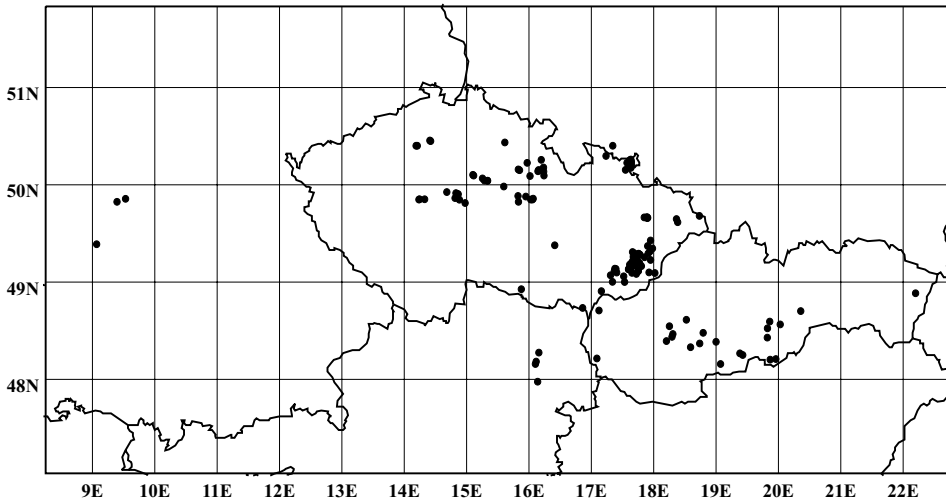


Fig. 26. – Distribution of *Rubus austroslovacus*.

Hodčín and Rašovice, 5862b (Holub, 18.7.1983, PRA). – Malá Ledská village near Kostelec nad Orlicí town, wood margin close to the crossing at the E edge of the village, 5863c (Trávníček, 8.9.2000, OL). – Tutleky village near Kostelec nad Orlicí town, wood beside the road on the NW edge of the village, 5863c (Trávníček, 8.9.2000, OL). – Suchá Rybná village near Vamberk town, wood close to the crossing 0.4 km SE of the village, 5963a (Trávníček, 8.9.2000, OL). – **61b. Týništský úval:** Olešnice village near Kostelec nad Orlicí town, at the woodland path on Malý Chlum hill, SWS of the village, 5862d (Trávníček, 31.8.2000, OL). – **61c. Chvojenská plošina:** Vysoká nad Labem village near Hradec Králové town, wood along the road 0.6 km SEE of the margin of the village, 5861a (Havlíček, 26.10.2001, PRC). – **64b. Jevanská plošina:** Všešimý village near Říčany town, pine wood 0.5 km NWW of the village, 6054c (Havlíček, 17.8.2001, PRC). – **64c. Černokostelecký perm:** Stříbrná Skalice village near Sázava town, by the brook Jevanský potok S of settlement Hradec, 6054d (Holub, 9.11.1991, PRA). – Stříbrná Skalice village near Sázava town, E of settlement Cihelna, 6055c (Holub, 9.11.1991, PRA). – Stříbrná Skalice village near Sázava town, Kozly hill in the valley of Dílna, 6055c (Holub, 9.10.1993, PRA). – **68. Moravské podhůří Vysočiny:** Řepka village near Tišnov town, on the wood margins above the road 1.3 km S of the village, 6664a (Trávníček, 12.9.2001, OL). – Šumná village near Znojmo town, wood N of the village, 7061c (Holub, 20.8.1985, PRA). – **69a. Železnohorské podhůří:** Chrtníky village near Přelouč town, wood margin 0.8 km NWW of the village, 6059b (Trávníček, 11.9.2000, OL). – Distr. Chrudim, in the wood beside the road 0.5 km S of Chacholice village, 6161b (Trávníček, 11.9.2000, OL). – Distr. Chrudim, in the wood along the road 0.2–0.8 km N of the Libáň village, 6160b (Havlíček, 7.8.2000, PRC). – Distr. Chrudim, Zbožňov village, in the wood along the road to Hněvčovice village, 6162c (Trávníček, 9.8.2000, OL). – Zhoř village near Skuteč town, wood beside the road SES of the village, 6162c (Trávníček, 9.8.2000, OL). – Brdo village near Skuteč town, in the wood along the road to Hluboké village, 6162a (Trávníček, 9.8.2000, OL). – **69b. Sešská vrchovina:** Nová Ves village near Třihov Kamenice village, wood margin along the road 0.7 km E of Nová Ves village, 6160d (Havlíček, 8.8.2000, PRC). – **73a. Rychlebská vrchovina:** Distr. Jeseník, Supíkovice village, wood 1 km NWW of the curve of the main road in the southern part of the village, 5769a (Trávníček, 26.7.2001, OL). – **74a. Vidnavsko-osoblažská pahorkatina:** Pitárné village near Osoblaha town, groves along the road to Sádek, 5771b (Trávníček, 18.8.1999, OL). – Sádek village near Osoblaha town, beside the road in the woodland 0.7 km NW of the village, 5771b (Trávníček, 7.8.1998, OL). – Sádek village near Osoblaha town, 5771b (Holub, 7.8.1998, PRA). – Distr. Bruntál, Dívčí Hrad village, shrubby vegetation along the road to Liptaň, 1 km of the margin of the village, 5771d (Trávníček, 7.8.1998, OL). – Distr. Bruntál, S of Dívčí Hrad village, 5771d (Holub, 7.8.1998, PRA). – Damašek village near Osoblaha town, SW part of the wood, 0.4 km NE of the margin of the village, 5771c (Trávníček, 18.8.1999, OL). – Bučávka village near Osoblaha town, on the woodland edge 1.3 km E–SEE of the village, 5771d (Trávníček 18.7.2000, OL). – Distr. Bruntál, between the villages Víno and Piskořov, 5871b (Holub, 3.8.1980, PRA). – Distr. Bruntál, Piskořov village, 5871b (Holub, 3.8.1980, PRA). – Distr. Bruntál, Piskořov village, in the wood beside the road to Pelhřimovy village, 5871b (Trávníček, 7.8.1998, OL). – Distr. Bruntál, Město Albrechtice

town, in the wood of Obora on Pěnkavčí vrch hill, 5871b (Holub, 7.8.1998, PRA). – Distr. Bruntál, in the wood near the bend of the road 0.8 km NWN of Biskupice village, 5871b (Trávníček, 7.8.1998, OL). – **75. Jesenícké podhůří:** Žáry village near Město Albrechtice town, wood along the road to the settlement Česká Ves, 5871a (Trávníček, 18.8.1999, OL). – Distr. Nový Jičín, Odry town, wood along the road to Pohof village E of the town, 6373a (Trávníček, 6.9.2000, OL). – Distr. Nový Jičín, Suchdol nad Odrou village, along the woodland path 2.5 km W of the village, 6373a (Trávníček, 29.8.1992, OL). – Suchdol nad Odrou village, woodland edge 1.7 km NW of the village, 6373a (Trávníček, 29.8.1992, OL). – Distr. Nový Jičín, Kletné village, on the edge of the wood beside the road to Pohof village 1–1.5 km W of Kletné village, 6373a (Pečinka, 8.9.2000, OL). – **77c. Chřiby:** Jankovice village, beside the road near the gamekeeper's lodge, 2.2 km S(–SES) of the village, 6870c (Trávníček, 22.9.1995, OL). – Salaš village near Buchlovice town, in the wood above the road 1 km W of Hrušov hill, 6870c (Trávníček, 1.9.1996, OL). – Velehrad village, wood along the road to Salaš village 1–1.5 km NWN of the village, 6870c (Trávníček, 1.9.1996, OL). – Velehrad village, wood clearing at the woodland path NEE of Nový Dvůr settlement, 6870c (Trávníček, 28.8.1994, OL). – Distr. Uherské Hradiště, E part of the wood S of Modrá village, 6970a (Trávníček, 12.9.2000, OL). – Stribrnice village near Uherské Hradiště town, clearing on the edge of the wood 1.5 km N of the village, 6969b (Trávníček, 12.9.1993, OL). – **78. Bílé Karpaty lesní:** Popovice village near Uherské Hradiště town, at the woodland path 1.4 km NW of the village, 6971a (Trávníček, 21.8.2001, OL). – Dobrkovice village near Luhačovice town, on the edge of the wood along the road 1.4 km W of the village, 6971b (Trávníček, 10.9.2001, OL). – Biskupice village near Luhačovice town, grove beside the road 0.9 km NEN of the railway station, 6972a (Trávníček, 20.8.2002, OL). – Luhačovice town, in the wood along the road 2.1 km N of the railway station, 6872d (Trávníček, 10.9.2001, OL). – Luhačovice town, wood margins along the road in the direction of Řetechov, 1.6 km N of railway station, 6872d (Trávníček, 20.8.2002, OL). – Bohuslavice nad Vláří village, on the S edge of the wood 0.5 km N of railway station, 6873d (Trávníček, 25.8.1994, OL). – Brumov town, clearings in the woodland surrounding Brumov castle and ponds near the brewery, 6974a (Dančák, 23.8.2001, OL). – **79. Zlínské vrchy:** Distr. Zlín, Fryšták village, along the path SWS of the village, NWW of Přehrada Fryšták reservoir, 6772a (Trávníček, 10.9.1995, OL). – Kostelec village near Zlín town, at the woodland path close to Vítkovice recreation hotel near the village, 6772a (Kusák, 1.8.1993, OL). – Near the Zlínské Paseky village close to Zlín town, 6772c (Holub, 10.7.1990, PRA). – Zlín town, on the slope above the road between the villages of Přiluky and Štákovy Paseky, 6772c (Kusák, 29.8.1993, OL). – Zlín town, 1.6–1.8 km NWW of the Přiluky village, 6772c (Trávníček, 7.9.1997, OL). – Zlín town, along the way to the wood N of Přiluky village, 6772c (Kusák, 29.8.1993, OL). – Zlín town, on the wood margin 1.6–1.9 km NEN of Přiluky village, 6772c (Trávníček, 7.9.1997, OL). – Lužkovice village near Zlín town, along the woodland path 1.5 km NW of the village to the SW periphery of the village, 6772c (Trávníček, 7.9.1997, OL). – Zlín town, at the woodland path from suburb Lazy to the road leading to Březůvky village, close to Vršek hill (438 m), 6772c (Kusák, 29.8.1993, OL). – Zlín town, beside the road 2.5 km S of Zlín-střed railway station, 6771d (Trávníček, 18.9.1994, OL). – Distr. Zlín, grove close to SE edge of Jaroslavice u Zlína village, 6772c (Trávníček, 21.7.1999, OL). – Distr. Zlín, beside the way 1.3 km SE of the village Jaroslavice u Zlína, 6772c (Trávníček, 21.7.1999, OL). – Zlín town, from the S periphery of the town towards the wood margin 1 km W of Kudlov village, 6772c (Trávníček, 18.9.1994, OL). – Zlín town, beside the woodland path leading from the town over Barabáš hill towards the Film studio Kudlov, 0.5 km N of the studio, 6771d (Kusák, 18.8.1993, OL). – Zlín town, at the woodland path over Díly hill, E of Kudlov village, 6772c (Trávníček, 31.8.1997, OL). – Zlín town, on the woodland edge along the road between the villages of Kudlov and Nové Paseky, SES of Kudlov village, 6872a (Trávníček, 31.8.1997, OL). – Distr. Zlín, in the wood along the path N–NWN of the village Březnice, 6771d (Trávníček, 18.9.1994, OL). – Březnice village, along the asphalt way W of the road to Zlín town, 6871b (Kusák, 18.8.1993, OL). – Salaš village near Zlín town, in the wood along the road 0.9 km NW of the village, 6871b (Trávníček, 20.8.2002, OL). – Bohuslavice u Zlína village, at the woodland path 1.5 km SES of the village, 6871b (Trávníček, 15.9.1993, OL; Trávníček, 17.10.1996, OL). – Šarovy village near Zlín town, in the wood along the road SWS of the village, 6871d (Holub, 13.7.1994, PRA). – Distr. Zlín, on the woodland edge along the road NE of Březolupy village, 6871d (Trávníček, 9.7.1987, OL; Kusák, 3.8.1993, OL; Trávníček, 3.8.1993, OL; Kusák, 13.7.1994, OL; Trávníček, 13.7.1994, OL). – Distr. Zlín, beside the woodland path 0.8 km NW of Zlámanec village, 6871d (Trávníček, 15.9.1993, OL). – Nové Paseky village near Zlín town, along the woodland asphalt way from the margin of the village 1.2 km SW in the direction of the village, 6872a (Trávníček, 31.8.1997, OL). – Březůvky village near Zlín town, along the woodland asphalt way 1 km N – 0.8 km NWW of Kamenec hill, 6872a (Trávníček, 31.8.1997, OL). – Horní Lhota village near Luhačovice town, beside the road 1.5 km N of the village, 6872b (Trávníček, 13.7.1994, OL). – Lípa village near Zlín town, shrubby vegetation near Na Kolibě settlement, 2.3 km S of the railway station, 6872b (Trávníček, 21.7.1999, OL). – Distr. Zlín, Dešná village, at the woodland path 1 km SES of the village, 6773a (Trávníček, 14.8.1995, OL). – Distr. Zlín, bushes and wood margins close to the former Bařova dráha railway, SW of Pozdřechov village, 6773d (Dančák, 18.8.2000, OL). – **80a. Vsetínská kotlina:** Bystřička village near Valašské Meziříčí town, on the edge of the grove 0.2 km W of the settlement of Žabárna, 6573d (Trávníček, 21.8.1999, OL). – Ratiboř village near Vsetín town, bushes on Kosiska hill NW of the village, 6673a (Dančák, 10.10.1999, OL). –

Vsetín town, suburb Hrbová, slopes on the N periphery of the town, 6673d (Dančák, 20.9.2001, OL). – **81. Hostýnské vrchy:** Lhota u Vsetína village, bushes along the path close to the settlement of Lhotské Paseky, NW of the village, 6673d (Dančák, 8.9.2000, OL). – Distr. Zlín, Lukoveček village, wood margins from NW edge of the village to Hadovna gamekeeper's lodge, 6671d (Trávníček, 4.8.1996, OL). – Distr. Zlín, at the woodland path on the N edge of Fryšták village in the direction of Lukoveček village, 6772a (Trávníček, 4.9.1996, OL). – Distr. Zlín, in the wood between the villages of Lukov and Kašava, 6772b (Holub, 11.7.1990, PRA). – Distr. Zlín, Lukov village, in the wood along the road in the direction of Kašava village, 1.5–2.2 km NEN of Lukov village, 6772b (Trávníček, 31.8.1996, OL). – Distr. Zlín, Veliková village, on the woodland edge along the road NW–NE of the village, 6772b (Trávníček, 14.8.1995, OL). – Distr. Zlín, Hrobice village, near the crossing NW of the village, 6772b (Trávníček, 14.8.1995, OL). – **84a. Beskydské podhůří:** Baška village near Frýdek-Místek town, shrubs on the bank of the river Ostravice 0.3 km SW of railway station, 6376c (Trávníček, 31.8.1990, OL). – Janovice village near Frýdek-Místek town, on the W slope of Velký pahorek hill, 6376c (Holub, 23.7.1992, PRA). – Vendryně village near Trinec town, along the road in the valley 1.5 km NWW of Ostrý hill, 6378a (Vašut, 15.8.2001, OL).

**S l o v a k i a :** **2. Ipělsko-rimavská brázda:** Hrušov village near Šahy town, along the road 1.8 km SEE of the village (Trávníček, 29.7.1993, OL). – Dolné Strháre village near Modrý Kameň town, along the path on the hill 1.5 km N of the village (Trávníček, 1.8.1993, OL). – Pôtor village near Veľký Krtíš town, on the wood margin along the road to Slovenské Kľačany, 2.5 km NEN of the village (Trávníček, 7.7.2003, OL; Žíla, 7.7.2003, herb. Žíla). – Šiatorská Bukovinka village, along the path 1 km NW of Šomoška castle (Trávníček, 30.7.1993, OL). – Šiatorská Bukovinka, village, along the path 0.8 km N of Šomoška castle (Trávníček, 30.7.1993, OL). – Gemerský Jablonec village near Fifakovo town, on the S slope of Matrač hill 0.8 km NWW of the village (Trávníček, 9.8.1994 and 7.7.2003, OL). – **4. Záhorská nížina:** Gbely town, at the woodland path 1 km SWW of the railway station (Trávníček, 5.7.1995, OL). – Gbely town, wood margin 1.5 km W of the railway station (Trávníček, 5.7.1995, OL). – **10. Malé Karpaty:** Bratislava, in the valley of Vydrlica brook near Želiezna studienka settlement (Holub, 21.9.1998, PRA). – **12. Trábeč:** Krnča village near Topoľčany town, at the woodland path towards Kozlica hill 1 km NE Tábor hill (Trávníček, 8.7.1994, OL). – Zlatno village near Zlaté Moravce town, beside the woodland path 0.8 km NWW of the village (Trávníček, 6.7.2003, OL; Žíla, 6.7.2003, herb. Žíla). – Velčice village near Zlaté Moravce town, along the path 1–2 km NWW of the village (Trávníček, 6.7.2003, OL). – Jelenec village near Nitra town, at the woodland path 0.8 km NWW of Jelenec reservoir NW of the village (Trávníček, 5.7.2003, OL). – **14b. Vtáčnik:** Rudica village near Partizánske town, in the valley of Oslianský potok brook 2 km SEE of the village (Jelínková, 7.7.1994, OL). – **14e. Štiavnické vrchy:** Hodruša-Hámre village near Banská Štiavnica town, along the road in the E part of the village (Trávníček, 9.8.1994, OL). – Voznica village near Banská Štiavnica town, along the road in the valley of Richnava brook 2 km SEE of the village (Trávníček, 9.7.1997, OL). – Hronský Beňadik, by the brook 1.5 km E of railway station (Trávníček, 18.7.1995, OL). – Pukanec village near Banská Štiavnica town, along the road towards Brehy village, ca 2 km N of the village (Trávníček, 6.7.2003, OL; Žíla, 6.7.2003, herb. Žíla). – Žibritov village near Banská Štiavnica town, on the margin of woodland near the settlement beside the road towards Krupina ca 2 km SEE of the village (Trávníček, 6.7.2003, OL). – **15. Slovenské rudohorie:** Poltár village near Lučenec town, by the small pond near the cottage settlement 2 km NEE of the village (Trávníček, 8.7.2003, OL). – Zlatno village, on the wood margin along the road towards Kokava nad Rimavicou town, 1 km N of the village (Trávníček, 8.7.2003, OL). – Klenovec village, wood margin along the road to Kokava nad Rimavicou, in Chorepa saddle 2.5 km W of the village (Trávníček, 8.7.2003, OL; Žíla, 8.7.2003, herb. Žíla). – Brádno village, wood margin along the road to Jelšava town, 0.8 km E of the village (Trávníček, 8.7.2003, OL). – Distr. Rožňava, Roštár village, wood margin beside the road to Henckovce village, 2.5 km NE of Roštár village (Trávníček, 9.7.2003, OL). – **20. Vihorlat:** Remetské Hámre village, along the road in the direction of Morské oko lake (Kusák, 22.7.1993, OL).

**P o l a n d :** **Śląsk:** Przyłęk village, on the wood margin along the road Nysa – Glucholazy, close to Przyłęk village (Trávníček, 11.9.1999, OL).

**A u s t r i a :** **Niederösterreich:** Wienerwald, Hochrotherd village near Pressbaum village, along the road 1 km SE of the village (Trávníček, 30.8.1998, OL). – Wienerwald, along the road by the highway bridge near Wienerwaldsee lake, E of Pressbaum village (Trávníček, 30.8.1998, OL). – Wienerwald, Mauerbach village, beside the road 2.8 km NWN of the village (Tulbinger Kogel) (Trávníček 30.8.1998, OL). – Haidlhof near Baden, by Schl. Merkenstein castle 1 km NW of the village (Trávníček 30.8.1998, OL).

**G e r m a n y :** **Baden-Württemberg:** Odenwald, in the scrub beside the road 0.8 km SWW of Guttenbach town (Žíla, 7.9.2000, OL). – **Bayern:** Spessart, on the wood margin 1 km SEE of Altenbuch village (Žíla, 8.9.2000, OL). – Spessart, at the woodland path 1.5 km NEE of Kredenbach village (Žíla, 8.9.2000, OL).

***Rubus parthenocissus* Trávníček et Holub, spec. nova**

Figs 27–31

**Descriptio:** Frutex altus glandulis stipitatis nullis obsitus vel interdum stipulae atque pedicelli glandulis subsessilibus instructae. Turio altiarcuatus, robustus, 6–9 (–13) mm in diametro, angulatus, cum faciebus distincte sulcatis, (in apricis) atrovinosus, glaber vel cum pilis singulis subglaber. Aculei turionis recti vel paulo curvati, explanate reclinati (4–) 5–8 (–9) mm longi basi (4–) 5–8 (–9) mm lati in numero (2–) 4–8 (–11) ad 5 cm longitudinis. Folia turionis digitato-quinata, plus minusve plana, supra glabra vulgo opace-viridia, subtus pilis stellulatis plerumque tenue griseo-viride tomentosa (in locis umbrosis paene glabrata viridiaque) praeterea pilis patentibus paulo longioribus parce instructa (pilis ad tactum paene non perceptibilibus pilosa). Petiolus 60–75 mm longus foliolis infimis plerumque paulo brevior [longitudo petioli = 80% (rarissime usque 100%) longitudinis foliolorum], disperse usque densior pilosus, cum aculeis (11–) 13–18 (–22) curvatis munitus. Stipulae anguste lineares usque filiformes 0.3–0.6 (–1.0) mm latae. Foliolum terminale plerumque modice longe petiolulatum (longitudo petioluli (25–) 30–40 (–45)% longitudinis laminulae). Laminula latiore (usque rotundate) obovata vel elliptica basi rotundata (raro usque subcordata vel truncata), gradatim vel subabrupte in apice (5–) 10–18 mm longe attenuata, margine plus minusve plana vulgo grosse et inequaliter periodice serrata e dentibus principalibus magnibus, cuspidatis, incisurae (2.0–) 3.0–4.5 (–5.0) mm profundae. Foliola lateralia plerumque expresse minoria quam foliola terminalia, foliola infima manifeste longe [(4–) 5–9 (–12) mm] petiolulata. Inflorescentia paniculata, magna, anguste vel ovate-pyramidalis fere ad apicem foliosa [ad (0–) 1–4 (–12) cm infra apicem efoliosa]. Rami inflorescentiae erecto-patentes. Folia inflorescentiae 1–4 (–5)-nata foliolis terminalibus (late) obovatis vel ellipticis, folia in inferiore parte inflorescentiae grosse serrata cum incissuris 3.5–5.5 (–7.0) mm profundis. Rhachis flexuosa, fere usque ad apicem sulcata, patente pilosa, vix tomentosa, aculei 2–6 (–8) pro 5 cm longitudinis, leviter curvati reclinatique (2–) 3–5 (–6) mm longi basi (2–) 3–6 mm lati. Pedicelli (7–) 10–20 (–25) mm longi, tomentosi insuper pilis longioribus patentibus villosi cum 1–8 (–12) aculeis, aculei plerumque leviter curvati 0.5–2.5 (–3.0) mm longi. Sepala post anthesin reflexa, inermia, externe canescente-tomentosa insuper pilis patentibus paulo longioribus obsita, cum apicibus in appendices saepe prolongati. Petala alba vel rare subrosacea, obovata vel anguste obovate-elliptica, sat magna, (8–) 10–13 (–15) mm longa (4–) 5–7 mm lata. Stamina stylos superantia. Antherae glabrae vel subglabrae. Filamenta alba. Ovaria in parte superiori longe denseque pilosa, styli albo-virescentes. Receptaculum pilosum. Fructus subglobosus vel globosus e (0–) 5–18 (–30) drupeolis compositus. Floret (VI–) VII (–VIII).

**Holotype:** Czech Republic; S Moravia, town Tišnov, path in the wood E of the Koží brada hill W of the town Tišnov, 345 m a.s.l. (R 22/96), coll. B. Trávníček, 17.7.1996, OL (Fig. 27).

**Etymology:** Named according to the coarse and acute leaflet indentation (especially in lower leaves in inflorescences), at first sight resembling that of *Parthenocissus*.

Main diagnostic features (see also Figs 27–31): stems glabrous, usually deeply furrowed, richly suffused dark purple, with (2–) 4–8 (–11) prickles per 5 cm; leaves glabrous above, mostly dark green, with a thin and slight tomentum below (older leaves and leaves of shaded plants only indistinctly tomentose, almost green), with short and relatively sparse simple hairs (almost not hairy to the touch); petioles with (11–) 13–18 (–22), i.e. numerous, prickles; terminal leaflet broadly ovate to ± broadly obovate, in older leaves almost orbicular and then with a short, (5–) 10–18 mm long apex; indentation irregularly periodic, coarse, teeth acute, incisions (2.0–) 3.0–4.5 (–5.0) mm deep; petiolule of terminal leaflet (25–) 30–40 (–45)% as long as its lamina; petiolules of lower leaflets conspicuously long, (4–) 5–9 (–11) mm; inflorescence often voluminous, with a distinctly furrowed rhachis and main branches, with relatively (compared to the size of inflorescence) tiny prickles, inflorescence rhachis often flexuous; inflorescence with simple leaves distributed often to the most distal part, lower leaves in the inflorescence often conspicuously coarsely periodically dentate, with incisions 3.5–5.5 (–7.0) mm deep (resembling the indentation of leaves of *Parthenocissus*); petals white or more rarely pinkish, relatively large; ovaries very densely hairy above.

The species must be treated as a member of the ser. *Discolores* (also because of its triploid chromosome number) in spite of the fact that it is similar to several species of the

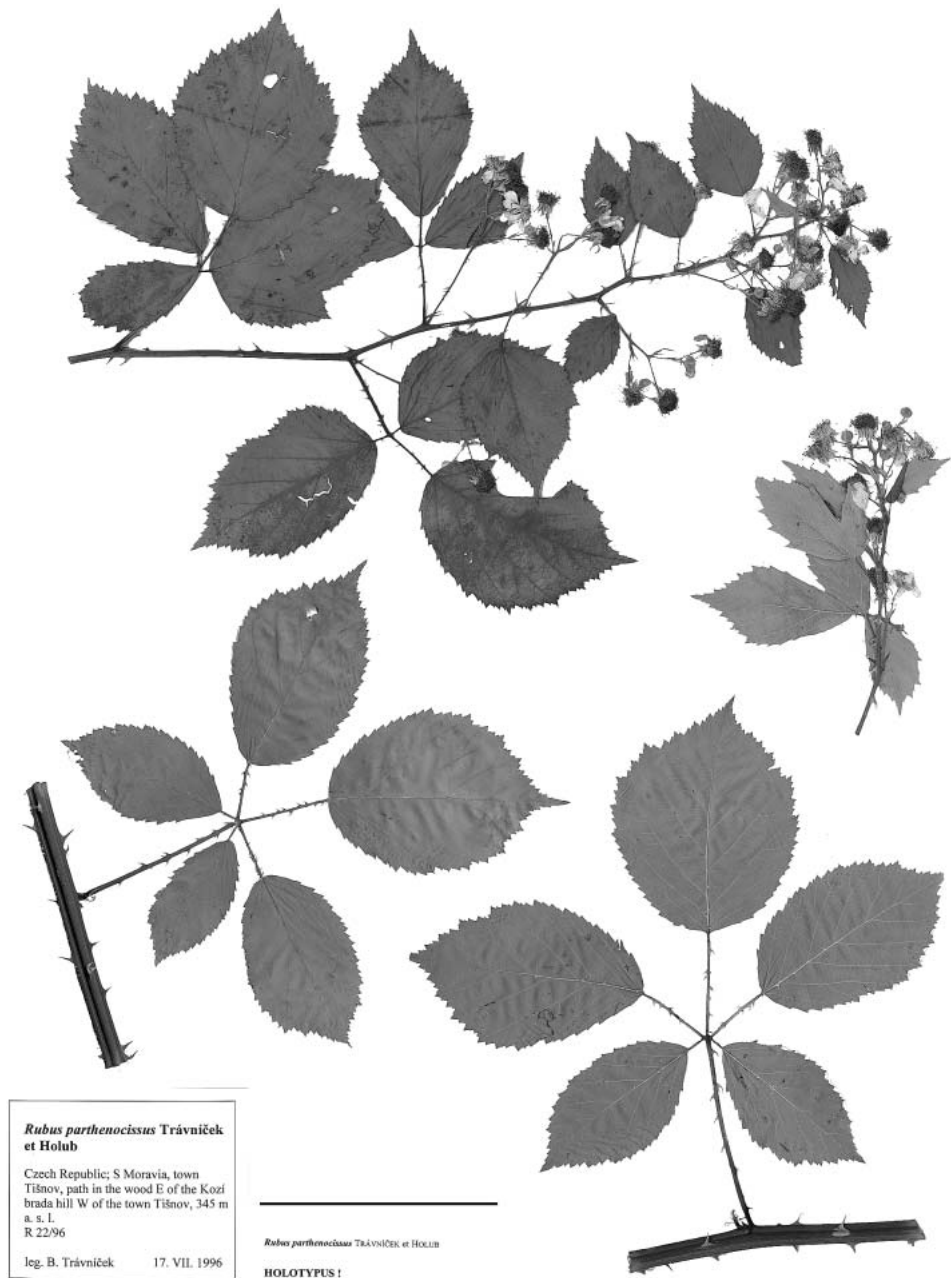


Fig. 27. – *Rubus parthenocissus*, holotype; bar = 10 cm.

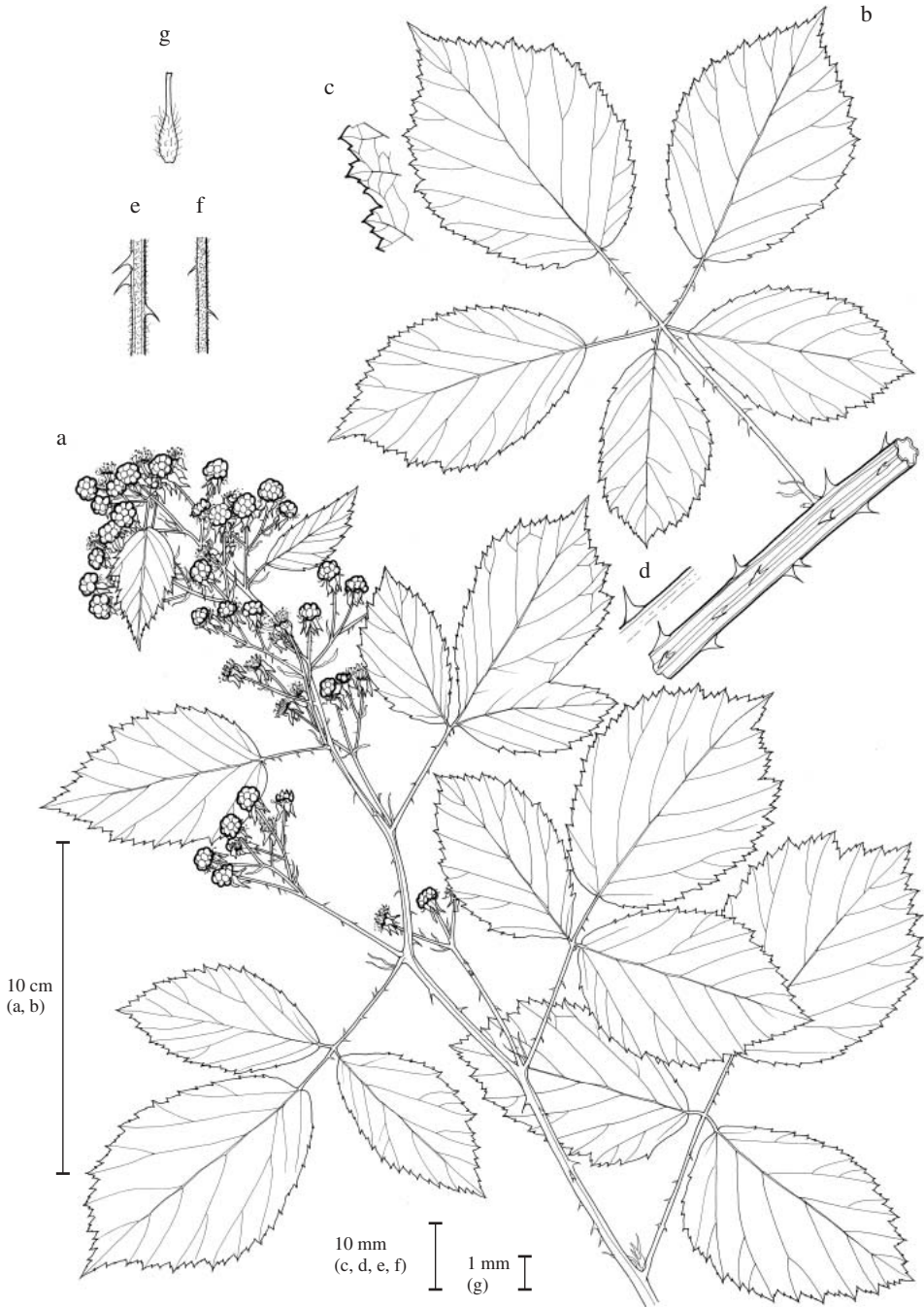


Fig. 28. – *Rubus parthenocissus*: a – inflorescence; b – leaf; c – indentation on the margin of the terminal leaflet; d – detail of sterile branch with prickly; e – detail of inflorescence axis; f – detail of peduncle; g – detail of pistil. Del. A. Skoumalová.

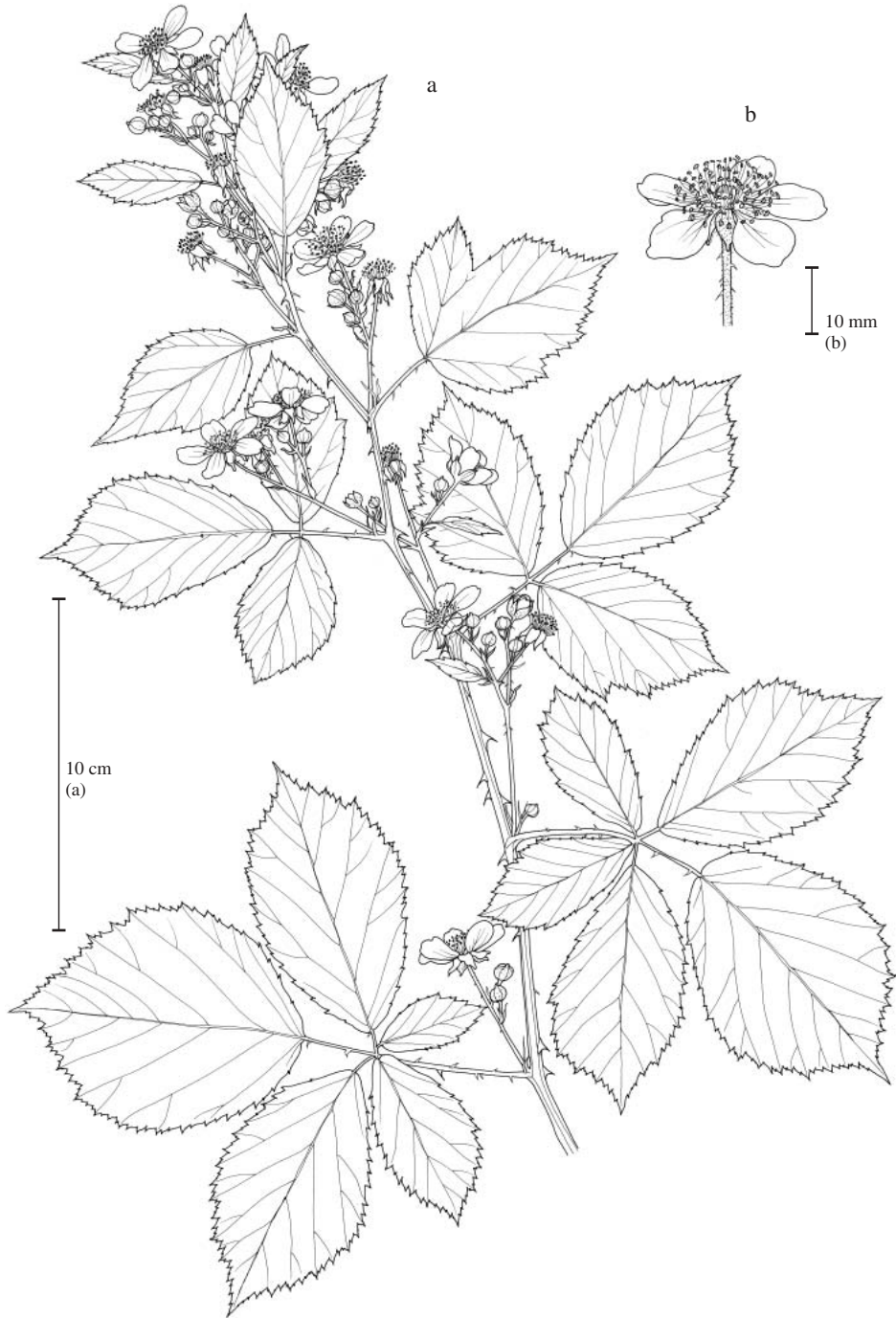


Fig. 29. – *Rubus parthenocissus*: a – inflorescence; b – flower. Del. A. Skoumalová.



Fig. 30. – Sterile branch of *Rubus parthenocissus* (locality: C Moravia, Chříby hills, Bunč settlement).



Fig. 31. – Leaf of *Rubus parthenocissus* (locality: C Bohemia, Osečany near Sedlčany).



ser. *Rhamnifolii*, and *R. nemoralis* P. J. Mueller in some characters (leaf shape and less developed tomentum). Within the ser. *Discolores* it resembles *R. grabowskii* Weihe at first sight; the latter differs in that lower leaflets on first-year stems have shorter petiolules 3–5 mm long, petioles (on these stems) only with (4–) 6–10 (–15) prickles, in the shape of inflorescence, shallower indentation of lower inflorescence leaves, and (at least in the Czech Republic) bright pink petals.

In leaf characters (including the more distinctly acute indentation) and its more voluminous inflorescence, the more robust individuals of *R. parthenocissus* especially may superficially resemble tetraploid species of the *R. praecox* group. In addition to their chromosome number, they exhibit a series of more conspicuous differences: nearly white tomentose undersides of leaves, stouter prickles on first-year stems and in inflorescences, usually less distinctly furrowed first-year stems and inflorescence branches, and pink petal colour (in the Czech Republic).

*R. parthenocissus* is a widespread, formerly overlooked species. According to our current knowledge, its distribution is centered in the southern half of C Europe where it is known to occur from SE Germany (see also Fürnrohr 1996), through the Czech Republic, S Poland (a single locality known) and Austria (common in Wienerwald, and an additional site found near Linz in Upper Austria) to S Slovakia (reaching Zemplínské vrchy in the east, see also Holub & Trávníček 1998). It probably occurs in N Hungary.

*R. parthenocissus* was first recognized (by B. Trávníček) in E Slovakia (Zemplínské vrchy hills) and in the Chřiby hills in C Moravia. Later it was detected at a number of other localities in this relatively extensive distribution area.

In the Czech Republic, *R. parthenocissus* was found in the warmer regions of Bohemia and Moravia. In Bohemia, it grows scattered in its SW, C, N and E parts, scattered or locally almost common in S half of Moravia. It is a species evidently preferring more basic, nutrient rich and usually drier soils, and belongs to the thamnophilous element. It occurs along forest margins, in wood clearings and clearing-paths, amongst shrubs, more rarely also in open patches in woodland (plants from the latter habitat have leaves almost without tomentum beneath, and their identification requires considerable experience).

Herbarium specimens examined (Fig. 32)

Czech Republic: **1. Doupovská pahorkatina:** Klášterec nad Ohří town, along the woodland path between the villages of Útočiště and Průsek, 5644b (Bílek, 18.7.2000, herb. Bílek). – Distr. Chomutov, in the village of Útočiště near Klášterec nad Ohří town, 5644b (Holub, 13.7.1988, PRA). – Distr. Chomutov, Klášterecká Jeseň village, in the direction of Útočiště village, 5644b (Holub, 13.7.1988, PRA). – Distr. Chomutov, E of the Klášterecká Jeseň village, 5644b (Holub, 13.7.1988, PRA). – Kotvina village near Klášterec nad Ohří town, 1 km NE of the village, 5644b (Žíla, 30.8.1997, herb. Žíla). – **3. Podkrušnohorská pánev:** Distr. Chomutov, Vysoká Pec village, along the road towards Jezeří castle, 5446d (Žíla, 13.9.1998, herb. Žíla; Bílek, 19.8.2000, herb. Bílek). – **4b. Labské středohoří:** Distr. Ústí nad Labem, in the wood between villages of Povrly and Český Bukov, 5350b (Holub, 11.7.1991, PRA). – Distr. Ústí nad Labem, Povrly village, wood margins beside the road 0.7 km N of the village, in the direction of Mašovice village, 5350b (Havlíček, 5.10.2001, PRC). – **7d. Bělohorská tabule:** Přední Kopanina village near Prague, at the woodland path 1.4 km NE of the village, 5851d (Trávníček, 25.8.2000, OL). – **9. Dolní Povltaví:** Tursko village near Libčice nad Vltavou town, in the wood along the wood, 1.5 km SEE of the village, 5852a (Trávníček, 25.8.2000, OL). – **11a. Všetatské Polabí:** Distr. Mělník, Míkov wood between the villages of Záboří and Vavříneč, 5653c (Trávníček, 5.7.1993, OL; Holub, 3.8.1994, PRA; Trávníček, 3.8.1994, OL; Holub, 10.11.1995, PRA; Holub, 9.9.1997, PRA). – **11b. Poděbradské Polabí:** Vinaře village near Čáslav town, in the wood E of the road NE of the village, 6059c (Havlíček, 12.9.2000, PRC). – **12. Dolní Pojizeří:** Chloumek village near Mělník town, W margin of the village, 5652b (Holub, 1.8.1992, PRA; Holub, 9.9.1997, PRA). – **16. Znojensko-brněnská pahorkatina:** Hradčany village near

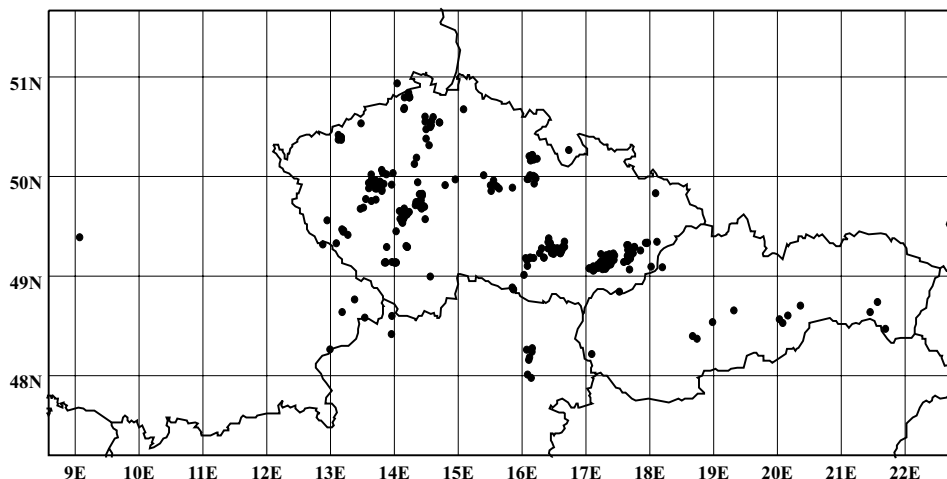


Fig. 32. – Distribution of *Rubus parthenocissus*.

Tišnov town, road ditch near Hradčany railway station, 6664d (Hrbáč, 31.8.2002, herb. Hrbáč). – Brno, Královo Pole suburb, on the railway siding close to the railway station, 6765d (Hrbáč, 29.8.1993, herb. Hrbáč; Hrbáč, 3.9.1995, PRA). – **20a. Bučovická pahorkatina:** Distr. Kroměříž, Divoky village, in the wood above the path at the SE edge of the village, 6769d (Trávníček, 16.7.2001, OL). – Distr. Kroměříž, Újezdsko village, in the wood along the road 0.6 km NWN of the village, 6770c (Trávníček, 16.7.2001, OL). – Distr. Kroměříž, Sulimov, in the scrub along the road on the E margin of the village, 6770d (Trávníček, 16.7.2001, OL). – **20b. Hustopečská pahorkatina:** Lovčice village near Žďánice town, at the woodland path in Jordánek valley 1.5 km NWN of the village, 6968a (Trávníček, 16.8.2000, OL). – Lovčice village near Žďánice town, in the wood beside the road 1.5 km N of the village, 6968a (Havlíček, 20.7.2001, PRC). – Bohuslavice u Kyjova village, E margin of the wood 0.4 km SWW of the railway station, 6968b (Trávníček, 15.8.1993, OL). – **25a. Krušnohorské podhůří vlastní:** Distr. Chomutov, Měděnec village, road verge 100 m W of Sfíny nature reserve, S of the village, 5544d (Bílek, 12.8.2000, herb. Bílek). – **29. Doupovské vrchy:** Distr. Chomutov, on the W–SW edge of the Černýš village, 5644b (Holub, 9.10.1996, PRA; Bílek, 11.7.2000, herb. Bílek; Žíla, 16.9.2000, herb. Žíla). – **31a. Plzeňská pahorkatina vlastní:** Litohlavy village near Rokycany town, beside the wood margin 1 km NW of the village, 6247a (Žíla, 24.8.2001, herb. Žíla). – Štáhlavy village near Plzeň, in the wood 1.5 km NE of the village, 6347a (Žíla, 20.8.2000, herb. Žíla). – Štáhlavy village near Plzeň, on the wood margin 1.5 km W of the village, 6346b (Žíla, 20.8.2000, herb. Žíla). – Borovice village near Horšovský Týn town, on the wood margin beside the road 1.5 km S of the village, 6443b (Žíla, 8.10.2000, herb. Žíla). – Klatovy town, SE part of woodland along the road towards Svrčovec village, 6545d (Trávníček, 2.8.1999, OL). – **32. Křivoklátsko:** Distr. Rakovník, Krakovec village, in the valley close to the village, 5947d (Holub, 30.9.1992, PRA). – Chříč village near Plzeň town, in the wood along the road near the village, 6047b (Holub, 30.9.1992, PRA). – Třímány village near Radnice town, in the wood on the slope along the road 1 km SWW of the village, 6047d (Havlíček, 1.10.2000, PRC). – Kladruby village near Radnice town, wood margin 0.8 km SEE of the village, 6047d (Havlíček, 1.10.2000, PRC). – Zvíkovec village near Radnice town, on the edge of the wood beside the road 1.5 km NWN of the village, 6048a (Žíla, 22.9.2001, herb. Žíla). – Kalínova Ves near Kožlany town, in the mixed forest along the road 0–0.9 km NW of the village, 6048a (Havlíček, 21.10.2001, PRC). – Podmokly village near Zbiroh town, in the wood along the road 1.5 km E of the village, 6048c (Havlíček, 1.10.2000, PRC). – Distr. Rakovník, Skryje village, along the road in the wood S of the village, 6048d (Holub, 1.10.1991, PRA). – Distr. Rakovník, Skryje village, along the road near the hills of Červený vrch and Velký vrch, S of the village, 6048d (Holub, 2.10.1991, PRA). – Distr. Rakovník, Skryje village, N of Těchovín hill, 6048d (Holub, 8.9.1997, PRA). – Kamenec village near Radnice town, beside the road in the village, 6147b (Havlíček, 1.10.2000, PRC). – Terešov village near Rokycany town, Tisy u Terešova nature reserve, 6048c (Holub, 14.8.1981, PRA). – Biskoupky village near Radnice town, wood margins along the road 1 km NEE of the village, 6148a (Žíla, 22.9.2001, herb. Žíla). – Třebnuška village near Rokycany town, SW slopes of Ušák hill, 6148a (Holub, 18.9.1992, PRA). – Třebnuška village near Rokycany town, in the wood of Záušní les, in the direction of the quarry, 6148a (Holub, 1.10.1992, PRA). – Jablečno village near Rokycany

town, near the gamekeeper's lodge of Jablonecká myslivna, 6148b (Holub, 1.10.1992, PRA). – Drahoňův Újezd village near Zbiroh town, on the NW edge of the village, 6148a (Havlíček, 7.10.1999, PRC). – Týček village near Zbiroh town, beside the road by the farm buildings on the E margin of the village, 6148b (Havlíček, 7.10.1999, PRC). – Třenice village near Zbiroh town, wood margin beside the road 1.7 km SWW of the village, 6148b (Havlíček, 7.10.1999, PRC). – Lašovice village near Rakovník town, near the railway station, 5948b (Holub, 13.10.1984, PRA). – Distr. Rakovník, Malá Buková village, near the crossroad NE of the village, 5948d (Holub, 3.10.1991, PRA). – Distr. Rakovník, Velká Buková village, on the wood margin W of the village, 5948d (Holub, 1.7.1999, PRA). – Distr. Rakovník Rostoky u Křivoklátu village, above the railway station, 5949c (Holub, 30.7.1979, PRA). – Distr. Rakovník, Dřevíč village, near the crossroads to Řepišť village, 5949d (Holub, 28.6.1999, PRA). – Distr. Beroun, Kublov village, on the slope of Jehlovka hill in the direction of Líšná village, 6048d (Holub, 28.7.1978, PRA). – Zdice town, between the place “V hroudě” and Hřeben hill W of the town, 6049d (Holub, 11.11.1984, PRA). – **33. Branžovský hvozď:** In the village of Chudenice near Klatovy town, 6545a (Holub, 4.10.1983, PRA). – Distr. Klatovy, Bělýšov village near Slatina, 6545a (Holub, 1.7.1985, PRA). – Distr. Klatovy, Slatina village near Dolany village, wood margin E of the village, 6545c (Trávníček, 5.8.1999, OL; Žíla, 5.8.1999, herb. Žíla). – Distr. Domažlice, in the village of Orlovice, 6644d (Holub, 4.10.1996, PRA). – **35a. Holoubkovské Podbrdsko:** Borek village near Rokycany town, on the wood margin along the road 1 km NE of the village, 6247b (Žíla, 17.8.2001, herb. Žíla). – Medový Újezd village near Rokycany town, in the wood SW of the village, 6248a (Holub, 2.10.1993, PRA). – **35d. Březnické Podbrdsko:** Boudy village near Mirovice town, in the wood of Velký Kosatín, 6550a (Holub, 10.10.1987, PRA). – **37d. Čkyňské vápence:** Nahořany village near Čkyně town, along the road in the wood of V hájích 1–1.5 km SE of the village, 6849c (Žíla, 26.9.1997, herb. Žíla). – Distr. Strakonice, on the N edge of Zlešice village, 6849c (Žíla, 26.8.1998, herb. Žíla). – Distr. Strakonice, Zlešičky village, on the edge of the wood of V háji, along the road 0.5 km N of the village, 6849c (Žíla, 26.8.1996, herb. Žíla). – **37e. Volyňské Předšumaví:** Kakovice village near Volyně town, in the wood 0.5 km SWS of the village, 6849d (Žíla, 28.9.2000, herb. Žíla). – **37f. Strakonické vápence:** Distr. Strakonice, Bavorov village, in the wood on E slope of Helfenburk hill, 6850c (Holub, 31.7.1990, PRA). – Distr. Strakonice, Štětín village, wood clearing between the village and Helfenburk hill, 6850c (Holub, 16.8.1996, PRA). – **37e. Volyňské Předšumaví:** Distr. Strakonice, Javornice village near Bavorov, wood S–SW of Helfenburk hill, 6850c (Trávníček, 16.8.1996, OL; Žíla, 16.8.1996, herb. Žíla). – **37f. Strakonické vápence:** Distr. Strakonice, Štětín village, wood S of the road 1 km NWW of the village, 6850c (Trávníček, 16.8.1996, OL; Žíla, 16.8.1996, herb. Žíla). – Krty village near Strakonice town, on the hill of Tisovník E of the village, 6749a (Žíla, 15.8.1996, herb. Žíla; Holub, 18.8.1996, PRA; Trávníček, 18.8.1996, OL). – **37p. Novohradské podhůří:** Jivno village near České Budějovice town, on the wood margin 1 km E of the village, 7053a (Žíla, 28.9.2001, herb. Žíla). – **41. Střední Povltaví:** Jíloviště village near Prague, at the woodland path beside the highway 1 km NE of summit of Cukrák hill, 6052c (Trávníček, 10.9.1998, OL). – Distr. Příbram, Jelence village, wood along the road 0.8 km NWN of the village, 6350b (Trávníček, 10.9.1998, OL). – Příbram town, Bytíz village, at the woodland path between Háje settlement and Placy gamekeeper's lodge, 6350a (Holub, 15.8.1988, PRA). – Slapy village near Prague, in the wood near the cottage settlement of Letovisko N of the village, 6152c (Holub, 11.8.1995, PRA; Trávníček, 11.8.1995, OL; Holub, 20.10.1995, PRA). – Slapy village near Prague, close to the dam of Slapská přehrada reservoir, 6152d (Holub, 1.7.1996, PRA). – Slapy village near Prague, near the cottage settlement of Na vyhlídce, 6152c (Holub, 1.8.1994, PRA; Holub, 11.7.1995, PRA; Holub, 2.10.1996, PRA). – Nová Rabyně village near Slapy, in the wood along the road 0–0.8 km SES of the village, 6152d (Havlíček, 14.10.1999, PRC). – Distr. Příbram, Živohošť village, in the wood along the road towards Záhorka settlement, 6252a (Trávníček, 10.9.1998, OL). – Distr. Příbram, Živohošť village, in the wood near the village, 6252a (Holub, 28.10.1995, PRA). – Distr. Příbram, Živohošť village, on the periphery of the village near the Sport hotel, 6252a (Holub, 2.7.1995, PRA). – Distr. Příbram, Mokrsko village, at the woodland path close to the SE edge of the village, 6252c (Trávníček, 10.9.1998, OL). – Distr. Příbram, between the villages of Cholín and Smilovice, 6252c (Holub, 2.7.1996, PRA). – Žďár village near Sedlčany town, beside the road 0.4 km NEN of the village, 6252c (Trávníček, 9.9.1998, OL). – Křepenice village near Sedlčany town, along the road between the bridge and V Pekle settlement NW of the village, 6251d (Trávníček, 9.9.1998, OL). – Zduchovice village near Kamýk nad Vltavou town, road verge 1.5 km NE of the chapel in the centre of the village, 6351c (Havlíček, 17.9.1999, PRC). – Distr. Příbram, in the wood along the road between the villages of Nepřejov and Větrov, 6351c (Holub, 4.7.1996, PRA; Holub, 22.8.1997, PRA; Trávníček, 22.8.1997, OL). – Distr. Příbram, Solenice village, between the village and U altánu hill, 6351c (Holub, 3.7.1996, PRA). – Distr. Příbram, in the village of Smolotely, 6350d (Žíla, 22.8.1996, OL). – Distr. Příbram, Smolotely village, between Maková hora hill and Kolčava gamekeeper's lodge, 6350d (Holub, 15.8.1988, PRA). – Distr. Příbram, in the village of Solenice, 6351c (Holub, 4.7.1996, PRA). – Distr. Příbram, the cottage settlement of Lavičky near Orlík nad Vltavou village, 6450b (Holub, 21.8.1997, PRA; Trávníček, 21.8.1997, OL). – Distr. Příbram, in the wood between the villages of Bukovany and Hatě, in the direction of Niva settlement, 6450b (Holub, 25.9.1993, PRA). –

Distr. Příbram, in the wood NE of Chraštíčky village, 6450b (Holub, 29.5.1993, PRA). – Distr. Příbram, Podholušice village, cottage settlement near Orlická přehrada reservoir, 6450b (Holub, 4.7.1996, PRA). – Distr. Příbram, Podholušice village, along the woodland asphalt path by the brook 1–1.5 km NEE of the village, 6450b (Trávníček, 21.8.1997, OL). – Kozárovice village near Orlík nad Vltavou, along the woodland asphalt path 1.7 km SE of the village, 6450d (Trávníček, 21.8.1997, OL). – Distr. Písek, Pukňov village, near Trnovec pond, 6450d (Holub, 6.10.1990, PRA). – V Dolících settlement near Sedlčany town, along the road W–S of the settlement, 6252d (Havlíček, 19.8.2001, PRC). – Osečany village near Sedlčany town, in the wood beside the road 1.4 km NEE of the village, 6252d (Trávníček, 9.9.1998, OL). – Kňovice village near Sedlčany town, along the woodland asphalt path 1.3 km N of the village, 6352a (Trávníček, 22.8.1997, OL). – Prosenická Lhota village near Sedlčany town, in the pine wood along the road 1 km NW of the village, 6352b (Havlíček, 19.8.2001, PRC). – **42a. Sedlčansko-milevská pahorkatina:** Roudný village near Sedlčany town, along the road in the wood N–NE of the village, 6352b (Havlíček, 19.8.2001, PRC). – Dolní Mladějov village near Sedlec-Prčice town, in the wood along the road E of the village, 6452b (Havlíček, 20.8.2001, PRC). – **46a. Děčínský Sněžník:** Distr. Děčín, Čechy village, by the water-station above the village, 5250b (Holub, 31.8.1994, PRA). – **46b. Kaňon Labe:** Labská Stráň village near Děčín town, in the wood on the slope along the road on the right bank of the river Labe, 0.5 km SW of the village, 5151c (Havlíček, 21.9.2000, PRC). – Čertova Voda village near Děčín town, along the road and railway near the railway station, 5151c (Havlíček, 21.9.2000, PRC). – Distr. Děčín, in the valley of the river Labe between the villages of Horní Žleb and Prostřední Žleb, 5151c (Holub, 26.7.1993, PRA). – Děčín town, N of the Loubí village, 5251a (Holub, 5.9.1985, PRA). – Distr. Děčín, Horní Žleb village, along the road 0.5 km N of the railway station, 5251a (Havlíček, 21.9.2000, PRC). – Distr. Děčín, Dolní Žleb village, near the railway station, 5251a (Havlíček, 21.9.2000, PRC). – **40a. Písecko-hlubocký hřeben:** Písek town, wood margin on the E periphery of the town, 6651c (Žíla, 2.9.2001, herb. Žíla). – Distr. Písek, in the wood 0.5 km E of the Na Flekačkách settlement, 6751a (Havlíček, 30.8.2001, PRC). – Distr. Písek, at the woodland path 0.6 km SWW of the elevation 520 m W of Na Flekačkách settlement, 6751a (Šída, 21.8.1994, PRA). – **51. Polomené hory:** Distr. Česká Lípa, Loubí village, in the wood along the hiking trail 1.5 km NW – 1.3 km NWN of the village, 5352d (Trávníček, 6.7.1998, OL). – Pavlíčky village near Dubá town, near the ruin of Čáp, 5452d (Holub, 19.8.1989, PRA). – Vrchovany village near Dubá town, in the wood surrounding Starý Bernštejn castle on Berkovský vrch hill NE of the village, 5453a (Trávníček, 8.7.1998, OL). – Nedamov village near Dubá town, on the edge of the wood along the road 0.3 km E of the village, N of Březinka settlement, 5453c (Havlíček, 30.8.2000, PRC). – Dubá town, Beškov village, in the canyon-like valley of Beškovský důl, 5453c (Holub, 3.7.1989, PRA). – Střeživojice village near Dubá town, road verge 0.3 km NEN of the village, 5553a (Havlíček, 30.8.2000, PRC). – Distr. Mělník, between Nové Osinalice village and Království wood, 5552b (Holub, 3.9.1988, PRA). – **52. Ralsko-bezděžská tabule:** Staré Splavy village near Doksy town, wood margin at parking place on the road W of Máchovo jezero reservoir, 0.8 km SES of the village, 5453b (Havlíček, 1.9.2000, PRC). – Doksy town, at the woodland path towards Bezděz village, 4 km SE of the town, 5454c (Kusák, 22.8.1993, OL). – Bezděz hill, at the hiking trail 0.5 km NWW of Malý Bezděz hill, 5454c (Havlíček, 7.7.1998, OL). – **53c. Českokubská pahorkatina:** Hodkovice nad Mohelkou village near Jablonec nad Nisou town, in the wood NW of the village, 5356a (Holub, 31.7.1987, PRA). – **60. Orlické opuky:** Voděrady village near Dobruška town, wood NE of the village, 5762d (Holub, 24.8.1995, PRA; Trávníček, 24.8.1995, OL). – Voděrady village near Dobruška town, in the wood of Zádušní les, 5762d (Holub, 27.9.1996, PRA). – Distr. Rychnov nad Kněžnou, Lično village, in the wood beside the road on the hill of Hradiště SE of the village, 5863a (Holub, 24.8.1995, PRA; Trávníček, 24.8.1995, OL). – Domašín village near Solnice village, in the wood along the road on the E edge of Domašín village, 5863a (Trávníček, 8.9.2000, OL). – **61a. Křivina:** Vyhnance village near Týniště nad Orlicí town, at the woodland path 0–1.2 km NW of the village, 5762d (Trávníček, 12.9.1997, OL). – **61b. Týnišťský úval:** Distr. Ústí nad Orlicí, Rašovice village, in the wood of Kobylanec, 5862b (Holub, 18.7.1983, PRA). – **61c. Chvojenská plošina:** Rzy village near Choceň town, in the wood 1.2 km N of the village, 5962d (Trávníček, 31.8.2000, OL). – Sruby village near Choceň town, along the woodland path 1.2 km NW–1.2 km N of the village, 5963c (Trávníček, 21.8.1996, OL). – **62. Litomyšlská pánev:** Vraclav village near Choceň town, in the wood 1.3 km NE of the village, 6062b (Trávníček, 22.7.2000, OL). – Vraclav village near Choceň town, in the wood 1 km NW of the village, 6062a (Trávníček, 9.8.2000, OL). – Choceň town, in the woodland along the hiking trail 0–1.5 km W of the town, 6063a (Trávníček, 21.8.1996, OL). – Choceň town, on Chlum hill S of the town, 6063a (Trávníček, 21.8.1996, OL; Holub, 20.9.1996, PRA). – Hrušová village near Vysoké Mýto town, in the wood along the road N of the village, W of Valcha settlement, 6063c (Trávníček, 22.7.2000, OL). – **64b. Jevanská plošina:** In the wood along the road between the villages of Ondřejov and Kostelní Střimelice, 6054d (Trávníček, 8.9.1998, OL). – **64c. Černokostelecký perm:** Ždánice village near Kouřim town, in the wood W of the village, 6055b (Holub, 10.8.1983, PRA; Holub, 1.11.1997, PRA). – **65. Kutnohorská pahorkatina:** Zvěstovice village near Golčův Jeníkov town, on the orchard edge along the road 0.7 km N of the village, 6159a (Havlíček, 12.9.2001, PRC). –

**67. Českomoravská vrchovina:** Distr. Brno-venkov, Radoškov village, on the hill of Borkovec, 6763b (Holub, 4.7.1988, PRA). – Újezd u Rosic village, in the wood along the road 1.5 km NE of the village, 6763d (Trávníček, 18.9.1995, OL). – **68. Moravské podhůří Vysočiny:** Klepačov village near Blansko town, wood clearing on the NW edge of the village, 6665d (Trávníček, 5.8.1993, OL). – In the town of Adamov 0.2 km S of the railway station, 6765b (Trávníček, 22.7.1993, OL). – Útěchov village near Brno, near crossings 0.5 km N of the village, 6765b (Trávníček, 22.7.1993, OL). – Soběšice village near Brno, beside the road 1 km N of the village, 6765b (Trávníček, 22.7.1993, OL). – Soběšice village near Brno, beside the road 1.3 km SWS of the village, 6765d (Trávníček, 25.7.2001, OL). – Řepka village near Tišnov town, on the wood margins above the road 1.3 km S of the village, 6664a (Trávníček, 12.9.2001, OL). – Tišnov town, beside the hiking trail W of the village, E of Kozí brada hill, 6664c (Trávníček, 17.7.1996, OL) [holotype]. – Veverská Bitýška town, in the wood beside the road towards Lažánky village 1 km NNW of the town, 6764b (Trávníček, 25.7.2001, OL). – Lažánky village, in the wood towards Veverská Bitýška town, 1.2 km SEE of the village, 6764a (Trávníček, 25.7.2001, OL). – Moravské Knínice village near Kuřim town, at the woodland path 1.5 km SW of the crossroads in the village, 6764b (Trávníček, 12.9.2001, OL). – Česká village near Brno town, at the hiking trail 1.3 km SWW of the railway station, 6765a (Trávníček, 23.7.1993, OL). – Brno, Brněnská přehrada reservoir, Osada village, wood margin on the E bank of the reservoir, 6765c (Hrbáč, 16.7.2002, herb. Hrbáč). – Brno town, Žebětín suburb, in the wood along the hiking trail 1 km SWS of Ríšova studánka spring, 6764d (Trávníček, 17.7.1999, OL). – Brno town, Bystrc suburb, in the wood along the hiking trail SW of Chvalovka hill, 6764d (Trávníček, 17.7.1999, OL). – Zastávka village near Brno, along the road to Masarykova studánka spring, 6864a (Holub, 4.9.1996, PRA). – Zastávka village near Brno, along the road 1.5 km SWW of the railway station, 6864a (Trávníček, 4.9.1996, OL). – Vicenice village near Náměšť nad Oslavou town, in the wood S of the village, 6862b (Holub, 18.9.1995, PRA). – Zňátky village near Náměšť nad Oslavou town, in the wood beside the road 1.5 km SW of the village, 6862b (Trávníček, 18.9.1995, OL). – Kozlany village near Náměšť nad Oslavou town, in the wood near the cottage settlement 0.6 km W of the village, 6862a (Trávníček, 27.7.2001, OL). – Stropešín village near Náměšť nad Oslavou town, in the wood beside the road 0.7 km N of the village, 6862a (Trávníček, 27.7.2001, OL). – Hrotovice village near Náměšť nad Oslavou town, in the wood beside the road 1.4 km SEE of the village, 6862c (Trávníček, 27.7.2001, OL). – Březník village near Náměšť nad Oslavou town, at the woodland path 1.9 km NW of the crossroads in the village, 6863a (Trávníček, 6.8.2001, OL). – Distr. Znojmo, Slatina village, at the woodland path 1 km SE of the village, 6962c (Trávníček, 23.7.2001, OL). – Vranov nad Dyjí village near Znojmo town, in the wood between Vranovské brány settlement and Dyje river, 6161a (Holub, 19.9.1995, PRA). – Distr. Znojmo, along the hiking trail between the villages of Vranov nad Dyjí and Čížov, below Ledové sluje cave, 7161a (Holub, 27.8.1992, PRA; Trávníček, 19.9.1995, OL). – Distr. Znojmo, Čížov village, along the road 1.8 km SWS of the village, 7161a (Trávníček, 8.9.1993, OL). – Distr. Znojmo, Čížov village, on the place “Na keplech” SW of the village, 7161a (Holub, 3.7.1991, PRA). – **69a. Železnohorské podhůří:** Distr. Kutná Hora, close to Bernardov village, 5958c (Holub, 31.8.1997, PRA). – Distr. Chrudim, Turkovice village, in the wood N of the village, 6059a (Holub, 27.9.1996, PRA). – **69b. Sečská vrchovina:** Distr. Chrudim, in the wood between the villages of Zbyslavce and Míčov, 6059d (Holub, 16.7.1985, PRA). – Distr. Chrudim, Skoranov village, in the wood beside the road 1.1 km E of the village, 6159b (Havlíček, 9.8.2000, PRC). – Distr. Chrudim, Míčov village, beside the woodland path 0.7 km SES of the village, 6159b (Trávníček, 11.9.2000, OL). – **74b. Opavská pahorkatina:** Distr. Opava, Dolní Lhota village, in the wood S of the village, 6174d (Holub, 23.7.1989, PRA). – **77a. Žďánický les:** Jestřabice village near Kyjov town, on the wood margin 1 km S of the railway station, 6968b (Trávníček, 15.8.1993, OL). – **77b. Litenčické vrchy:** Distr. Kroměříž, Hořtice village, along the woodland path 1.5 km NEN – 1.6 km NNW of the village, 6769c (Trávníček, 2.9.1998, OL). – **77c. Chřiby:** Bohuslavice u Kyjova village, between the hills of Malá Ostrá and Velká Ostrá, 6968b (Trávníček, 20.9.1992, OL). – Distr. Uherské Hradiště, Osvětimany village, wood clearing 1.8 km N–NEN of the village, 6969b (Trávníček, 12.9.1993, OL). – Distr. Kroměříž, Koryčanská přehrada reservoir, close to the branch of the way, 6869c (Holub, 14.7.1994, PRA). – Distr. Kroměříž, Koryčany village, by the brook in the valley leading to Koryčanská přehrada reservoir, 1.3 km NE of Vršava hill, 6869c (Trávníček, 20.9.1992, OL). – Distr. Kroměříž, Koryčany village, along the woodland path leading to Koryčanská přehrada reservoir, 1.1 km NE of Vršava hill (500 m), 6869c (Trávníček, 14.7.1994, OL). – Distr. Kroměříž, Koryčany village, in the wood along the hiking trail 1.2 km E of Vršava hill, 6869c (Trávníček, 20.9.1992, OL). – Distr. Kroměříž, Koryčany village, between the settlement of Češky and crossing of woodland path, 6969a (Trávníček, 17.9.1992, OL). – Distr. Kroměříž, Koryčany village, wood clearing near the settlement of Češky, 6968b (Trávníček, 17.9.1992, OL). – Distr. Kroměříž, Koryčany village, along the hiking trail in the direction of Češky settlement, 6968b (Trávníček, 17.9.1992, OL). – Distr. Kroměříž, Koryčany village, between Zavadilka gamekeeper's lodge and Moravanské lúky meadow, 6969a (Trávníček, 20.9.1992, OL). – Bohuslavice u Kyjova village, along the woodland path in the direction of Zavadilka gamekeeper's lodge, 1–1.5 km NW of railway station, 6968b (Trávníček, 20.9.1992, OL). – Distr. Kroměříž, Cetechovice village, at the woodland path 1 km NEE

of Vlčák settlement, 6869b (Trávníček, 18.9.1993, OL). – Distr. Kroměříž, Střílky village, by the motorway restaurant, 6869c (Holub, 13.7.1990, PRA). – Distr. Kroměříž, Střílky village, in the wood clearing 1.3 km E(–SEE) of the village, 6869c (Trávníček, 22.9.1995, OL). – Distr. Uherské Hradiště, Staré Hutě village, at the woodland path 1.7 km N of Buchlovský kámen hill, 6869b (Trávníček, 18.9.1993, OL). – Distr. Uherské Hradiště, Staré Hutě village, at the woodland path 0.2 km E of Buchlovský kámen hill, 6869d (Trávníček, 18.9.1993, OL). – Distr. Uherské Hradiště, Staré Hutě village, beside the main road near the parking place 2 km SE of the village, 6869d (Trávníček, 1.9.1996, OL). – Buchlovice town, along the hiking trail N of Chrástě hill, 6869d (Trávníček, 4.9.1994, OL). – Stříbrnice village near Uherské Hradiště town, wood clearing 1.8 km NWN of the village, 6969b (Trávníček, 12.9.1993, OL). – Velehrad village, wood clearing at the woodland path 0.3 km NW of Nový Dvůr settlement, 6870c (Trávníček, 28.8.1994, OL). – Velehrad village, wood along the road to Salaš village 1.5–1 km NWN of Velehrad village, 6870c (Trávníček, 1.9.1996, OL). – Velehrad village, in the wood N of the settlement of Nový Dvůr, 6870c (Trávníček, 28.8.1994, OL). – Distr. Uherské Hradiště, near Bunč village, 6870a (Holub, 14.8.1985, PRA; Trávníček, 16.10.1996, OL). – Distr. Uherské Hradiště, Bunč village, along the woodland path to the gamekeeper's lodge, 0.2 km S of the village, 6870a (Trávníček, 25.8.1992, OL). – Distr. Uherské Hradiště, Bunč village, in the wood beside the asphalt way 1 km SW of the village, 6870a (Trávníček, 27.7.1997, OL). – Distr. Uherské Hradiště, Bunč village at the woodland path 0.6 km W of the village, 6870a (Trávníček, 4.9.1993, OL). – Distr. Uherské Hradiště, Bunč village, along the woodland path between Kudlovická dolina valley and Bunč recreation site close to Komínské skály hill, 6870a (Kusák, 4.9.1993, OL). – Salaš village near Buchlovice town, in the wood above the road 1 km W of Hrušov hill, 6870c (Trávníček, 1.9.1996, OL). – Salaš village near Buchlovice town, along the hiking trail in the direction of Buchlov, 0–1.5 km SW of the village, 6870c (Trávníček, 4.9.1994, OL). – Distr. Uherské Hradiště, Jankovice village, beside the road near the gamekeeper's lodge, 1.5 km NW of the village, 6870a (Trávníček, 25.8.1992, OL). – Distr. Uherské Hradiště, Jankovice village, beside the road in the direction of Bunč village, near the gamekeeper's lodge, 2 km S(–SES) of the village, 6870c (Trávníček, 22.9.1995, OL). – Distr. Uherské Hradiště, Jankovice village, in the wood clearing 0.4 km SE of Komínky hill (523 m), 6870a (Trávníček, 4.9.1993, OL). – Distr. Uherské Hradiště, Jankovice village, in the wood along the road 0.8 km SW of the centre of the village, 6870c (Havlíček, 18.7.2001, PRC). – Distr. Uherské Hradiště, Košíky village, along the way 0.8 km NEN of the village, 6870b (Trávníček, 4.9.1993, OL). – Distr. Uherské Hradiště, at the woodland path from Kudlovická dolina valley to Bunč village, 7 km W of the village, 6870b (Kusák, 4.9.1993, OL). – Distr. Kroměříž, Nová Dědina village, in the wood along the road on the SW edge of the village, 6770d (Havlíček, 18.7.2001, PRC). – Distr. Uherské Hradiště, Kudlovice village, in the wood along the road 1.6 km NWN of Dolina settlement, 6870b (Trávníček, 4.9.1993, OL). – **78. Bílé Karpaty lesní:** Distr. Uherské Hradiště, Maršov village, in the wood of Rubaniska S of the village, 6972a (Holub, 2.8.1996, PRA). – Javorník village near Velká nad Veličkou town, between the railway and road 2.2 km SWS of the centre of the village, 7171c (Havlíček, 19.7.2001, PRC). – Brumov town, clearings in the woodland surrounding Brumov castle and ponds near the brewery, 6974a (Dančák, 23.8.2001, OL). – **79. Zlínské vrchy:** Zlín town, on the wood margins along the road between the villages of Kudlov and Nové Paseky, SES of Kudlov village, 6872a (Trávníček, 31.8.1997, OL). – Zlín town, 1.6–1.9 km NEN of Příluky village, 6772c (Trávníček, 7.9.1997, OL). – Zlín town, 1.6–1.8 km NWW of Příluky village, 6772c (Trávníček, 7.9.1997, OL). – Distr. Zlín, Lužkovice village, at the woodland path 0–1.5 km NW of the village, 6772c (Trávníček, 7.9.1997, OL). – Březnice village, along the road to Zlín town, 1.2–1.5 km N of the village, 6871b (Trávníček, 18.9.1994, OL). – Distr. Zlín, Březnice village, in the wood along the road 2 km N(–NEN) of the village, 6871b (Trávníček, 18.9.1994, OL). – Distr. Zlín, Březnice village, in the wood along the hiking trail N–NWN of the village Březnice, 6771d (Trávníček, 18.9.1994, OL). – Bohuslavice u Zlína village, wood clearing 1 km SES of the village, 6871b (Trávníček, 15.9.1993, OL; Trávníček, 13.7.1994, OL). – In the wood between the villages of Bohuslavice u Zlína and Doubravy, near the crossroads to Paseky village, 6871b (Holub, 13.7.1994, PRA). – Bohuslavice u Zlína village, wood clearing near the village, 6871b (Kusák, 13.7.1994, OL). – Březůvky village near Zlín town, along the woodland asphalt way 1 km N–0.8 km NWW of Kamenec hill, 6872a (Trávníček, 31.8.1997, OL). – Distr. Zlín, at the woodland path 1.3 km SW of Šarovy village, 6871d (Trávníček, 3.8.1993, OL). – Distr. Zlín, Dešná village, at the woodland path 1 km SES of the village, 6773a (Trávníček, 14.8.1995, OL). – Fryšták town, at the woodland path 2 km S–SW of the village, 6771b (Trávníček, 10.9.1995, OL). – **80a. Vsetínská kotlina:** Semeťín village near Vsetín town, on the N foothill of Janišovský vrch hill S of Šatka settlement, 6673d (Dančák, 19.9.2001, OL). – Potůčky village near Vsetín town, above the road to Valašské Meziříčí town, 6673d (Dančák, 10.7.1999, OL). – **81. Hostýnské vrchy:** Přílepy village near Fryšták town, on the wood margins along the road between the village and Hadovna gamekeeper's lodge, 6671d (Trávníček, 4.8.1996, OL). – Distr. Zlín, Lukoveček village, wood margins from NW edge of the village to Hadovna gamekeeper's lodge, 6671d (Trávníček, 4.8.1996, OL). – Distr. Zlín, in the wood between the villages of Lukov and Kašava, 1.5–2.2 km NEN of Lukov village, 6772b (Trávníček, 31.8.1996, OL). – Distr. Zlín, Veliková village, on the woodland edge along the road NW–NE of the village, 6772b (Trávníček, 14.8.1995,

OL). – Semetín village near Vsetín town, on the slope at the SE foothill of the Ratibořský Grůň Mt, SW of the village, 6673d (Dančák, 19.9.2001, OL). – **82. Javorníky:** Distr. Vsetín, Svrčin village in the valley of Dinotice brook, 6674d (Dančák, 20.10.2001, OL).

**Slovakia:** **2. Ipel'sko-rimavská brázda:** Stolické vrchy highland, on the wood margin 0.7 km NW of the village of Slizké (Trávníček, 9.8.1994, OL). – **8. Východoslovenská nížina:** Zemplínske vrchy hills, wood clearing in the valley on NE edge of Veľká Trňa village (Trávníček, 9.8.1994, OL). – **10. Malé Karpaty:** Bratislava, in the valley of Vydrica brook near Želiezna studienka settlement (Holub, 21.9.1998, PRA). – **14d. Poľana:** Hrochof village, beside the road 0.8 km SES of the village (Trávníček, 8.7.1997, OL). – **14e. Štiavnické vrchy:** Kozelník village near Banská Štiavnica town, on the meadows surrounding the top of Rejchard hill NWN of the village (Daníhelka, 8.9.1997, OL). – Brehy village near Banská Štiavnica town, along the road in the valley 1.5–2 km SEE of the village, SW of Chlm hill (Trávníček, 6.7.2003, OL; Žíla, 6.7.2003, herb. Žíla). – Pukanec town, in the scrub along the road towards Brehy village, 2 km N of the village (Trávníček, 6.7.2003, OL). – **15. Slovenské rudohorie:** Brádno village, wood margin along the road to Jelšava town, 0.8 km E of the village (Trávníček, 8.7.2003, OL). – In the scrub along the road between Rákoš village and Jelšava town, 1 km NEE of the village (Trávníček, 8.7.2003, OL). – Distr. Rožňava, Roštár village, wood margin beside the road to Henckovce village, 2.5 km NE of Roštár village (Trávníček, 9.7.2003, OL). – **19. Slanské vrchy:** Dargov village near Trebišov town, along the road 1.5 km W of the village (Trávníček, 19.7.1995, OL). – Slanec village near Trebišov town, wood clearing beside the road 2.2 km W of the village (Trávníček, 1.8.1994, OL). – **27a. Biele Karpaty (severná časť):** Červený Kameň village near Púchov town, in the woodland close to Závlačná hill (635.5 m), E of the village (Trávníček, 3.7.2003, OL).

**Poland:** **Śląsk:** Marianówka village SE of Bystrzyca Kłodzka town, on the wood margin 1.3 km NWN of the centre of the village (Trávníček, 13.9.1999, OL).

**Austria:** **Oberösterreich:** Rohrbach in Oberösterreich town, on the edge of Kimmerting village (Žíla, 30.9.2002, herb. Žíla). – Untermühl village between the towns of Linz and Passau, on the left bank of Donau river (Žíla, 13.7.1993, OL). – **Niederösterreich:** Wienerwald, beside the highway underpass near Wienerwaldsee lake, E of Pressbaum village (Trávníček, 29.8.1998, OL). – Wienerwald, Hochrotherd village near Pressbaum, along the road 1 km SE of the village (Trávníček, 30.8.1998, OL). – Wienerwald, Ried am Riederberg village, along the main road 2 km SEE of the village (Trávníček, 29.8.1998, OL). – Wienerwald, Mauerbach village, beside the road 2.8 km NWN of the village (Tulbinger Kogel) (Trávníček, 30.8.1998, OL). – Mauerbach village, beside the road 1.8 km SW of the village (Trávníček, 30.8.1998, OL). – Wienerwald, Schwarzensee lake near Baden town, beside the road 2 km E of the village (Trávníček, 30.8.1998, OL). – Wienerwald, Haidlhof village near Baden town, beside the road 3 km NW of the village (Trávníček, 30.8.1998, OL).

**Germany:** **Baden-Württemberg:** Odenwald, along the road 0.8 km SWW of Guttenbach town (Žíla, 7.9.2000, herb. Žíla). – **Bayern:** E Bavaria, Grafenau town, along the road on the S edge of Trautmannsdorf village (Žíla, 4.8.2002, herb. Žíla). – E Bavaria, Furth im Wald town, near the village of Seuchau (Žíla, 29.7.2002, herb. Žíla). – Passau, Vilshofen town, on the wood margin of Kufnaholz woodland (Holub, 4.9.1995, PRA). – Passau, Vilshofen town, along the road in Kufnaholz woodland (Holub, 4.9.1995, PRA). – Passau town, beside the railway along the Donau river, SE of Kernmühle settlement, 5 km E of Passau (Holub, 6.9.1995, PRA). – Passau, Simbach a. Inn town, on the edge of Julbach village (Holub, 5.9.1995, PRA). – **Sachsen:** Strand-Thürmsdorf village near Dresden town (Holub, 1.9.1994, PRA).

## Notes on the triploid species new to the Czech Republic

The following two species were studied in detail and safely identified only after the publication of the treatment of the genus *Rubus* in the Flora of the Czech Republic (Holub 1995). Both of them are annotated in more detail below.

### *Rubus perperus* H. E. Weber

*Rubus perperus* H. E. Weber Ber. Bayer. Bot. Ges. 66–67 (1996): 176, 1997. – Syn.: *R. elatior* auct. p. p., non Gremli: Holub, 1995: 108, 110. – *R. verae* nom. nud. (nom. provis.) in Holub 1995: 110.

Main diagnostic features (see also Fig. 33): usually quite robust shrubs, stems distinctly furrowed, sparsely hairy to glabrous; leaves usually with a short petiole (lower leaflets of-

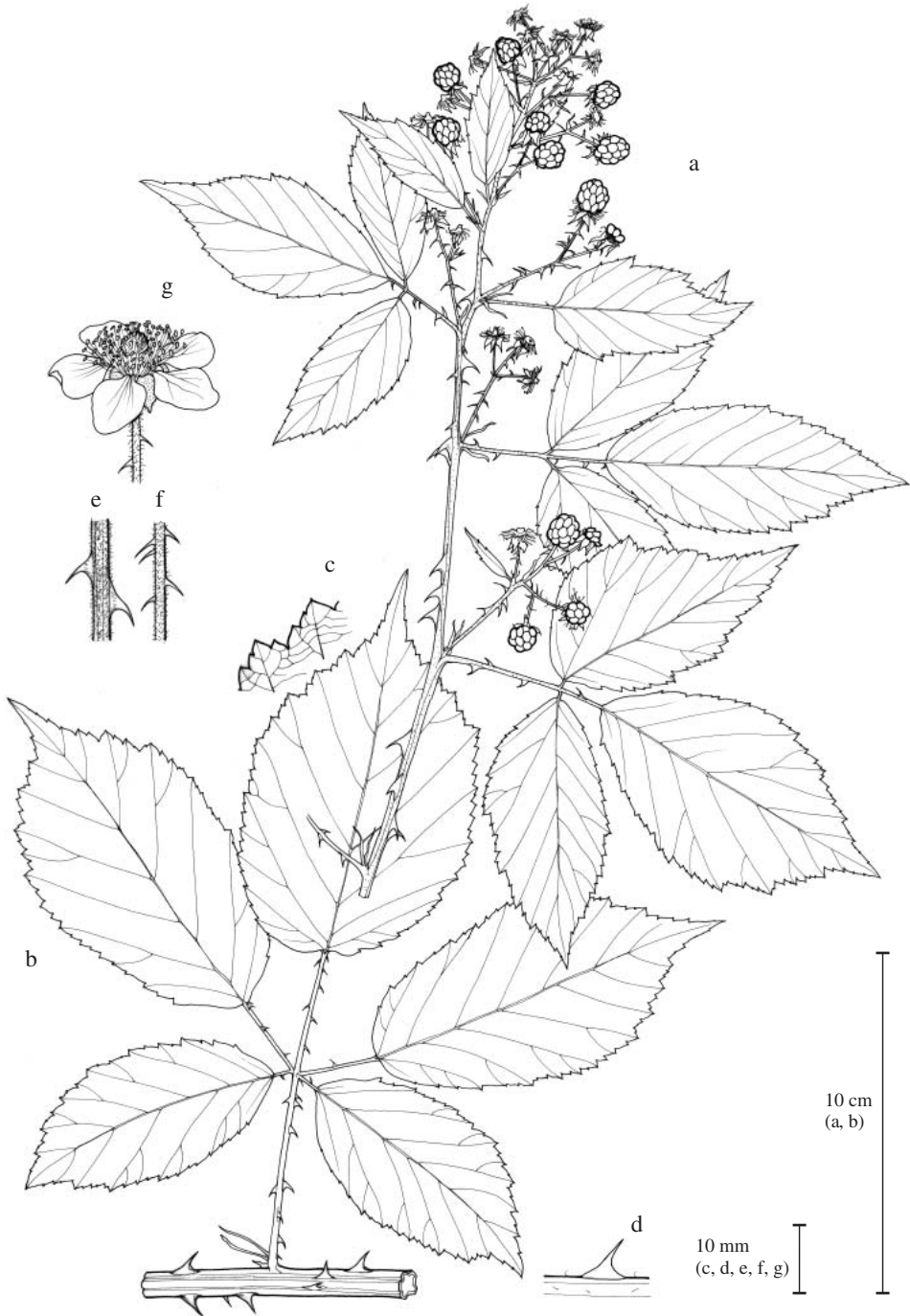


Fig. 33. – *Rubus perperus*: a – inflorescence; b – leaf; c – indentation on the margin of the terminal leaflet; d – detail of sterile branch with prickle; e – detail of inflorescence axis; f – detail of peduncle; g – flower. Del. A. Skoumalová.



ten 1/3 longer than petiole), terminal leaflet with quite short petiolule (most often 25–35% as long as the lamina), usually (narrowly) ovate to elliptical, with a  $\pm$  abrupt, relatively long (20–25 mm) apex, indentation coarser, incisions 3–4 (–5) mm deep; leaves with distinctly grey-white tomentose beneath, longer hairs make leaves feel slightly hairy to the touch; inflorescence usually shorter, often rather plagiotropic, without leaves in the distal part, proximally with usually conspicuously acuminate leaves (leaves towards the inflorescence apex do not become smaller); petals pink (at least in the Czech Republic).

The species was recently (Weber 1997) described from Germany (recorded in Rheinland-Pfalz, Hessen and Bavaria), and reported from a single site in Belgium (Spa) and S Moravia (Stříbrnice in the Chřiby hills, leg. B. Trávníček, 1993, OL).

In the treatment of the genus *Rubus* in the Flora of the Czech Republic, two types were included under the name of *R. elatior* (Holub 1995: 108–110): one of them white-flowered with more densely hairy stems and leaves gradually decreasing in size in the inflorescence, which characterizes *R. elatior* s. str.; the other form is pink-flowered, with glabrescent stems and large, long acuminate leaves in the inflorescence, distally (up to the middle of the inflorescence) of  $\pm$  same size. The latter type was given a provisional name, *R. verae* (Holub 1995: 110), to honour Věra Holubová, an outstanding mycologist, the wife of J. Holub. After 1995, both types were shown to be different. It turned out that *R. elatior* s. str. represents a rare taxon, mostly found in S and SW Bohemia, and in neighbouring Bavaria, while the other form, *R. verae*, is more widespread in Bohemia. It is common in C Bohemia, rare in S and E Bohemia, and very rare also in SE and C Moravia. A plant from one of the S Moravian sites (Stříbrnice in the Chřiby hills) sent to H. E. Weber was later assigned to the newly described *R. perperus*. A comparison of the plants tentatively called *R. verae* in the Czech Republic with a photograph of the holotype and the original description of *R. perperus* led to the conclusion that they belong to the same taxon. The only difference found is in the flower colour: while Weber (1997: 176) describes *R. perperus* as having white to pale pink petals, our plants have pink flowers. In a later publication, Weber (1998) confirms the occurrence of *R. perperus* in the Czech Republic, and suggests that it may have a wider distribution there.

There is a good illustration of *R. perperus* in the Flora of the Czech Republic (Holub 1995: 109) under the name of *R. elatior*, with a detailed illustration of its inflorescence, which is typical of the species. As there is no drawing of the true *R. elatior*, we give an illustration of this less common species in the Czech Republic (based on plants from SW Bohemia) (Fig. 34).

Herbarium specimens examined (Fig. 35)

Czech Republic: **6. Džbán:** Distr. Louny, Deštnice village, along the road in the wood N of the village, 5747d (Holub, 23.7.1998, PRA). – Distr. Rakovník, Mutějovice village, close to the mine of Perun, 5748c (Holub, 11.9.1996, PRA). – Distr. Rakovník, Pochvalov, at the woodland path E of Pochvalovská stráň nature reserve, 1.5 km NE of the village, 5748d (Havlíček, 16.9.1999, PRC). – **7c. Slánská tabule:** Lotouš village near Slaný town, on the edge of pine wood 0.6 km SWW of the village, 5750c (Havlíček, 6.9.2001, PRC). – **31a. Plzeňská pahorkatina vlastní:** Losiná village near Plzeň town, on the wood margin along the road 1.5 km SE of the village, 6346b (Žíla, 20.8.2000, herb. Žíla). – Předence village near Plzeň town, in the woodland Vysoká, at the foothill of Tlustá hora hill, 6346c (Holub, 2.8.1989, PRA). – Blovice town, in the wood along the road 1.5 km W of the town, 6447a (Žíla, 17.8.2001, herb. Žíla). – Křenice village near Přeštice town, in the wood along the road towards Biřkov, 6445c (Trávníček, 5.8.1999, OL). – Distr. Klatovy, Třebýcinka village, in the wood along the road towards Švihov village, SWW of the village Třebýcinka, 6545b (Trávníček, 2.8.1999, OL). – **32. Křivoklátsko:** Distr. Rakovník, Pustověty village, on the hill of Čepina, 5948d (Holub, 30.9.1992, PRA). – Distr. Rakovník, between the villages of Městečko

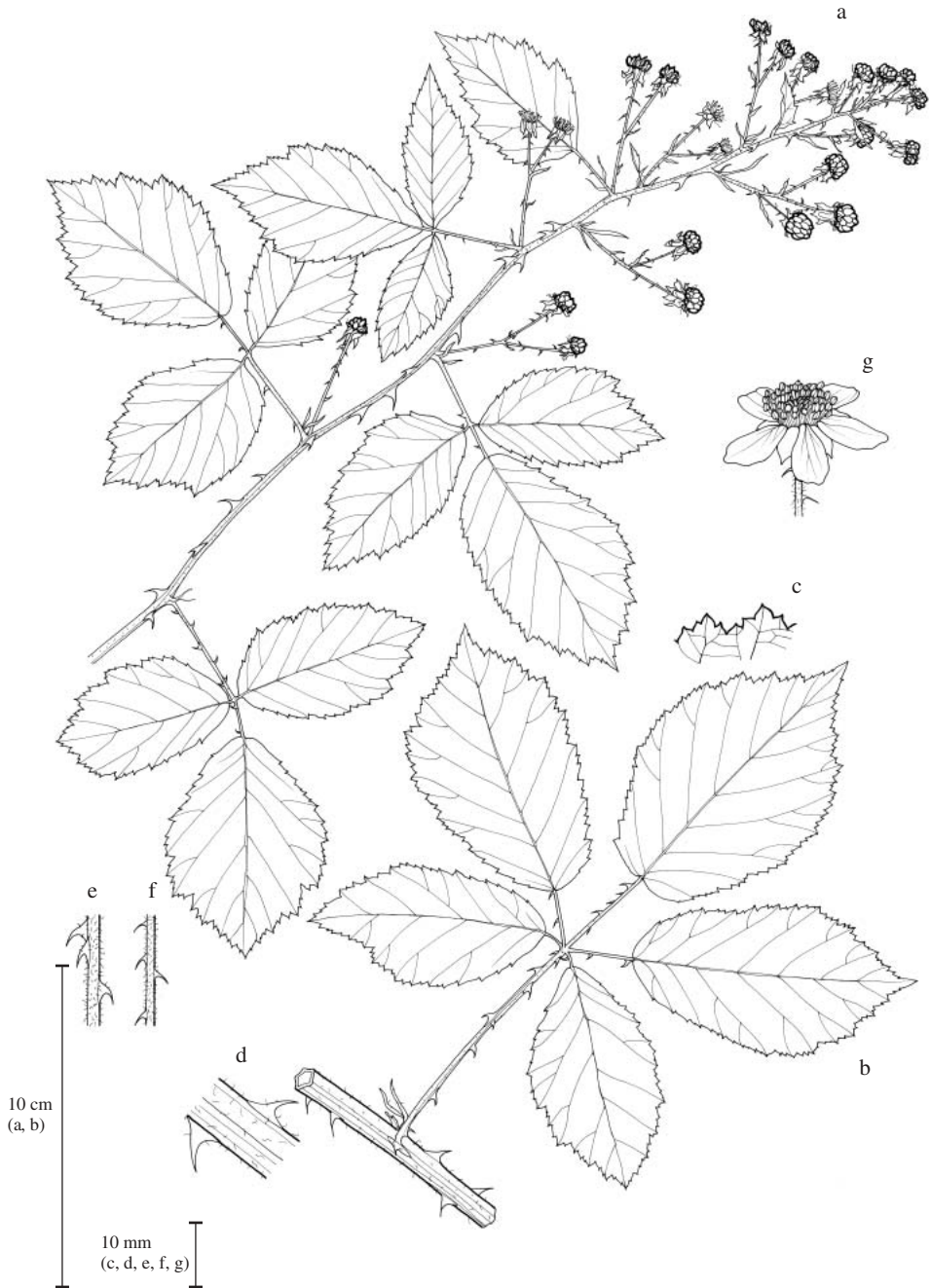


Fig. 34. – *Rubus elatior*: a – inflorescence; b – leaf; c – indentation on the margin of the terminal leaflet; d – detail of sterile branch with prickles; e – detail of inflorescence axis; f – detail of peduncle; g – flower. Del. A. Skoumalová.

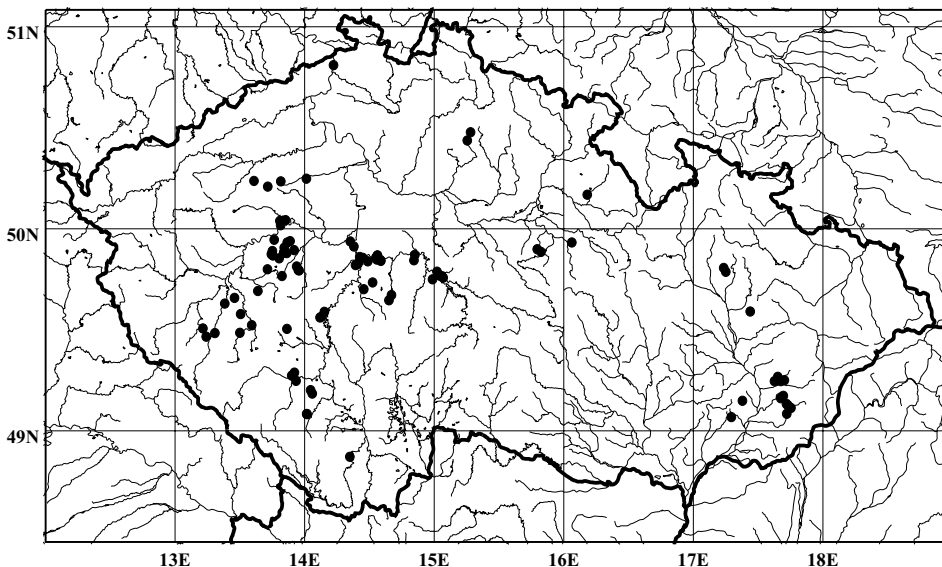


Fig. 35. – Distribution of *Rubus perperus* in the Czech Republic.

and Velká Buková, 5949c (Holub, 3.10.1991, PRA). – Distr. Rakovník, Nezabudice village, on the wood margin above the village, 5948d (Holub, 27.10.1995, PRA; Holub, 1.7.1999, PRA). – Distr. Rakovník, in the wood close to the crossroads “U ručiček”, 2 km S of Skryje village, 6048d (Havlíček, 22.10.1999, PRC). – Distr. Beroun, near the village of Kublov, 6049c (Holub, 15.9.1990, PRA). – Distr. Beroun, Kublov village, close to U křížků crossing, 6049c (Holub, 28.7.1987, PRA). – Distr. Beroun, between the villages of Bzová and Křižovatky, 6049c (Holub, 12.7.1995, PRA). – Hředle village near Žebrák town, in the wood 1 km SWS of the crossroads in the village, 6149b (Trávníček, 10.7.2001, OL). – Točnick village near Žebrák town, on the wood margin beside the road 1.5 km SW of the chapel in the village, 6149a (Havlíček, 7.10.1999, PRC). – Distr. Rokycany, Jablečno village, close to Jablecká myslivna gamekeeper’s lodge, 6148b (Holub, 8.9.1997, PRA). – Zbiroh town, on the N slope of the hill of Světovina, 6148a (Holub, 7.10.1989, PRA). – Zbiroh town, on the E slope of the hill of Světovina, close to Františkov village, 6148b (Holub, 7.10.1989, PRA). – Distr. Beroun, on the foothill of Holý vrch hill between the villages of Líšná and Opyš, 6149a (Holub, 2.7.1999, PRA). – Třenice village near Zbiroh town, on the wood margin along the road 1.7 km SWW of the village, 6148b (Havlíček, 7.10.1999, PRC). – Drozdov village near Žebrák town, in the wood along the road NEN of Holý vrch hill, 1.5 km N of the village, 6149a (Havlíček, 7.10.1999, PRC). – **33. Branžovský hvozd:** Distr. Klatovy, Chlumská village, in the wood along the road towards Malechov village, 1.3 km of Chlumská village, 6545a (Trávníček, 2.8.1999, OL). – **34. Plánický hřeben:** Srby village near Nepomuk town, in the wood NW of the village, 6447d (Holub, 4.10.1983, PRA). – Distr. Plzeň-jih, Žinkovy village, on Poudřim hill, 6546b (Holub, 24.8.1991, PRA). – **35a. Holoubkovské Podbrdsko:** Těškov village near Rokycany town, E of the village, in the direction of Mýtský vrch hill, 6248a (Holub, 17.10.1987, PRA). – Zaječov village near Hořovice town, on the hill close to the village, 6248b (Holub, 10.8.1982, PRA). – Mirošov village near Rokycany town, in the woodland of Holubí kout W of the village, 6347b (Holub, 13.10.1990, PRA). – **35c. Příbramské Podbrdsko:** Distr. Příbram, Felbarka village, in the wood close to the village, 6149d (Holub, 11.8.1995, PRA; Trávníček, 11.8.1995, OL; Holub, 27.10.1995, PRA). – Distr. Příbram, between the villages of Evženov and Křešín, 6249b (Holub, 19.11.1994, PRA). – Distr. Příbram, Evženov village, in the wood on the W edge of the village, 6249b (Havlíček, 20.10.2000, PRC). – **36a. Blatensko:** Bělčice village near Blatná town, on the wood margin 0.8 km W of the village, 6449c (Žíla, 24.8.2000, herb. Žíla). – **37e. Volyňské Předšumaví:** Podšpr village near Strakonice town, in Srpsko wood close to the village, 6749d (Holub, 16.8.1996, PRA; Trávníček, 16.8.1996, OL; Žíla, 16.8.1996, herb. Žíla). – Distr. Strakonice, Dunovice village, on the NEN slope of Radovec hill, 0.3 km S of the village, 6750c (Žíla, 22.9.1996, herb. Žíla). – Distr. Strakonice, Netonice village, wood margin of Brnouš wood 1 km E of the village, 6850a (Žíla, 19.9.1997, herb. Žíla; Žíla, 28.9.2000, herb. Žíla). – Strakonice town, Šibeníční vrch hill on the N periphery of the town, 6749a (Žíla, 24.10.1995, herb. Žíla). – Řepice village near

Strakonice town, on Hradec hill NW of the village, 6749b (Žíla, 4.10.1995, herb. Žíla). – **37h. Prachatické Předšumaví:** Distr. Prachatice, on the hill of Spálená between the villages of Budkov and Dub, 6950a (Holub, 2.8.1990, PRA; Holub, 16.8.1996, PRA). – Distr. Prachatice, Budkov village, in Čarouše wood N of the village, 6950a (Holub, 3.10.1996, PRA). – **37k. Křemžské hadce:** Distr. Český Krumlov, Třísov village, beside the road 1 km S of the village, 7152a (Žíla, 5.9.1999, herb. Žíla). – **41. Střední Povltaví:** Jíloviště village near Prague, near the summit of Cukrák hill, 6052c (Holub, 14.7.1982, PRA; Trávníček, 10.9.1998, OL; Holub, 1.10.1998, PRA). – Měchenice village near Prague, along the road on the left bank of Vltava river between the bridge and the railway station, 6052c (Havlíček, 15.10.1999, PRC). – Hradištko village near Štěchovice, on the wood margin beside the road 0.6 km SW of the village, 6152b (Havlíček, 15.10.1999, PRC). – In the village of Závist near Štěchovice, 6152b (Havlíček, 15.10.1999, PRC). – Distr. Benešov, in the wood along the road between the villages of Krňany and Maskovice, 6152d (Holub, 20.10.1995, PRA). – Slapy village near Prague, in the wood near the cottage settlement of Letovisko N-NEE of the village, 6152c (Holub, 9.9.1992, PRA; Trávníček, 9.9.1992, OL; Holub, 11.8.1995, PRA; Trávníček, 11.8.1995, OL). – Slapy village near Prague, cottage settlement of Letovisko, on the foothill of Vyhlička hill, 6152c (Holub, 6.10.1984, PRA; Holub, 19.7.1990, PRA; Holub, 2.10.1996, PRA). – Slapy village near Prague, cottage settlement Vyhlička II, 6152c (Holub, 19.7.1990, PRA). – Neveklov town, in the wood between the villages of Hůrka Kapinos and Zádolí, 6253c (Holub, 15.10.1985, PRA). – Osečany village near Sedlčany town, in the wood beside the road 1.4 km NEE of the village, 6252d (Trávníček, 9.9.1998, OL). – Distr. Příbram, the cottage settlement of Lavičky near Orlík nad Vltavou village, 6450b (Holub, 21.8.1997, PRA). – Holušice village near Orlická přehrada reservoir, in the wood E of the village, 6450b (Holub, 6.10.1990, PRA). – Kozárovice village near Orlík nad Vltavou, NE of the village, 6450b (Holub, 6.10.1990, PRA). – Distr. Benešov, Krhanice village, close to the quarry W of the village, 6153a (Holub, 4.8.1984, PRA). – Distr. Benešov, Krhanice village, in the wood above the railway station, 6153c (Holub, 11.8.1984, PRA). – Distr. Benešov, Krhanice village, on the hill of Na vrších, in the direction of Týnec nad Sázavou village, 6153d (Holub, 6.8.1984, PRA). – Distr. Benešov, near the village of Chrást nad Sázavou, 6153d (Holub, 12.8.1984, PRA). – Dojetřice village near Sázava town, in the wood between the gamekeeper's lodges of Dojetřická hájovna and hájovna Vestec, 6155a (Holub, 29.9.1990, PRA; Marek, 29.9.1990, OL). – Distr. Kutná Hora, Kácov village, on the foothill of Vlachov hill close to the railway station, 6256a (Holub, 2.9.1989, PRA). – Distr. Kutná Hora, Kácov village, on the foothill of Klenka hill, 6256a (Holub, 19.10.1991, PRA). – Brandýs village near Zruč nad Sázavou town, on the wood of Jedlina, 6256a (Holub, 25.10.1996, PRA). – Holšice village near Zruč nad Sázavou town, in the wood beside the asphalt way 0.5 km N – 1 km NW of the village, 6256a (Trávníček, 29.7.1998, OL). – Chabeřice village near Zruč nad Sázavou town, in the wood of Jedlina N of the village, 6256a (Holub, 2.9.1989, PRA). – **42a. Sedlčansko-milevská pahorkatina:** Vodslivy village near Sázava town, in the wood along the road 1.3 km SEE of the village, 6155c (Trávníček, 8.9.1998, OL). – **42b. Táborsko-vlašimská pahorkatina:** Dubovka village near Zruč nad Sázavou town, beside the road leading along the highway 0.7 km N of the village, 6255b (Trávníček, 29.7.1998, OL). – **43b. Miličinská vrchovina:** Distr. Benešov, between the villages of Mokřany and Ouběnice, near the places Pod Kačínou and Na Plecháci, 6354a (Holub, 12.10.1991, PRA). – Votice town, on the hill of Čerenský vrch, 6353d (Holub, 4.11.1984, PRA). – **46b. Kaňon Labe:** Distr. Děčín, between the villages of Prosdědní Žleb and Čertova Voda, in the valley of the river Labe, 5151c (Holub, 10.10.1996, PRA). – **55d. Trosecká pahorkatina:** Distr. Jičín, along the road in the village of Pařezská Lhota, 5557b (Hadinec, 26.9.2000, PRC). – **55e. Markvartická pahorkatina:** Distr. Jičín, near Štidla village, 5557d (Holub, 28.7.1987, PRA). – **60. Orlické opuky:** Lično village near Kostelec nad Orlicí town, in the wood along the road leading to Ledská village, 5863a (Holub, 24.8.1995, PRA; Trávníček, 24.8.1995, OL). – **62. Litomyšlská pánev:** Mravín village near Vysoké Mýto town, in the wood along the road to Pěšice village, S-SES of the village, 6062c (Trávníček, 9.8.2000, OL). – **64b. Jevanská plošina:** Distr. Benešov, Krhanice village, in the direction of Horní Požáry settlement, 6153a (Holub, 5.8.1984, PRA). – Distr. Benešov, Krhanice village, near Lediny gamekeeper's lodge, 6153a (Holub, 18.8.1984, PRA). – **69a. Železnohorské podhůří:** Distr. Chrudim, in the village of Kochánovice, 6160b (Holub, 12.7.1989, PRA). – Distr. Chrudim, Libáň village, in the wood along the road 0.2–0.8 km N of the village, 6160b (Havlíček, 7.8.2000, PRC). – **75. Jesenické podhůří:** Paseka village near Uničov town, at the woodland path towards Sovinec castle, NE of the village, 6169c (Kusák, 5.9.1993, OL). – Paseka village near Uničov town, at the woodland path towards Řídečská myslivna gamekeeper's lodge, 6269b (Kusák, 5.9.1993, OL). – **76b. Tršická pahorkatina:** Daskabát village near Olomouc town, SW part of Haplokoš wood 1.5 km NWN of the village, 6470b (Trávníček, 24.8.1993, OL). – **77c. Chříby:** Distr. Uherské Hradiště, Jankovice village, in the wood along the road 0.8 km SW of the centre of the village, 6870c (Havlíček, 18.7.2001, PRC). – Stříbrnice village near Uherské Hradiště town, wood margin 1.6 km NWN of the village, 6969b (Trávníček, 12.9.1993, OL). – **78. Bílé Karpaty lesní:** Luhačovice town, on the wood margin along the road towards Řetečov village, 1.6 km N of railway station, 6872d (Trávníček, 20.8.2002, OL). – Biskupice village near Luhačovice town, in the grove along the road 0.9 km NEN of the village, 6972a (Trávníček, 20.8.2002, OL). – **79. Zlínské vrchy:** In the village of Zlínské Paseky near Zlín town, 6772c (Holub, 10.7.1990, PRA). – Distr. Zlín, along the road between the villages of Racková and

Mladcová, near Zlínské Paseky settlement, 6771b (Trávníček, 10.9.1995, OL). – Distr. Zlín, Mladcová village, near the ponds NW of the village, 6771d (Trávníček, 10.9.1995, OL). – Zlín town, E of the valley of Fryštácký potok brook 3.5 km W of Hvozdná village, 6772a (Kusák, 1.8.1993, OL). – Bohuslavice village near Zlín town, along the woodland asphalt way 0.8 km NWW of Kamenec hill to 2 km E of the village, 6872a (Trávníček, 31.8.1997, OL). – Březůvky village near Zlín town, along the woodland asphalt way 1 km N – 0.8 km NWW of Kamenec hill, 6872a (Trávníček, 31.8.1997, OL). – Ludkovice village near Luhačovice town, close to the game-keeper's lodge, 6872c (Holub, 1.8.1996, PRA). – Ludkovice village near Luhačovice town, in the wood beside the road along the Ludkovice reservoir N of the village, 6872c (Trávníček, 10.9.2001, OL).

### *Rubus phyllostachys* P. J. Mueller

*Rubus phyllostachys* P. J. Mueller Flora, Regensburg, 41: 133, 1858. – Syn.: *R. grabowskii* subsp. *phyllostachys* (P. J. Mueller) H. E. Weber, Abh. Naturwiss. Ver. Bremen, 39: 167, 1979. – *R. elegantior*, nom. nud. (nom. provis.) in Trávníček & Hájek 1996: 30, etc. (see below).

Main diagnostic features (see also Figs 36–38): stems always distinctly hairy with scattered short hairs, usually slightly greyish; leaves with scattered appressed hairs above, rarely (almost) glabrous, with grey to grey-green tomentum and only a little longer simple hairs beneath (slightly hairy to the touch); leaves markedly three-dimensional, with leaflets  $\pm$  arcuate (leaves are shallowly funnel-shaped); terminal leaflet ovate, broadly ovate to almost orbicular, usually  $\pm$  cordate at the base, with a quite distinct, ca 10–20 mm long apex, indentation regular to indistinctly periodic, with incisions 1.5–2.5 (–3.0) mm deep; inflorescence often leafy to the very top, with simple leaves; petals white or pale pink; ovaries almost glabrous.

*Rubus phyllostachys* was described in the middle of the 19th century by an outstanding specialist P. J. Mueller (1858: 133). Because of a certain resemblance with the widely distributed *R. grabowskii*, it was sometimes treated as a subspecies of the latter (Weber 1979, 1986). Nowadays, it is again treated (justifiably, in our opinion) as a separate species (Weber 1995). The distribution of *R. phyllostachys*, as recorded hitherto, includes N France (the Vosges), Belgium, S Netherlands and W Germany (from the Black Forest to Rheinland-Pfalz and lower Rhine valley).

In 1993–2002, a taxon of the ser. *Discolores* (provisionally called *R. elegantior* – see Trávníček & Hájek 1996, Holub & Trávníček 1998, Holub 1999) was found at a number of localities in Moravia and SW Slovakia (Záhorská nížina lowland). It resembles *R. grabowskii* in the shape of the terminal leaflet, and is intermediate between *R. grabowskii* and *R. henrici-egonis* in leaflet indentation. It differs from both these species in its slightly leathery and rugose upper leaf surface and  $\pm$  arcuate (i.e. not  $\pm$  flat) leaflets with apex often recurved. Further diagnostic characters of this taxon are a greyish stem with scattered hairs, and leaves often with sparse appressed hairs above (*R. grabowskii* and *R. henrici-egonis* have stems very sparsely hairy or glabrous, and leaves usually entirely glabrous above). It has the same flower colour as *R. henrici-egonis* but differs from *R. grabowskii*, which (in the Czech Republic, at least) has bright pink flowers. From both it can be distinguished by its less densely hairy to glabrous gynoeceium. Another quite specific feature of this species is the frequent occurrence of simple leaves in the upper part of the inflorescence.

In 1995, an excellent treatment of C European brambles was published by Weber (1995), which includes a good illustration of *R. phyllostachys*. Comparison of the illustration and the descriptions (Weber 1979: 167, 1986: 246, 1995: 383) with plants called *R. elegantior* showed that the Moravian and W Slovak taxon might be identical with the W European *R. phyllostachys*. Plants from several Moravian sites were sent to H. E. Weber

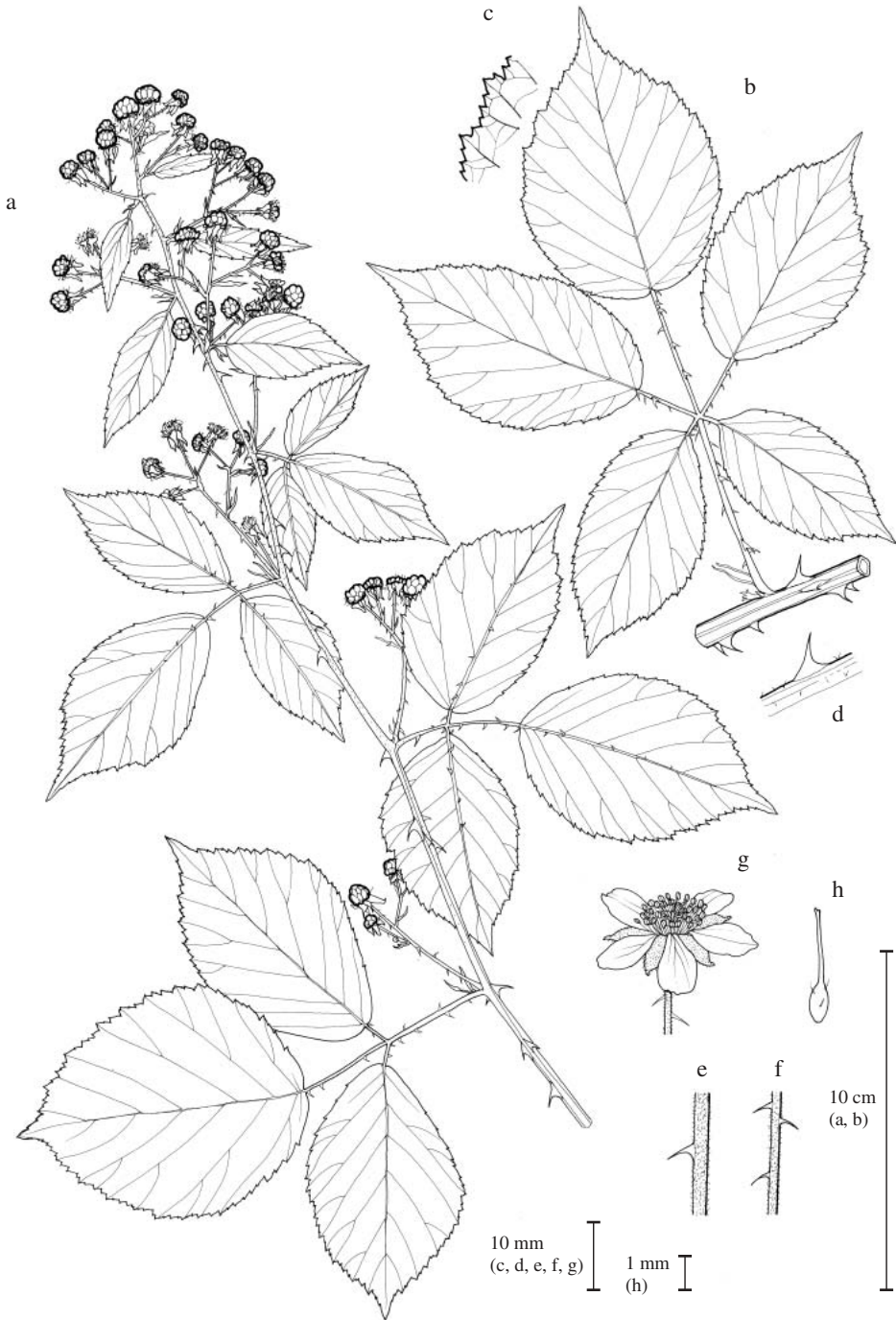


Fig. 36. – *Rubus phyllostachys*: a – inflorescence; b – leaf; c – indentation on the margin of the terminal leaflet; d – detail of sterile branch with prickle; e – detail of inflorescence axis; f – detail of peduncle; g – flower; h – detail of pistil. Del. A. Skoumalová.



Fig. 37. – Sterile branch of *Rubus phyllostachys* (locality: SE Moravia, Lukov near Zlín).

Fig. 38. – Leaf of *Rubus phyllostachys* (locality: SE Moravia, Lukov near Zlín).



who confirmed this in 2000 (pers. comm., the examination was carried out together with G. Matzke-Hajek). *R. phyllostachys* therefore represents a remarkable example of a species with a widely disjunct distribution in Europe. However, a similar disjunct distribution is known for other species of brambles, for instance *R. graecensis* W. Maurer or *R. micans* Godron (Weber 1995).

*R. phyllostachys* is known only from Moravia in the Czech Republic, and its distribution there is centred in the SE part (the Bílé Karpaty Mts, Zlínské vrchy hills, Hostýnské vrchy hills, regions of Břeclav and Hodonín, and the Chřiby hills). From the south-east, it extends to the central part of S Moravia (the Ždánický les hills), C Moravia (E of Olomouc) and the Záhorská nížina lowlands in Slovakia (see also Holub & Trávníček, 1998: 602, as *R. elegantior* ined.). It is also likely that this species occurs in the adjacent part of Lower Austria.

Herbarium specimens examined (Fig. 39)

Czech Republic: **18a. Dyjsko-svratecký úval:** Distr. Břeclav, Charvátská Nová Ves village, along the woodland path SW of the railway station, 7267a (Trávníček, 21.9.1994, OL). – **18b. Dolnomoravský úval:** Distr. Hodonín, Dubňany village, along the woodland path SE of Důl Osvobození mine, SE of the village, 7068d (Trávníček, 4.7.1995, OL). – Distr. Hodonín, Ratiškovice, in the wood 0.7 km NEE of the village, 7069c (Trávníček, 27.8.2000, OL). – Pánov village, in the wood along the road Hodnín – Ratiškovice, N of the village, 7168b (Trávníček, 27.8.2000, OL). – Distr. Hodonín, Rohatec village, in the wood 0.6 km NWN of the railway station, 7169a (Trávníček, 27.8.2000, OL). – Distr. Hodonín, Rohatec village, pine wood along the railway NE of the Soboňky settlement, 7169a (Štěpánek, 7.7.1982, PRA). – **19. Bílé Karpaty stepní:** Distr. Uherské Hradiště, Míkovice village, in the wood 0.9 km SEE of the village, 6971c (Trávníček, 12.9.2000, OL). – Bojkovice town, wood clearing 1.5 km SES of the railway station, 6972d (Trávníček, 6.9.1994, OL). – Nivnice village near Uherský Brod town, in the wood of Králov, 7072a (Hájek, 18.6.1993, OL; Trávníček, 7.9.1994, OL). – **20a. Bučovická pahorkatina:** Distr. Kroměříž, Střílky village, in the wood along the road 1.2 km NE of the village, 6869c (Trávníček, 16.7.2001, OL). – **20b. Hustopečská pahorkatina:** Bohuslavice u Kyjova village, on the E margin of the wood 0.4 km SWW of the railway station, 6968b (Trávníček, 15.8.1993, OL). – Moravský Písek village near Veselí nad Moravou town, in the wood along the road in the direction of Polešovice village, 6970c (Trávníček, 12.9.2000, OL). – **76a. Moravská brána vlastní:** Bystřice pod Hostýnem town, on the hill of Bedlina, 6672a (Trávníček, 29.7.2000, OL). – **76b. Tršická pahorkatina:** Distr. Olomouc, on the edge of the wood 0.8 km SEE of Tověř village, 6369d (Trávníček, 9.9.1991, OL). – Lošov village near Olomouc town, beside the cart road 0.3 km W(–SWW) of the village, 6370c (Trávníček, X.1998, OL). – **77a. Ždánický les:** Distr. Vyškov, Nížkovice village, along the woodland path on the left side of the road 1.8 km SE of U bílého vlka gamekeeper's lodge, 6967b (Trávníček, 22.9.1994, OL). – Distr. Hodonín, Uhřice village, in the wood 0.6 km W of the village, 6967d (Trávníček, 16.8.2000, OL). – **77b. Litenčické vrchy:** Distr. Kroměříž, Litenčice village, at the woodland path NE–SWW of Kleštěnec hill, 6769c (Trávníček, 2.9.1998, OL). – **77c. Chřiby:** Bohuslavice u Kyjova village, along the way towards Zavadilka village, 1–1.5 km NE of railway station, 6968b (Trávníček, 20.9.1992, OL). – Buchlovice town, along the hiking trail N of Chrástě hill, 6869d (Trávníček, 4.9.1994, OL). – Břestek village near Buchlovice town, along the way 0.6 km SW – 1.3 km N of Břestecské skalky hill, 6870c (Trávníček, 4.9.1994, OL). – Břestek village near Buchlovice town, wood margin near the cottages 0.5 km S of the hill of Břestecské skalky hill (456 m), 6870c (Trávníček, 2.7.1998, OL). – Velehrad village, wood clearing at the woodland path NEE of Nový Dvůr settlement, 6870c (Trávníček, 28.8.1994, OL). – Distr. Uherské Hradiště, Modrá village, E part of the wood S of the village, 6970a (Trávníček, 12.9.2000, OL). – **78. Bílé Karpaty lesní:** Distr. Uherské Hradiště, Maršov village, in the wood of Rubaniska S of the village, 6972a (Holub, 2.8.1996, PRA). – Distr. Zlín, Polichno village, in the wood 0.6 km SEE of the railway station, 6972a (Trávníček, 1.9.1993, OL). – Dobrkovice village near Luhačovice town, on the edge of the wood along the road 1.4 km W of the village, 6971b (Trávníček, 10.9.2001, OL). – Biskupice village near Luhačovice town, grove beside the road 0.9 km NEN of the railway station, 6972a (Trávníček, 20.8.2002, OL). – Biskupice village near Luhačovice town, along the hiking trail 1.5 km E of the railway station, 6972a (Trávníček, 1.9.1993, OL). – Distr. Uherské Hradiště, village Rudice, in the wood clearing along the road 1.6 km SES of the village, 6972c (Trávníček, 6.9.1994, OL). – Distr. Uherské Hradiště, village Rudice, in the wood of Hrabová, 6972b (Holub, 1.8.1996, PRA). – Luhačovice town, in the wood S of the railway station, 6972b (Trávníček, 1.9.1993, OL). – Luhačovice town, along the path towards



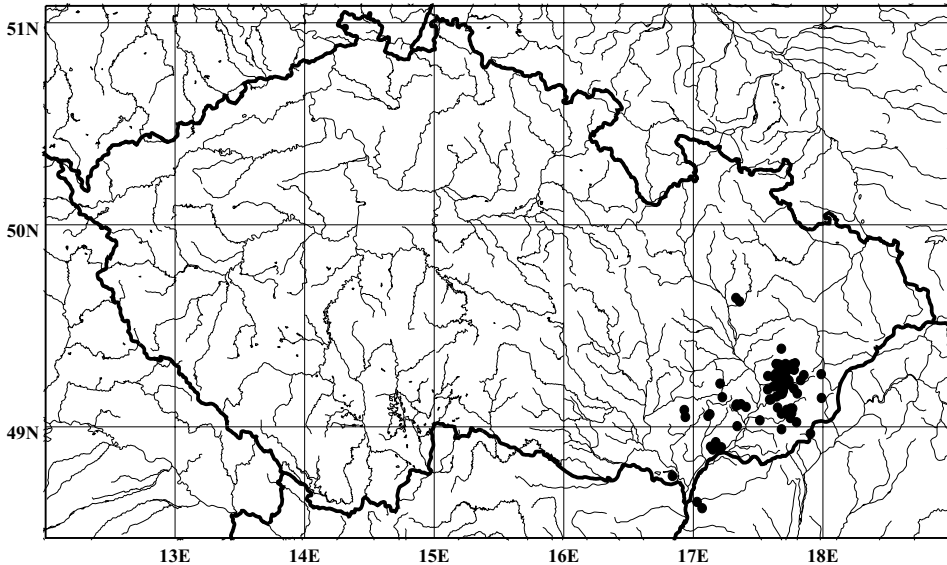


Fig. 39. – Distribution of *Rubus phyllostachys* in the Czech Republic and Slovakia.

Bílý kříž crossing, 6972b (Holub, 1.8.1996, PRA). – **79. Zlínské vrchy:** Distr. Zlín, Hostišová, in the wood along the road to Mysločovice 1 km W–SWW of the village, 6771a (Trávníček, 10.9.2001, OL). – Distr. Zlín, Racková village, in the woodland in the direction of Mladcová village, 6771b (Holub, 11.7.1990, PRA). – Distr. Zlín, Mladcová village, along the hiking trail between the road Racková – Mladcová and Horní rybník pond NW of the village, 6771b (Trávníček, 10.9.1995, OL). – Distr. Zlín, Mladcová village, near the ponds NW of the village, 6771d (Trávníček, 10.9.1995, OL). – Distr. Zlín, Fryšták village, along the path SWS of the village, NWW of Přebrada Fryšták reservoir, 6772a (Trávníček, 10.9.1995, OL). – Lešná village near Zlín town, along the road near zoo, 6772a (Trávníček, 31.8.1996, OL). – Kostelec u Zlína village, on the wood edge near the crossroads 0.5 km SW of the village, 6772a (Trávníček, 31.8.1996, OL). – Zlín town, Příluky village, on the wood margin 1.6–1.9 km NWW of the village, 6772c (Trávníček, 7.9.1997, OL). – Zlín town, Příluky village, 1.6 km NWW – 1.8 km NWN of the village, 6772c (Trávníček, 7.9.1997, OL). – Zlín town, beside the cart road from the hospital to Příluky village, 6772c (Kusák, 29.8.1993, OL). – Distr. Zlín, Malenovice village, between the edge of the village and the crossing SEE of the village, 6771d (Trávníček, 18.9.1994, OL). – Distr. Zlín, Březnice village, along the woodland path N–NWN of the village, 6771d (Trávníček, 18.9.1994, OL). – Zlín town, beside the road 2.5 km S of Zlín-střed railway station, 6771d (Trávníček, 18.9.1994, OL). – Zlín town, at the woodland path from Zlín-Lazy suburb in the direction of the road to Březůvky, near Vršek hill (438 m), 6772c (Kusák, 29.8.1993, OL). – Zlín town, between the town periphery and wood margin 1 km W of Kudlov village, 6772c (Trávníček, 18.9.1994, OL). – Zlín town, Barabáš hill S of the town, on the slope below the wood, 6772c (Kusák, 18.8.1993, OL). – Zlín town, beside the woodland path leading from the town over Barabáš hill towards the Film studio Kudlov, 0.5 km N of the studio, 6771d (Kusák, 18.8.1993, OL). – Zlín town, Film studio Kudlov, along the way downhill the Barabáš hill NE of Lesní hřbitov cemetery, 6771d (Kusák, 18.8.1993, OL). – Zlín town, at the woodland path over Díly hill, E of Kudlov village, 6772c (Trávníček, 31.8.1997, OL). – Zlín town, wood margin along the road between the villages of Kudlov and Nové Paseky, SES of Kudlov village, 6872a (Trávníček, 31.8.1997, OL). – Distr. Zlín, grove close to SE edge of Jaroslavice u Zlína village, 6772c (Trávníček, 21.7.1999, OL). – Jaroslavice village near Zlín town, along the path in the orchard E of the village, 6772c (Kusák, 1.8.1993, OL). – Březůvky village near Zlín town, along the woodland asphalt way 1 km N of Kamenec hill, N of the village, 6872a (Trávníček, 31.8.1997, OL). – Březůvky village near Zlín town, NW of the village, 6872a (Holub, 1.8.1985, PRA). – Březůvky village near Zlín town, along the woodland asphalt way 0.8 km NWW of Kamenec hill up to 2 km E of the crossroads in the village, 6872a (Trávníček, 31.8.1997, OL). – Bohuslavice u Zlína village, wood clearing 1.5 km SES of the village, 6871b (Trávníček, 15.9.1993, OL; Trávníček, 13.7.1994, OL). – Distr. Zlín, Oldřichovice village, wood margin beside the road 1 km NE of the village, 6871a (Trávníček, 10.9.2001, OL). – Distr. Zlín, on

the woodland edge beside the road between the villages of Březolupy and Šarovy, 6871d (Kusák, 3.8.1993, OL; Trávníček, 3.8.1993, OL; Trávníček, 13.7.1994, OL). – Distr. Zlín, Březolupy village, along the path near the brook 1.5 km N of the village, 6871d (Trávníček, 3.8.1993, OL). – Lužkovice village near Zlín town, along the woodland path 1.5 km NW of the village to the SW periphery of the village, 6772c (Trávníček, 7.9.1997, OL). – Distr. Zlín, Želechovice nad Dřevnicí village, in the valley along the brook SW of the village, 6772c (Trávníček, 21.7.1999, OL). – Lípa village near Zlín town, in the scrub beside the path 1.7 km NW of Pod Drdolem settlement, 6872b (Trávníček, 21.7.1999, OL). – Distr. Zlín, Raková village, in the wood along the road 1 km SE of the village, 6772d (Trávníček, 10.9.2001, OL). – Distr. Zlín, Dešná village, at the woodland path 1 km SES of the village, 6773a (Trávníček, 14.8.1995, OL). – Horní Lhota village near Luhačovice town, beside the road 1.1 km N of the village, 6872b (Trávníček, 13.7.1994, OL). – Valašské Klobouky town, in the wood along the road towards Mirošov village, 6873d (Trávníček, 25.8.1994, OL). – **80a. Vsetínská kotlina:** Distr. Vsetín, Valašská Polanka village, beside the cart road in the direction of Prlov village, above the valley of Vápenka, 6773b (Dančák, 20.9.2001, OL). – **81. Hostýnské vrchy:** Držková village, on the slopes and wood margins on the S edge of the village above the road towards Kašava village, 6672d (Dančák, 3.8.2000, OL). – Distr. Zlín, Vlčková village, on the slopes at the E margin of the village, 6672d (Dančák, 11.8.2000, OL). – Distr. Zlín, Přlepy village, wood margins between the SE edge of the village and Hadovna gamekeeper's lodge, 6671d (Trávníček, 4.8.1996, OL). – Distr. Zlín, between the villages of Lukoveček and Přlepy, 6671d (Holub, 10.7.1990, PRA). – Distr. Zlín, Lukoveček village, wood margins between the NW edge of the village and Hadovna gamekeeper's lodge, 6671d (Trávníček, 4.8.1996, OL). – Fryšták town, at the woodland path on the N edge of the town in the direction of Lukoveček village, 6772a (Trávníček, 4.9.1996, OL). – Vítová village near Fryšták town, behind the village, 6672c (Holub, 1.8.1985, PRA). – Vítová village near Fryšták town, wood margin on the N edge of the village, 6672c (Trávníček, 10.9.2001, OL). – Lukov village near Fryšták town, in the wood along the road to Kašava village, 1.5–2.2 km NEN of the village, 6772b (Trávníček, 31.8.1996, OL). – Distr. Zlín, along the road on the edge of the wood NW–NE of Veliková village, 6772b (Trávníček, 14.8.1995, OL). – Distr. Zlín, Hrobice village, near the crossroads W of the village, 6772b (Trávníček, 14.8.1995, OL).

**S l o v a k i a :** **4. Záhorská nížina:** Borský Svätý Jur village near Malacky town, beside the path along the wood margin 2.5 km SE of the village (Trávníček 7.7.1995, OL). – Záhorie, Borský Svätý Jur near Malacky town, wood margin along the railway NW of the village (Kaplan, 4.7.1995, OL). – **27a. Biele Karpaty (severná časť):** Starý Hrozenkov village, in the wood clearing 0.7 km SEE of Boky settlement E of the village (Trávníček, 6.9.1994, OL).

## Identification of species of the ser. *Discolores* in the Czech Republic

Some species of the ser. *Discolores* are very similar to one another, and their identification requires considerable experience. The identification usually is much easier in the field where it is possible to examine a whole plant, including its natural coloration, and spatial arrangement of its parts. The posture of leaflets is quite typical of some species: for instance, *R. montanus*, *R. grabowskii* and often also *R. flos-amygdalae* have flat leaves, with leaflets arranged in one plane, while the very similar species *R. guttiferus*, *R. pericrispatus*, *R. phyllostachys* and sometimes also *R. austroslovacus* have three-dimensional leaves, with leaflets or their petiolules variously arcuate. Stem coloration on sunny sites is also important: in the closely similar triploid species *R. montanus*, *R. flos-amygdalae*, *R. parthenocissus* and *R. austromoravicus* it is characteristically deep purple, while in *R. pericrispatus*, *R. guttiferus*, *R. crispomarginatus* and perhaps also *R. henrici-egonis* and *R. phyllostachys* it is almost green or (as in intense sunshine) paler coloured. Flower colour is quite constant (with the exception of *R. flos-amygdalae*): some species (*R. crispomarginatus*, *R. guttiferus*, *R. elatior*) have pure white flowers, others white to pale pink flowers (*R. montanus*, *R. austromoravicus*, *R. austroslovacus*, *R. henrici-egonis*, *R. pericrispatus*), and even pink flowers (*R. bifrons*, *R. grabowskii*, *R. portae-moravicae*, *R. praecox* and *R. perperus*, both the latter in the Czech Republic). Also the indumentum of the gynoecium proved to be a useful feature, which, however, should be studied at or just after anthesis. It is  $\pm$  glabrous in

*R. montanus*, *R. flos-amygdalae* and *R. austromoravicus*, almost glabrous in *R. phyllostachys* and sparsely hairy in *R. pericrispatus*. On the other hand, there are similar species with a conspicuously to densely hairy gynoeceium: *R. austroslovacus*, *R. grabowskii*, *R. guttiferus*, *R. henrici-egonis*, *R. parthenocissus*. The shape of leaflets on sterile stems is considered an important character. However, as a rule, the younger (i.e. more distal) a leaf, the narrower are its leaflets. Similarly narrower leaflets are found on thinner stems. As a standard collection technique, we therefore recommend that not only two typical leaves from the central part of a stem but also additional 1–2 younger leaves from the distal third of a stem are gathered. For instance, on the robust stems of *R. montanus* the terminal leaflet of middle stem leaves is quite broad; this leaflet thus may be regarded as “untypical”. A good character (requiring considerable experience) may be the shape and arrangement of the inflorescences, especially at fruit ripening when branchlets and peduncles are becoming woody and the spatial arrangement of the inflorescence (or infructescence) has stabilized.

The following identification key includes all the members of the ser. *Discolores* known to occur in the Czech Republic. Mention of two undescribed species, currently being studied, with the provisional names “*R. peripragensis*” and “*R. mollifrons*” is included in separate notes. On the basis of our field studies in the Czech Republic, and after the recognition of *R. perperus* and *R. phyllostachys* and the formal description of a further six species, we can confidently claim that the majority of plants of the ser. *Discolores* are included in our identification key. Special and local types, which are impossible to determine, now represent a quite negligible percentage (3–5%) of the plants found in the wild. At the same time, the ser. *Discolores* is now the group with the highest number of species in the Czech Republic: it contains 17 indigenous species, two garden escapes and two taxa now under study, which are likely to be described as new species in the future period.

### Key to the identification of species of the ser. *Discolores* in the Czech Republic

- 1a Stems distinctly hairy at least when young (magnifying glass!), with 30–100 (–200) hairs per 1 cm of stem side length .....2
- b Stems glabrous or with scattered hairs, with 0–25 (–40) hairs per 1 cm of stem side length (if hairs rarely more numerous than upper surface of leaves with sparse appressed hairs – *R. phyllostachys*, or prickles in the inflorescence straight – *R. armeniacus* and *R. bifrons*) .....4
- 2a Stem prickles 4–7 mm long, 8–15 per 5 cm of stem length; terminal leaflet with a short petiolule (18–26% as long as its lamina); petiole distinctly shorter than lower leaflets; leaflets overlapping; prickles on inflorescence rachis 3–6 mm long. – Stems (at most) medium high arching, distally decumbent, slightly angled with slightly convex sides, conspicuously densely hairy, with up to 200 patent hairs per 1 cm of stem side length; petals pink; gynoeceium slightly hairy .....*R. bohemicola* Holub
- b Stem prickles 6–11 mm long, 4–8 (–10) per 5 cm of stem length; terminal leaflet with longer petiolule (longer than 30% of its lamina); petiole longer than lower leaflets or only slightly shorter; prickles on inflorescence rachis 4–8 mm long; leaflets remote from or touching one another .....3
- 3a Petals pale pink, broadly elliptical to almost orbicular; stems slightly angled with sides often slightly concave; prickles conspicuously broad; stem indumentum short, almost appressed; inflorescence in fruit ± truncate above, dense, with relatively thick, usually almost patent branches; terminal leaflet broad, to orbicular-obovate, often slightly concave, with a conspicuously long petiolule (petiolule 38–50% as long as its lamina), with (8–) 9–15 (–17) prickles; calyx segments often with pricklets; shrubs dense, compact. – Stems most often dull greyish green or (on sunny sites) slightly suffused red-brown; leaves usually dark green above, distinctly white-tomentose beneath, slightly hairy to the touch; inflorescence prickles often hook-shaped, with a broad base; gynoeceium slightly hairy .....*R. portae-moravicae* Holub et Trávníček [*R. ulmifolius* Schott is a rare escape (present in a park at Průhonice, near Praha). It can be distinguished by its pruinose, silvery squamulose stems, terminal leaflet usually narrower, obovate, petals darker (purplish pink) and stamens shorter or at most slightly longer than gynoeceium.]

- b Petals white, (usually narrowly) obovate; stems usually conspicuously angled to shallowly furrowed; prickles narrower; stem indumentum patent; inflorescence in fruit rounded above, sparser, with relatively thin, usually erecto-patent branches; terminal leaflet elliptical to obovate (sometimes slightly angular-ovate), usually  $\pm$  flat, with the petiolule 30–35% as long as its lamina, usually with 4–8 prickles; calyx segments without pricklets; shrubs less compact, sterile stems conspicuously overtopping the shrub. – Stems (on sunny sites) usually suffused rather red-brown; leaves with a distinct white tomentum beneath, slightly hairy to the touch; indentation coarse, incisions 3–4 mm deep; gynoecium almost glabrous ..... *R. elatior* Greml
- 4a Leaves distinctly pedate, quinate (3–4-nate on thinner stems); inflorescence prickles straight and slender. – Stems (particularly those exposed to sunshine) quite distinctly suffused red-brown to dark violet, with 10–15  $\pm$  straight prickles per 5 cm, scattered hairy especially when young; leaves dark green above, with a distinct, thin, grey-white tomentum beneath, without distinct hairiness of longer hairs (not hairy to the touch); leaf margin indentation periodic, teeth very finely acute, incisions 2–3 mm deep; petals pink, styles yellowish, gynoecium covered with long hairs ..... *R. bifrons* Vest
- b Leaves palmate or very indistinctly pedate, always quinate; inflorescence prickles mostly curved (if straight and slender then stems green, with conspicuously dark red angles and prickles bases – *R. armeniacus*) ..... 5
- 5a Terminal leaflet with a conspicuously periodic (to lobate-periodic) indentation,  $\pm$  crisped, with principal teeth (lobes) obtuse and incisions 3–6 mm deep, petiolule short, 22–35% as long as its lamina; petiolules of lower leaflets (0–) 1–2 (–4) mm long. – Stems deeply furrowed, often green to faintly suffused red-brown, glabrous; prickles usually 3–5 per 5 cm, with broad base, only in the upper half narrowed into an acicular apex, patent, yellowish; leaflets overlapping; terminal leaflet oblong-triangular, cordate at base, with the non-abrupt, laterally slightly curved apex; lower leaflets distinctly longer than the petiole of their leaf; inflorescence usually broadly cylindrical; petals white; gynoecium with scattered hairs ..... *R. crispomarginatus* Holub
- b Terminal leaflet without conspicuous periodic indentation (or lobation), incisions between principal teeth usually up to 4 mm deep, its petiolule usually longer (if sometimes short then petals pink and upper leaves in the inflorescence often conspicuously long – *R. perperus*); petiolules of lower leaflets 3–8 mm long ..... 6
- 6a Stems usually robust, often 1.0–1.5 (–2.0) cm in diameter, with conspicuous, quite broad, 7–11 mm long prickles; inflorescence usually with distinct, up to 6–8 mm long prickles; leaves beneath most often with a remarkably grey to white tomentum, with sparse patent hairs (indistinctly hairy to the touch); fruit usually well developed, large, globose to ovoid;  $2n = 28$  ..... 7
- b Stems usually less robust, with rather thinner, often shorter prickles; inflorescence often with smaller prickles (if prickles stouter then upper leaves in the inflorescence conspicuously long – *R. perperus*); leaves with distinct to indistinct grey to white tomentum beneath, distinctly or indistinctly hairy to the touch; fruit often small, semiglobose to globose;  $2n = 21$  ..... 8
- 7a Stems  $\pm$  green in summer, with angles and prickles bases conspicuously coloured, bright purple; terminal leaflet distinctly convex when fresh; inflorescence rhachis mostly with straight prickles; flowers often large, petals up to 14–18 mm long; stems often with scattered fine fascicular hairs; leaves very large, over 20 cm long, terminal leaflet often longer than 10 cm. – Stems angled to furrowed; leaves dark green above, terminal leaflet broadly elliptical, obovate or almost orbicular, with a short, very abrupt apex, its margin with an irregularly periodic coarse indentation; petals pink, styles often reddish at base; gynoecium hairy ..... *R. armeniacus* Focke
- b Stems (when exposed to sunshine) suffused to dark violet, angles and prickles bases not conspicuously differently coloured; terminal leaflet with undulate margins (not convex) when fresh; inflorescence rhachis mostly with curved prickles; petals 10–14 mm long; stems usually glabrescent to glabrous; leaves usually smaller. – Stems angled to slightly furrowed; leaves dark green above, terminal leaflet most often broadly elliptical, with a  $\pm$  abrupt apex, its margins with an irregularly periodic coarse serrulate-denticulation; petals pink (in the Czech Republic); gynoecium (sparsely) hairy ..... *R. praecox* Bertol. (s. lat.)
- 8a Stems with scattered hairs, with 5–25 hairs per 1 cm of stem side length; leaves usually with sparsely scattered appressed hairs above; inflorescence often leafy throughout with simple leaves. – Stems angled to slightly furrowed, slightly greyish, only indistinctly suffused red-brown, sometimes spotted dirty violet, with 3–5 prickles per 5 cm; leaves often three-dimensional with leaflets arcuate, indentation inconspicuously periodic, shallow (incisions only 1.5–2.5 (–3.0) mm deep), slightly coriaceous-rugulose above, with a medium thick to thinner grey tomentum beneath, slightly hairy to the touch; terminal leaflet broadly ovate to ovate-orbicular from a shallowly cordate base, with a 10–20 mm long apex; petals white or pale pink (especially when dry); gynoecium almost glabrous ..... *R. phyllostachys* P. J. Mueller
- b Stems glabrous or glabrescent, with 0–5 (–7) hairs per 1 cm of stem side length (if rarely more densely hairy then leaves in the inflorescence conspicuously long and petals pink – *R. perperus*); leaves glabrous above; inflorescence usually distally not leafy (if leafy then lower leaves in the inflorescence conspicuously coarsely dentate and stem strongly furrowed – *R. parthenocissus*) ..... 9

- 9a Leaves with a dense white tomentum and with a rich glossy indumentum of longer hairs beneath, soft sericeous to the touch; inflorescence often short, broadly ovoid-pyramidal, most often only in proximal 1/4 leafy, usually in the axils of quinate leaves similar to the leaves on sterile stems. – Stems often (on sunny sites) suffused red-brown to dark violet, slightly spotted, glabrous, angled, indistinctly furrowed; prickles quite broad at base, 2–6 per 5 cm of stem length; leaves usually dark green, terminal leaflet usually  $\pm$  truncate at base, with 8–15 mm long apex; indentation acutely serrate, periodic, principal teeth longer, straight, incisions 1.5–3.5 mm deep; petals white or pale pink; gynoecium glabrous ..... *R. austromoravicus* Holub
- b Leaves tomentose beneath, sometimes with sparse to scattered longer hairs which usually do not form a dense soft glossy indumentum (if such an indumentum is present then leaves with undulate margins and stems light coloured,  $\pm$  green – *R. pericrispatus*); inflorescence usually of a different shape and type, with 3–4-nate leaves predominating ..... **10**
- 10a Leaflets often with a  $\pm$  abrupt, conspicuously elongated, 15–25 mm long apex; lower leaflets distinctly (c. by 1/3 of their length) longer than petiole of their leaf; inflorescence distally not leafy, proximally with relatively large, conspicuously elongated leaves. – Stems usually distinctly furrowed, sparsely to scattered hairy to almost glabrous, suffused red-brown (on sunny sites), with 4–7 prickles per 5 cm; leaves quite distinctly grey-white tomentose, only indistinctly hairy to the touch (of longer patent hairs); terminal leaflet usually coarsely,  $\pm$  periodically dentate, incisions 2–4 mm deep, petiolule shorter (petiolule 25–35% as long as its lamina); inflorescences often slightly plagiotropic, with relatively stout prickles quite broad at base; petals pink (in the Czech Republic); gynoecium hairy ..... *R. perperus* H. E. Weber
- b Leaflets with apex shorter and/or not abrupt, lower leaflets shorter or a little longer than petioles of their leaf; leaves becoming smaller towards the distal part of the inflorescence, the most distal ones not conspicuously elongated ..... **11**
- 11a Indentation regular, shallow, serrulate-crenulate (teeth distinctly wider than their length), incisions only 1.0–1.5 (–2.0) mm deep; terminal leaflet often (on sunny sites) convex; prickles very broad at base, (6–) 7–10 mm wide, often slightly reddish; stem glabrous or with sparsely scattered hairs. – Stems  $\pm$  green or suffused light red-brown (peach-coloured), angled to slightly furrowed, with 2–5 prickles per 5 cm; leaves usually paler green, often yellowing in a mosaic pattern, with only a very thin greyish tomentum beneath,  $\pm$  not hairy to the touch; terminal leaflet broadly elliptical, with a short, less distinct apex; petals white to pale pink; gynoecium hairy ..... *R. henrici-egonis* Holub  
[A relatively similar taxon of the ser. *Discolores* was found in E Moravia; it differs from the other Czech species of the series as its leaves are densely (to softly) finely hairy above. It was accorded a provisional name, “*R. mollifrons*”.]
- b Indentation often irregular, coarser, with incisions 2–4 mm deep; terminal leaflet usually not convex; prickles usually narrower at base,  $\pm$  of the same colour as the stem (yellowish green or almost dark violet); stems glabrous (rarely – in *R. parthenocissus* – with solitary hairs) ..... **12**
- 12a Inflorescence voluminous, some of them leafy up to below the top, with a relatively flaccid, conspicuously flexuous rachis furrowed to the most distal part, with relatively small prickles; lower leaves in the inflorescence distinctly coarsely dentate with incisions 3.0–5.5 (–7.0) mm deep; petiolules of lower leaflets (4–) 5–9 (–12) mm long, flowers quite large, with petals often up to 15 mm long; leaves usually dark green above, with a thin tomentum below (often glabrescent and almost green), almost without patent hairs ( $\pm$  not hairy to the touch); stems usually deeply furrowed. – Stems (on sunny sites) intensely suffused dark violet, with 4–8 prickles per 5 cm; prickles usually declining, 5–8 (–9) mm long; terminal leaflet broadly elliptical to obovate or almost orbicular, with a short  $\pm$  abrupt apex c. 10–18 mm long, its indentation usually irregularly periodic and quite coarse, incisions 3–4 (–5) mm deep; petals white or (especially after drying) pale pink; gynoecium with a dense long indumentum ..... *R. parthenocissus* Trávníček et Holub
- b Inflorescence of different character; lower leaves in the inflorescence usually less coarsely dentate (if more coarsely so then with almost soft indumentum of patent hairs beneath – *R. pericrispatus*), petiolules of lower leaflets usually shorter; flowers usually smaller; leaves most often more distinctly tomentose beneath and/or covered with patent hairs (if with a thin and slightly developed tomentum then terminal leaflet gradually acuminate with an elongated apex and stems green or pale red – *R. guttiferus*); stems usually less distinctly furrowed ..... **13**
- 13a Terminal leaflet broad, broadly ovate to obovate or almost orbicular from a shallowly cordate base, usually only 1.1–1.3 times longer than their width, with a short,  $\pm$  abrupt apex, flat, not undulate; petals (bright) pink, broad (broadly elliptical to almost orbicular), filaments white to pale pink. – Stems  $\pm$  furrowed, suffused red-brown (on sunny sites), with 4–8 prickles per 5 cm; leaves often lighter green above, grey-white tomentose beneath, with patent, only slightly longer hairs (slightly hairy to the touch); larger inflorescences distinctly paniculate, long pyramidal; gynoecium hairy ..... *R. grabowskii* Weihe

- b Terminal leaflet of different shape, usually narrower; petals white or pale pink or dark pink but then narrower and filaments equally or darker pink (in *R. flos-amygdalae*) ..... 14
- 14a Gynoecium densely hairy (hairs persist even on the top of young drupelets and form a fascicle there); terminal leaflet most often rounded at base, or truncate to very broadly cuneate, widest below the middle, or at or above the middle (but then elongated-elliptical, with an indistinct apex), indentation regular or indistinctly periodic; leaves often three-dimensional (leaflets or their petiolules variously arcuate); petals white or rarely pinkish ..... 15
- b Gynoecium glabrous or very sparsely hairy; terminal leaflet distinctly cordate or rounded at the base, widest at or above the middle, indentation usually at least slightly periodic; leaves  $\pm$  flat or three-dimensional; petals white, pinkish or bright pink ..... 16
- 15a Terminal leaflet broadest below the middle, gradually narrowed to a distinct apex 17–23 mm long, at least in young leaves it has the shape of a drop; leaves with a thin tomentum beneath, through glabrescence often only greyish green, almost not hairy to the touch; stems  $\pm$  green, only slightly suffused pale red-brown (peach-coloured) on sunny sites; inflorescence in fruit relatively dense, with branchlets shorter and thicker, subpatent to patent; inflorescence prickles with broader bases, distinctly curved; stem prickles broader at least in the proximal half, often slightly curved and declining; leaf indentation almost regular, margins often  $\pm$  undulate with very dense teeth; petals white ..... *R. guttiferus* Trávníček et Holub
- b Terminal leaflet broadest at or above the middle, abruptly narrowing in a short, 8–15 mm long apex, most often oblong-elliptical to almost oblong-rectangular (with  $\pm$  parallel margins); leaves usually with distinctly grey-white tomentose beneath, at least slightly hairy to the touch; stems more intensely purple on sunny sites; inflorescence in fruit often sparse, with branchlets longer and thinner, erecto-patent; inflorescence prickles slender, with narrow bases, only very slightly curved; stem prickles usually narrow, flat (especially after drying), most often almost straight and patent; leaf indentation regular to slightly periodic, margins may be slightly undulate; petals white to pale pink ..... *R. austrolovacicus* Trávníček
- 16a Leaflets (especially when exposed to sunshine) with distinctly to conspicuously undulate margins, more or less grey tomentose beneath and with longer patent hairs (distinctly to softly hairy to the touch), most often (paler) deep green above; terminal leaflet narrowly to broadly obovate, usually cordate at base; stems green, only very slightly suffused reddish even on sunny sites, with 4–8 prickles per 5 cm; lower leaflets with petiolules usually 4–6 mm long; inflorescence usually short, pyramidal from a broad base. – Petals white to pale pink, leaf indentation periodic, sometimes relatively coarse (incisions 3–4 mm deep), with teeth often pointing in various directions; inflorescence leaves often longitudinally arcuate, with raised margins ..... *R. pericrispatus* Holub et Trávníček
- b Leaflets  $\pm$  flat, with grey to white tomentum beneath, with only a little longer, sparse indumentum of simple hairs (indistinctly and slightly hairy to the touch); most often dark green above; terminal leaflet usually narrower, narrowly elliptical to narrowly obovate, more rarely obovate, rounded to cordate at base; stems (on sunny sites) suffused distinctly purple to dirty dark violet, with (0–) 1–3 (–5) prickles per 5 cm; lower leaflets with petiolules usually 2–4 mm long; inflorescence usually elongated, narrowly pyramidal to almost cylindrical ..... 17
- 17a Terminal leaflet most often narrowly (more rarely broadly) elliptical to almost rectangular, usually with parallel margins and a  $\pm$  abrupt, 10–15 mm long apex; petals pinkish white, (broadly) elliptical to obovate, most often 9–12 mm long, filaments usually white; branchlets of inflorescences with fruit relatively thick, most often straight or moderately curved; stems (on sunny sites) suffused red-violet, not spotted to slightly so. – Terminal leaflet usually distinctly periodically dentate, medium intensely grey to grey-white tomentose beneath ..... *R. montanus* Lej.
- b Terminal leaflet most often narrowly (angular-) obovate, less often obovate (margins not parallel), usually with an indistinctly abrupt, often shorter, broadly triangular apex; petals most often (to bright) pink, less often pale pink to white, conspicuously narrow, usually only 7–10 mm long, filaments of the same colour as petals, bright pink in pink-flowered specimens (flowers then resemble those of almond tree); inflorescence branchlets relatively thin, most often ascending; stems (exposed to sunshine) conspicuously coloured dark violet, distinctly spotted dirty violet (spots more visible on the shaded side of stem). – Terminal leaflet usually distinctly periodically dentate, with grey tomentum beneath ... *R. flos-amygdalae* Trávníček et Holub [In C Bohemia, a scattered occurrence was recorded for a similar species, especially in the shape of the terminal leaflet; it was given a provisional name, “*R. peripragensis*” It can be distinguished by the denser and more robust prickles on its stems, and stems covered with scattered short hairs, more coarsely acutely dentate, often slightly broader terminal leaflet and hairy gynoecium.]

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## Souhrn

Práce přináší výsledky taxonomicko-chorologického studia série *Discolores* rodu *Rubus* v České republice a přílehlých územích střední Evropy v letech 1994–2003. Ostružiníky ser. *Discolores* rostoucí v přírodě v ČR lze rozdělit do tří skupin. První skupinu tvoří jediný, morfologicky i karyologicky vyhraněný endemický druh *R. bohemicola* Holub, druhá skupina je reprezentována tetraploidním druhem *R. bifrons* Vest a tetraploidními taxony z okruhu *R. praecox* agg.: naturalizovaným druhem *R. armeniacus* Focke a dále přirozeně se vyskytujícími populacemi 2 typů. První z nich, vyskytující se především na jihovýchodní Moravě, je ztotožňován s *R. praecox* Bertol., druhý typ, známý ze střední a severní Moravy a jižního Polska, je popisován jako nový druh *R. portae-moravicae* Holub et Trávníček. Poslední, druhově nejbohatší skupinu ser. *Discolores* tvoří triploidní druhy. Ve zpracování rodu *Rubus* ve 4. svazku Květeny ČR (Holub 1995) bylo uvedeno 6 těchto druhů: *R. austromoravicus* Holub, *R. crispomarginatus* Holub, *R. elatior* Gremli, *R. grabowskii* Weihe, *R. henrici-egonis* Holub a *R. montanus* Lej. V předkládané práci jsou uvedeny další 2 druhy nalezené v ČR v poslední době: *R. perperus* Weber (nalezený v Čechách i na Moravě) a *R. phyllostachys* P. J. Mueller, zjištěný především na jihovýchodní Moravě a také v přílehlé části Slovenska. Posledních 5 triploidních druhů (*R. austroslovacus* Trávníček, *R. flos-amygdalae* Trávníček et Holub, *R. gutiferus* Trávníček et Holub, *R. parthenocissus* Trávníček et Holub a *R. pericrispatus* Holub et Trávníček) bylo pro vědu objeveno teprve v poslední době a jsou v práci popisovány z četných lokalit České republiky a přílehlých oblastí střední Evropy. Spolu s jedním ojediněle v parku zplanělým druhem (*R. ulmifolius* Schott) je tedy v současnosti z území ČR známo celkem 19 druhů ser. *Discolores*. V práci je uveden také klíč k určení všech těchto druhů.

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