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The genus *Rosa* L. in Greece

Abstract

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The present study, based on rich herbarium material and the author's own field work, includes a key, the most important synonyms specimen citations and distribution maps. Particular attention is given to the reciprocal relations between species and to the infraspecific variation.

Additional key words: systematics, distribution maps.

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The genus *Rosa* in Greece, as a whole, has never been a subject of special critical studies. Fragmentary informations on Greek roses one can find only in few basic floras and in not numerous rhodological articles (Sibthorp, Smith 1809, Halácsy 1900 - 1912, Burnat, Gremler 1887, Hayek 1926, Christ 1888, Dingler 1928, Klášterský 1942, Zieliński 1982, 1986).

The present account is a result of both field work and analysis of rich herbarium collections from major Europaean herbaria. From the studies conducted by the author it appears that there occur in Greece 17 native species of roses. As it can be seen from the distribution maps the commonest species growing throughout the country are *R. canina* and *R. agrestis*. The rarest ones are *R. glauca* and *R. jundzillii* known only from single stands in the North.

Greek roses belong to 5 sections: *Rosa*, *Cinnamomeae* DC., *Pimpinellifoliae* DC., *Synstylae* DC. and *Caninae* DC. The latter to which belong the majority of species is the most complex taxonomically group of the genus. Taxa of this section are polyploids with $2n=28, 35, 42$ and are characterized by a special type of meiosis referred to as *Caninae* meiosis or balanced heterogamy.

Section *Caninae* is a relatively young polyphyletic group originated most probably as a result of hybridization between *R. canina* or its direct ancestor with the different species representing several other sections, mainly *Rosa* and *Cinnamomeae* (Zieliński 1985). The species of *Caninae* are usually much more variable than the species from the other groups. The traits which are stable in related sections such as width of orifice, position and persistence of sepals etc., here in the section *Caninae*,

may vary independently one from another within one and the same species. As a result none of the characters discussed alone can be used for delimitation of taxa within *Caninae*. In most cases they can be defined using the complex of traits, their different combination or various degree of their frequency.

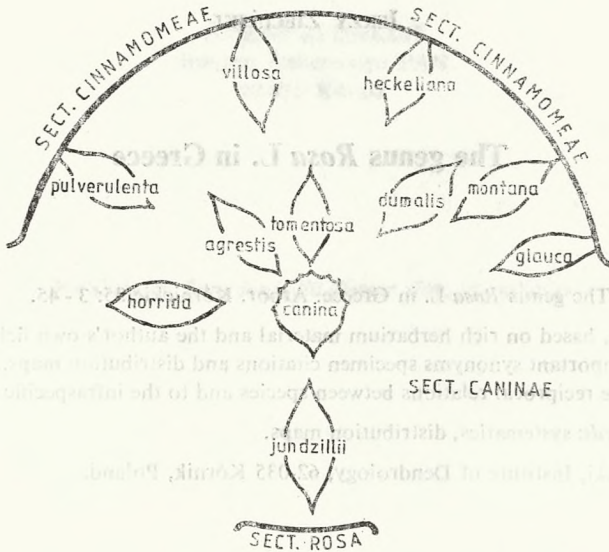


Fig. 1. Presumable relationship of the species of the section *Caninae*

In the key presented below use is made of both flowering short-shoots and long-shoots. In the latter case the prickles were considered. Orifice is broad when it is at least 1 mm in diameter.

When preparing the map of distribution of species use was made mainly of herbarium materials. Data from literature were used only in the case of the less critical species. The specimens cited earlier by the author (Zieliński 1982, Boratyński, Browicz, Zieliński 1983) are not mentioned in the lists of localities.

Key to the genus *Rosa* in Greece

- 1a. Creeping or trailing shrubs. Styles connate in a long column (often broken in fruit). Orifice very narrow
 - b. Erect shrubs. Styles short, free 2.
- 2a. Leaves evergreen; leaflets glossy above. Styler column hairy 17. *R. sempervirens*
- b. Leaves deciduous; leaflets dull above. Styler column glabrous 3.
- 3a. Stems trailing. Prickles slender. Inflorescence (1-)2-6-flowered. Sepals with few lobes 15. *R. arvensis*
- b. Stems climbing. Prickles stout, hooked. Inflorescence (5-)8-20-flowered. Sepals with many lobes 16. *R. phoenicia*
- 4a. Orifice broad, usually more than 1 mm in diameter. Styles pubescent, forming ± compact head. Sepals often entire, erect or ascending in fruit, usually persistent 5.

- b. Orifice narrower. Styles often glabrous, forming \pm loose, small head. Sepals always lobed, usually patent or deflexed and deciduous before fruit ripens 13.
- 5a. Stems at least in the upper part unarmed. Leaflets usually compound-serrate. Stipules usually broad. Petals usually deep purplish pink. Sepals entire. Ripe fruit red, often pendent 2. *R. pendulina*
- b. Plants with another combination of characters 6.
- 6a. Prickles (if present) slender, irregularly set on the stem, usually grading into bristles. Stipules narrow with long linear-lanceolate divergent auricles. Petals creamy-white. Ripe hypanthium violet-black 1. *R. pimpinellifolia*
- b. Prickles stout, if slender then stipules broad, with short triangular auricles. Petals usually pink or purple. Ripe hypanthium red 7.
- 7a. Leaflets glabrous, smooth, simply serrate, bluish-green or purplish, entire at base. Sepals very narrow, up to 3(-4) mm wide. Petals shorter than sepals, deep purple. Very rare in the North 3. *R. glauca*
- b. Plants with another combination of characters 8.
- 8a. Leaflets glandular at least beneath 9.
- b. Leaflets eglandular or with glands on the margin only 10.
- 9a. Leaflets glaucous or greyish-green, \pm pubescent. Prickles straight, acicles and bristles normally lacking 7. *R. villosa*
- b. Leaflets green or yellowish-green. Prickles often curved or hooked and mixed with glandular acicles and bristles 8. *R. puberulenta*
- 10a. Stems and pedicels usually pubescent. Leaflets small, 5 - 20 mm long, pubescent to velutinous, broadly ovate to suborbicular, acute to rounded at apex, margin simply or unevenly biserrate, teeth eglandular or with sparse glands 6. *R. heckeliana*
- b. Stems and pedicels glabrous. Leaflets usually larger and narrower, if small and broad then glabrous or with densely glandular margin 11.
- 11a. Prickles straight, subulate, abruptly dilated at base. Leaflets \pm densely pubescent, margin glandular-serrate 7. *R. villosa*
- b. Prickles curved or hooked, gradually dilated at base, if not so then leaflets glabrous 12.
- 12a. Prickles slender, straight or slightly curved, abruptly dilated at base. Fruit usually stipitate-glandular. Petals pale pink to white 4. *R. montana*
- b. Prickles rather stout, usually curved or hooked, gradually dilated at base. Fruit usually smooth. Petals usually deep pink 5. *R. dumalis*
- 13a. Stems erect, slender, up to 3 - 4(-5) mm in diameter. Prickles usually small, curved or hooked and mixed with glandular acicles or setae. Leaflets 3 - 5, relatively large, normally glandular-crenate or crenate-serrate 14. *R. gallica*
- b. Stems thicker. Leaflets 5 - 7, serrate 14.
- 14a. Adult leaflets usually thick, usually eglandular and glabrous, with prominent veins on both sides, sharply compound-serrate, teeth deep, slightly divergent. Prickles slender (sometimes lacking). Pedicels usually stipitate-glandular. Very rare in the North 13. *R. jundzillii*
- b. Plants with another combination of characters 15.
- 15a. Leaflets glaucous- or greyish-green, \pm densely tomentose, pedicels longer than fruit, \pm stipitate-glandular. Sepals often patent or ascending. Prickles straight or slightly curved 11. *R. tomentosa*
- b. Leaflets green, if not so then glabrous or pedicels shorter or smooth 16.
- 16a. Leaflets rounded or broadly elliptical, small, up to 15 mm long, \pm densely glandular beneath. Flowers small, white, pedicels up to 5(-7) mm long. Styles glabrous 9. *R. horrida*
- 16b. Plants with another combination of characters 17.
- 17a. Leaflets \pm densely glandular below or on both sides. Flowers small, up to 30 mm in diameter. Sepals with many lateral lobes, densely glandular-ciliate 10. *R. agrestis*
- b. Leaflets usually eglandular. Flowers larger, usually pink; sepals without or with sparse glands 12. *R. canina*

Sect. *Pimpinellifoliae* DC.

Erect shrubs usually with suckers. Prickles irregularly set on the stems, often subulate and acicular. Stipules narrow with long, diverging auricles. Flowers usually solitary, white or yellow. Orifice broad. Styles densely pubescent, forming large head. Sepals ascending, persistent. Meiosis regular.

1. *Rosa pimpinellifolia* L., Syst. Nat. ed. 10, 2: 1062 (1759) Described from Europe (Linn. 652/12, photo!).

Syn.: *R. spinosissima* L., Sp. Pl.: 491 (1753) pro parte; *R. myriacantha* DC., Fl. Fr. ed. 3, 4: 439 (1805).

Low shrub, usually not more than 1 m tall, with numerous suckers. Prickles bristly. Leaflets glabrous, simply serrate. Flowers solitary, white. Styles densely hairy. Orifice broad. Sepals suberect, persistent. Fruit hard, violet-black. $2n=28$.

Euro-Siberian species occurring in North, Central and South Europe, on the Caucasus, in NE Anatolia, NW Iran, in C and E Asia.

In Greece it occurs only in the North, mainly in E Makedonia. On isolated stands it was noted in N Pindos in the massif of Vourinos and on the Athos Peninsula (Fig. 2). It grows on sunny places, on stony slopes, on dry meadows and pastures, on edges of oakwoods, on roadside escarpments, inside open woodlands, on edges of abandoned orchards etc. In Greece it occurs exclusively in mountains usually between 1000 and 1500 m but occasionally attains 2000 m as on Smolikas Mt.

R. pimpinellifolia is a very distinct species easy to recognize by its habit, bristly stems and black, hard fruits.

E. Macedonia. Nom. Dramas: WNW of the village of Kataphyton, on SE slope of Mt. Orvilos (Ali Botus). 1200 - 1400 m. Shallow slope (limestone) with low *Juniperus oxycedrus*, *Pinus sylvestris* and *Ostrya carpinifolia*. 25.07.1977. Strid, Goergiadou 13273 (KOR); Prov. Drama: mons Falakron, in declivibus orientalibus cacuminis Koritsovouno. 24.08.1977. Goergiadis, Zouridis 1341 p.p. (UPA); Macedonia. Nom. Dramas. Mt. Falakron. N slopes between the village Volakas and Mesovounion, ca 1100 m. Meadows and remnants of beech forest. 18.07.1970. Strid 994 (C); Nom. Dramas. Mt. Menikion/Boz Dag of Serrae. NNE of the summit, by end of forest road ascending from the village of Mikropolis (14 km from the village). 1500 - 1600 m. Grassy subalpine meadows. Limestone. 5.07.1981. Strid et al. 18603 (C); Boz Dag. 20 km NW of Drama. 4000 ft. Stainton 7699 (WU); Macedonia. Oros Ali Baba. 1600 - 1700 m. 11.08.1968. Stamatiadou 4100 (ATH); Macedonia or. Montes Vrondeus in latere bor.-occ. montis Ali Baba. 1520 - 1849. 27.07.1977. Greuter et al. G. 17429 (G); Neurokopion - Livadaki. 29.04.1950. Goulimis 20035 (ATH); Nom. and Ep. Serron. Mt. Menikion SW part, ca 4.5 km N of the village of Inoussa, just E of ravine called Kazil Tsai Rema. 1300 - 1500 m. Steep rocky slopes with some deciduous forest. Limestone. 24.07.1979. Strid, Papanicolaou 15824 (KOR); Nom. Serron. Ep. Sintikis. Mt. Belles (Kerkini). Neon Trienthes, between filakion and the summit. 1700 - 1850 m. Alpine meadows and rocky outcrops. Gneis and schist. 4.07.1981. Strid et al. 18576 (C), Stamatiadou 22472 (ATH); Macedonia or. in Mt. Laila Serrae. 24.06.1962. Pinatzis 17764 (Herb. Pinatzis); Nom. Serron. Ep. Sintikis. Mt. Belles (Kerkini) NE of the village of Ano Poroia, along the ridge W of the highest summit, 1650 - 1800 m. Deforested grassy slope with abundant *Juniperus communis*. Micaceous

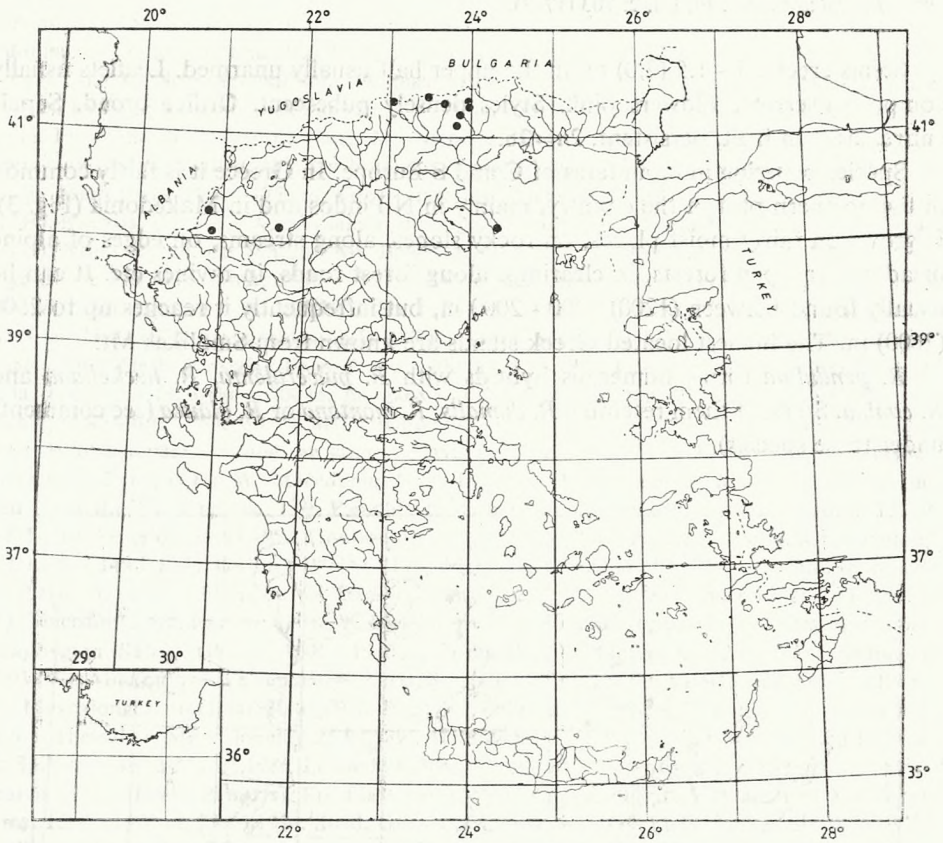


Fig. 2. Distribution of *Rosa pimpinellifolia* L.

schist. 2.08.1979. Strid, Papanicolaou 16129 (KOR); Macedonia. Or. Mt. Pangheon. 24.04.1950. Pinatzis (Herb. Pinatzis); Mt. Athos prope Panajia. 4500 ft. (Grisebach 1843, 1:104); Athos (Rechinger 1943); Oros Bourinon. 1150 - 1250. 10.05.1960. Goulimis 19942 p.p. (ATH); Macedonia occ. Ep. Kastoria. In latere orientali montis Epano Arena. 2000 m (40°18'30"N - 20°54'E). 8.08.1977. Greuter 15567 (G); Epirus. Nom. Ioaninon. Ep. Konitsis. Mt. Smolikas, 11 km W of Samarina, 5 km S of the village Paraskevi. Rocky ridges and meadows on steep N-facing slopes above and in upper part of *Fagus* forest. 1900 - 2000 m. Substr. schist. 16.07.1976. Hartwig, Baden, Christiansen 5973 (KOR).

Sect. *Cinnamomeae* DC.

Erect shrubs. Prickles infrastipular, straight or slightly curved, or stems unarmed. Stipules usually broad with straight auricles. Inflorescence 1- to many-flowered. Flowers pink or red, never yellow. Styles densely pubescent, forming \pm large head. Orifice broad. Sepals entire, ascending or erect, persistent. Meiosis regular.

2. *R. pendulina* L., Sp. Pl. 492 (1753).

Described from Europe (Linn. 652/43, photo!).

Syn.: *R. alpina* L., Sp. Pl. Ed. 2: 703 (1763).

Stems erect 0.1 - 1.5 (2.0) m, in the upper half usually unarmed. Leaflets usually compound-serrate. Flowers pink. Styles densely pubescent. Orifice broad. Sepals entire, erect in fruit, persistent. $2n=28$.

Species occurring in mountains of C and S Europe. In Greece it is fairly common in the northern part of the country, mainly in N Pindos and in Makedonia (Fig. 3). It grows on fairly moist places, on rocky slopes, along streams, on edges of alpine meadows, in open forests, in clearings, along forest roads, in ravines etc. It can be usually found between (1200) 1400 - 2000 m, but infrequently it reaches up to 2500 (2600) m. The highest located Greek stands are known from Smolikas Mt.

R. pendulina forms numerous hybrids with *R. pulverulenta*, *R. heckeliana* and *R. canina*. Some of them resemble *R. dumalis*, *R. montana* or *R. glauca* (see comments under these species).

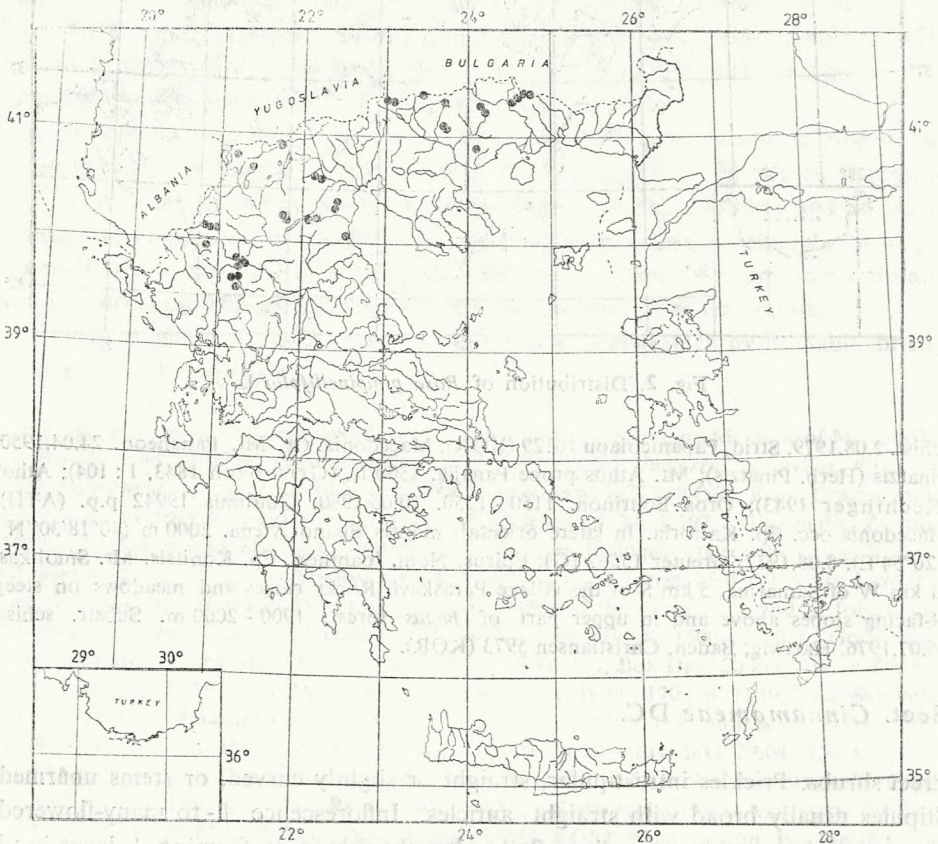


Fig. 3. Distribution of *Rosa pendulina* L.

Macedonia: E. Macedonia. Nom. Dramas: by the military post of Gydhotypos, c. 22 km NNE of Paranestion, c. 3 km from the Bulgarian border. 1500 m. Meadows in openings of mixed forest. 1 - 2.08.1977. Strid, Georgiadou 13695, 13707 (KOR); Nom. Dramas. W. Rhodope. 9 km along

road N of forest station of Zagradenia, c. 1 km from the border, area called Likolacka (Daliboska) 1800 m. Meadow in opening of mixed forest. 9.08.1979. Strid, Papanicolaou 16464 (KOR); Macedonia. Prov. and distr. Drama, Boz Dag am Gardena (Gorylophos). Ca 1400 - 1600 m. 2.06.1979. Krendl. s.n. (W); Nom. Serron/Nom. Dramas: Mt. Orvilos (Ali Botuš), Summit area along ridge between Bouri and the main summit 2000 - 2200 m. 23.07.1981. Strid et al. 19397 (C); E. Macedonia. Prov. and distr. Serrai/Drama. Mt. Menikion (Boz Dag Serrai). 2 - 2.5 km NNE of the summit known as "Psili Rach". On N facing slopes SW end of forest road ascending from the village Micropolis. 1650 - 1750 m. Grassy meadow, limestone. 6.06.1981. Stamatiadou 22568 (ATH); Kavalla. Boz Dag. Apo Volaka mehri Agiou Pneumoto. 19 - 24.07.1953. Goulimis 19947 (ATH); Nom. Serron. Ep. Sintikis: Mt. Belles (Kerkini) NE of the village of Ano Porolia, along ridge of the highest summit. 1650 - 1800 m. Deforested grassy slopes with abundant *Juniperus communis*. Micaceous schist. 2.08.1979. Strid, Papanicolaou 16123 (KOR); Laila. Serrai. 1400 - 1500 m. 11.06.1970. Stamatiadou 9051 (ATH); Laila. Serrai. 20.06.1955. Goulimis in Pinatzis 11088, 17761 (Herb. Pinatzis); From Serrai. 1200 m. 21.06.1955. Goulimis 20016 (ATH); Montes Laila. Prope Serrai. 1600 - 1700 m. In saxosis ad litem silvarum. 9.07.1973. Nordenstam in Rechinger 45446 (C, W); Voras. Mt. Peteinos (Voliotis 1979); Nomos Imathia. Mt. Vermion, 11 km W of Naoussa. Around the summit Mavri Petra. 1950 - 2027 m. 20.07.1979. Gustavsson, Franzen 8742 p.p. (LD); W. Macedonia. Prov. Imathia. Distr. Naoussa. Mt. Vermion. On the road from the place named Tria Pigadhia to Tsanaktsi. 1700 - 1850 m. Stamatiadou 13129 (ATH); Mt. Vermion. 10.08.1954. Goulimis in Pinatzis 9805 (Herb. Pinatzis); Pieria. Kataphygion, 1600 m. 8. - 14.07.1956. Goulimis 19944 (ATH); Macedonia occidentalis. Distr. Kozani. In montibus Pieria, in monte Phlambouron. 2000 - 2190 m. 9. - 12.07.1956. Rechinger 18026 (C), 18055 (W); Macedonia occidentalis: Distr. Kozani. In montibus Pieria, in declivibus borealibus supra Kataphygion. Substr. silic. C. 1600 - 1900 m. In pinetis et torrentes. 9. - 12.07.1956. Rechinger 17893 (W); Aliakmon - Velvendos - Pieria. 8. - 14.07.1956. Goulimis 19945 (ATH); Mt. Olympus. Mavrolongos. In fageti. 30.06.1936. Pinatzis 1528 (Herb. Pinatzis); In regione sylvatica Mt. Olympi Thessaliae. Mavrolongos 25.07.1891. Heldreich s.n. (G); Olympus Mt. Between Prionia and Spilios Agapitos. 31.05.1986. Lisowski B-2663 (KOR); Mt. Olympus. In fageti supra Prionia. Pinatzis 11070 (Herb. Pinatzis); Ep. Elassonos. Mt. Olympus. N part W branch of Xerolakki Rema. 1500 - 1900 m. 29.06.1976. Strid, Gustavsson 11884 (C); Olympus. In fageti. 10.06.1951. Goulimis 7016 (ATH); Oros Bourinon. 1300 - 1600 m. 1.08.1969. Stamatiadou 7072 (ATH); Oros Vourinos. 1200 m. 20.06.1970. Stamatiadou 9592 (ATH); Macedonia occidentalis: Distr. Kozani, in monte Vourinon. In declivibus orientalibus. Substr. serpent. 1600 - 1800 m. 5. - 7.07.1956. Rechinger 17472 (W); Kopais - Domokos - Bara - Tservaina. Bourinon. 3 - 7.07.1956. Goulimis 19448 (ATH); Macedonia. Mt. Vourino. 1. - 2.07.1950. Goulimis in Pinatzis 12330 (Herb. Pinatzis); Macedonia. Nom. Kozanis/Nom. Grevenon. Mt. Vourinos, 17 km SW of Kozani. Summit area. 1700 - 1800 m. Mainly rocky slopes with *Buxus* and *Juniperus*. Serpentine substr. 5.07.1977. Hartwig, Christiansen 6467 (C; KOR); Macedonia. Nom. and Ep. Grevenon. Nom. Kozanis. Ep. Voiou. Mt. Vourinos. Summit area. 1750 - 1865. Substr. serp. 25.07.1979. Hartwig, Christiansen 8415, 8416 (C); Pindus Tymphaeus: in summo montis Zygos. 4500 - 5500'. Solo serpent. 1885. Haussknecht (W); Ioanina: Katara, 4 km NE of Metsovon. Grassy schist-ground with *Pinus nigra* and *Buxus sempervirens*. Ca 1750 m. 3.07.1971. Alden 1323 (LD); Metsovon. Profitis Ilias. 11. - 16.08.1956. Goulimis 19946 (ATH); Epirus. Nom. Ioaninon, E. Metsovon: Mt. Mavrovouni. E part c. 10 km N of Metsovon, N facing slope in *Fagus* forest S of Dados Tsileli. 1850 - 1925 m. Serpentine substr. 22.07.1976. Hartwig, Baden, Christiansen 6107 (KOR); Epirus. Nom. Ioaninon. Ep. Metsovon: Mt. Mavrovouni, E part, c. 10 km N of Metsovon. By the road on NE slope near Dados Tsileli, ca 1675 m. Serpentine substr. Grassy slope in forest of *Pinus heldreichii* and *Fagus sylvatica*. 23.07.1976. Hartwig, Baden, Christiansen 6143 (C); Macedonia. Peristeri. 1300 - 1400 m. Bornmueller 845 (B); Prov. Florina. Mons Varnous (Peristeri) in declivibus occidentalibus cacuminis Solaki. 1950 m. 8.08.1977. Phitos, Kamari s.n. (UPA); W. Macedonia. Prov. and distr. Phlorina. Mt. Bela Vodha. 1950 - 2100 m. 25.06.1972. Stamatiadou 16045 (ATH); Macedonia occ. montes Varnous (Kalo Nero), in austro-orientali

verticum "Bela Voda" vocatorum, alt. 2000 - 2500 m. Solo granitico. 1.08.1976. Greuter 14162 (G, UPA), 14162 bis (G); Nom. and ep. Grevenon. Mt. Smolikas. 2 km NW of Samarina. Narrow ravine and rocky slopes. 1725 - 1800 m. 9.07.1976. Hartwig, Baden, Christiansen 5711 (C); Mt. Smolikas, NE slope, ca 4 km NW of Samarina N of Bagdanis. Woodland of old *Fagus* trees. 1750 - 1800 m. On rocky outcrops of limestones. 30.08.1975. Hartwig, Seberg 4998 (C, KOR); Macedonia (Epirus: Mt. Smolikas, great SE ravine, 3 km SW of Samarina. SW-facing steep, rocky slopes and ravines in *Pinus nigra* woodland. 1300 - 1550 m. 31.08.1975. Hartwig, Seberg 5074 (C); Ad Paleosoli m. Smolika distr. Konitsa. 19.07.1896. Baldacci 234 a (BM); Epirus (distr. Konitsa) Montes Smolikas, in vertice principii, alt. 2600 - 1637. 17. 08. 1976. Greuter 14533 (C); Macedonia, Epirus: Mt. Smolikas, E ridge. W and S slopes of Gourgoulios 2 - 3 km of Samarina. Steep slopes in woodland of *Pinus heldreichii*. Screes and ledges. 1600 - 1900 m. 10.07.1976. Hartwig, Baden, Christiansen 5739 (C); Epirus. In summo monte Smolika. Ca 2600 m. In saxosis serpentinicis. 9.07.1958. Rechinger 21026 (W); Epirus Mt. Gamila sept. 5.07.1955. Goulimis in Pinatzis 11091 (Herb. Pinatzis); Mt. Gamila (Timfi) North. cliffs from Ghiol Spring to Tsouka Rossa. Goulimis 20021 (ATH); Pindos, Smolikas. 8.07.1953. Goulimis in Pinatzis 8416 (Herb. Pinatzis); Prov. Joannina: mons Smolikas, in cacumine, alt. 2600 m. In saxosis magmaticis. 13.07.1961. Phitos 4404 (UPA); Nomos Joannina. Eparchia Katara. Pass. 1689 m. 21.09.1980. Binder, Hageman, Hempel, Rhaus 640 (B); Pindos. Tsouka Rossa. 31.07. - 7.08.1952. Goulimis 19972, 20036 (ATH); Trikala: Mt. Baros in Mt. Plastaria, 8 km SSW of Chalikion. Very moist and steep rocks with meadows facing W. 1900 - 2000 m. 6.07.1973. Alden 3021 (LD).

Hybrids

Rosa pendulina × *pulverulenta*

Macedonia orientalis. In australibus montis Pangeon (Purnar Dagh). 1400 m. 26.06.1936. Rechinger 10363 (G); Macedonia. Nom. Kavallas: Mt. Pangeon E of the summit. C. 1500 m. 9.07.1970. Strid 762 (C); W. Macedonia. Prov. and distr. Pieria. Near the refuge "Spilios Agapitos". 1.08.1968. Stamatiadou 3870 (ATH).

Rosa pendulina × *villosa*

Macedonia occ. (distr. Almopia): montes Kozuf, in latere meridionali verticis Tzena. 1700 m 30.07.1976. Greuter 14082 (G); Nom. Kozanis (Pierias): Mt. Pieria around the summit of Flamboaron 2000 - 2190 m. 24.07.1976. Anderson 11186 (G); Nom. Florinis (Kastorias): 5 km EES of the village of Kristallopigi, place called Papadochoria. 1520 - 1600 m. 19.07.1985. Strid 24718 (G).

Sect. *Caninae* DC.

Stems erect or arched. Prickles straight or curved, irregularly set or rarely infrastipular. Stipules broad or narrow. Inflorescence 1- or usually more flowered. Flowers white, pink. Styles glabrous to densely pubescent. Orifice broad or narrow. Sepals lobed, exceptionally entire, erect, ascending or deflexed after flowering, persistent or caducous. Caninae meiosis.

3. *Rosa glauca* Pourret, Mem. Acad. Toulouse 3: 326 (1788). Cited from the Alps.

Syn.: *R. rubrifolia* Vill., Hist. Pl. Dauph. 3: 549 (1789).

Erect shrub up to 2 (3) m tall. Leaflets glabrous, bluish-green or purplish, simply serrate. Flowers small, deep pink. Styles densely pubescent. Orifice broad. Sepals narrow (3 - 4 mm), longer than petals, suberect or patent, deciduous during ripening of fruits. $2n=28$.

The species occurs in the mountains of C, W and S Europe. In Greece it is known till now from one stand in the North-West on slopes of Epano Avena Mt., just near the Greek-Albanian border (Fig. 4). It has been found there between 1900 and 2000 m elevation. This locality is distinctly isolated from the nearest stands of the species in N Albania and NW Bulgaria.

R. glauca is one of the most distinct species of the section *Caninae*. It can be usually distinguished in vegetative state owing to its leaflets which are simply, coarsely serrate and more or less glaucous. Morphologically it matches almost entirely sect. *Cinnamomeae*, to which it is sometimes wrongly included. From the representatives

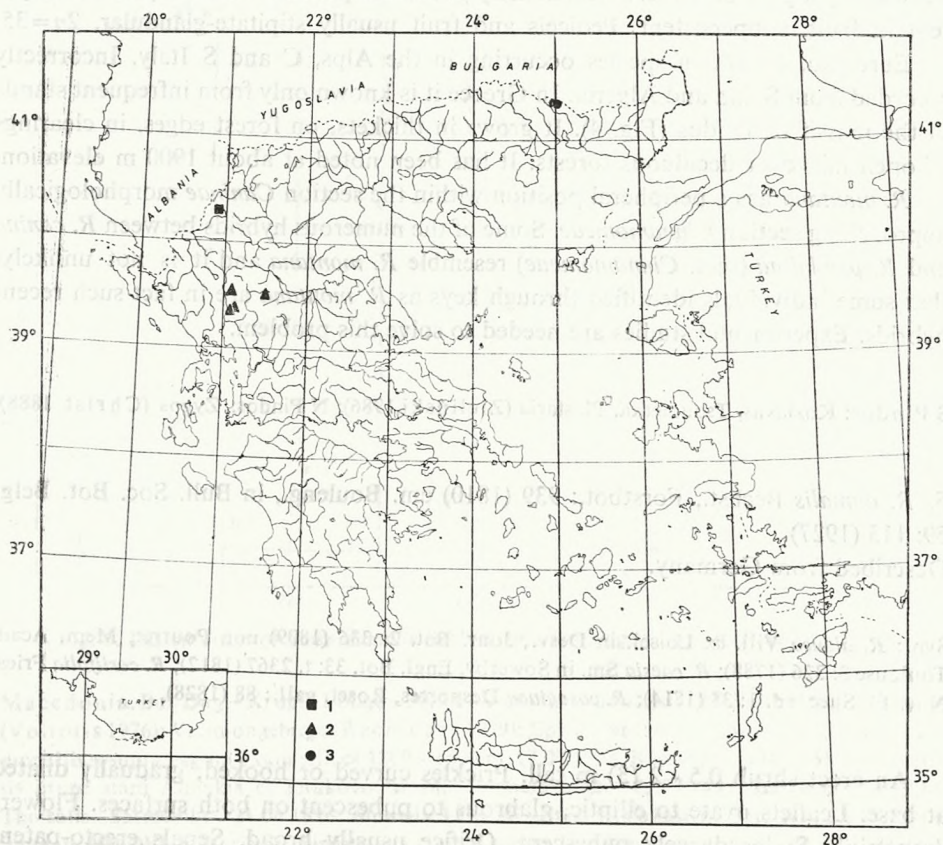


Fig. 4. Distribution of *Rosa glauca* Pourret (1), *R. montana* Chaix (2) and *R. jundzillii* Besser (3)

of this section it differs, however, in having earlier deciduous sepals, narrower orifice, prickles irregularly set on the stems and first of all by the type of meiosis.

The hybrids of *R. pendulina* (sect. *Cinnamomeae*) with *R. canina* are often confused with *R. glauca*, but they can be usually distinguished by broader sepals, longer petals and fruits, differently serrate leaflets, etc.

Macedonia Occidentalis. Eparchia Kastoria: in latere orientali montis Epano Avena alt. 1900 - 2100 m. 40°18'30" N - 20°54' E. 8.08.1977. Greuter 15564 (G).

4. *R. montana* Chaix in Vill., Hist. Pl. Dauph. 1: 346 (1786). Described from the Alps.

Syn.: *R. chavirii* Rapin ex Reut., Cat. Pl. Vasc. Geneve, ed. 2: 69 (1891) p.p.

An erect shrub 0.5 - 2.0 (3) m tall. Prickles slender, abruptly dilated at base, straight or slightly curved. Leaflets glabrous, broadly obovate to suborbicular. Flowers light pink or white. Styles densely pubescent. Orifice broad. Sepals erecto-patent in fruit, subpersistent. Pedicels and fruit usually stipitate-glandular. $2n=35$.

European mountain species occurring in the Alps, C and S Italy. Incorrectly recorded from Spain and Algeria. In Greece it is known only from infrequent stands in the massif of Pindos (Fig. 4). It grows in thickets, on forest edges, in clearings of open mixed or deciduous forests. It has been noted at about 1900 m elevation.

R. montana has a peripheral position within the section *Caninae* morphologically approaching section *Cinnamomeae*. Some of the numerous hybrids between *R. canina* and *R. pendulina* (sect. *Cinnamomeae*) resemble *R. montana* and it is not unlikely, that some individuals identified through keys as *R. montana* are in fact such recent hybrids. Experimental studies are needed to solve this problem.

S Pindos: Koziakas, Tsoumerka, Plastaria (Zieliński 1986); N Pindos: Zygos (Christ 1888).

5. *R. dumalis* Bechst., Forstbot.: 939 (1810) em. Bouleng., in Bull. Soc. Bot. Belg. 59: 113 (1927).

Described from Germany.

Syn.: *R. glauca* Vill. ex Loisel. in Desv., Jour. Bot. 2: 336 (1809) non Pourret, Mem. Acad. Toulouse 3: 326 (1788); *R. caesia* Sm. in Sowerby, Engl. Bot. 33: t. 2367 (1812); *R. coriifolia* Fries, Nov. Fl. Suec. ed. 1: 33 (1814); *R. vosagiaca* Desportes, Roset. gall.: 88 (1828).

An erect shrub 0.5 - 2 (3) m tall. Prickles curved or hooked, gradually dilated at base. Leaflets ovate to elliptic, glabrous to pubescent on both surfaces. Flowers deep pink. Styles densely pubescent. Orifice usually broad. Sepals erecto-patent in fruit, subpersistent. Pedicels shorter than hypanthium. $2n=35$.

A central-European species occurring also on infrequent localities in SW Asia. In Greece it is scattered mainly in mountains in northern and central regions, besides it is known from one very isolated stand on Crete (Fig. 5). It grows usually in loose thickets, on edges of forests, in clearings of mixed or coniferous woods, along roads etc., above 1200 m. The highest located populations are known from Crete and from the slopes of Giona Mt. in Fokida at 1800 m elevation.

R. dumalis is closely related to *R. montana* from which is sometimes difficult to distinguish. Numerous hybrids of *R. pendulina* with *R. canina* are sometimes mistaken for *R. dumalis*, but they usually have weaker prickles, longer pedicels and earlier deciduous sepals.

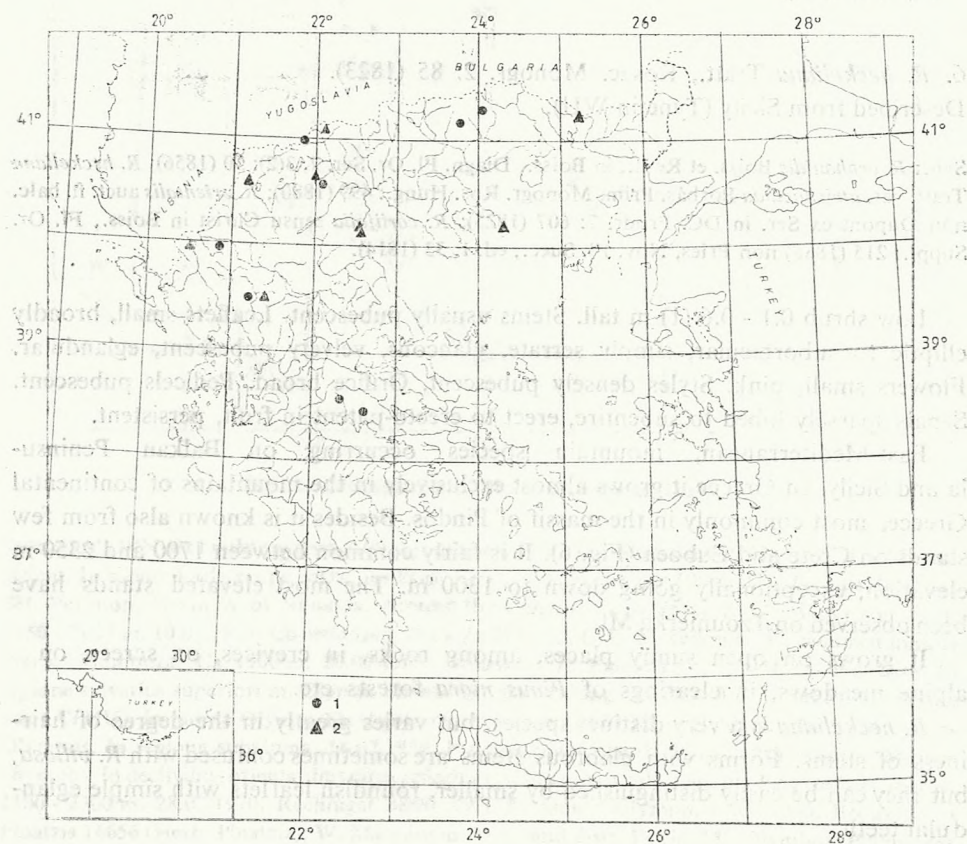


Fig. 5. Distribution of *Rosa dumalis* Bechst. em. Boulenger (1) and *R. villosa* L. (2)

Macedonia. Boz Dag—Krimni Lobnos. 30.07. - 2.08.1953. Goulimis 19963 (ATH); Vorasgebirge (Voliotis 1976); Vermiongebirge (Rechinger 1939); Epirus. Montes Timphi. In declivibus meridionalibus supra pagum Skammeli, ca 1200 - 1600 m. 17.07.1958. Rechinger 21464 (G); In praeruptis prope stani Almakia et Jerakovouni m. Tzumerka. 22. - 23.07.1895. Baldacci 138 (BM); Thessalia. Sarmeniko. 21.08.1896. Sintenis 1273 (G, SO); Malakasi in Mt. Siria. 13.07.1896. Sintenis 899 (WU); Doris: in rupestribus regioni alpini Mt. Kiona 6000 ft. 12.07.1888. Halácsy 903 (WU); In m. Parnassi reg. media Carcaria. 24.08.1865. Guicciardi 3211 (ATHU); Legi ad

radices Parnassi prope Gurnam Rachovae. 24.06.1854. Orphanides 2711 (ATHU); In regione super. m. Parnassi. 4500 ft. Heldreich s.n. (G);

Crete: Kidhonia. At the snow-cave Mile on the N slope of Mt. Spathi 35°21'30"N - 24°02'30"E. 1750 m. Sunny limestone cliffs above the cave mouth. Greater 7730 (Herb. Greuter).

Hybrids

Rosa dumalis × *pulverulenta*

M. Oeta. Phtiotidis. In pascuis subalpinis 5500 - 6300 ft. Heldreich s.n. (WU), (Type of *Rosa* × *oetea* Burn. et Greml.).

6. *R. heckeliana* Tratt., Rosac. Monogr. 2: 85 (1823).

Described from Sicily (Type in WU).

Syn.: *R. orphanidis* Boiss. et Reut., in Boiss., Diagn. Pl. Or. Ser. 2, 3(2): 50 (1856); *R. heckeliana* Tratt. var. *atrichoclada* Borbás, Prim, Monogr. Ros. Hung.: 499 (1880); *R. orientalis* auct. fl. balc. non Dupont ex Ser. in DC. Prodr. 2: 607 (1825); *R. coriifolia* sensu Christ in Boiss., Fl. Or. Suppl.: 215 (1888) non Fries, Nov. Fl. Suec., ed. 1: 33 (1814).

Low shrub 0.1 - 0.6 (1) m tall. Stems usually pubescent. Leaflets small, broadly elliptic to suborbicular, simply serrate, glaucous, velvety pubescent, eglandular. Flowers small, pink. Styles densely pubescent. Orifice broad. Pedicels pubescent. Sepals sparsely lobed to subentire, erect to erecto-patent in fruit, persistent.

East-Mediterranean, mountain species occurring on Balkan Peninsula and Sicily. In Greece it grows almost exclusively in the mountains of continental Greece, most commonly in the massif of Pindos. Besides it is known also from few stands on Crete and Euboea (Fig. 6). It is fairly common between 1700 and 2350 m elevation, exceptionally going down to 1300 m. The most elevated stands have been observed on Tzoumerka Mt.

It grows on open sunny places, among rocks, in crevices, on screes, on alpine meadows, in clearings of *Pinus nigra* forests etc.

R. heckeliana is a very distinct species, but varies greatly in the degree of hairiness of stems. Forms with glabrous stems are sometimes confused with *R. villosa*, but they can be easily distinguished by smaller, roundish leaflets with simple eglandular teeth.

Tracia. In monte Karlik Dag prope Komotini. In declivibus austr. saxosis. 1300 m. 2.08.1936. Rechinger 10384 (G, W); Rodopy. Komotini (Gjummjuldžina/Karlik/Vejkata/G. Snežnik) 21.07.1926. Stojanov 5576 (SO); E. Macedonia. Nom. Dramas: NWW of the village of Katafyton, on SE slope of Mt. Orvilos (Ali Botuš) 1200 - 1400 m. Shallow slope (limestone) with *Jun. oxycedrus* and *Pinus sylvestris* and *Ostrya carpinifolia*. 25.07.1977. Strid et Georgiadou 13268 (KOR); E. Macedonia. Prov. and distr. Serron/Dramas. Mt Menikion (Boz Dagh Serrae) 3 km NNE of the summit known as "Psili Rach" by end of forest road 14 km from the village of Micropolis. 1520 - 1600 m. Rocky subalpine pasture. Limestone. 5.07.1981. Stamatiadou 22522 (ATH); E. Macedonia. Prov. Serrai. Distr. Sintikis. SW part of Mt. Kerkini (Beles) summit area of "Neon

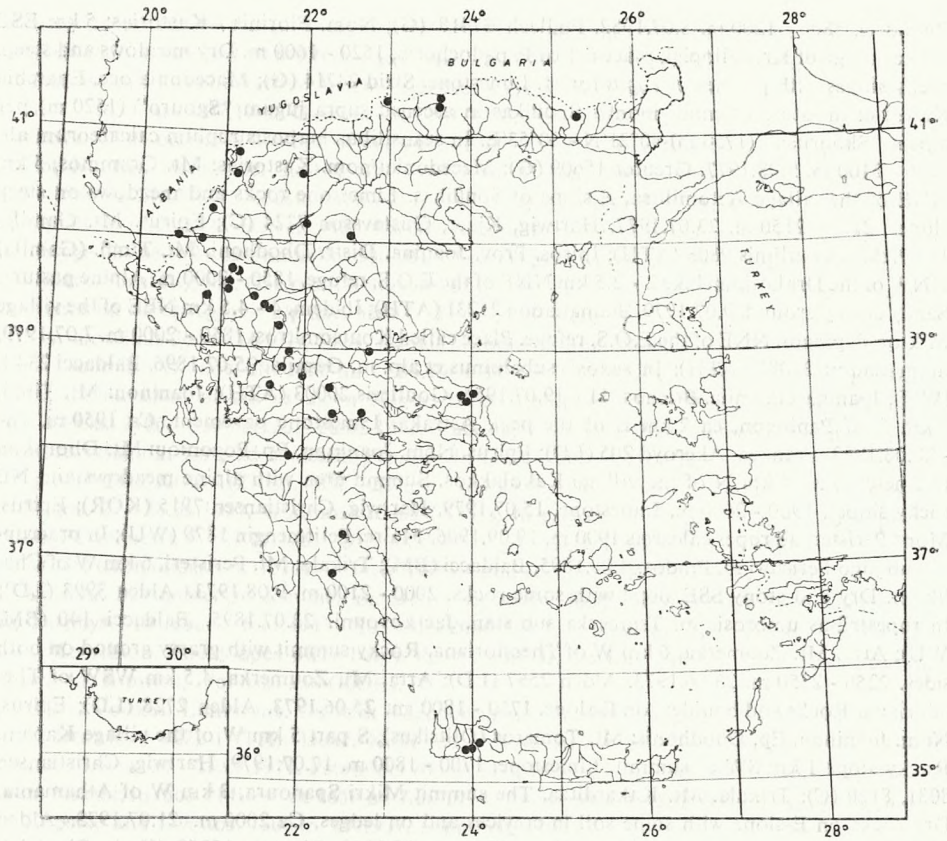


Fig. 6. Distribution of *Rosa heckeliana* Tratt.

Trienthes". WNW of military post. Alpine meadows. 4.07.1981. Stamatiadou 22473 (ATH); Maced. Orient. In monte Laila prope Serrai. 1800 m. 12.07.1936. Rechinger 10842 (G); Nomos Imathia: Mt. Vermion, 11 km W of Naoussa. Around the summit Mavri Petra. Stony slopes and cliffs, 1950 - 2027 m. 10.07.1979. Christiansen, Franzén 8743 (C, LD); Macedonia. Ad cacumen montis Pieria. Flambuza. Ca 1900 m. 20.07.1963. Brousalis in Pinatzis 18598. (Herb. Pinatzis); In regione sylvatica superiori m. Olympi Thessaliae. Mavro-longhos. 1500 ft. 22.07.1851. Heldreich s.n. (ATHU); In monte Olympi Thessaliae reg. sylvatica. 24.07.1851. Heldreich 2442 (W); Mons Olympus. In regione subalpina. 14.07.1958. Pinatzis 14486 (Herb. Pinatzis); Thessalia. Montes Olympos. In declivibus orientalibus circa refugium A. In saxosis calc. regionis *Pinus heldreichianae*. 2100 - 2300 m. 28.07.1970. Rechinger 38896 (W); In monte Olympo. 17.07.1960. Brousalis in Pinatzis 16656 (Herb. Pinatzis); W. Macedonia. Prov. and distr. Pieria. Mt. Olymbos. Plains near the refuge "Spilios Agapitos". 2050 - 2100 m. Stony ground with *Pinus heldreichii*. 9.07.1969. Stamatiadou 6838 (ATH); Thessaly. Ep. Elassonos: Mt. Olympus, N part, upper E part of Xerolakki Rema and ridge between Xerolakki and Papa Rema, 1600 - 2100 m. Limestone rocks. *Pinus nigra* and *Pinus heldreichii* woodland. 3.07.1976. Strid, Gustavsson 12012 (C); Mt. Olympus. NW side: upper part of Xerolakki Rema, where forest road crosses W branch of ravine, 6 - 8 km from intersection with Petra-Kokkinoplos road, 1300 - 1500 m. *Pinus nigra* woodland and cleared area in the ravine. 1.09.1975. Strid, Hansen 9715 (C); Olympus. Above Lithohoron. Ca 1000 m. 3.10.1980. Boratyński, Browicz, Zieliński 1382 (KOR, ATH); Bezirk Florina. Nordlicher Pindus. Aufstieg zur Kawinitzsa (ostl. Vorgipfel des Kalo Nero = Bela Voda) vom Kataphygon bei

Pissoderi. 1800 - 1200 m. 8.07.1982. Podlech 37418 (G); Nom. Florinis / Kastorias: 5 km ESE of the village of Kristallopigi, place called Papadochoria, 1520 - 1600 m. Dry meadows and steep, rocky slopes with patches of *Fagus* forest. Limestone. Strid 24714 (G); Macedonia occ. Eparchia Kastoria: in latere orientali montis Souflikas in ascensu supra jugum "Sgouro" (1520 m) per alpem "Skouritsa" (1750 m) 40°21'N - 20°53'E. In scansilibus herbosis rupium calcareorum alt. 1900 - 2100 m. 9.08.1977. Greufer 15609 (G); Macedonia: nom. Kastorias: Mt. Grammos, 5 km NNE of the village Aetomilitsa, E slope of Souflikas. Limestone rocks and meadows on steep slopes. 2100 - 2150 m. 23.07.1977. Hartwig, Kjaer, Gustavsson 7224 (C); Epirus. Mt. Gamila. 16.07.1951. Goulimis 9806 (ATH); Ipiros. Prov. Joanina. Distr. Dhodhoni. Mt. Timfi. (Gamila) NNW of the Drakolimni lake 2 - 2.5 km NNE of the E.O.S. refuge. 1850 - 2000 m. Alpine pasture. Sandy clayey ground. 9.07.1979. Stamatiadou 21231 (ATH); Ibidem. 4 - 4.5 km NEE of the village Mikton Papington NNE of the E.O.S. refuge. Place called Koutsomitros. 1850 - 2000 m. 7.07.1979. Stamatiadou 21082 (ATH); In saxosis subalpinus et alp. m. Gamila. 25.07.1896. Baldacci 234 b (WU); Joanina-Gkamila. Brichos. 11 - 19.07.1954. Goulimis 20003 (ATH); Joaninon: Mt. Timfi, 5 km E of Papington, ca 2 km E of the peak Astraka. Limestone pavement. Ca 1950 m. 26 - 28.08.1959. Franzen, Akeroyd 205 (LD); Epirus. Nom. Joaninon. Ep. Pogoniou: Mt. Dhouskon (Nëmerçka) 3 - 4 km N of the village Kakolakkos. Summit area with alpine meadows and NE rocky slopes. 1900 - 2000 m. Limestone. 15.07.1979. Hartwig, Christiansen 7915 (KOR); Epirus. Mons Peristeri ad rupes calcareis 1900 m. 19.09.1906. Maire, Petitmengin 1879 (WU); In praeruptis sub jugo Peristeri m. Pindos. 4.08.1895. Baldacci (BM); Trikala: Mt. Peristeri, 6 km W of Chalikion. Dry and stony SSE slope with some rocks. 2000 - 2100 m. 9.08.1973. Alden 3993 (LD); In rupestribus umbrosis m. Tsumerka sub stan. Jaekovouni. 23.07.1895. Baldacci 140 (BM, WU); Arta. Mt. Zoumerka. 6 km W of Theodoriana. Rocky summit with grassy ground on both sides. 2250 - 2350 m. 23.06.1973. Alden 2597 (LD); Arta. Mt. Zoumerka. 4.5 km WSW of Theodoriana. Rocks and boulders on E-slope. 1750 - 1800 m. 25.06.1973. Alden 2728 (LD); Epirus, Nom. Joaninon. Ep. Dhodhonis: Mt. Tomaros (Olitsikas), S part 5 km W of the village Kapani. Rocky slope 1 km SW of summit. Limestone. 1700 - 1800 m. 17.07.1979. Hartwig, Christiansen 8031, 8120 (C); Trikala. Mt. Kakarditza. The summit Mikri Spanoura, 3 km W of Athamania. Dry rocks on E-slope with some soil in crevices and on ledges. Ca 2000 m. 21.07.1973. Alden 3652 (LD); Ad cacum. montis Kakarditza. 2200 m. 08.1959. Pinatzis 15350 (Herb. Pinatzis); Kakarditsa. 2000 m. 9 - 10.08.1959. Goulimis. 20010 (ATH); Trikala: Mt. Baros in Mt. Plastaria, 8 km SSW of Chalikion. Very moist steep rocks with meadows facing W. 6.07.1973. Alden 3020. (LD); Trikala: Mt. Boutaia, 3 km SSW of Chalikion, NW-facing steep meadows and rocks; 1950 - 2000 m. 11.07.1973. Alden 3435 (LD); Trikala: Mt. Augo, 6 km SW of Pirra. Steep rocks meadows and rock ledges. 1850 - 1900 m. 17.06.1973. Alden 2416 (LD); Trikala: Mt. Katarraxias, 6 km ENE of Kalarrites. Very dry rocks and grassy slope E of the top. Ca 2280 m. 23.08.1974. Alden 5226 (LD); Karditsa: Mt. Voutsikaki, 4.5 km ESE of Vlasion. Rocks and dry E slope near the top. Ca 2100 m. 15.07.1974. Alden 4501 (LD); Karditsa: Mt. Mazur, 3 km ESE of Argidea. Grazed top area. Stony ground. Limestone. 1800 m. 22.06.1971. Alden 931 (LD); Prov. and Distr. Fthiotis. Mt. Othris. SE side of Jerakovouni. 1500 m. 13.06.1971. Stamatiadou (ATH); Eurytania: Mt. Chelidon, ca 3.5 km W of Mikro Chorio. N-facing slope with cliffs and meadows. 1725 - 1900 m. 5.07.1973. Gustavsson 2532 (LD); Evritania: Mt. Oxia, 6.5 km SSW of Gardikion. Sandstone cliffs and gravel, W and SW of the main top. 1800 - 1920 m. 27.06.1975. Gustavsson 6306 (LD); Timfristos Mt. above Karpension. Stony pasture above the upper limit of *Abies cephalonica* forest. 1700 m. 3.06.1988. Boratyński, Browicz, Tomlik, Zieliński 886 (ATH, KOR); Doris: in regione alpina Mt. Kionae. 12.07.1888. Halácsy s.n. (WU); Phocis: Mt. Kokkinari, 6 km WSW of Amfissa. Limestone cliffs around the summit. 1850 - 1910 m. 15.06.1975. Gustavsson 5705 p.p. (LD); Phocis: Mt. Giona, 4.5 km E-ENE of Sikea. Scree and gravel on slopes facing E and S. Ca 2150 m. 14.07.1973. Gustavsson 6923 (LD); Aetolia-Akarnania: Mt. Yiorgia, ca 3 km WSW of Lampirion. Cliffs and ledges on a slope facing NE. 1850 - 1920. 28.07.1973. Gustavsson 3405 (LD); In monte Parnasso. 3.08.1852. Heldreich s.n. (ATHU, BM, W); In regione superior montis Parnassi prope Arnovrysi. 15 - 29.07.1854. Orphanides 422 (ATHU, WU); In monte

Parnasso prope Trypia Spilia. 3 - 15.07.1854. 5000'. Orphanides 2562 (G); In m. Parnassi reg. alpina 08.1855. Guicciardi E 679 (G); Parnassos. 21 - 27.06.1946. Goulimis 20004 (ATH); Beotia: Mt. Parnassos, 5 km NE-ESE of Arachova. Scree, gravel and cliffs along the rivulet in the Gourni ravine. C. 1650 m. 18.07.1975. Gustavsson 7040 (LD); Phthiotidis: Mt. Parnassos, 7 km NNE of Arachova. Cliffs on the NW-slope of main top. 2300 - 2350 m. 1.08.1970. Gustavsson 557 (LD); Phthiotidis: Mt. Parnassos, 3.5 km SW - WSW of Titorea. Moist limestone cliffs facing E. 1850 - 1950 m. 21.07.1975. Gustavsson 6715, 7145 (LD); Peloponnisos: Achaia. In mte Chelmos reg. alp. 2150. 19.06.1926. Bornmueller 584 (B); Achaia. In montis Chelmos reg. alpina in faucibus fluvii Stygis. 25.06.1926. Bornmueller 586 (B); Chelmos pr. Stygem. 06.1949. Goulimis in Pinatzis 4491 (Herb. Pinatzis); Mt. Chelmos ad Stygem. 23.06.1957. Pinatzis 13422, 13423 (Herb. Pinatzis); M. Olenos ad rupes regionis alpinae. 6500 ft. 23.07.1848. Herb. Boiss. (G); Erymanthos, Olenos. 07.1946. Goulimis 20006 (ATH); Prov. Achaia. Montes Erymanthos, in declivibus boreo-orientalibus cacuminis Olenos, alt. 1450 m. 25.06.1968. Phitos 8481 (UPA); Laconia: in M. Taygetos regione alpina ad summum cacumen Hagios Elias. Heldreich 1536 (WU); Taygetos Gebirge, Profitis Elias. 2100 - 2300 m. 15 - 16.07.1981. Staudinger s.n. (W); Prov. Laconia. Montes Taygetos supra refugium Eos, ad cacumen Profitis Ilias, alt. 2000 - 2250. Tzanoudakis, Georgiadou 4369 p.p. (ATH); Killini (Ziria). 2050 - 2210 m. 17 - 23.06.1949. Goulimis (ATH); Periohi Koilados Stigos. 22 - 26.06.1957. Goulimis 20009 (ATH); In regione superiori (Gymno Vuno prope Tricala Peloponesi). 8 - 20.07.1851. Orphanides s.n. (ATHU); Legi in monte Malevo Laconiae. 22.06.1856. Orphanides s.n. (ATHU); Inter Trikala and Kyllenae (Klásterský 1942);

Euboea: In rupibus pr. cacumen m. Delphi Euboeae. 5000 ft. 19.08.1848. Herb. Boiss. 366 (G); Dirphys. Xirovouni. 6.11.1947. Goulimis 20008 (ATH); Euboea. N slopes of Skotini Mt. above Metochion. Rocky open place below the summit. In crevices. 1100 m. 29.08.1986. Awzan, Boratyński, Browicz, Zieliński 356 (KOR).

Crete: Volikas. Limestone. On rock ledge facing north, above a spring. 1500 m. 21.08.1971. Jermy, Brownsey 9222 (ATH); Distr. Kidhonia. Above village of Kambi. Around the refuge Volikas. 1350 m. 20 - 21.08.1971. Petamidis 700 (ATH); Prov. Chania. Montes "Lefka Ori" supra pagum Kampi, in loco "Miles" ca 1650 m. 7.06.1974. Tzanoudakis 1502 (UPA); Hag. Pneuma. Zw. Kapsike und Livados. 1800 m. 07.1937. Lempberg 1204 (W);

Hybrids

R. heckeliana × *pendulina*

Nom. Florinis/Kastorias: Mt. Vitsi (Vernon) just SW of the summit. 1750 - 1850. Meadows and rocky outcrops. 10.07.1981. Strid et al. 18915 (C); Thessalia. Nom. Larisis. Mt. Olympus, S part, just SE of Hellenic Alpine Club Refuge B. 1800 - 1900 m. (above the village Sparmos). 23.07.1970. Strid 1210 (C).

R. heckeliana × *pulverulenta*

Macedonia. Prov. and distr. Florina. Between 12th and 13th pyramid of the Greek-Albanian frontier W of the village Vronero. Place named Vratseria. 1300 - 1400 m. 23.07.1972. Stamatidou 15922 (ATH); In monte Parnasso, reg. alpina. 08.1852. Heldreich 2681 (BM); Phthiotis: Mt. Iti, 6.5 km SSE of Ipati. 1850 - 1900 m. 1.07.1975. Gustavsson 6472 p.p. (LD); Peloponnisos. Achaia in monte Erymanthos (Olenos). 1800 m. 15.06.1926. Bornmueller 588 a (W); Nom. Messinia. Ep. Kalamon: Mt. Taygetos, S part, NE of Mavrovouna, above place called Ag. Dimitros. 1600 - 1950 m. 30.06.1979. Strid, Papanicolaou 15297 (C, KOR); Crete. Ep. Lassithi: N-Hang des Berges Spathi bei u. ob. der Alp Lekanida. 23.06.1961. Greuter S 3684 (Herb. Greuter).

7. *R. villosa* L., Sp. Pl.: 491 (1753).

Described from Europe (Linn. 652/15, photo!)

Syn.: *R. pomifera* J. Herrmann, Diss. Rosa: 16 (1762); *R. mollis* Sm. in Sowerby, Engl. Bot. 35: tab. 2459 (1812); *R. heldreichii* Boiss. et Reut., in Boiss., Diagn. Pl. Or. Ser. 2, 3(2): 1856; *R. pomifera* J. Herrmann var. *olympica* Wagn., Feddes Repert. 38 : 283 (1935).

Stems erect up to 1 m. Prickles straight, subulate. Leaflets pubescent, glaucous, glandular or smooth on surface, compound glandular-serrate on the margin. Flowers pink, Pedicels and hypanthium usually stipitate-glandular. Styles densely pubescent. Orifice broad. Sepals lobed to subentire, erect or erecto-patent in fruit, persistent. $2n=35$.

The extensive range of *R. villosa* covers C and W Europe, Caucasus and NE part of Anatolia. In Greece it is a rare species occurring only in the northern, continental part of the country (Fig. 5). It has been observed exclusively in mountains, usually between 1000 and 1700 mm elevation. The most elevated stands are known in the massif of Vermion at 2000 m. It grows on stony slopes in light open oak woods, on forests edges, on subalpine meadows, along forest roads etc.

R. villosa is a characteristic species, rather little variable in Greece. Forms with sparsely glandular leaves are sometimes separated as *R. heldreichii* Boiss. et Reut. or confused with *R. heckeliana* Tratt. The latter species can be easily identified owing to its small, simply serrate, eglandular leaflets.

Nom. Rhodopi. Papikion Oros (Karlik Dagħ) SE part. Meadows on rocky slopes with patches of *Fagus* forest. 1300 m. 5.08.1984. 41°31'N - 25°18'E. Strid et al. 24231 (UPA); Athos (Rechinger 1943); Nomos Imathia: Mt. Vermion, 10 of Naousa. On the slopes of Tsanaktsi. Stony meadows among small cliffs. 1950 - 2052 m. 20.07.1979. Gustavsson, Franzén 8658 (W); Nomos Pellis: Mt. Pinovon, S-side. 1400 - 1700 m. Rocky limestone outcrops in *Fagus* woodland; 16.08.1979. Strid, Papanicolaou 16562 (C); Makedonia. Prov. Kastoria: in declivibus cacuminis Boutsis supra pagum Gavros. In regione sylvatica. 1300 - 1500 m. 9.08.1977. Phitos, Kamari s.n. (UPA); Timfi. (Goulimis 1960); Macedonia: Caterine, pentes de Olympo. 19.06.1890. Rahman-Nadji s.n. (G); In regione sylvatica m. Olympi Thessaliae. 25.07.1891. Heldreich 2443 (G, W); Between Kalliroi and Kranea SSE of Metsovon. In thickets by the road at the foot of stony slope. 6.06.1988. Boratyński, Browicz, Tomlik, Zieliński 991 (KOR).

8. *R. pulverulenta* M. Bieb., Fl. Taur.-Cauc., 1:399 (1808).

Described from Caucasus, from the vicinity of Narzana. Type in LE! (Herb. Bieberstein).

Syn.: *R. glutinosa* Sibth. et Sm., Fl. Graec. Prodr. 1: 348 (1809); *R. sicula* Tratt., Rosac. Monogr. 2: 86 (1823); *R. thureti* (Burn. et Greml.) Burn. et Greml., Rev. Orient.: 30 (1887); *R. coqueberti* Burn. et Greml. l. c.: 47; *R. sicula* Tratt. var. *coqueberti* (Burn. et Greml.) Christ in Boiss., Fl. Or. Suppl.: 219 (1888); *R. glutinosa* Sibth. et Sm. var. *coqueberti* (Burn. et Greml.) Dingler, Notizbl. Bot. Gart. Berlin 10: 481 (1928); *R. eglantheria* L. var. *ifflandiana* Wagn., Feddes Repert. 38: 283 (1935).

Low shrub 0.1-0.5 (1) m tall, forming patches. Prickles usually mixed with acicles, bristles and stalked glands. Leaflets broadly obovate to roundish, densely

glandular and sticky. Flowers pink or white. Sepals with few lobes, erect, ascending or rarely patent in fruit, usually persistent. Styles more or less pubescent. Orifice usually broad. $2n=35$.

Mediterranean species occurring also on Caucasus, in E Iraq and N Iran. In Greece it is rather common in mountains of continental part of the country, besides it grows on some bigger Aegean islands (Fig. 7).

It is a typical mountain species growing usually above 1400 m elevation, only sporadically coming down to 700(-500) m, as on the island of Thasos. The most elevated stands have been observed at 2250 m in the massif of Taygetos on Peloponnisos and on the slopes of Iti Mt. in the Phtiotis province. It grows on open dry slopes, stony gorges, grassy hillsides, stony alpine meadows etc.

R. pulverulenta is an exceptionally variable species, within which many taxa have been described including several with the rank of species. They are usually distinguished on differences in the armature of stems, size and pubescence of lea-

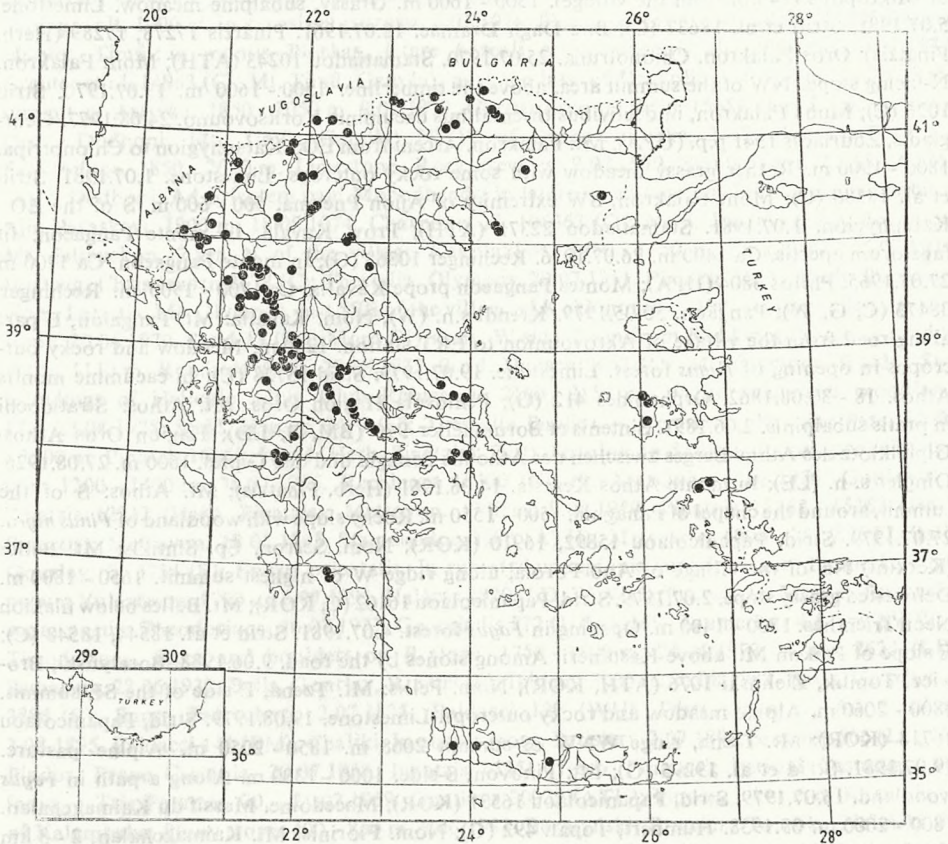


Fig. 7. Distribution of *Rosa pulverulenta* M. Bieb.

flets etc. These characters are usually not correlated and geographical differentiation is rather weak. Strikingly different forms occur often in close proximity to each other. The form described as *R. coqueberti* is particularly noticeable. It is characterized by small leaflets, prickles mixed with acicles, small white flowers, and less pubescent styles. Vegetatively it resembles *R. horrida* with which it is often mistaken, but the latter has glabrous styles, more lobed, caducous sepals, besides it occurs at lower altitudes. The variability of *R. pulverulenta* is so great, that it is scarcely possible to maintain *R. coqueberti* even at subspecies level.

Thrakien. Berg Kallidea. 800 - 900 m. Mt. Boukate Dagh, 10 km N Esimi. 5 - 28.06.1965. Bauer, Spitzenberger 1734 (W); Macedonia orientalis. In monte Boz-Dagh prope Serrae. 1600 m. 15.07.1936. Rechinger 11016 (G, LD); In monte Laila prope Serrae. 1800 m. 12.07.1936. Rechinger 10843 (G); Boz Dagh (Serron). From Moni Prodromou until 1200 m. 19. - 20.06.1955. Goulimis 19999 (ATH); Nom. and Ep. Serron: Mt. Menikion, SW part, c. 5.5 km NE of the village of Inoussa (above the hamlet of Chionochorion), 1350 - 1600 m. Rocky, subalpine meadows. Limestone. 23.07.1979. Strid, Papanicolaou 15791 (C); Ibidem. C. 4.5 km N of the village of Inoussa, just E of ravine called Kazil Tsai Rema, 1300 - 1500 m. Steep, rocky slopes with some deciduous forest. 24.07.1979. Strid et Papanicolaou 15828 (KOR); Nom. Dramas. Mt. Menikion, NNE of the summit, by the end of forest road ascending from the village of Mikropolis (14 km from the village). 1500 - 1600 m. Grassy, subalpine meadow. Limestone. 5.07.1981. Strid et al. 18632 (C); Boz Dagh Dramae. 18.07.1961. Pinatzis 17278, 17289 (Herb. Pinatzis); Oros Falakron. Chionotrana. 25.07.1970. Stamatiadou 10243 (ATH); Mont Falakron, N-facing slopes NW of the summit area, above the timberline. 1500 - 1600 m. 19.07.1970. Strid 1026 (C); Mons Falakron, in declivibus orientalibus cacuminis Koritsovouno. 24.08.1977. Georgiadis, Zouriadis 1341 p.p. (UPA); Mt. Falakron. Ascend from EOS Kataphygon to Chionotripa. 1800 - 1900 m. Rather grassy meadow with some rocky outcrops. Limestone. 1.07.1981. Strid et al. 18380 (C); Mont Falakron, SW extremity of Ajion Pnevma. 500 - 600 m. S of the EOS Kataphygon. 1.07.1981. Stamatiadou 22371 (ATH); Prov. Kavala. In monte Pangaeon. In fagetorum apertis. Ca 1400 m. 26.07.1936. Rechinger 10368 (G); In monte Pangaeon. Ca 1700 m. 27.07.1965. Phitos 3804 (UPA); Montes Pangaeon prope Kavalla. Ca 1700 - 1900 m. Rechinger 38473 (C, G, W); Pangäon. 30.05.1979. Krendl s.n. (W); Nom. Kavalla: Mt. Pangaion, E part along road from the village of Akrovounion to ERT station. 1250 m. Meadow and rocky outcrops in opening of *Fagus* forest. Limestone. 19.07.1979. Strid 15728 (C); In cacumine montis Athos. 18 - 30.08.1862. Orphanides 412 (G); Peninsula Hagion Oros. Mt. Athos: Stratidochi in pratis subalpinis. 2.06.1891. Sintenis et Bornmueller 970 (BM, G, LD); Hagion Oros Athos: Gipfelklotz des Athos-Berges zwischen der Athonos Panagia und den Gipfel. 1600 m. 27.08.1926. Dingler s. n. (LE); In monte Athos Kerasia. 14.06.1961 (Herb. Pinatzis); Mt. Athos: S of the summit, around the chapel of Panaghia. 1500 - 1550 m. Rocky slope with woodland of *Pinus nigra*. 27.07.1979. Strid, Papanicolaou 15892, 16910 (KOR); Nom. Serron. Ep. Sintikis: Mt. Belles (Kerkini) NE of the village of Ano Poroia, along ridge W of highest summit. 1650 - 1800 m. Deforested grassy slope. 2.07.1979. Strid, Papanicolaou 16102 (C, KOR); Mt. Belles below filakion Neon Trienthes. 1300 - 1400 m. Opening in *Fagus* forest. 4.07.1981. Strid et al. 18544, 18548 (C); E slope of Paikon Mt. above Kastaneri. Among stones by the road. 9.06.1988. Boratyński, Browicz, Tomlik, Zieliński 1076 (ATH, KOR); Nom. Pellis: Mt. Tzena, E-side of the SE summit. 1800 - 2060 m. Alpine meadow and rocky outcrops. Limestone. 19.08.1979. Strid, Papanicolaou 16718 (KOR); Mt. Tzena, ridge WNW of summit 2068 m. 1850 - 2050 m. Alpine pasture. 19.07.1981. Strid et al. 19295 (G); Mt. Pinovon, S-side. 1000 - 1300 m. Along a path in *Fagus* woodland. 16.07.1979. Strid, Papanicolaou 16531 (KOR); Macedoine. Massif du Kaimakchalan. 1800 - 2000 m. 09.1938. Humbert, Topali 492 (G); Nom. Florinis. Mt. Kaimakchalan, 2 - 3 km WNW of the filakion at point 1963, meadow by a small stream. 1800 - 1850 m. 23.07.1985. Strid 24896 (G); Mt. Piperitsa, S of the summit by a small road ascending from the village of Kella

1500 m. Dry rocky subalpine pasture. 11.07.1981. Strid et al. 18986 (C); Prov. Florina-Pella. Distr. Florina/Edessa. summit area of Mt. Piperitsa. 7 - 8 km NNW of the village of Ajiros Athanasios. 1770 - 1995 m. 24.07.1985. Stamatiadou 230088 (ATH); Nom. Imathia. Mt. Vermion, 11 km of Naoussa. On the slopes NEE of the summit Tsanaktsi, c. 1950 m. 20.07.1979. Gustavsson, Franzén 8604 (C); Mt. Vermion, 11 km W of Naoussa. between Mavri Petra and Tsanaktsi. Stony meadow. 17 - 21.1979. Gustavsson, Franzén 8493 (LD); Mont Vermion. 29.06.1969. Pinatzis 15353 (Herb. Pinatzis); Mazedonien. N. Pisoderion, auf der bela Voda (Kalo Nero), ca 2000 m. 5.07.1978. Krendl s.n. (W); Prov. Kastoria: ad cacumen montis Boutsis, supra pagum Gayros. 1650 - 1776 m. 9.08.1977. Phitos et Kamari s.n. (UPA); Nom. and Ep. Kastorias. Mt. Grammos, by the hamlet of Grammos c. 7 km NE of the summit 1400 - 1500 m. Smooth deforested grassy slope. 22.08.1979. Strid, Zacharof 16741 (C); In herbidis m. Smolika supra Kerasovo. 14.07.1896. Baldacci 171 (WU); Montes Smolika in declivibus borealibus supra pagum Kerasovo. 1300 - 2000 m. 9.07.1958. Rechinger 20890 (G), 20890 b (C, W); Nom. and Ep. Grevenon. Mt. Smolikas, c. 1 km WSW of Samarina. E slope in *Pinus heldreichii* forest. 1600 - 1800 m. 11.08.1975. Hartwig, Seberg 4022 (C); Mt. Smolikas, 2 - 3 km S of Samarina along the road to Armata. 1275 - 1350 m. 27.08.1975. Hartwig, Seberg 4830 (C); Mt. Smolikas, roadside 2 km S of Samarina, c. 1400 m. 12.07.1976. Hartwig, Baden, Christiansen 5833 (KOR); In herbidis subalpinis Vradeton ad jugo Papingon et Gamila. 12. - 29.07.1896. Baldacci 170 (BM); Supra Papingon. 22.07.1896. Baldacci 170 (WU); Mt. Gamila. 2 - 3.07.1966. Goulimis 19995 (ATH); In Pindo Tymphaeo. 1500 m. Loco dicto Despoti. 21.09.1958. Pinatzis 15361 (Herb. Pinatzis); Drakolimi Gamilac. 18.07.1961. Pinatzis s.n. (Herb. Pinatzis); Montes Tymphi, supra pagum Papingo, alt. 1200 m. in saxosis et petrosis. 6.07.1976. Phitos, Kamari, Tzanudakis 15845 (UPA); Montes Timfi: in montis Ploskas, latere boreali et occidentali, alt. 1900 m. 22.07.1977. Greuter et al. 14963 (C); Mt. Timfi (Gamila), near the lake of Drakolimi, c. 3 km NNE of the summit of Astraka. 1850 - 2050 m. 9.07.1979. Christiansen in Strid 15652 (C); Prov. Joanina. Distr. Dodhoni. Mt. Timfi (Gamila) NWW of Drakolimi lake, 2 - 2.5 km NNE of the EOS refuge. 1850 - 2000 m. Limestone. Rock crevices. 9.07.1979. Stamatiadou 21253 (ATH); Distr. Dodhoni. Ad orientem pagi Monodhendri in latere laevo faucium Vikos infra coenobium Ajia Paraskevi. 1900 m. 18.08.1974. Charpin et al. 106363 (G); Nom. Joaninon. Ep. Pogoniou: Mt. Dhouskon, 2 km N of the village Kakolakkos. 1450 - 1550 m. Limestone. 15.07.1979. Hartwig, Christiansen 7828 (C); Thessalia. Olympos. 20.07.1951. Pinatzis 7014 (Herb. Pinatzis); Nom. Larissis. Mt. Olympos. just SSE of the village of Kokkinoplos. 1100 - 1180 m. Stony grazed slope. 20.06.1970. Strid 13 (W); Mont Olympos. W side: 2 km from Kokkinoplos along road to Petra. 1140 m. Roadside ditch. 29.08.1975. Strid, Hansen 9642 (C); Mt. Olympos. E side. Surroundings of Hellenic Alpin Club Refuge A. 2100 - 2150 m. *Pinus heldreichii* woodland. 17. - 23.08.1975. Strid, Hansen 9477 (C); Thessalia Pindica - Venolesta. Kraniae Pass. 1400 - 1500 m. Pinatzis 16663, 16664 (Herb. Pinatzis); Distr. Joanina. in declivibus siccis prope Metsovon. 1200 - 1400 m. 28.07.1956. Rechinger 18300 (C); Pr. Metsovon. 1.08.1956. Goulimis in Pinatzis 12332 (Herb. Pinatzis); Metsovon. 1200 m. 9.08.1959. Pinatzis 15362 - 15363 (Herb. Pinatzis); Metsovon. 18.05.1965. Stamatiadou 3183 (ATH); Metsovon. 4000'. 26.07.1937. Balls, Gourlay, B. 3754 (E); Epirus orientalis. In rupestribus regionis superioris mt. Tzumerka supra pagum Vulgareion. 1700 m. 8.07.1893. Halácsy 2920 (LD, W, WU); Prov. Arta. Montes Tzumerka, supra pagum Theodoriana. 10.07.1977. Georgiadis 772 (UPA); Mt. Tzumerka. 4.5 km SWW of Theodoriana. Scree and boulders on E slope. 1750 - 1800 m. 24.06.1973. Alden 2629 (LD); Samarina. 28.06.1937. Balls, Gourlay, B. 3409 (E); Ibidem. 5000 ft. 20.08.1937. Balls, Gourlay, B. 3888 (E); Supra Paleochori. 2.07.1895. Baldacci 139 (WU). Distr. Joanina. Ad Syrakon. 3.08.1895. Baldacci 141 (BM); Chaliki. In abietis mont. Peristeri. 2.07.1896. Sintenis 666 (LD, W); Pindos. Prope Castania. 20.07.1959. Pinatzis 15351 (Herb. Pinatzis); Periohi Castanias, Stefanio - Tria Potamia. 20. - 21.07.1959. Goulimis 20039 (ATH); Pindos. 5 km E of Kastania, W of Kalambaka. Stony slope. 400 - 850 m. 6.06.1988. Boratyński, Browicz, Tomlik, Zieliński 998 (ATH, KOR); Mesorachi. 6. - 11.06.1947. Goulimis 19988 (ATH); Trikala. Mt. Tringia, 2.5 km N of Paleochorion, SE sloping scree. 1850 - 1950 m. 4.06.1971. Alden 306 (LD); Trikala. Mt. Peri-

vouli in Mt. Plastaria, 7.5 km S of Chalikion. E slope with steep rocks and meadows. 2100 - 2150 m. 7.07.1973. Alden 3159 (LD); Trikala. Between Mts Katafilii and Soufli, 5.5 km SSW of Athamania. Small and grazed summit with gravel and rocks. C. 1830 m. 30.07.1974. Alden 4687 (LD); Trikala. Mt. Augo, 4.5 km SW of Pirra. 1650 - 1750. 15.06.1973. Alden 2273 (LD); Karditsa. Pindus Dolopicus. Prope Neraida. In abietis. 1200 m. 5.06.1955. Pinatzis 1108 (Herb. Pinatzis); Thessalia bor. occ. In herbis and marginem faetarum mt. Oxya non procul a statione militari Oxya Despot. dicto. 1500 m. 9.07.1893. Halácsy s.n. (WU); Thessalia. Sermeniko: in monte Gionskala. 10.08.1896. Sintenis 1526 (LD); Agrapha: in declivibus montis Ghavellu Pindi supra Sermeniko. 4500 - 5500 ft. Heldreich s.n. (W, WU); Agrapha. In regione superiori Pindi summi montis Karava. 5500 - 6500'. 13.07.1885. Heldreich s.n. (G); Karditsa: Mt. Ailas, 3.5 km NEE of Argidea. Grazed and dry top area. 1650 - 1750 m. 21.06.1971. Alden 815 (LD); Pindos. E foot of Athamanon. Between Gardikion and Agia Paraskevi. C. 900 m. 5.06.1988. Boratyński, Browicz, Tomlik, Zieliński 978 (ATH, KOR); Trikala. Mt. Koziakas, 6 km E of Pertoulion. Dry W-slope. 1750 - 1850 m. 7.08.1974. Alden 4809 (LD); Pertoulion. At the cross-roads to Pirra, NW of Trikala. Stony places. 5.06.1988. Boratyński, Browicz, Tomlik, Zieliński 938 (KOR, ATH); Between Elati and Pertoulion. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Trikala Mt. Koziakas, 5 km NE of Pertoulion. Rocky S-slope NW of E.M.O.T. cabin. 1750 - 1950 m. 7.07.1972. Alden 1470, 1499, (LD); Karditsa: Mt. Mazur, 3 km ESE of Argidea. W slope with small cliffs. Limestone. 1750 - 1800 m. 22.06.1971. Alden 891 (LD); Eurytania: Mt. Pteri, 5 km NNE of Granitsa. Grazed, dry stony ground. 1700 m. 21.07.1972. Alden 1890 (LD); Ossa. Ad cacumen. 23.08.1963. Pinatzis 8419 (Herb. Pinatzis); Kissavos - Ossa. 1700 m. 28.06.1972. Coll. ign. (ATH); 9 km from Rentina towards Fourni, NE of Karpension. Grassy slope. 4.06.1988. Boratyński, Browicz, Tomlik, Zieliński (ATH, KOR); Pindus. Rentina to Maloka. 4800 ft. 5.08.1937. Balls, Gourlay, B. 3796 (E, BM); In monte Veluchi Eurytaniae. (Timfristos). 5000'. 5.08.1857. Heldreich 734 (G); Karpension. Agios Athanasios. 21.06.1951. Goulimis 19988 (ATH); Karpension. Timfristos. 1600 m. 9.06.1968. Stamatiadou 3286 (ATH); Timfristos, 6 km NEE of Karpension. NE-slope. 22.07.1970. Gustavsson 227 (LD); Mt. Timfristos, 5 km NE of Karpension. Meadows and scree. 1700 - 1900 m. 23.06.1975. Gustavsson 6104 (LD); Gerölbett des Karpensionflusses. 1300 m. 26.07.1926. Mattfeld 2539 (B); Aetolia. Between Kalesmenon and Karpension, 8 - 18 km from Karpension. Clearings in *Abies cephalonica* forest. 1100 - 1200 m. 2.06.1988. Boratyński, Browicz, Tomlik, Zieliński 871 (ATH, KOR); Aetolia-Akarnania: Mt. Yiorla, c. 3 km W of Kato Lampirion. Scree on a slope facing E. 1750 - 1900 m. 18.07.1973. Gustavsson 3345 (LD); Ibidem 27.07.1973. Gustavsson 3334 (LD); Ibidem. 18.06.1975. Gustavsson 5891 (LD); Eurytania. Mons Chelidoniae. 1500 m. 28.06.1959. Pinatzis 15356, 15387 (Herb. Pinatzis); Mt. Chelidonia, c. 3 km W of Mikro Chorio. 1725 - 1900 m. 4.07.1973. Gustavsson 2400 (LD); Eurytania. Mt. Oxya, 6.5 km SSW of Gardikion. Sandstone cliffs and gravel. 1800 - 1920 m. 27.06.1975. Gustavsson 6323 (LD); Nom. Phtiothidis. Mt. Oxya, 5 km SSW of Gardikion. C. 1400 m. 16.06.1985. Gustavsson 9539, 9540 (C); Prov. Eurytania.: in monte Kaliakouda. 07.1960. Phitos. 4388 (UPA); Eurytania: Mt. Kaliakouda, c. 4 km SE of Megalo Chorio. E-facing slope with scree. C. 1700 m. 10.07.1973. Gustavsson 2741, 2747, 2757 (LD); Mt. Korax Aetoliae. 08.1896. Coll. ign. (WU); Montes Vardousia. 28.06.1959. Pinatzis 15352 (Herb. Pinatzis); Phocis: Mt. Vardousia, 3.5 km W of Ath. Diakos. N-facing cliffs at Kokkinias, 1850 - 1950 m. 6.07.1972. Gustavsson 1339 (LD); Ibidem. ca 7 km W of Athanasios Diakos. C. 1975 m. 9.08.1973. Gustavsson 3592 (LD); Prov. Phokis. Mons Vardousia, in declivibus orientalibus cacumine Koryphi 1800 - 1850 m. 10.07.1974. Phitos, Kamari, Georgiadis, Tzanudakis 15187 (UPA); Phocis: Mt. Vardousia, 3.5 km NEE of Dafnos. Scree on E-facing slope. 1850 - 2000 m. 23.07.1973. Gustavsson 3247, 3286 (LD); Phtiotis. Mt. Oeta. Above Ipati. 9.06.1937. Balls, Gourlay B. 3167 (BM, E); Mt. Oeta supra Pavliani. 1300 m. 21.06.1959. Pinatzis 15354 (Herb. Pinatzis); Mt. Iti, 6.5 km SE-SSE of Ipati. W slope of Koriti. 2050 - 2100 m. 24.07.1972. Gustavsson 1908 (LD); Mt. Iti, 4 - 4.5 km E-SEE of Neochorion. Scree and gravel on a slope facing SW. 2000 - 2050 m. 4.07.1975. Gustavsson 6681 (LD); Mt. Iti, 6 km SE-SSE of Ipati. Limestone cliffs and ledges facing N. 1850 - 1950 m. 1.07.1975. Gustavsson 6532 (LD); Mt. Iti, 6.5 km SSE of Ipati. Dry meadows

and sand. 1.07.1975. Gustavsson 6742 p.p. (LD); Mt. Oeta — supra Pavliani. 1200 m. 9.08.1957. Pinatzis 13668 (Herb. Pinatzis); Mt. Iti, c. 8 km NW of Pavliani. Stony SE - E-facing slope dominated by *Juniperus*. 2000 - 2100 m. 2.07.1975. Gustavsson 6594 (LD); Mt. Iti, 3 km SW of Pavliani. 1250 - 1300 m. 5.06.1985. Gustavsson 9084 (C); Phocis: Mt. Giona, 6 km NE - NNE of Lidorikion. Stony meadow on a slope facing E. 1750 - 1900 m. 27.06.1972. Gustavsson 945 (LD); Mt. Giona, 7 km NW of Prosilion. Scree and gravel on slopes facing S and W. 2050 - 2100 m. 13.07.1975. Gustavsson 6783 (LD); Mt. Kiona, prope fontem Platylotis. 1400 m. 30.08.1957. Pinatzis 13367 (Herb. Pinatzis); Doris. In lapidosis reg. alpinae Mt. Kiona. Loco *Plathyliotis* dicto. 6000 ft. 11.07.1888. Halácsy 926 (WU); Amfissa. Giona. 1000 m. 28. - 31.08.1957. Goulimis 20001 (ATH); Mt. Kokkinari, 6 km SWW of Amfissa. Limestone cliffs and screes around the summit. 1850 - 1910. 15.06.1975. Gustavsson 5705 p.p. (LD); In monte Parnasso. In reg. alpina. 11.08.1852. Heldreich 2681 (ATHU, G); In m. Parnassi reg. alpina. 08.1855. Guicciardi 292 (E, LD), 2678 (G); In regione superiori Parnassi prope Kedrokastano rara. 9.07.1854. Orphanides 423 (ATHU, E, WU); In regione alpina Parnassi 1750 m. 2.07.1926. Bornmueller 585 (B), 587 (B, W); Prov. Viotia, distr. Levadhia: In parte austro-occidentali montis Parnassos, in ditone Vlakolakkos ad orientem jugi Stavros. 1100 - 1200 m. 15.06.1963. Greuter 5953 (Herb. Greuter); Parnassos, loco Carcaria, in rupestribus reg. superiori 28.06.1964. Pinatzis 1529 (Herb. Pinatzis); Mt. Parnassos, 7 km NE - NEE of Arachova. 6.07.1975. Gustavsson 6716 (LD); Mt. Parnassos. 4 km SWW of Titorea. Stony slopes facing NE. Ca 1800 m. 21.07.1975. Gustavsson 7114 (LD); Prov. Sterea. Parnass: N Arachova. Ca 1700 m. Kalk. 14. - 29.06.1979. Polatschek s.n. (W); Mt. Parnassos. W part above Arachova, near Athens Ski Club Hut, 1700 - 1750 m. Rocky limestone outcrops at timberline. 24.06.1979. Strid 15035 (C); Mt. Parnassos, SE part c. 5 km NEE of Arachova. 1600 - 1700 m. 25.08.1982. Hartwig, Franzén, Christiansen 10430 (G); Sterea Ellas. Neraïdolakkona. 1700 m. 28.08.1960. (Herb. Pinatzis); Montes Helikon. In saxosis calc. mont. Paläowuni. Ca 1500 m. 19.07.1932. Rechinger 2736 (BM); Nomos Beotia: Helikon Oros. Paliövouna, 2 - 3 km SW of Koukoura. Stony slope. 1600 - 1748 m. Limestone rock crevices. 6. - 9.07.1979. Gustavsson, Franzén 8288 (LD); Attica. In reg. abietina m. Cithaeron. 7. - 12.06.1911. Tunta 1340 (WU); Cithaeron. 1200 m. 15.06.1930. Pinatzis 1530 (Herb. Pinatzis); Parnes. 3.06.1951. Pinatzis 7018 (Herb. Pinatzis); Attica. In regione abietina m. Parnethi l.d. Metochi. 12 - 25.06.1911. Tunta 1337 (WU); In monte Pentelico. 3 - 16.06.1914. Tunta s.n. (Thessaloniki); In regione abietina M. Gerania Megarae. 9 - 22.05.1911. Tunta 1332 (WU); Peloponnisos. Prov. Achaia. Mons Panachaikon. In declivibus borealibus supra pagum Kastritsion. 1100 m. 13.07.1970. Phitos 10861 (UPA); Panachaikon. Pirgos. 19 - 23.06.1949. Goulimis 19985 (ATH); Mt. Olenos. 6000'. 08.1848. Heldreich s.n. (LE); Olenos (*Erymanthos*). 1880 m. 1926. Bornmueller 558, 588 b, 588 c (B); Am *Erymanthos* (*Olenos*) oberhalb Hag. Vlasis. 1500 - 1600 m. 15.06.1926. Mattfeld 1784 b (B); Montes *Erymanthos*, in declivibus borealibus cacuminis *Erymanthos*. 1400 m. In saxosis calc. 14.06.1967. Phitos 6044 (UPA); Montes *Erymanthos*. Supra pagum Kalousion. 1200 m. 27.06.1967. Phitos 7049 (UPA); Montes *Erymanthos*. In declivibus orientalibus cacuminis *Olenos*. 1750 m. 25.06.1968. Phitos 8411, 8417, 8418, 8420, 8456. (UPA); Huate region du Taygeti de la Varvara (Au Kali Kochoni a la Choupata). 24.07.1844. Boiss. (G); Taygetos. Ad Koupata, Kakochori. 07.1844. Heldreich s.n. (BM, G); Taygetos. Hagios Elias. 14.07.1898. Zahn 285 (WU); Laconia. In monte Taygeti regione alpina ad summum cacumen Hagios Elias. 7.07.1899. Zahn s.n. (ATHU, BM, G, E); Prov. Lakonia/Messinia. Montes Taygetos, in declivibus cacuminis. 1800 m. 1.07.1966. Phitos 5247, 5242 (UPA); Prov. Lakonia. Montes Taygetos in ditone Megala Zonaria. 1800 - 2000 m. In rupestribus calcareis. 22.07.1978. Tzanudakis, Georgiadis 4431 (UPA); Montes Taygetos. Supra refugium EOS, ad cacumen Profitis Ilias. 2200 - 2250. 22.07.1978. Tzanudakis, Georgiadis 4362 p.p. (UPA); Aegean islands. Insula Samothrake. In monte Phaengari in saxosis. 1500 m. 18 - 20.06.1936. Rechinger 9854 (G); In silvis *Pini brutiae* Insulae Thasos, supra pagum Kastro. Ca 500 m. 25.08.1941. Stojanov, Kitanov 38813 (SO); In insula Euboea. Pixaria. Orphanides s.n. (W); Euboea. Dirphys. 1930. Pinatzis s.n. (Herb. Pinatzis); Insel Euboea. Mons Dirphys. in loco Liri. 1300 m. In saxosis calc. 11.06.1965. Phitos 3933 (UPA); Euboea. N slope of Skotini Mt. above

Metochion. Along the path towards the top, in *Abies cephalonica* forest. 600 m. 29.08.1986. Awzan. Boratyński, Browicz, Zieliński 345, 365 (ATH, KOR); E slope of Dirphys. W of Stropones. the route from the hospice to the summit. 31.08.1986. Awzan, Boratyński, Browicz, Zieliński 382 (ATH, KOR); In insula Chios supra Spartounta montis Pellinaei. 4000 ft. 7. - 29.04.1856. Orphanides s.n. (ATHU); Ins. Chios. In pinetis saxosis montis Plaka supra pagum Karies. 900 m. 12. - 14.1934. Rechinger 5383 (G); Chios. N slopes of Pelinaion Mt. Open rocky places. 600 - 800 m. 14.05.1985. Boratyński, Browicz, Zieliński 58, 63 (ATH, KOR); Ibidem. Above Kampia. 24.05.1985. Boratyński, Browicz, Zieliński 152 (ATH, KOR); Chios. S slopes of Oros Mt. above Kardamila. 750 m. 28.05.1985. Boratyński, Browicz, Zieliński 152 (ATH, KOR); Samos. In regione media montis Kerki. 6.06.1886. Forsyth-Major 379 (G); Samos. Montes Kerkeutes. 3.06.1955. Goulimis in Pinatzis 11080 (Herb. Pinatzis); Samos. Profitis Ilias. 1. - 7.06.1955. Goulimis 19917 (ATH); Samos Mt. Kerki. E of the peak. 100 - 1450 m. 2.08.1960. Runemark, Nordestam 16923 (LD); Crete. In regione superiori montis Idae (nunc Psiloviti). 5000 ft. 15.08.1870. Heldreich s.n. (ATHU); M. Ida. In marmor prope Kareikos. 23.06.1883. Sintenis 480 (LE); In saxosis et rupestribus m. Psiloti (Ida). Ad cacumen specum Jovis. 9.06.1889. Baldacci s.n. (BM), 69 (W, WU); Creta. In rupestribus ad l.d. Mile. H. Pneuma (Asprovouna). 4.07.1893. Baldacci 118 (W, WU); Creta. distr. Sphakia. Levka Ori. In saxosis calc. mont. Malotira prope casas pastorales Kalokitass. Ca 1700 m. 17.06.1942. Rechinger 13896 (G, W); Ep. Selinos/Sfakia: N-Seite des Gipfels Strifomadi swl. des Xyloskala - Passes. 1750 - 1800 m. 26.06.1962. Greuter S 4784 (Herb. Greuter); Ep. Selinos/Sfakia. Am Gratzung Pachnes nordl. des Xyloskala - Passes. 1000 m. 8.07.1961. Greuter S 3812 (Herb. Greuter); Prov. Hania. Distr. Sfakia. Gingilos top from Limnosli spring. 1500 - 1750 m. Stamatiadou, Georgiadou 19839 (ATH).

9. *R. horrida* Fischer, Cat. Jard. Gorenk.: 66 (1812).

Described from Crimea.

Syn.: *R. ferox* Bieb., Cat. Pl. Rar. Ros. 1: t. 37 (1810) non Lawrance 1799; *R. turcica* Rouy, III. Pl. Eur. Rar. 6: 45 (1896).

Low compact shrub up to 1 (-1.5) m tall. Prickles hooked, uniform or mixed with acicles. Leaflets small, roundish, glandular at least beneath. Flowers small, white. Styles glabrous. Orifice narrow. Sepals with many lobes, deflexed after flowering, early deciduous. $2n=35$.

A hyrcanian species growing also in SE part of Balkan Peninsula. In Greece it is known from few localities in Makedonia, Thraki and from east-Aegean islands Samos and Mytilini (Fig. 8). It usually occurs at lower elevations between 400 and 1000 (-1500) m. The highest located populations are known from Olympos in Thessaly. It grows in open sunny places or among loose thickets, on rocky hillsides, on stony pastures, in clearings of oak woods etc.

R. horrida is a very distinct species varying mainly in the armature of stems. Forms with uniform, large prickles are usually identified as *R. micrantha* Sm., which does not occur in Greece and neighbouring countries (see comment under *R. pulverulenta*).

Thracia occid. Montes Rhodope prope Xanthi. Dere Kolo. 13.06.1936. Rechinger 9496 (G); Bei Schabhane zw. Gumuldschina u. Feredschik. 500 - 600 m. 2.05.1876. Dingler 396 (B); Makedonia. Pantokerasia N of Lachanas. Grassy slope with *Pteridium aquilinum*. 10.06.1988. Bora-

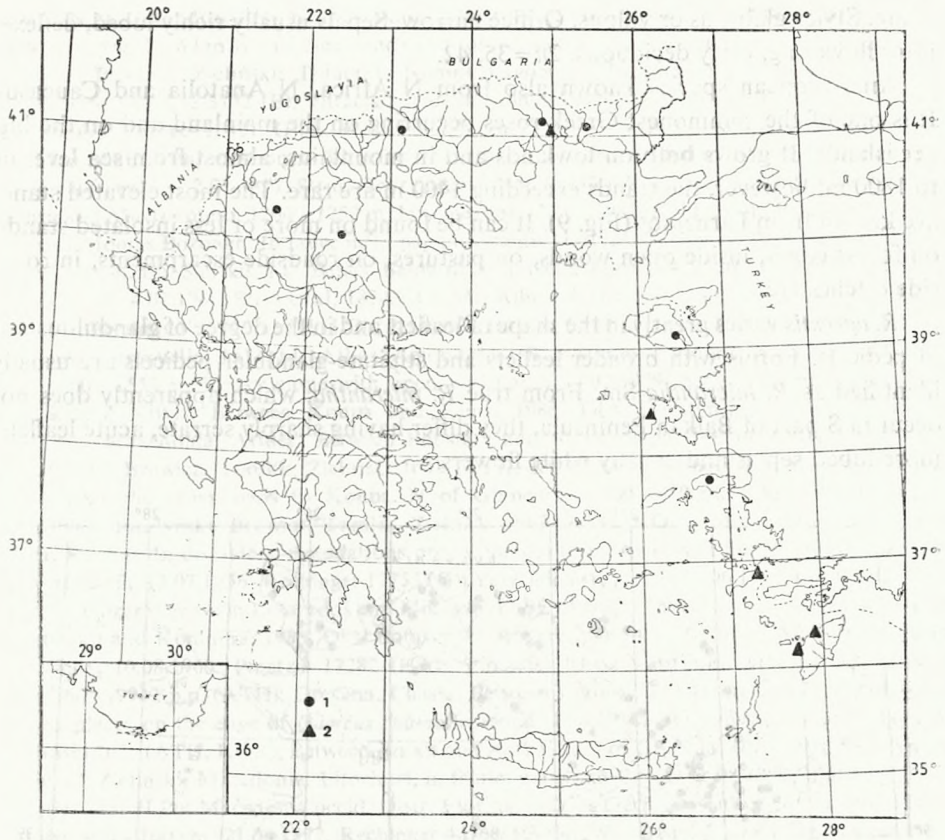


Fig. 8. Distribution of *Rosa horrida* Fischer (1) and *R. phoenicia* Boiss. (2)

tyński, Browicz, Tomlik, Zieliński 1110 (KOR); Macedonia occidentalis. Distr. Florina. Hag. Germanos ad orientem isthmi lacum Presba. 900 - 1000 m. 21.06.1972. Rechinger 44963 (C, W); Thessaly. Ep. Elassonos. Mt. Olympus, S side between the village of Sikaminea and Kriavrissi. C. 1050 m. Grazed macchie dominated by *Quercus coccifera*. 23.06.1976. Strid, Gustavsson 11679 (C, KOR); Insula Mytilini (Lesbos). In monte Olympo ad pagum Ajassos. 400 - 500 m. 19.05?. Rechinger 5547 (W); Samos island. Path to Vromathiana Monastery. 900 m. Gathorne-Hardy 535 (Nilsson 1972).

10. *R. agrestis* Savi. Fl. Pis. 1: 475 (1798).

Described from Italy.

Syn.: *R. hungarica* A. Kerner. Oesterr. Bot. Zeitschr.: 234 (1869); *R. gizellae* Borbás, Prim. Monogr. Ros. Hung. 479 (1880); *R. pouzinii* Tratt. var. *graeca* Christ in Boiss., Fl. Or. Suppl.: 214 (1888); *R. arcadiensis* Halácsy, Denkschr. Akad. Wiss. Math.-Nat. Lk. (Wien) 61: 503 (1894); ? *R. leucadia* H. Braun, Verh. Zool.-Bot. Ges. Wien 35: 126 (1885); *R. micrantha* auct. fl. graec. non Borrer ex Smith in Sowerby, Engl. Bot. 35: t. 2490 (1812).

An erect, dense shrub 0.5 - 2 (- 2.5) m tall. Prickles curved or hooked, unform. Leaflets elliptic to obovate, acute, sharply serrate, glandular below, Flowers small,

white. Styles glabrous or villous. Orifice narrow. Sepals usually richly lobed, deflexed after flowering, early deciduous. $2n=35, 42$.

An European species known also from N Africa, N Anatolia and Caucasus. It is one of the commonest Greek roses occurring on the mainland and on the bigger islands. It grows both on lowlands and in mountains, almost from sea level up to 1800 m, however, the stands exceeding 1400 m are rare. The most elevated stands are known from Parnassos (Fig. 9). It can be found on more or less insolated stands, on forest edges, inside open woods, on pastures, on roadside escarpments, in roadside ditches etc.

R. agrestis varies greatly in the shape of leaflets and in the degree of glandulousness of pedicels. Forms with broader leaflets and stipitate-glandular pedicels are usually identified as *R. micrantha* Sm. From true *R. micrantha*, which apparently does not occur in S part of Balkan Peninsula, they differ having sharply serrate, acute leaflets, more lobed sepals and usually white flowers.

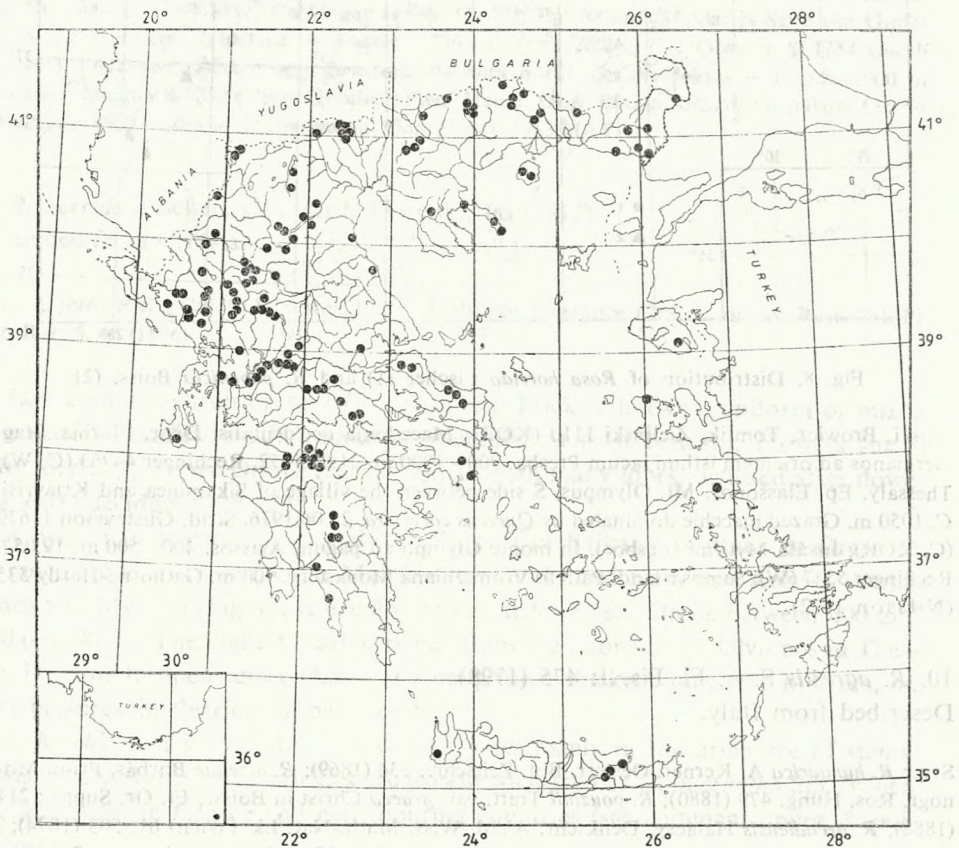


Fig. 9. Distribution of *Rosa agrestis* Savi

Thrakien. Nomos Evros. Kouvocono. Umgebung des Steinbruches 4 km WNW Didymotichon. 5. - 28.06.1965. Bauer, Spitzenberger 1458 (W); Thrakien. Berg. Kalidhea. 800 - 900 m. In Boukate Dagh 10 km N of Esimi. 5. - 28.06.1965. Bauer, Spitzenberger 1739 (W); Thraki. 3 - 4 km E of

Nipsa (N of Alexandroupolis); Near Jerakas, by the road to Stavrupolis; W of Makri, ca 2.5 km W of Mesimvria; 5 - 6 km NE of Nea Sanda (NE of Sapaie); 2 - 3 km W of Pherai. 1979. Obs. Boratyński, Browicz, Zieliński; Thracien. Nomos Komotini. Zwischen Putwiran und Hamidli. 30.06.1926. Mattfeld 3132 (B); Thracia occid. In monte Karlik Dagħ prope Komotini. 1000 m. 2.06.1936. Rechinger 10431 (G); E. Makedonia. Nom. Dramas. By the military post of Gydotypos, c. 22 km NNE of Paranestion, c. 3 km from the Bulgarian border. 1500 m. Meadows in openings of mixed forest. 1 - 2.08.1977. Strid, Georgiadou 13656 (KOR); Nomos Dramas. Saddle between Boura and Mavrovouno. 1200 - 1250 m. Dry meadow. 22.07.1981. Strid et al. 19329 (C); Distr. Drama. Montes Bozdagh. In fauce infra pagum Grantis (Jurcic). Ca 300 m. Rechinger 1934 (G); Nom. Serron. Ep. Sintikis. Mt. Belles. Below filakion Neon Trienthes. 1300 - 1400 m. Opening in *Fagus* forest. 4.07.1981. Strid et al. 18543 (C); Mt. Athos. Stratidochi. In pratis subalpinis. 2.07.? Sintenis, Bornmueller 970 a, 971 (LD); Peninsula Hagion Oros. Kerasia. In silvaticis. 17.06.1891. Sintenis, Bornmueller 1553; Mt. Athos (Agion Oros). S. of summit. Around the chapel of Panaghia. 1500 - 1550 m. Rocky slope with open woodland. 27.07.1979. Strid, Papanicolaou 15894 (C, KOR); Kilkis. Between Koupa and Fanos 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Makedonia. Aridea. Between Foustani and Aetochorion, NE of Aridea. 8.06.1988. Boratyński, Browicz, Tomlik, Zieliński 1042 (ATH, KOR); Aridea. Between Archangelos and Skra, near the cross-roads to Koupa. N of Gumenissa. 800 - 850 m. Edge of oak wood. 9.06.1988. Boratyński, Browicz, Tomlik, Zieliński 1969 (ATH, KOR); Macedonia occidentalis. Distr. Kozani. In declivibus denudatibus prope pontem trans Aliakmon flumen inter Kozani et Servia. 400 m. 13.07.1956. Rechinger 17753 (G); Velvendos (Kozani). 15.06.1960. Goulimis 20012 (ATH); Kozani: between Lazarados and Mikrovalto; SE of Begoritis Lake near Farangi; Between Anatoliko and Komnina. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Macedonia austr. Vourinos. 10.08.1960. Pinatzis 17282 (Herb. Pinatzis); Oros Vourinon. 1150 - 1250 m. 1960. Goulimis 19942 p.p. (ATH); Grevena. Chasia. Between Fotinon and Deskati, NE of Kalabaka. Sunny places on the edge of *Quercus pubescens* wood. 7.06.1988. Boratyński, Browicz, Tomlik, Zieliński 1013 (ATH, KOR); Between Anixis and Anthakia, S of Grevena. 1980. Obs. Boratyński, Browicz, Zieliński; Macedonia. Litochori, in frutic. marit. ad Plaka. 31.08.1891. Sintenis, Bornmueller 1255 (LD); Macedonia occid. Distr. Florina. Hagios Germanos ad orientem isthmi lacus Presba. 900 - 1000 m. 21.06.1972. Rechinger 44968 (C, G, W); Distr. Florina. In isthmo lacus Presba. 780 m. 21.06.1972. Rechinger 44943 (W), 44943 p.p. (C); Nom. and Ep. Kastorias, Mt. Grammos, by the hamlet of Grammos c. 7 km NE of the summit. 1400 - 1500 m. Smooth deforested grassy slope. 22.08.1979. Strid, Zacharof 16746 (C); Epirus. In monte Smolikas, ca 1500 m. 13.07.1961. Phitos 4409 (UPA); Ibidem. Pinatzis 17283 (Herb. Pinatzis); Montes Timphi, in declivibus meridionalibus supra pagum Skammeli, ca 1200 - 1500 m. 17.07.1958. Rechinger 21463 (G, W); Epirus. In monte Gamila. 10.07.1961. Phitos 4253 (UPA); Prov. Joanina. In faucibus Vikos. 500 - 600 m. 13.06.1972. Phitos 11665 p.p. (UPA); Between Paramythia and Petusion, c. 4 - 5 km W of Paramythia. C. 450 m. (S of Igumenitsa). 1980. Obs. Boratyński, Browicz, Zieliński; Distr. Joanina. Ad Berkowitza, sub m. Olyciko. 16.06.1896. Baldacci 25 (WU); Distr. Joanina. Ad Syracon. 3.08.1895. Baldacci 134 (BM), 137 (WU); Epirus orient. In regione abietina Tsumerka supra pagum Theodoriano. 1500. Solo calc., 9.07.1893. Halácsy s.n. (WU); Between Paleochorion and Drosopigi (the way from Arta). 600 m. 1981. Obs. Boratyński, Browicz, Zieliński; Thessalia. Chaliki. in abietis ad mont. Peristeri. 2.07.1896. Sintenis 666 bis (LD); Thessalia. Malakasi, in vinetis. 18.06.1896. Sintenis 579 (LD, W), 579 b (B); Thessalia. Kalabaka, près Muzgara. 22.06.1957. Pinatzis 13383 (Herb. Pinatzis); Kalabaka, inter - Kastreiki et Daleuri-Chan. 1.07.1896. Sintenis 498 (LD, WU); Pindos. Trikala. Pertoulion. At the cross-roads to Pirra, NW of Trikala. Stony places in the open *Abies cephalonica* forest. 5.06.1988. Boratyński, Browicz, Tomlik, Zieliński 937 (ATH, KOR); Trikala. Between Gardikion and Agia Paraskevi. 1988 obs. Boratyński, Browicz, Tomlik, Zieliński; Ossa. reg. silv. 3500' pr. Spilaea. 7.08.1882. Heldreich 77 (LE, WU); Aetolia: Agios Vlasios; Between Agios Vlasios and Chuni; Chuni: Kalesmenon. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Between Chuni and the lake of Kremaston NE of Agrinion. Stony wayside in the *Abies cephalonica* forest. 2.06.1988. Boratyński, Browicz, Tomlik, Zieliński 862 (ATH, KOR); Between Skoutesiada and Frangoskala NE of Agrinion.

Wayside thickets. 2.06.1988. Boratyński, Browicz, Tomlik, Zieliński 847 (ATH, KOR); Evritania, 9 km from Rendina towards Fourná. Edge of *Abies cephalonica* forest. 3.06.1988. Boratyński, Browicz, Tomlik, Zieliński 923 (ATH, KOR); Carpenis in monte Tymphristos. 21.10.1962. Pinatzis 18599 (Herb. Pinatzis); Karpenision. Stony pasture above the town. 2.06.1988. Boratyński, Browicz, Tomlik, Zieliński 884 (ATH, KOR); 14 km from Karpenision towards Lamia. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Eurytanien. von Karpenision zu Buchen-Wäldern des Oxya Gebirges. Ca 1650 m. 5.08.1926. Mattfeld 2604 (B); Sterea Ellas. Vardoussia. 28.07.1959. Pinatzis 15365 (Herb. Pinatzis); Mons Oeta supra Pavliani. 21.06.1959. Pinatzis 13539, 13360 (Herb. Pinatzis); Doris. Ad radices montis Kionae. Xeropotamo dicto. Heldreich s.n. (WU); Phokis. Parnass. 1600 m. 2.07.1926. Mattfeld 2063 (B); In regione alpina Parnassi. 1600 - 1700 m. 2.10.1926. Bornmueller 589 (B); Parnassos. 21. - 26.06.1946. Goulimis 19949 (ATH); Parnassos. Arachova. 27.06.1956. Pinatzis 12334 (Herb. Pinatzis); Mt. Parnassos: ad coenobium Jerusalem. 100 m. 4.08.1956. Pinatzis 13265 (Herb. Pinatzis); Attica. In regione abietina superiori m. Parnethis. 4000'. 30.05.1895. Heldreich 1234 (G, LD, WU); In regione abietina montis Parnethis pr. Koromilla. 17. - 30.05.1909. Tunta 1455, 1459 (WU); Parnes. Hagia Triada. 9.10.1954. Pinatzis 11053 (Herb. Pinatzis); Parnis. Slope by the way to Agia Trias. *Abies cephalonica* forest. 1979. Obs. Boratyński, Browicz, Zieliński; Pentelicon. 5.06.1932. Pinatzis 1534 (Herb. Pinatzis) Peloponnisos. Achaia. Mons Clocos prope pagum Fteri. 5.10.1958. Pinatzis 15358 (Herb. Pinatzis); Achaia. In sepibus prope pagum Lopesi. 300 m. 11.06.1893. Halácsy s.n. (LD, PR, WU); Achaia. Ca 20 km S of Kalavryta. 4. - 8.06.1975. Polunin 12824 (UPA); Arkadia. In saxosis calcareis apricis mt. Kastro prope pagum Kalavryta ad radices m. Chelmos. 800 m. 15.06.1893. Halácsy s.n. (WU); Peloponnisos. The route Kalavryta - Patras. Between Krionero and the cross-roads to Kato Vlasia. Wayside thickets. 19.05.1988. Boratyński, Browicz, Tomlik, Zieliński 651 (ATH, KOR); In rupetribus calcareis vallis fluvium Voreikos prope coenobium Megaspilaeo. 700 m. 16.06.1893. Halácsy s.n. (WU); Between Megaspilaeon and Kalavryta, Stony stream valley. 18.05.1988. Boratyński, Browicz, Tomlik, Zieliński 629 (ATH, KOR); Montes Erymanthos, supra pagum Kalousion. Ca. 1000 m. 27.06.1967. Phitos 7008 (UPA); Mons Khelmo, in vallis Stygis. 13.08.1906. Maire, Petitmengin 188 (WU); In monte Chelmos supra pagum Peristera ad Stygem. 30.09.1962. Pinatzis 18606 (Herb. Pinatzis); Arkhadia. S of Tripolis. 29. - 30.05.1975. Polunin 12656 (UPA); Sipylus supra Manissa. 800 - 900 m. 10.06.1906. Bornmueller 9840 (B); Ionian Islands: Leucas (Santa Maura). 15.05.1878. Spitzenberger s.n. (WU); Insula Lefkas. Between Agios Petros and Hortata. 1981. Obs. Boratyński, Browicz, Zieliński; Kefalinia. Mt. Enos, along the road to ERT station WNW of the summit. 1150 - 1400 m. *Abies cephalonica* forest with meadow on opening. Limestone. 21.06.1981. Strid et al. 18097 (C); Aegean Islands: Insula Thasos. Theologos. 31.05.1989. Sintenis 594 (G); Thasos. Limenas. 29.05.1891. Sintenis, Bornmueller 589, 589 b p.p. (LD); Thasos. Between Mikro Prinos and Agios Pandeileimon, just over Mik. Prinos. 1979. Obs. Boratyński, Browicz, Zieliński; Euboea. Monte Delphus. 2.06.1876. Pichler s.n. (WU); Euboea, supra Steni. 20.05.1956. Pinatzis 12333 (Herb. Pinatzis); Euboea. Seta ca 20 km N of Amaryndos. Wayside thickets on E slopes of Zygos Mt. 400 m. 22.08.1986. Awzan, Boratyński, Browicz, Zieliński 244, 245 (ATH, KOR); Between the pass 950 m and Ag. Sophia. 1986. Obs. Awzan, Boratyński, Browicz, Zieliński; SE slope of Xiron Mt. above Kurkuli. 5.09.1986. Awzan, Boratyński, Browicz, Zieliński 483 (ATH, KOR); The slopes of Telethron Mt. 1986. Obs. Awzan, Boratyński, Browicz, Zieliński; Mytilini. In monte Olympos ad pagum Ajassos. In castanetis. Ca 400 - 700 m. 19.05.1934. Rechinger 5577 (G, WU); Chios Island. Kampia, near the road to Spartounta. 14.05.1985. Boratyński, Browicz, Zieliński 76 (ATH, KOR); Between Kampia and Agios Georgios 1985. Obs. Boratyński, Browicz, Zieliński; N slopes of Pelinaion. 14.05.1985. Boratyński, Browicz, Zieliński 56 (ATH, KOR); Insula Samos. In monte Ambelos. In pinetis. Ca 800 - 1000 m. 16. - 23.06.1932. Rechinger 2148 (G); Creta. Kaminaki (Lasithiou): Alp Vathia. 1100 m. 2.06.1963. Creutzburg E 3639 (Hb. Greuter); Mirambello. NE slopes of Mt. Lazaros above the Katharo plain. 35°08'N/25°33'30"E. 1100 m. Heavily grazed phrygana. Risse 1193 (B); Lasithi/Mirambello: gorge between Mesa Lasithaki and the Katharo plain. 35°09'N - 25°31'30"E. 950 m. Greuter, Mathäs, Risse 19806 (B);

Hybrids

R. agrestis × *canina*

Thessalia. Kalampaka. 24.05.1896. Sintenis 431 bis (WU); Prov. Achaia. In ditone pagi Halkianika. Ca 1000 m. 30.07.1972. Katsampa 2076 (UPA);

R. agrestis × *pulverulenta*

Thessalia. Chaliki in abietis m. Peristeri. 2.06.1896. Sintenis 666 bis (WU); Prov. Joanina. Montes Tymphi, supra pagum Papingo. 1300 - 1350 m. 6.07.1976. Phitos, Kamari, Tzanoudakis 15689 (UPA); Aetolia-Akarnania: Mt. Yiorla, 3 km W-WSW of Lampirion. 1700 m. 19.06.1975. Gustavsson 5985 (LD); Evritania: Mt. Oxya, 6.5 km SSW of Gardikion. Sandstone cliffs and gravel. 1800 - 1920 m. 27.06.1975. Gustavsson 6292, 6307 (LD); Attica, in regione abietina superiori m. Parnethis. 4000 ft. 30.05.1895. Coll. ign. (W); Nom. Beotia: Helikon Oros, Paliouvouna 2 - 3 km SW of Kokoura. 1600 - 1748. 1979. Gustavsson, Franzen 8287 (LD).

11. *R. tomentosa* Sm., Fl. Brit. 2: 539 (1800).

Described from England.

Shrub 1 - 2 (- 3) m tall with straight or arching stems. Prickles uniform, straight or slightly curved. Leaflets elliptic to obovate, ± glaucous, pubescent on both surfaces, glandular or smooth. Flowers pink. Pedicels stipitate-glandular. Styles glabrous to villous. Orifice narrow. Sepals lobed, deciduous, rarely subpersistent in fruit. $2n=35$.

A central-European species, erroneously recorded from Anatolia and Caucasus. In Greece it occurs almost exclusively in the northern part of the country, where it is scattered in the northern Pindos, Makedonia and Thraki (Fig. 10). It has been collected between 300 and 1400 m elevation. This latter elevation it attains on Oxya Mt. It grows usually in loose thickets, on edges of forests, in woodland clearings, on edges of pastures, seldom in maquis.

R. tomentosa is rather constant in Greece and easy to distinguish from the other Greek roses. It may be confused, however, with *R. canina* with pubescent leaves and with shady forms of *R. heckeliana*. The former has usually smooth pedicels and more curved prickles, while the latter densely tomentose styles, broad orifice and roundish leaflets.

Makedonia. Agios Markos, at the foot of Krusia Mt. Stony-clayey slope. 10.06.1988. Boratyński, Browicz, Tomlik, Zieliński 1101 (ATH, KOR); Prov. Joanina. In ditone oppidi Metsovon. 07.1960. Phitos 4431 (UPA); Pindos. Near Agia Paraskevi between Gardikion and Kalliroi. By the way in *Abies cephalonica* forest. 6.06.1988. Boratyński, Browicz, Tomlik, Zieliński 985 (ATH, KOR); Thessalia Pindica. Prope pagum Doliana. 1100 - 1200 m. 16.07.1960. Pinatzis 16665 (Herb. Pinatzis); Prope Castania Pindi. Ad sepes. 4.06.1960. Pinatzis 16332 (Herb. Pinatzis); Mt. Olympos. N-side. Lower part of the Papa Roma ravine. 1.2 - 2 km from the chapel of Agia Kori. 500 - 580 m. Mixture of macchia and *Pinus nigra* woodland. 8.08.1975. Strid, Hansen 9132 (C); Legi in regione inferiori Olympi Thessaliae prope Mavros-longos. 21.07 - 2.08.1857. Orphani-

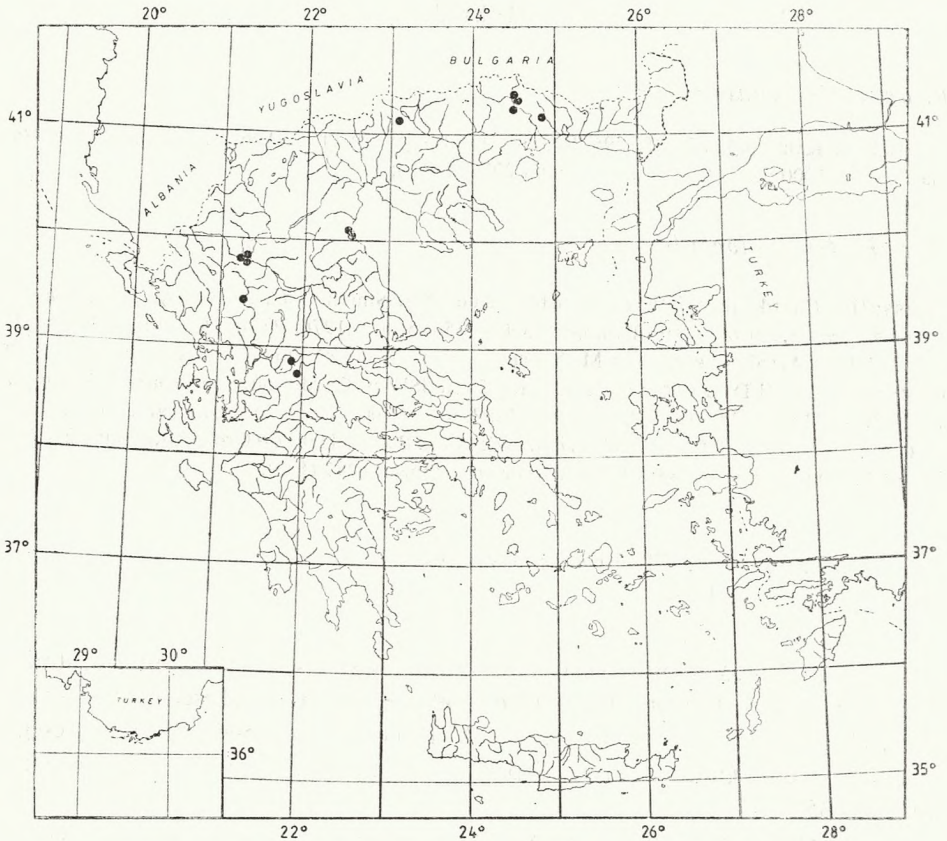


Fig. 10. Distribution of *Rosa tomentosa* Sm.

des s.n. /ATHU/; 4 - 6 km from Karpension towards Lamia. Clayey wayside. In thickets. 3.06.1968. Boratyński, Browicz, Tomlik, Zieliński 893 (ATH, KOR); Nom. Phthiotidis. Mt. Oxya⁺ 5 km SSW of Gardikion. Dry meadow on sand. 1400 m. 16.06.1985. Gustavsson 9537 (C).

12. *R. canina* L., Sp. Pl.: 491 (1753).

Described from Europe (Linn. 652/31, photo!)

Syn.: *R. corymbifera* Borkh., Vers. Forstbot. Besch. Holzart.: 319 (1790); *R. dumetorum* Thuill., Fl. Paris. ed. 2: 250 (1799); *R. andegavensis* Bast., Essai Fl. Maine Loire 189 (1809); *R. dumalis* auct. fl. balc. non Bchst., Forstbot.: 939 (1810); *R. nitidula* auct. fl. balc. non Besser, Cat. Pl. Jard. Krzemien. Suppl. 4: 20 (1815).

Stems usually 1 - 3 m tall, erect, arching or sometimes climbing. Prickles uniform, hooked. Leaflets glabrous or pubescent, usually eglandular beneath. Pedicels smooth and usually longer than hypanthium. Styles glabrous to villous. Orifice narrow. Sepals lobed, deflexed after flowering, early deciduous. $2n=35$.

R. canina is the commonest European species of the genus, widespread also in NW Africa, SW and C Asia. In Greece it is common throughout the continental

part of the country and on bigger islands (Fig. 11), growing from near sea level up to 1800 (- 2000) m elevation. It can be observed in thickets, on forest edges, on roadside escarpments, in roadside ditches, on wast lands, on banks of rivers and streams etc.

R. canina is one of the most variable roses and it is often treated as a collective species. All its divisions, however, are not justified, both from the theoretical and practical points of view.

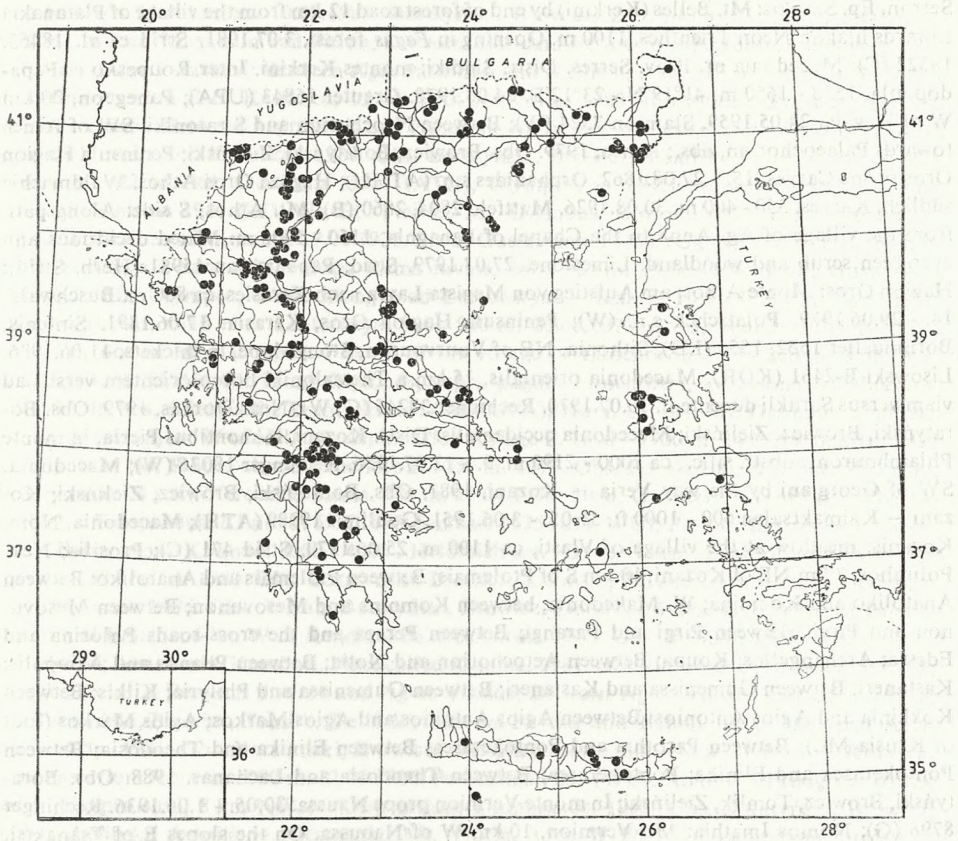


Fig. 11. Distribution of *Rosa canina* L.

Thrakien. Nomos Xanthi. Kap Baloustra, 5 km SSE of Abdira. 19.09 - 8.10.1966. Bauer, Spitzenberger 1171 (W); Thraki: prov. Evros, distr. Orestias. NE of the village Rizia. Place named Tsaja. 60 m. 22.05.1972. Stamatiadou 15287 (ATH); Thrakien. Avas: 4 km S Nomos Evros. Umgebung der Burgruine. 5. - 28.06.1965. Bauer, Spitzenberger 1382 (W); Zwischen Makri und Marogna, ägäische Küste. 9.05.1876. Dingler 460 (B); Karlyk Dag. ca 2000 ft. 16.05.1876. E. T. 723 (B); Thrakien. In collinis siccis ad opp. Xanthi. 14.05.1924. (SOM); Thraki: prov. Rodhopi, distr. Komotini. S of village Nimfea. 500 - 520 m. Stamatiadou (ATH); Rodopi. 5 - 6 km NE of Nea Santa. 1979. Boratyński, Browicz, Zieliński in obs.; Macedonia or. Prov. Drama, prope phylacion novum "Preseki" a pago Ano Vrondots ca 6 km boreo-occidentem versus 1320 m. 41°19'30"N - 23°39'E. 22.08.1978. Greuter 16725 (UPA); Drama. 400 ft. 8.05.1959. Stainton 1262

(W); Bozdag 20 km NW of Drama. 1000 ft. Stainton 7480 (W); Macedonia Or. Montes Bozdag prope Drama. Ad versuras prope Volakam. Ca 800 m. 7.08.1936. Reehinger 10636 (G); E. Macedonia. Nom. Dramas: by the military post of Gydhotypos, ca 22 km NNE of Paranestion, ca 3 km from the Bulgarian border, 1500 m. Meadows in openings of mixed forest. 1. - 2.08.1977. Strid et Georgiadou (KOR); Macedonia. Nom. Dramas, macchia in the W part of Kalitheia. 17.07.1970. Gustavsson 59 (LD); Macedonia. Nom. Dramas: Mt. Falakron, northern slopes between the villages of Volakas and Mesovounion, ca 1100 m. Meadows and remnants of beech forest. 18.07.1970. Strid 1001 (C); Macedonia orientalis. In monte Laila prope Serrai. 1400 m. 12.07.1936. Reehinger 10754 (G); Macedonia orientalis. Montes Laila prope Serrai. In pinetis (*P. sylvestris*) prope Kataphygon. 1400 - 1500 m. 9.07.1973. Reehinger 45412 (G, W); Nom. Serron. Ep. Sintikis: Mt. Belles (Kerkini) by end of forest road 12 km from the village of Platanakia towards filakon Neon Trienthes. 1100 m. Opening in *Fagus* forest. 3.07.1981. Strid et al. 18463, 18522 (C); Macedonia or. Prov. Serres. Distr. Sindiki: montes Kerkini. Inter Roupesko et Papadopoula. 1550 - 1650 m. 41°19'N - 23°12'E. 24.08.1978. Greuter 16843 (UPA); Panegeon, 20 km W of Kavala. 24.05.1959. Stainton 7524 (W); Between Neochorion and Stratoniki, SW of Arnea towards Palaeochorion, obs.; Arnea. 1979. Obs. Browicz, Boratyński, Zieliński; Peninsula Hagion Oros prope Caryes. 15. - 27.08.1862. Orphanides s.n. (ATHU); Hagion Oros Athos. Waldmachie südlich. Karyes. 350 - 400 m. 30.08.1926. Mattfeld 2804, 2860 (B); Mt. Athos, S side: Along path from the village of Ag. Anna to the Chapel of Panaghia, 1150 - 1400 m. Mixed deciduous and evergreen scrub and woodland. Limestone. 27.07.1979. Strid, Papanicolau 15981 (Herb. Strid); Hagion Oros: Monte Athos: am Aufstieg von Megista Lavra nach Kerasies, ca 800 m. Buschwald. 14. - 29.06.1979. Polatschek s.n. (W); Peninsula Hagion Oros, Kerasia. 17.06.1891. Sintenis, Bornmueller 1552, 1554 (LD); Sithonia. NE of Vourvouron. Stony slope, in thickets. 11.06.1986. Lisowski B-2461 (KOR); Macedonia orientalis. 15 km a Thessaloniki boreo-orientem versus ad viam versus Sarakli ducentem. 10.07.1970. Reehinger 38245 (G, W); Near Dorkas. 1979. Obs. Boratyński, Browicz, Zieliński; Macedonia occidentalis: Distr. Kozani, in montibus Pieria, in monte Phlambouron, substr. silic., ca 2000 - 2190 m. 9. - 12.07.1956. Reehinger 18026 (W); Macedonia. SW of Georgiani by the way Veria - Kozani. 1981. Obs. Boratyński, Browicz, Zieliński; Kozani - Kaimaktsalan 600 - 1000 ft. 31.05. - 3.06.1951. Goulimis 19989 (ATH); Macedonia. Nom. Kozanis: meadow at the village of Vlasti, ca 1100 m. 25.06.1970. Strid 471 (C); Prosilia; Near Polirahos; 7 km NE of Kozani; 10 km S of Ptolemais; Between Ptolemais and Anatoliko; Between Anatoliko and Komnina; W. Macedonia, between Komnina and Mesovounon; Between Mesovounon and Pirgi; Between Pirgi and Farangi; Between Peraea and the cross-roads Phlorina and Edessa; Archangellos; Koupa; Between Aetochorion and Notia; Between Phanos and Axiupolis; Kastaneri; Between Gumenissa and Kastaneri; Between Gumenissa and Philyria; Kilkis; Between Kokkinia and Agios Antonios; Between Agios Antonios and Agios Markos; Agios Markos (foot of Krusia Mt.); Between Paroithia and Pontokerasea; Between Elinika and Theodosia; Between Pontokerasea and Elinika; Pontokerasea; Between Theodosia and Lachanas. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; In monte Vermion prope Naoussa. 30.05. - 1.06.1936. Reehinger 8796 (G); Nomos Imathia: Mt. Vermion, 10 km W of Naoussa. On the slopes E of Tsanaktsi, stony meadows among small cliffs, 1950 - 2052 m. 20.07.1979. Gustavsson et Franzén 8657 (LD); Macedonia occ. In monte Vermion prope Kastanea. 2.06.1958. Pinatzis (G); Macedonia occidentalis. Distr. Phlorina. In fagetis jugi Pisoderion, inter lacus Presba et Phlorina. 22.06.1972. Reehinger 44986 (G, W); Macedonia occidentalis. Distr. Phlorina. In isthmo lacus Presba. 780 m 21.06.1973. Reehinger 44944 (C p.p., W); Nom. Florinis: Mt. Varnous (Peristeri), by mountain road E of the village of Ag. Germanos. 1400 m. 28.06.1981. Strid et al. 18270, 18271 (C); Nom. Florina/Kastorias: Mt. Vitsi (Vernon), just SW of the summit, 1750 - 1850 m. Meadows and rocky outcrops. Schist. 10.07.1981. Strid et al. 18916 (C); W. Macedonia. Prov. and distr. Florina. SWW side of Mt. Varnous (Peristeri) 4.5 - 5 km from the spring known as "Vrisi Kalo Nero" along the road to village Ajiōs Germanos. Place called Ramna. 1400 m. Openings in *Quercus* woodland. 28.06.1981. Samatiadou 22213 (ATH); W. Macedonia. Nom. Grevenon. Ep. Grevenon. Mt. Smolikas. River bank in the village of Samarina. 1450 m. 14.08.1975. Hartwig et Šoberg (KOR); Montes Smolikas supra pagum Kerasovo. 1300 - 2000 m. 19.07.1958. Reehinger 20831

(G, W); Montes Timphi in saxosis calcareis supra pagum Papingon. 900 - 1500 m. Rechinger 21320 (C, G); SW of Joanina, between Pedini and Dodoni. 1981. Obs. Boratyński, Browicz, Zieliński; Prov. Dodhoni. Vill. Sitaria. 520 - 550 m. 20.05.1973. Stamatiadou 16968 (ATH); Between Sitaria and Parakalamo. Place named Selim Aga. At Nezeros riverside. 450 - 460 m. 21.05.1973. Stamatiadou 16981 (ATH); Macedonia. Between Anixis and Anthakia S of Grevena. 1981. Obs. Boratyński, Browicz, Zieliński; Distr. Paramythia. Ad pontem Flamburos m. Murga. 6.07.1895. Baldacci 45 (W); N of Kira Panagia, road to Paramythia, SE of Igumenitsa; Road Arta - Joanina. Between ramification to Kopani and ramification to Dodoni. 1981. Obs. Boratyński, Browicz, Zieliński; Pindos. Metsovon, 30.05. - 3.06.1950. Goulimis 19968 (ATH); Pindos. Among pastures between Korydallos and Metsovon not far from the ramification of the road towards Malakasion. 10.09.1981. Boratyński, Browicz, Zieliński 1475 (ATH, KOR); SE Pindos. Between Musakion and Pilion; Between Elati and Pertoulion; Pertoulion; Between Gardikion and Agia Paraskevi; Between Agia Paraskevi and Kalliroi; 5 km NE of Kalliroi; 5 km SW of Kastanea; 5 km E of Kastanea; 15 km E of Kastanea. 1988. Boratyński, Browicz, Tomlik, Zieliński; Chasia. Between Asproklisia and Photinon, by the way to Deskati; 10 km SW of Deskati; Between Deskati and Paliouria. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Pieria. Velvendos. 20 - 22.06.1961. Goulimis 19961 (ATH); Olympus, in sylvis prope Hagios Dionysios. 3.09.1889. Sintenis 1931 (LD, W); Ep. Pierias. Mt. Olympus. E foothills just near Litochoron. 250 - 280. Ravine and machie. 17.06.1976. Strid, Gustavsson 11462 (C); Mt. Olympus, N-side: Middle and upper parts of the Papa Rema ravine, 660 - 920 m. 19.06.1976. Strid, Gustavsson 11550 (C); Mt. Olympus, S-side along road Leptocarya - Karya. 16.3 - 17.8 km from intersection with nat. road near Leptocarya. 890 - 940 m. 26.08.1975. Strid, Hansen 9518 (C); Ep. Pierias. E foot of Mt. Olympus. Flats E of the village of Litochoron. 180 - 200 m. 3.06.1976. Strid, Kjelson 11065 (C); Mons Olympus, supra pagum Litochoron, in ditone loci Stavros. 7.08.1973. Phitos, Georgiadis, Tzanoudakis 14326 (UPA); Nom. Larisis. Mt. Olympus, southern side, small ravine just W of Hellenic Alpine Club Refuge B. 1800 - 1900 m. 24.07.1970. Strid 1322 (C); Olympos Mt. Slopes above Litochoron. 1050 m. 1979. Obs. Boratyński, Browicz, Zieliński; Mt. Olympos. N part. Xerolakki Rema. 980 m. 21.06.1976. Strid, Gustavsson 11619 (C); Thessalia. Pindus Tymphaeus: Klinovo. 6.06.1896. Sintenis 1525 (LD, WU); Pindus. In regione inferiori montis Baba, prope Klinovo. 3000 - 4000'. Heldreich s.n. (G); Between Metallion and Domokas (Lamia - Pharsala). 1980. Obs. Boratyński, Browicz, Zieliński; Between Achillion and Glypha. Near ferry-boat. 1986. Obs. Awzan, Boratyński, Browicz, Zieliński; S Thessaly. Between Palaeokastron and Fournia; 6 km W of Rendina; Palaeokastron. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Akarnania. Komboti. Place called Kambia. 1981. Obs. Boratyński, Browicz, Tomlik, Zieliński; Aetolia. Between Stavros and Agios Vlasios; Between Agios Vlasios and Chuni. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Between Phytiae and Babini, W of the road Agrinion - Arta. 1981. Obs. Boratyński, Browicz, Zieliński; Akarnania. Nom. Gypsili - Koryphi. Ad monasterium Romvo. 1000 m. 12.07.1906. Petitmengin 263 (WU); Anatoliki Frangista, by the road to Karpenision; 8 km NW of Karpenision; Timphristos. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Aetolia - Akarnania. Mt. Yiotla, 3 km W-WSW of Lampirion. limestone cliffs and blocks facing W. 1800 - 1850 m. 19.06.1975. Gustavsson 6007 (LD); Mt. Korax prope Musinitza. 25.05.1989. Leonis s.n. (B, WU); Doris. Ad radices mt. Kionae loco Xetopotamo dicto. 3000'. 13.08.1888. Halácsy s.n. (WU); In monte Parnasso pr. Arachova. 31.07.1852. Heldreich 2680 (ATHU); Prov. Boeotia: mons Parnassos, inter oppidum Arachova et pagum Kalyvia. 800 m. 21.06.1966. Phitos 4789, 5356 (UPA); Mons Parnassos, supra pagum Agoriani. 1100 m. 16.11.1976. Tzanoudakis 5254 (UPA); Parnassos: in faucibus Langadha ad orientem planitiei Livadhia. 1250 m. 16 - 30.07.1977. Greuter, 14840 (C); Fokida. Gravia, N of Amphissa; N of Braños towards Lamia; 10 km N of Elaeon by the road Amphissa - Lamia. 600 m. 1980. Obs. Boratyński, Browicz, Zieliński; Attica. In monte Parnetho prope Dekeleiam. 17.07.1878. Heldreich s.n. (WU); Ibidem. 13.06.1883. Heldreich s.n. (W); Parnes. Ad sepes prope Hatsia. 25.05.1892. Heldreich s.n. (G); In regione abietina montis Parnethis, loco dicto Gardurovrysi. 22 - 24.08.1911. Tunta 1338 (WU);

Peloponnisos. Achaia. In sepibus prope pagum Lopesi 400 m. 11.06.1893. Halácsy s.n. (WU); In montis Kyllenes Achaiae prope pagum Trikala. 3500 - 4000 ft. Hagios Vlasios. 24.06.1887. Heldreich s.n. (LD, WU); In montis Kyllenes Achaiae regione silvatica 4000 - 4500 m'. In faucibus Phlamburitza. 23.06.1887. Heldreich 1884 (LD, WU); In valle Xylokastron ad radices Kyllenes Achaiae. 20.06.1887. Heldreich s.n. (WU); In montis Kyllenes Achaiae regione silvatica versus Libadi. 4000 - 4500'. 22.06.1887. Heldreich s.n. (WU); Mons Ziria (Kyllini) supra Phlambouritza l.d. Tsapourna. 8.08.1906. Maire, Petitmengin 486 (WU); Prov. Achaia. Vill. Valimi. 900 - 920 m. 13.05.1971. Stamatiadou 12188 (ATH); Prope Kalavryta. 23.06.1899. Leonis 406 (W); Chelmos. Von Kalvryta über der Tannerücken Hag. Theodoros. 1200 - 1300 m. 19.06.1926. Mattfeld 1876 (B); Prope pagum Kalvryta, ad coenobium Agia Lavra. 800 - 900 m. 6.06.1926. Bornmueller 576, 577 (LD); In montis Chelmos. 1500 - 1600 m. Bornmueller 583 (B) Montes Erymanthos. In loco Gremisto Nero. 1300 m. 24.06.1968. Phitos 8396 (UPA); In dumetis prope pagum Hagios Vlasios ad radices mt. Olenos. 700 m. 11.06.1893. Halácsy s.n. (WU); In rupestribus calcareis vallis fluvii Voreikos prope coenobium Megaspilaeon. 700 m. 16.06.1893. Halácsy s.n. (WU); In monte Malevo Laconiae. Hajos Joannis. 27.04. - 9.05.1854. Orphanides 3330 (ATHU, G, WU); Lakonia. 15 km ab oppido Sparti versus oppidum Tripolis. Ad viam in saxosis calcareis. 10.05.1975. Phitos, Kamari 13957 (UPA); Hagios Petros in monte Malevo. 17.06.1958. Pinatzis s.n. (G); Arkadia. Agios Petros. 15.05.1970. Stamatiadou 8705 (ATH); Prope Tripolim Arkadiae. 1896. Sartori (WU); Between Diakopto and Ano Diakopto; Between Ano Diakopto and Megalon Spilaeon; Between Megalon Spilaeon and Kalavryta; Between Kalavryta and the cross-roads to Vrisari; The route from Kalavryta to Trikala, between the cross-roads to Vrisari and Plampoura; Between Phlamopoura and Krioneri; between Krioneri and the cross-roads to Kato Vlasia, by the way to Patras; the route from Kalavryta to Patras, between the cross-roads to Kato Vlasia and to Kobigosi; Between Kobigosi and Kalanistra. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Between Lefkohorion and Lagadia on the way Olimpias - Tripolis; Lefkohorion between Olimpias and Tripolis; C. 11 km S of Tripolis towards Sparti; Just N of Levidi, N of Tripolis; 5 km E of Karakalou by the way Tripolis - Olimpias. 1000 m. Between Lagadia and Karakalou by the way Tripolis - Olimpias; Between Levidi and Vlaherna NNE of Tripolis. 1980. Obs. Boratyński, Browicz, Zieliński; Mani. Agios Nikolaos. 3. - 8.05.1952. Goulimis 19990 (ATH); Nom. Messinia. Ep. Kalamon. Mt. Taygetos. S part. NE of Mavrovouna, above place called Ag. Dimitros. 1500 - 1950 m. 30.06.1979. Strid, Papanicolaou 15292 (KOR); Aegean Islands. Samthrake. In nemorosis l.d. Therma. 18. - 20.06.1936. Rechinger 9949 (G); Samothrake. Olonia. 7.05.1943. Stojanov, Kitanov s.n. (SOM); Thasos. Limenas. 4.06.1891. Bornmueller, Sintenis 589 b (BM, G, LD p.p.); Ibidem. 3.06.1942. Kitanov s.n. (SO); Thasos, Mariae. 9.05.1960. Goulimis 19975 (ATH); Mytilini. In monte Olympus prope Ajassos. 19.05.1934. Rechinger (G, BM); Ibidem. Goulimis 19973 (ATH); Mytilini. In declivibus siccis iater Kapi et Gelia (Montes Lepetymnos), ca 400 m. 18. - 24.05.1934. Rechinger 5748 (BM, G, W); N Sporaden. Insel Psathura. 29.05.1894. Reiser s.n. (WU); Sporadam Insula Skopelos: Hagios Georgios, in dumetis. 7. - 9.07.1927. Rechinger 958 (LD); Euboea septentr. In monte Telethron. 1500 m. 25.06.1890. Heldreich s.n. (WU); Euboea. Mt. Dirphys, supra Steni. 20.06.1956. Pinatzis 12341 (Herb. Pinatzis); Euboea. Seta, ca 20 km N of Amaryndos. E slopes of Zygos Mt. 22.08.1986. Awzan, Boratyński, Browicz, Zieliński 295 (ATH, KOR); Between Andias and Komiton. E foot of Ochi Mt. 24.08.1896. Awzan, Boratyński, Browicz, Zieliński (ATH, KOR); E foot of Ochi Mt. Kapsurion. 25.08.1986. Awzan, Boratyński, Browicz, Zieliński 299 (ATH, KOR); N slopes of Skotini Mt. above Metochion. 900 m. 29.08.1986. Awzan, Boratyński, Browicz, Zieliński 358 (ATH, KOR); 2 km NE of Kerasea. 10.09.1986. Awzan, Boratyński, Browicz, Zieliński 538 (ATH, KOR); The slopes of Telethron; Between Krya Vrysi and Kirindos; Between Politika and Daphni; Between Nea Pagondas and Akrae; Between the pass 950 m and Agia Sophia; Between Stropones and Lamari; Between Stropones and Steni Dirphys; between K. Steni and Katheni; Between Katheni and Nea Artaki; Between Metochion and Paralja Metochion; Between Evangelismos and Kapsurion. 1986. Obs. Awzan, Boratyński, Browicz, Zieliński; Chios: prope Nea Moni. 30.04.1856. Orphanides 3735 (ATHU); Chios. 1 - 3 km NE of Marmaron, 20 - 40 m. 1985. Boratyński, Browicz, Zieliński 218 (ATH, KOR); Between Agios Joannis and Vounos. 1.06.1985. Boratyński,

Browicz, Zieliński 218 (ATH, KOR); Between Chalanda and Afrodisia, N of Volissos. 23.05.1985. Boratyński, Browicz, Zieliński (ATH, KOR); N slopes of Pelinaion Mt. 400 m. 14.05.1985. Boratyński, Browicz, Zieliński 50 (ATH, KOR); Anavatos; Kambia; Between Kambia and Vikion; Between Vikion and Agios Nikolaos; Spartounta S of Kambia; Between Kambia and Spartounta; Between Gridia and Nenita; Between Agios Isidoros and Pityous; Between Kourounia and Neni-touria; Between Kambia and Ag. Georgios; Near the cross-roads Nea Moni – Karyes – Ana-vatos; Between Megas Limonas and Thymiana. 1985. Obs. Boratyński, Browicz, Zieliński; Samos. S of Vurliotos. N exposed cliffs of Ag. Ilias. 400 - 900 m. 27.05.1962. Runemark, Snogerup 19893 (LD); Ikaria. 2 km E to ESE of Mesaria. 300 m. 24.04.1958. Runemark, Snogerup 6878 (LD); Naxos. Ca 2 - 3 km SE of Agios Theodoros. Field edge. 300 m. 20.05.1958. Runemark, Snogerup 9014 (LD); Creta. In silvaticis montium Lassithi. 3000'. 05.1846. Heldreich 1655 (G); Lassithi. In saxosis inter Pneuma et Kudumalia. 1000 m. 13.07.1942. Reching 14409 (G, W); Prov. and distr. Lassithi. Above village of Psihra. 900 m. 19.07.1971. Petamidis s.n. (ATH); Amalos. 12.06.1884. Reverchon 280 (E); In regione infer.m. Idae prope Anagia. 13.08.1870. Heldreich s.n. (ATHU); Distr. Khamiotica. In dumetis ad Ormali. 10.07.1893. Baldacci 119 (BM); Nomos Iraklion. 1 km S of Amariano (between Kastelli and Geraki). Slope of stream valley. 29.05.1983. Boratyńska, Boratyński, Browicz, Dolatowski 226 (ATH, KOR); Christos (Ierapetros): Alp Selakkano in SE Lassithi. 800 m. Creutzburg E 3632 (Herb. Greuter).

Hybrids

R. canina × *heckeliana*

Mons Olympus, in declivibus austro-occidentalibus circa refugium B. 1900 m. 26.07.1970. Reching 38725 (G, W); Mt. Olympus, S side, around Hellenic Alpine Club Refuge B (above the village Sparmos) 1850 - 1900 m. 26.07.1970. Strid 1396 (C); Peloponnisos. Prov. Achaia. Montes Erymanthos, loco Germanisto Nero, ca 1300 m. 24.06.1968. Phitos 8414 (UPA); Montes Erymanthos, in declivibus boreo-occidentalibus cacuminis Olenos, ca 1400 m. 24.06.1968. Phitos 8457 (UPA).

R. canina × *pendulina*

Nom. Pellis. Mt. Pinovon S side. 1400 - 1700 m. Rocky limestone outcrops in *Fagus* woodland. 16.08.1979. Strid, Papanicolaou 16561 (C, KOR); Prov. and distr. Florina. Kastoria. Mt. Anemodarmeni, 6 - 7 km ESE of the village of Kristalopigi and SE of Boutsis. 1550 - 1650 m. Meadows. 16.07.1985. Stamatiadou 22815 (ATH); Nom. Joanina. Ep. Metsovon. 9 km NNE of Metsovon. The limestone rocks Petra Likou, NE of the road 3 km SW of the village Milea. c. 1450 m. 24.07.1976. Hartwig, Baden, Christiansen 6225 (C); Ad occidentem pagi Milea ad km VI viae ad Metsovo ducentis. 1400 m. 5.08.1873. Greuter 11603 (Herb. Greuter); Between Metsovon and Panagia, not far from the ramification to Milea. C. 1500 - 1700 m. 24.09.1981. Boratyński, Browicz, Zieliński 1739 (KOR); Thessalia. Sarmeniko, in abietis mont. Coccino-Lithari. 21.08.1896. Sintenis 1273 (LD); Olimpos, ca 1200 m. 22 - 24.08.1975. Polunin 13733 (UPA); Mt. Olympus. N side: Papa Rema ravine. 600 - 700 m. 8.08.1975. Strid, Hansen 9143 (C); Mt. Olympus. S side. Surroundings of Hellenic Alpine Club refuge. S of Agios Antonios. 1800 - 1850 m. 28.08.1975. Strid, Hansen 9597 (C); Olympos Mt. above Litochoron. Ca 1000 m. 3.10.1980. Boratyński, Browicz, Zieliński 1383 (KOR); Ibidem. 1600 m. Boratyński, Browicz, Zieliński 1384 (KOR);

R. canina × *pulverulenta*

In monte Chelmos Peloponesi. 17 - 29.06.1852. Orphanides (ATHU);

13. *R. jundzillii* Besser, Cat. Horto Cremn. 117 (1816).

Described from Ukraina.

Syn.: *R. trachyphylla* Rau, Enum. Ros. Wirceb. 124 (1816); *R. marginata* auct non Wallr., Annus bot. 68 (1815).

An erect shrub 0.5 - 1 (1.5) m tall. Prickles curved, uniform or rarely intermingled with acicles, bristles or stalked glands. Leaflets subcoriaceous, usually compound-serrate, with divergent teeth. Flowers pink. Pedicels usually stiff and stipitate-glandular. Styles \pm pubescent. Orifice narrow. Hypanthium usually globose. Sepals patent or deflexed in fruit, early deciduous. $2n=42$.

A central-European species known also from infrequent stands in Anatolia and Caucasus. In Greece it is known from Thraki, where it was found several years ago on two stands very close to each other, just near the Greek - Bulgarian frontier, between 1400 - 1500 m. (Fig. 4).

Morphologically *R. jundzillii* takes an intermediate position between *R. canina* and *R. gallica* L. (sect. *Rosa*). It is not impossible, that it is an old hybrid between these two species or their direct ancestors; from the former it differs by stiffer leaflets, usually bigger flowers, stiffer pedicels etc., while from the latter by usually taller and thicker stems, more sharply serrate leaflets, smaller flowers etc.

Thraki. Nom. Xanthi: Summit area of Mt. Surpika WNW of the village of Dimarion (c. 24 km NNW of Xanthi), 500 m from Bulgarian border, 1400 - 1520 m. 29.07.1977. Strid, Georgiadou 13592 (C, KOR); Thracia, prov. Xanthi. In montibus ad occidentem pagi Dhimari versus fines Bulgariae. 1500 - 1550 m. 41°22'N - 29°49'E. 15.08.1978. Greuter 16469 (UPA);

Sect. *Rosa*

Erect shrubs with suckers, prickles irregularly set on the stems, usually mixed and passing into small acicles or needles. Leaflets 3 - 5. Stipules narrow with straight, long auricles. Flowers solitary or few. Styles \pm pubescent or glabrous. Orifice narrow. Sepals with numerous lobes, usually deflexed or patent after flowering, deciduous. Meiosis regular.

14. *R. gallica* L., Sp. Pl. 492 (1753).

Cited by Linnaeus from France (Hb. Linn 652/26, photo!).

Low, erect shrub up to 0.5 (-1) m, usually with many suckers. Stems usually covered with curved hooked or needle-like prickles and often with acicles and stalked glands. Leaflets 3 - 5, relatively large, crenato-serrate. Flowers solitary or few, large, pink. Pedicels long, stipitate-glandular. Sepals deflexed, early deciduous. $2n=28$.

A central-European species occurring also on infrequent localities in Anatolia and Caucasus. It is scattered in Greece and attains here S limit of its range. Southernmost it reaches N Peloponnisos (Fig. 12). It grows on more or less insolated places on edges of oak woods, in loose, low thickets, on edges of fields, on abandoned

fields, on roadside escarpments etc. It is a lowland species growing between (50 -) 100 and 600 m elevation, however, occasionally it attains 1000 m, as in Agrapha near Neuropolis.

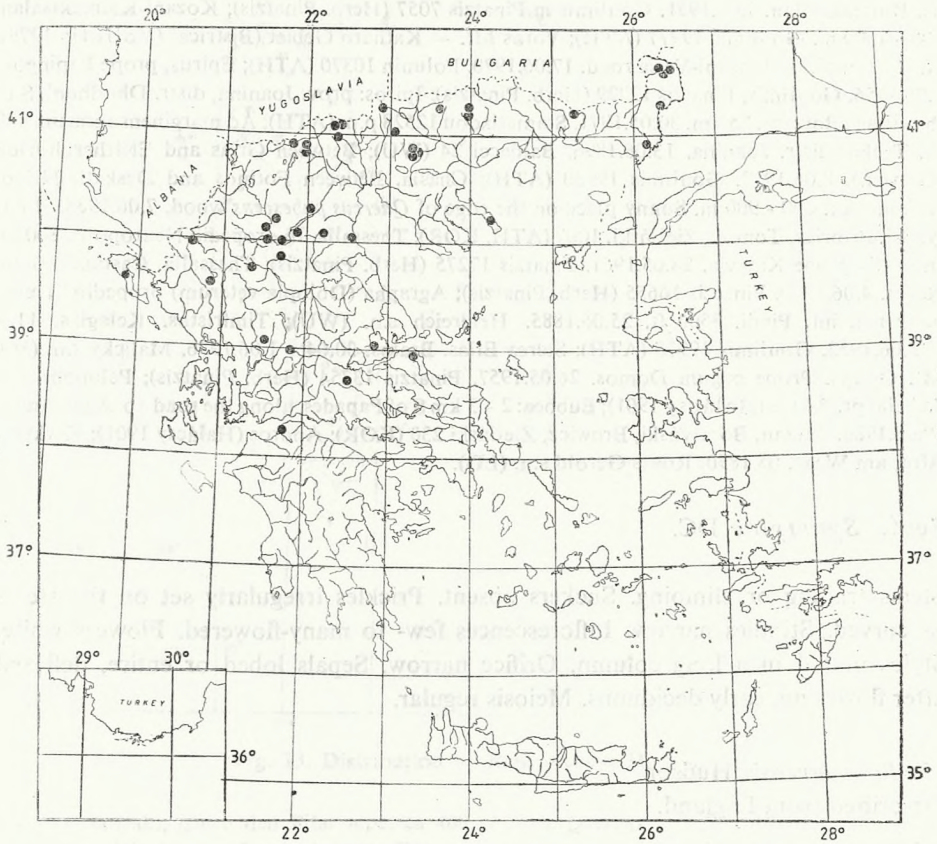


Fig. 12. Distribution of *Rosa gallica* L.

Thraci. Prov. Evros. Distr. Alexandroupolis. Between the village of Loutros and Pessani. Hills of Kavouratzi. 260 - 300 m. *Quercus* forest. 19.05.1972. Stamatiadou 15208 (ATH); Prov. Evros, distr. Alexandroupolis. Between Sapae and Alexandroupolis. At the road bifurcation to Perme. Wood of *Quercus*. Stony ground. 200 - 220 m. 18.05.1972. Stamatiadou 15153 (ATH); Nomos Evrou. Mandra. Goulimis 19981 p.p. (ATH); Prov. Evros. Distr. Orestias. NW of the village Keramos by the river Ardha. 50 m. 22.05.1972. Stamatiadou 15347 (ATH); Prov. Evros. Distr. Orestias. 2 - 3 km NW of the village Spileo towards Dhikea. 100 m. Fallow fields along the scrubby bed of torrent, clayey sandy stony ground. 23.05.1972. Stamatiadou 15393 (ATH. C); Prov. Evros. Distr. Orestias. NE of the village Rizia. Place named Tsajia. 60 m. 22.05.1972. Stamatiadou 15286 (ATH); Bei Essekkoi. Nordfuss des Karlik Dagh. 14.05.1876. Dingler 615 (B); Makedonia. Bozdagh. 20 km NW of Drama. 18.06.1959. Stamatiadou 7658 (W); Serrai- Dasos- Lajilia. 550 m. 11.06.1970. Stamatiadou 9930 (ATH); Between Evangelistria and Lachanas, near Dorkas. 1979. Obs. Boratyński, Browicz, Zieliński; Peninsula Hagion Oros (Grisebach 1843); Makedonia. Between Archangelos and Skra. Near the cross road to Koupa. Edge of *Quercus pubescens* wood. 9.06.1988. Boratyński, Browicz, Tomlik, Zieliński 1055 (ATH, KOR); Makedonia. Between Edessa and Sotira. Edge of *Quercus pubescens* wood. 8.06.1988. Boratyński, Browicz, Tomlik,

Zieliński 1034 (ATH, KOR); Pantokerasia, N of Lachanas. Edge of *Quercus pubescens* wood. 10.06.1988. Boratyński, Browicz, Tomlik, Zieliński 1104 (ATH, KOR); Between Paliouria and Lazarados; Between Mikrovalti and Prosilio; Between Goumenissa and Kastaneri; Between Theodosia and Lachanas 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Macedonia Centralis. Kaimaktsalan. 1.06.1951. Goulimis in Pinatzis 7057 (Herb. Pinatzis); Kozani-Kaimaktsalan. 600 - 1000 m. Goulimis 19977 (ATH); Voras Mt. — Katharo Gebiet (Bistrica) (Voliotis 1979); N. Kastaneai, on Kozani-Veria road. 17.06.1970. Polunin 10370 (ATH); Epirus, prope Papingon. 6.06.1956. Goulimis, Pinatzis 12329 (Herb. Pinatzis); Ipiros: prov. Joanina, distr. Dhodhoni. S of the village Botzara. 250 m. 30.05.1971. Stamatiadou 12528 p.p. (ATH); Ad marginem agrarum sub m. Tsuka, distr. Joanina. 13.06.1896. Baldacci 24 (WU); Between Grias and Eleftherohorion (Greven.). 8.06.1959. Goulimis 19980 (ATH); Chasia. Between Fotinos and Deskati, NE of Kalambaka. 600 - 900 m. Sunny place on the edge of *Quercus pubescens* wood. 7.06.1988. Boratyński, Browicz, Tomlik, Zieliński. 1007 (ATH, KOR); Thessalia. In oropedio Neuropolis. 800 m. In pratis prope Kalyvia. 28.05.1961. Pinatzis 17275 (Herb. Pinatzis); Thessalia, Castania Pindi. 900 m. 4.06.1960. Pinatzis 16655 (Herb. Pinatzis); Agrapha (*Dolopia veterum*) oropedio Neuropolis reg. inf. Pindi. 3500 ft. 25.06.1885. Heldreich s.n. (WU); Timfristos. Kelagias. 11. - 15.06.1952. Goulimis 19978 (ATH); Sterea Ellas. Bralos. 30.04. - 1.06.1976. Malicky s.n. (W); Mt. Othrys. Prope pagum Domos. 26.05.1957. Pinatzis 13354 (Herb. Pinatzis); Peloponnisos: Achaia, pr. Patras (Halácsy 1901); Euboea: 2 - 3 km S of Papades, along the road to Agia Anna. 19.08.1986. Awzan, Boratyński, Browicz, Zieliński 230 (KOR); Andros (Halácsy 1901); Kerkyra, Afra, am Wege. 05.1890. Rosas Gerold s.n. (LD).

Sect. *Synstylae* DC.

Stems trailing or climbing. Suckers absent. Prickles irregularly set on the stems \pm curved. Stipules narrow. Inflorescences few- to many-flowered. Flowers white. Styles united in a long column. Orifice narrow. Sepals lobed or entire, deflexed after flowering, early deciduous. Meiosis regular.

15. *Rosa arvensis* Hudson

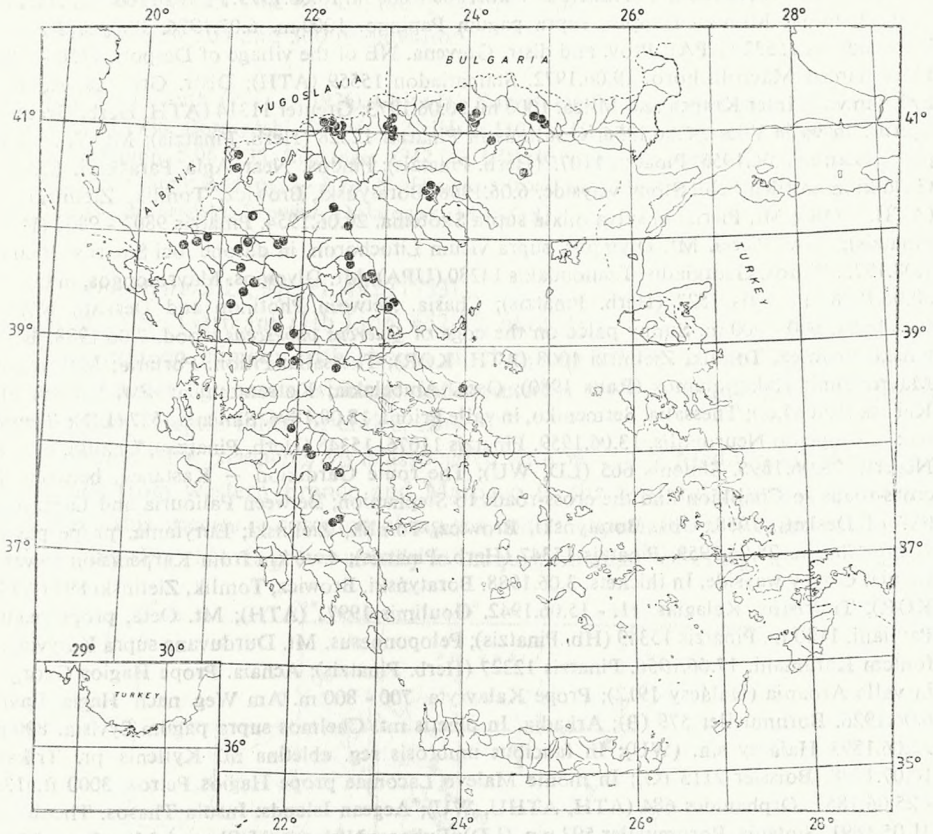
Described from England.

Trailing or rarely climbing shrub. Prickles sparse, rather slender. Leaflets pubescent on both sides or subglabrous above, paler beneath, simply serrate. Flowers solitary or 2 - 6 together. Styler column glabrous. Orifice narrow. Sepals with few lobes, deflexed after flowering, early deciduous. $2n = 14$.

European species widespread in W and S Europe. In Greece it occurs mainly on the mainland, where it is even common in places, besides it is known from single localities on Euboea and Thasos islands (Fig. 13). The record from Kos island (Rehinger 1943) refers undoubtedly to *R. phoenicia*.

In vertical distribution it is most often between 500 and 1000 m, but occasionally it attains up to 1500 - (1750) m. This latter altitude it reaches in Macedonia on the slopes of Falakron Mt. It grows in loose thickets on edges of oak forests, on roadside escarpments, on grassy hillsides etc.

Tracia. Prov. Xanthi; in valle infra pagum Dhimari. 540 m. 54°12'N - 24°52'E. 16.08.1978. Greuter 16406 (UPA); Macedonia. Nom. Dramas Mt. Falakron, northern slope between the village of Volakas and remnants of beech forest. 18.07.1970. Strid 1017 (C); Ca 8 km N of Drama,

Fig. 13. Distribution of *Rosa arvensis* Hudson

N of Monatiraki, gegen den Pilar tepe, ca 400 - 600 m. *Quercus coccifera* Fluren. 2.06.1979. Krendl s.n. (W); Montes Bozdagh prope Drama in dumetis ad Volaka. Ca 800 m. 7. - 8.07.1936. Rechinger 10617 (G); Boz Dagh Drama. 18.07.1961. Pinatzis 17276 (Herb. Pinatzis); Serrai. Dacos-Laila. 11.06.1970. Stamatiadou s.n. (ATH); Boz Dagh. Babitsa. 18.07.1961. Goulimis 19556, 19958 (ATH); Pangeon, 20 km W of Kavala. 24.05.1959. Stainton 7542 (W); Macedonia. Montes Cholomonde. 500 - 800 m. 5.06.1955. Rechinger 17247 (G); Cholomon. 17.06.1965. Goulimis 19953 (ATH); Macedonia. Between Ag. Antonios and Ag. Markos; Between Paroithia and Pantokerasia; Between Pantokerasia and Eliniko. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Pantokerasia. N of Lachanas. Edge of *Quercus pubescens* wood. 10.06.1988. Boratyński, Browicz, Tomlik, Zieliński 1106 (ATH, KOR); Between Kokkinia and Agios Antonios, NE of Kilkis. In thickets in the stream valley. 10.06.1988. Boratyński, Browicz, Tomlik, Zieliński 1095. (ATH, KOR); Between Foustani and Aetochorion, NE of Aridea. Wayside thickets. 8.06.1988. Boratyński, Browicz, Tomlik, Zieliński (ATH, KOR); Koupa; Between Periklia and Archangelos; Kastaneri; Between Goumenissa and Kastaneri. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Macedonia occ. In monte Vermion prope Naoussa. 800 m. 30.05 - 1.06.1936. Rechinger 8847 (G); Naoussa. 29.06.1956. Goulimis 19955 (ATH); Distr. Almopia/Peonia: montes Paiko (Meniki) in colle Pigos ad sept. pagi Livadhia alt. 1300 - 1400 m. In pteridetis et pratis. 29.07.1976. Greuter 14021 (G, UPA); Prov. and distr. Florina. Vill. Trigono at the bifurcation towards the Prespa lake. NW of the military post. 1000 - 1110 m. 21.06.1972. Stamatiadou 15698 (ATH); Distr. Florina. In jugo inter Kastoria and lacum Prespa. 100 m. 21.06.1972. Rechinger

44854 (G, W); Prov. Joanina. In faucibus Vikos. 500 - 600 m. 13.06.1973. Phitos 11665 p.p. (UPA); Prov. Joanina. Montes Tymphi, supra pagum Papingo. 1000 m. 6.07.1976. Phitos, Kamari, Tzanoudakis 15532 (UPA); Prov. and distr. Grevena. NE of the village of Despoti. 1150 - 1200. Place named Mavrolithoro. 19.06.1972. Stamatiadou 15559 (ATH); Distr. Grevena. Ad fines Epiri, in valle inter Kranea and Milea. 1000 m. 20.06.1973. Greuter 11314 (ATH, Herb. Greuter); Epirus. In valle Vikos. 6.06.1956. Goulimis in Pinatzis 12328 (Herb. Pinatzis); Mt. Voutsikaki prope Berula. 5.06.1955. Pinatzis 11075 (Herb. Pinatzis); Pindos. Near Agia Paraskevi, between Gardikion and Kalliroi. Stony wayside. 6.06.1988. Boratyński, Browicz, Tomlik, Zieliński 984 (ATH, KOR); Mt. Pieria: in sylva mixta supra Skoteina. 26.06.1954. Pinatzis 9802 - 9804 (Herb. Pinatzis); Prov. Pieria. Mt. Olympos, supra vicum Litochoron, in ditone loci Stavros. 1000 m. 7.08.1973. Phitos, Georgiadis, Tzanoudakis 14280 (UPA); Mt. Olympos. Mavrolongos, in fagetis. 30.06.1936. Pinatzis 1527 (Herb. Pinatzis); Chasia. Between Photinon and Deskati. NW of Kalabaka. 600 - 900 m. Sunny palce on the edge of *Quercus pubescens* wood. 7.06.1988. Boratyński, Browicz, Tomlik, Zieliński 1008 (ATH, KOR); Thessalia: Pilion. Portaria; Makrihahi; Mavrovouni; Rakopotamos (Raus 1980); Ossa. Ambelakia; Kotsamoursia; Zw. Seloma und Karitsa (Raus l.c.); Thessalia. Sermeniko, in valle Prioni. 18.08.1896. Sintenis 1527 (LD); Thessalia.: in oropedio Neuropolis. 13.06.1959. Pinatzis 11076, 15348 (Herb. Pinatzis); Chaliki, in valle Negerli. 28.06.1896. Sintenis 665 (LD, WU); The route Gardikion - Kastanea, between the cross-roads to Chalikion and the cross-roads to Stephanion; Between Paliouria and Lazarados; SW of Deskati. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Eurytania. prope pagum Micro-Choria. 28.06.1959. Pinatzis 15347 (Herb. Pinatzis); 4 - 6 km from Karpenision towards Lamia. Clayey wayside. In thickets. 3.06.1988. Boratyński, Browicz, Tomlik, Zieliński 897 (ATH, KOR); Tmfristos. Kelagias. 11. - 15.06.1942. Goulimis 19971 (ATH); Mt. Oeta, prope pagum Pavliani. 1100 m. Pinatzis 15349 (Hb. Pinatzis); Peloponnesus. Mt. Durduvana supra Kalyvia, ad fontem Karamani. 17.06.1956. Pinatzis 12327 (Herb. Pinatzis); Achaia. Prope Hagios Georgios in valle Aroania (Halácsy 1912); Prope Kalavryta. 700 - 800 m. Am Weg nach Hagia Lavra. 6.06.1926. Bornmueller 579 (B); Arkadia. In pinetis mt. Chelmos supra pagum Syvista. 800 m. 22.06.1893 Halácsy s.n. (WU); In faucibus umbrosis reg. abietina m. Kyllenis pr. Trikala. 10.07.1848. Boissier 2113 (G); In monte Malevo Laconiae prope Hagios Petros. 3000 ft. 13. - 25.06.1857. Orphanides 684 (ATH, ATHU, WU); Aegean Islands: Insula Thasos. Theologos. 31.05.1891. Sintenis, Bornmueller 593 p.p. (LD); Euboea: N slopes of Skotini Mt. above Metochion. Wayside thickets. Common. 500 - 600 m. 29.08.1986. Awzan, Boratyński, Browicz, Zieliński 346, 365 (ATH, KOR).

Hybrids

R. arvensis × *canina*

Thrakien. Nomos Evros. Avas, 4 km S. 5. - 28.06.1965. Bauer, Spitzenberger 1386 (W).

16. *R. phoenicia* Boiss., Diagn. ser. 1 (10): 4 (1849).

Described from the Near East.

Like *R. arvensis* but climbing, prickles rather strong, inflorescences many-flowered, sepals with many lateral lobes. $2n = 14$.

An east-Mediterranean species occurring in W and S Anatolia, Lebanon, Israel, SW Syria, NW Jordania and in N Iraq. In Greece it grows on east-Aegean islands of Rodhos, Chios and Kos (Fig. 8). It has been also mentioned from Thraki (Hayek 1926), this information, however, requires checking. *R. phoenicia* grows in loose

thickets, on edges of oak woods, along streams and rivers etc. Its Greek stands are situated between 100 and 300 m elevation.

Thraci. Near Xanthi (Hayek 1926); Chios Isl. Karyes. On the high escarp near the road to Nea Moni. 18.05.1986. Boratyński, Browicz, Zieliński 110 (KOR); Ins. Kos. In declivibus siccis ad ruinas Asclepion. 5.06.1935. Reching 7942 (G, LD); Rodhos. Wegrund bei Monolithos (Hansen, Snogerup 1966); Rodhos. 2 - 3 km N of Salakos (road to Kalvarda). In thickets. 26.04.1985. Boratyńska, Boratyński, Browicz, Dolatowski 18 (KOR).

17. *R. sempervirens* L., Sp. Pl. 492 (1753).

Described from Germany (Hb Linn. 652/17, photo!).

An evergreen climber with shoots climbing up to 8 (- 10) m. Prickles stout, hooked. Leaflets glabrous, shining. Inflorescences few- to many-flowered. Styler column hairy. Sepals lobed or entire. $2n=14$.

The range of *R. sempervirens* is associated with W and N Mediterranean regions. It extends from western France and Marocco to the western shores of Anatolia. In Greece this species is common along sea coasts, especially in western regions of the country (Fig. 14). It grows usually in maquis, on edges of evergreen or subever-

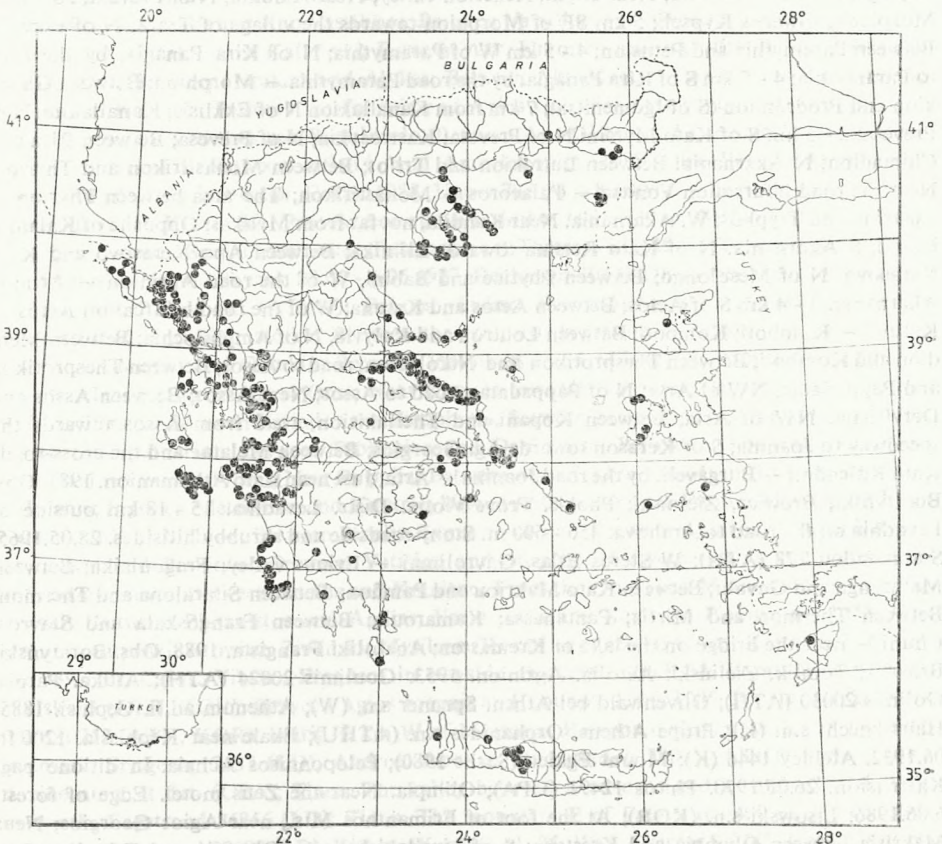


Fig. 14. Distribution of *Rosa sempervirens* L.

green forests, in roadside thickets etc. The most luxuriant specimens can be observed in more humid places, along streams and rivulets, in various depressions or along roadside ditches. As a rule it occurs between sea level and 400 - 500 m, exceptionally higher, as in Erimanthos Mt. to 700 - 800 m.

Thracien. Mesimvria. Nom. Evros. 5 - 28.06.1965. Rechinger 1837 (W); Xanthi. 500 ft. 27.05.1936. Tedd 1738 (K); Hagion Oros. Macchie inter Vatopedi and Karyae. 1.07.1963. Pinatzis 18289 (Herb. Pinatzis); Sithonia: Anolakka, Kastri, Platanitsi (Pavlidis 1976); Ep. Pierias. Mt. Olympos. E foothills, just N of Litochoron. 2500 - 280 m. 17.06.1976. Strid and Gustavsson 11468 (C); Makedonia. 5 km E of Litochoron. 30.05.1986. Lisowski B - 2796 (KOR); Kamena Vurla. Thickets on a stony slope. 2.06.1896. Lisowski B-2896 (KOR); W. Greece. Klisto, N of the road bifurcation Arta - Drosopigi, Near Despotica, N of the road Joanina - Igumenitsa; Near Soulopulon, W of Joanina; 2 - 5 km W of the road bifurcation Joanina - Igumenitsa; Between Vrosina and Keramitsa; 8 - 10 km SE of the cross-roads Sideri - Keramitsa, towards Neralda; 3 km from the cross roads Sideri - Keramitsa, towards Neralda; Near Neralda; Between Neralda and Parapotamos, E of Igumenitsa; Between Mavroudion and Igumenitsa; Drepanon, N of Igumenitsa; Between Filiata and Elea, by the road to Igumenitsa; Keramitsa, N of the road Joanina - Igumenitsa; Between Keramitsa and Xechora, NE of Igumenitsa; Near Suvota, SW of Igumenitsa; 4 - 5 km S of Plataria; Between Karterion and Masarakia, S of Igumenitsa; N of Masarakia; between Morphion and Ag. Kiriaki; Between Morphion and Mesopotamon, on the way Igumenitsa - Prevesa; Near Glyki, Acherion valley; Near Aidonia, N of Prevesa; Just near Morphion, towards Kypseli; 5 km SE of Morphion towards the village of Tzara, N of Prevesa; Between Paramythia and Petusion; 4 - 5 km W of Paramythia; N of Kira Panagia, by the road to Paramythia; 4 - 5 km S of Kira Panagia, by the road Paramythia - Morphion; Between Gardikion and Prodromion (S of Igumenitsa); 7 km from Kanallakion N of Ekklisie; Kanallakion N of Prevesa; 2 - 3 km S of Kato Myrsini N of Prevesa; Kastrokykia, N of Prevesa; Between Risa and Chimadion; N Akarnania. Between Lutrakion and Trifos; Between Monastirikon and Thyrion; Near the road bifurcation Vonitsa - Palaeoros - Monastirikon; The area between Thyrion - Vustrion and Tryphos; W. Akarnania. Near Kandila, not far from Mytikas; Opposite of Kalamos Island; S Akarnania. N of Kato Retsina towards Ellinika; Between Apo Kerasovo and Kato Kerasovo, N of Mesolongi; Between Phytiae and Babini, W of the road Agrinion - Arta; C Akarnania. 3 - 4 km S of Aetos; Between Aetos and Katuna; W of the road bifurcation Aetos - Katuna - Komboti; Komboti; Between Loutron and Kalyvia, N of Amphilochia; Between Mendion and Komboti; Between Thesprotikon and Nikolitsion, road to Assos; Between Thesprotikon and Pappadateae, NW of Arta; N of Pappadateae, road to Assos; Near Assos; Between Assos and Dervisiana, NW of Arta; Between Kopani and Theriakision, road from Assos towards the speedway to Joanina; S of Kerason towards Ag. Georgios; Between Melatae and the cross-roads Kato Kalendini - Burgaveli, by the road Joanina - Arta; Just near Kato Athamanion. 1981. Obs. Boratyński, Browicz, Zieliński; Phokis. Prov. Viotia. Distr. Levadhia. 15 - 18 km outside of Levadhia on the road to Arahova. 450 - 600 m. Stony roadside and shrubby hillsides. 28.05.1965. Stamatiadou 272 (ATH); W Sterea Ellas. Gavrolimni - Evinos valley; Fragoulaika; Between Mataranga and Gavalu; Between Kato Makriou and Pamfion; Between Sitaralona and Thermon; Between Thermon and Mirtia; Pantanassa; Kamaroula; Between Frangoskala and Stavros; Chuni - near the bridge on the lake of Kremaston; Anatoliki Frangista. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński. Aetolia. Agrinion. 1953. Goulimis 20024 (ATH); Attika. Parnis. Golimis 20030 (ATH); Olivenwald bei Athen. Spruner s.n. (W); Athenum ad fl. Cephisi. 1885. Haussknecht s.n. (K); Prope Athens. Orphanides s.n. (ATHU); Ekale near Kephissia. 1200 ft. 06.1932. Atchley 1446 (K); Mount Egaleo (Sarlis 1980); Peloponnisos Achaia. In ditione pagi Kastritsion. 26.05.1970. Phitos 12491 (UPA); Olimpia. Near the Zeus motel. Edge of forest. 6.06.1986. Lisowski s.n. (KOR); At the foot of Erimanthos Mts., near Agios Georgios; Near Makrisia between Olympia and Krestena; S of Livadaki between Olympia and Tripolis; Near Ovia, S of Patras; Between Moutriana and Seles on the way Kiparisia - Kalamata; Between

Olympia and Linaria; Between Kiriaki and Filiatra; N of Filiatra; 1.5 km N of Gargaliani; Between Mesinia and Pylos, near the cross-roads to Koukounara; Near Gialova, N of Pylos; Near Karifatsi, N of Pylos; Chora, near the cross road Pylos – Kiparisia – Kazarma; 3 - 4 km NE of Pylos; Near Rodia, Kiparisia Mts.; SE of Moutriada on the way Kiparisia – Kalamata; Just W of Tholo, S of Zaharo; Near Toubitis on the way Olympia – Tripoli; N of Livadaki on the way Olympia – Tripoli; Near Stavrodromi; N of Kidonies; S of Messinia. Methoni. 1980. Obs. Boratyński, Browicz, Zieliński; In Messenia. 17 - 29.05.1898. Zahn 292 (UW); Panachaikon. 19 - 23.06.1948. Goulimis 20028 (ATH); NW Peloponnisos. Between Diakopto and Ano Diakopto; Between Ano Diakopto and Meaglon Spilaeon; Between Eliniko and Halarditsa; Between Ag. Stephanos and Kaminia; Between Kato Ahaia and Kalamiki; Areti; Sea shore NW of Killini; Near Loutra Killini; Between Marathia and Ag. Joannis; Katakolon; Epitalia, valley of Afios river; Between Pyrgos and Ambelon; Between Ambelon and Ephyra; Between Ephyra and Keramidia; Between Keramidia and Chavarion; Between Chavarion and Elida; Traganon; Between Simiza and Borsi; Between Borsi and Dafni; Between Dafni and Velises; between Velises and Mihoio; between Mihoio and Mataraga; Between Kagadi and Karcika. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; Laconia: Agriani, Yeoritsi (Schouten 1977); Laconia. Prope Pasava. 17.05.1955. Goulimis in Pinatzis 11074 (Herb. Pinatzis); Monte Malevo Laconiae. Orphanides s.n. (ATHU); Ionian Islands. Lefkas: Between Vlichion and Katochorion; Between Drimonas and Ag. Nikitas; Between Marandochorion and Vasiliki. 1981. Obs. Boratyński, Browicz, Zieliński; Kefallinia. Mt. Rudi (Bornmüller 1928); Kefallinia. Akoli, Agrostilion, Charaktion (Phitos, Damboldt 1985); In Insula Zacyntho. 04.1867. Schmidt s.n. (ATH); Zakynthos. Maharaido. 17.05.1968. Stamatiadou 2850 (ATH); Zakynthos: Porto Roma; Between Porto Roma and Gerakas; Between Vassilikos and Ano Vassilikos; Between Vassilkos and Xirokastello, Between Argasi and the town of Zakynthos; Kalamaki; Between Akr. Kryoneri and Akrotiri; Between Akrotiri and Gerakari; Between Gerakari and Alykes; Between Akr. Katastari and Orthonies; Between Volimes and Korynth; Between Anafonitria and Agios Georgios Monastery; Between Keri and Lithakia; Between Kallitheia and Skoulikado; Between Ag. Kilikos and Langadakia, Near Lagopoda; E of Lithakia; Between Lithakia and Ampelokopioi. 1988. Obs. Boratyński, Browicz, Tomlik, Zieliński; In hortis ins. Corfu. 1958. Unger 708 (W); Kerkyra. Weg nach Ipso. 05.1890. Gerold s.n. (LD); Korfu. Mt. Pantokrator above Strinilas. 600 - 700 m. 20.07.1972. Davis 54600 (E); Aegean Islands. Samothraki: inter Palaeopolis et Therma. 6.05.1943. Stojanov, Kitanov s.n. (SO); Sporadum Insula Skyros. 29.04 - 6.05.1927. Reching 704 (LD); In insula Scyro Kamarae. 2 - 15.06.1908. Tunta 425 (ATHU); Euboea. Lichas; Between Agios Georgios and Gialtra; Between Istiaea and Kanatadika: Between the cross-roads Istiaea – Vutas and Monokarya; Between Artemision and Gerakui; Between Monokarya and Mileae; The slopes of Telethron; From Amelanda towards Xiron Oros; Near Kersea towards Pappades; Between Ag. Anna and Ag. Anna Paralia; Between Kirindos and Strophylia; Between Metochion and Kirindos; Between Kalyvia and Spatharion; Between Prokopion and Daphnussa; Between Pilion and Prokopion; From Vlachia towards Pilion; Near Pygadia; Between Agia Sophia and Myli; Between Stropones and Limari; Between Metochion and Kuturla; Between Metochion and Paralia Metochion; From Vitala towards Metochion; Between Paralia Kymis and Kymi; Between Kymi and Vitala; Between Neochorion and Perivolia; Between Vatisation and Stuppaei; Between Alexis and Paradision; Near Evangelismos; Between Andias and Komiton; From the cross road Marmarion – Karystos to Alexis; Between Platanistos and Andias; From the Kape Kastri to Platanistos. 1988. Obs. Awzan, Boratyński, Browicz, Zieliński; Mytilene (Reching 1943); Chios. Kampia. 2.06.1939. Platt 239 (K); Chios. Vikion. Frequent in wayside thickets. 1.06.1985. Boratyński, Browicz, Zieliński 81 (ATH, KOR); Between Agios Joannis and Vounos. 1. 06. 1985. Boratyński, Browicz, Zieliński 217 (ATH, KOR); Ikaria. 2 km W of Measaria. E-exposed sloping valley. 5. 04. 1958. Runemark, Snogerup 7037 (LD); Andros. Apokia. Stamatiadou 20031 (ATH); Andros. Coll. ign. sine num. et dat. (UPA); Tinos. The valley between Mousoulo and Livadia. 23. 05. 1968. Runemark, Engstrand 36956 (LD); Tinos. The mountain E of Falatados. 400 m. 24. 05. 1968. Runemark, Engstrand 37090 (LD); Kithira. Kapsali. 11. 05. 1964. Greuter S 6542 (Herb. Greuter); Crete. Kissamos. 29. 05. 1884. Reverchon 1 (E); Distr. Kissamos. Inter Male et Kissamos. 13. 06.

1943. Bicherich in Rechinger 15139 (W); Apokoronos. N Fuss des Hügels Kefalia nwl. Vrises. 100 m. 28. 03. 1962. Greuter S 4040 (G, LD, W); Nom. Rethymni. Arkadi, ca 500 m. 27. 06. 1969. Wągsjö 3194 (LD); Rodhos. S of Salakos, near the cross-roads Salakos — Kalavarda — Dimilia. 26. 04. 1983. Boratyńska, Boratyński, Browicz, Dolatowski 23 (ATH, KOR).

SUMMARY

The present account is a result of both field observations and the analysis of herbarium collections from the most important European herbaria.

From the studies conducted by the author it appears, that the genus *Rosa* in Greece is represented by 17 species belonging to 5 sections. The most numerous is the dominating in Europe critical section *Caninae* to which belong 11 extremely variable species. The commonest species growing practically throughout the country are *R. canina* and *R. agrestis*. The rarest ones are *R. glauca* and *R. jundzillii* known only from single stands in the North.

The article includes a key for the determination of species, their short descriptions, the most important synonyms, specimen citations and distribution maps.

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Rodzaj *Rosa* L. w Grecji

Streszczenie

Niniejsza praca jest wynikiem badań terenowych prowadzonych przez autora w Grecji oraz analizy bogatych materiałów zielnikowych ze wszystkich większych europejskich zielników.

Z przeprowadzonych studiów wynika, że rodzaj *Rosa* jest reprezentowany w Grecji przez 17 gatunków należących do 5 sekcji. Najliczniej (bo przez 11 gatunków) reprezentowana jest najbardziej krytyczna, dominująca w Europie sekcja *Caninae*. Do gatunków najpospolitszych w Grecji należą rozprzestrzenione praktycznie w całym kraju *R. canina* i *R. agrestis*, natomiast najrzadsze to *R. glauca* i *R. jundzillii*, znane tylko z pojedynczych stanowisk na północy.

Praca zawiera klucz do oznaczania gatunków, krótkie ich opisy, najważniejsze synonimy, listę analizowanych okazów zielnikowych oraz mapy rozmieszczenia poszczególnych gatunków.