

# New chorological data and remarks on the distribution of some vascular plants in Bulgaria

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**Abstract.** The paper presents contemporary chorological information and critical remarks on the distribution of 34 native and adventive Bulgarian vascular plants.

**Key words:** alien species, Bulgaria, chorological data, flora, rare plants

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## Introduction

The paper comprises data about the occurrence of 34 taxa of vascular plants in various floristic regions in Bulgaria. For some taxa new chorological data are reported, for others confirmative records are made supported by herbarium specimens. The present occurrence of *Primula halleri* in the Rila Mts is confirmed. Some remarks on the distribution of *Achillea grandifolia*, *Silene dioica* and *Xeranthemum cylindraceum* are also included. *Lavandula angustifolia* is recorded as escaped from culture and a new record is added to the distribution of the alien *Impatiens glandulifera*.

The information in this report has been collected during the authors' field trips in 1995–2002 and their check-ups in the Bulgarian herbaria. Specimens cited in the current article are kept in the Herbarium of the St. Kliment Ohridski University of Sofia (SO), the Herbarium of the Institute of Botany (SOM) and in the collections of the Herbarium of the Agricultural University, Plovdiv (SOA, PAU).

## List of plants

### *Achillea depressa* Janka

Mt Sredna Gora (*Western*): Mt Lozenska, in rocky calcareous places at the top of Lalina Mogila locality, with flowers, 20.10.2002, GN-01, SC (BA & RV), SOM 157901.

Although widespread throughout the country, this species has not been recorded for Mt Sredna Gora (*Western*), according to Peev (1992). Mention deserves the fact that *A. depressa* was reported earlier from Mt Lozenska by Ganchev (1956), but his contribution was overlooked.

### *Achillea distans* Waldst. & Kit. ex Willd.

Pirin Mts (*Northern*): the forest above Yavorov chalet, with flowers, 01.10.1975, GM-03, SV (B. Kuzmanov), SOM 139048; Bayuvi Douпки locality, with flowers, 30.09.1975, GM-03, SV (B. Kuzmanov), SOM 132900; above the Yavorov chalet, with flowers, 01.10.1975, GM-03, SV (B. Kuzmanov), SOM 132896; at the Yavorov chalet – the meadow, with flowers, 13.07.1970, GM-03, SV (D. Delipavlov & M.

Popova), SOA 26868, 26884, 26885 (sub *A. millefolium* L. f. *rosea* Desf.).

According to Peev (1992), *A. distans* has been known from the Central Balkan Range, Rila and Vitosha Mts. The species was later found in the Western Balkan Range (Vladimirov & Kozhuharov 1997) and West Frontier Mts (Vladimirov 2001b). Its occurrence in the Pirin Mts was reported by Kuzmanov & al. (1989), but this record has been omitted later.

#### ***Achillea grandifolia* Friv.**

Forebalkan (*Western*): in brushwood on the north-eastern slopes of the Vrushka Chouka crest, with flowers, 14.06.1963, FP-15, SV (D. Jordanov), SO 75310.

Balkan Range (*Central*): Gabrovo, with flowers, s. d., LH-64, SV (I. Neichev), SOM 79320; in forests at Sokolski monastery, with flowers, 09.05.1928, LH-64, SV (s. nom. coll.), SOM 79288; Sokolski monastery, with flowers, 05.1899 (s. d. ex.), LH-64, SV (I. Neichev), SO 75304; Korou Dere, stony grasslands, with flowers, 07.1903 (s. d. ex.), LH-43, SV (s. nom. coll.), SO 75302; idem, with flowers, 22.07.1902, LH-34, SV (I. Neichev), SOM 79307; Central Stara planina Mts (s. l. ex.), with flowers, 26.06.1949, SV (D. Delipavlov), PAU 19621; Gabrovski Balkan, the peak of Ushite, with flowers, 17.07.1903, LH-04, SV (I. Neichev), SOM 79308.

Rhodopi Mts (*Eastern*): in the shrubs above Mezek village, with flowers, 03.06.1984, FN-24, SV (D. Delipavlov & I. Cheshmedzhiev), PAU 41355; Northeastern Rhodopi Mts – in the shrubs on peak Kourt Kale, Svilengrad distr., with flowers, 24.06.1940, MG-32, SV (B. Kitanov), SO 75306.

Rhodopi Mts (*Central*): along the road below Asenova Fortress, with flowers, 10.06.1961, LG-25, SV (N. Vihodcevski), SO 75313; in grassy wastelands nearby Asenovgrad, with flowers, 18.05.1983, LG-25, SV (D. Delipavlov), PAU 41685; in saxosis ad Bachkovo, with flowers, 04.10.1914, LG-24, SV (I. Mrkvichka), SOM 79312; west of Yagodino, Rhodopi Mts., 1050 m, on limestone rocks and rocky slopes, with flowers, 25.07.1997, KG-71, SV (E. Bergmeier), SOM 155072.

A Balkan-Anatolian geoelement considered widespread in the mountain regions in Bulgaria – Sofia region, Mt Vitosha, West Frontier Mts, Mt Belasitsa, Mt Slavyanka, Pirin Mts, Rila Mts, Mt Sredna Gora, and West Rhodopi Mts (Peev 1992). Dimitrov & Denchev (1999) reported its occurrence in the Valley of Strouma River. Mention deserves the fact that this species is al-

so found in the Western Forebalkan, Central Balkan Range, Central and Eastern Rhodopi Mts.

#### ***Antennaria dioica* (L.) Gaertn.**

Znepole region: in grassy places at peak Rouy, with flowers, 24.05.2000, FN-24, SC (BA & B. Sidjimova), SO 101487; in pratis subalpinis ad Mt Rouy, with flowers, 24.06.1933, FN-24, SV (B. Acharov), SOM 76508.

The species is known as widespread throughout the mountain regions in Bulgaria: the Western and Central Balkan Range, Vitosha, West Frontier Mts, Mt Slavyanka, Pirin Mts, Rila Mts, Western and Central Rhodopi Mts (Peev 1992), and Mt Sredna Gora (*Western*) (Dimitrov 1994). In the region of Znepole this species was collected earlier by B. Acharov, but the find was not reported by him.

#### ***Asyneuma canescens* (Waldst. & Kit.) Griseb. & Schenk**

Mt Sredna Gora (*Western*): Mt Lozenska, in rocky calcareous places at the top of Lalina Mogila locality, with flowers, 20.10.2002, GN-01, SC (BA & RV), SOM 157902.

The species was reported by Anchev (1992) for Znepole region, Mt Vitosha, Mt Slavyanka, Pirin Mts, Rila Mts, and the Western Rhodopi Mts. It was recorded recently for the Central Balkan Range (Meshinev & al. 2000) too. *A. canescens* was already reported from Mt Lozenska by Ganchev (1956).

#### ***Carex panicea* L.**

Mt Vitosha: in damp grassy places above Zhelezni-tsa village, with spikes, 03.06.2002, FN-91, SC (BA), SOM 157898.

*Carex panicea* is considered widespread throughout the country, but it has not been reported from Mt Vitosha. Mention also deserves the fact that the species has been observed by us in the Western and Central Rhodopi Mts (Beglika locality, Smolyanski Lakes). The occurrence of *C. panicea* in the Rhodopi Mts was indicated earlier by Vulev & Kitanov (1964), but later it was omitted by Markova (1992) and Assyov & al. (2002).

#### ***Centaurea orientalis* L.**

Mt Sredna Gora (*Western*): Mt Lozenska, in rocky calcareous places at the top of Lalina mogila locality, with flowers, 20.10.2002, GN-01, SC (BA & RV), SOM 157900.

This species was found along the Black Sea Coast, in Northeast Bulgaria, Danubian Plain, Forebalkan, Balkan Range, Znepole region, Central Rhodopi Mts, and the Thracian Lowland (Peev 1992).

***Chaerophyllum byzantinum* Boiss.**

Black Sea Coast (*Northern*): forests in the vicinities of Aladzha monastery, with flowers, 15.07.1999, NH-89, SC (BA), SO 101492.

This species has been so far reported from the Northeast Bulgaria, Central and Eastern Balkan Range, Toundzha Hilly Country and Mt Strandzha (Andreev 1992). However, its occurrence at the Black Sea Coast was predictable.

***Cirsium candelabrum* Griseb.**

Rila Mts: Eleshnitsa locality, 14.07.1998, GM-25, SC (BA), SO 99979, 100962; above Yakorouda village, along the road to Treshtenik locality, cca 900 m, 18.08.2002, FM-96, SV (BA).

This species has been so far recorded from localities in the Balkan Range, Sofia region, Znepole region, Mt Vitoshka, West Frontier Mts, the Valley of Strouma River, Mt Belasitsa, Mt Slavyanka, Valley of Mesta River, and Pirin Mts (Peev, 1992). It was also reported recently from the Central Rhodopi Mts (Dimitrov 2002). This plant was reported earlier from the Rila Mts by Stojanov & Stefanov (1948), but in more recent botanical editions these localities were omitted.

***Dianthus pallens* Sm.**

Balkan Range (*Western*): grassy places above Lokorsko village, with flowers, 04.09.2002, GN-03, SC (BA), SOM 157903.

*D. pallens* is already known from the Black Sea Coast, Northeast Bulgaria, Danubian Plain, Eastern Balkan Range, Valley of Strouma River, Central and Eastern Rhodopi Mts, and the Thracian Lowland (Petrova 1992).

***Gentianella lutescens* (Velen.) Holub**

Vitoshka region: Mt Vitoshka, in moist meadows above Zhelezmitsa village and along the track to Aleko chalet, with flowers and fruits, June, 1995 (s.d.ex.), FN-91, SC (BA), SO 101037.

According to Petrova (1992), this species is known from localities in the Balkan Range, Sofia region, Znepole region, West Frontier Mts, Rila Mts, Western and Central Rhodopi Mts. It was also reported from the Northern Pirin Mts (Uzunov 1997).

***Impatiens glandulifera* Royle**

Vitoshka region: Along the riverbanks of Selska River in Zhelezmitsa village and its vicinities, escaped from culture and quite common, with flowers and fruits, 29.08.2002, FN-91, SC (BA & RV), SOM 161025.

A quite aggressive alien species which, according to a recent account of Vladimirov (2001a), is also widely known from the Western Forebalkan, Western and Central Balkan Range, Sofia region, the Valley of Mesta River, Rila Mts, Western and Central Rhodopi Mts. Considering the aggressiveness of *I. glandulifera*, as well as the fact that it is valued as an ornamental plant and frequently cultivated, the authors have found it appropriate to indicate their observation.

***Lavandula angustifolia* Mill.**

Balkan Range (*Eastern*): in rocky and grassy places along the road above Kamchia village, with flowers, 11.05.2001, MH-94, SC (BA & RV), SO 102249.

Sofia region: in rocky calcareous places in the vicinities of Belidie Han village, with flowers, April, 1999 (s.d.ex.), FN-84, SV(BA).

Znepole region: Mt Risha (Mt Konyavska) – along the road to peak Roni Vruh from Zemen town, ad ca 1000 m, with flowers and fruits, 21.07.1981, FN-40, SV (D. Dimitrov), SOM 156563.

*L. angustifolia* occurs natively in the Mediterranean region. In Bulgaria it is an exotic alien, widely cultivated as an aromatic plant. The species was recognized as escaped from culture in both localities cited above. In all known stations the species is confined to dry stony habitats on poor shallow soils, as in its entire area as well. Presumably, *L. angustifolia* was brought there by seeds from the nearby field cultures. In two out of three cases – in Sofia region and Eastern Balkan Range, the plants are flowering and fruiting normally.

***Orchis papilionacea* L.**

Balkan Range (*Eastern*): in rocky and grassy places along the road above Kamchia village, with spikes, 11.05.2001, MH-94, SV (BA & RV).

Only two plants of this endangered species were found in the new locality. Herbarium specimens were not collected, in order to ensure the survival of the population. In-field determination was later confirmed by Dr Antoaneta Petrova on the photographs. A quite rare plant protected by the Bulgarian law.

***Pedicularis leucodon* Griseb.**

Znepole region: grassy places along the road between Trun town and Zelenigrad village, with flowers, 25.05.2000 FN-24, SC (BA), SO 101941.

The species has been so far known from the Balkan Range, Sofia region, Mt Vitosha, Rila Mts, and Western Rhodopi Mts (Peev 1995).

***Potentilla crantzii* (Crantz) Beck ex Fritsch**

Vitosha region: Mt Vitosha, grassy places between Academica chalet and Reznyovete locality, with flowers, 15.06.2000, FN-81, SC (BA), SO 100401.

According to Markova (1992), *P. crantzii* is found in the Central Balkan Range, Pirin Mts, Rila Mts, Western and Central Rhodopi Mts. In the last several years it was also collected in the Eastern Rhodopi Mts (Gussev & al. 1998b).

***Potentilla mollicrinis* (Borbás) Stankov**

Sofia region: in grassy and stony places in the vicinities of Belidie Han, 10.06.2000, FN-84, SC (BA), SO 100402.

*P. mollicrinis* has been so far known from the Northern Black Sea Coast, Eastern Balkan Range, Znepole region and the Thracian Lowland (Markova 1992).

***Primula halleri* J. F. Gmel.**

Rila Mts: in moist grassy places near Malio Chatal River, before its inflow into Drushlyavitsa River, with flowers and immature fruits, 28.07.1998, FM-96, SC (BA & V. Krumov), SO 101490.

A rare Balkan endemic protected by the law, recorded from Rila and Pirin Mts (Peev 1992). In the last decades distribution of this plant in the Rila Mts remained uncertain and it was considered extinct there (Peev & al. 1993). The current record confirms the recent occurrence of *P. halleri* in the Rila Mts.

***Ranunculus chius* DC.**

Toundzha Hilly Country: in the vicinities of Sveta Troitsa Monastery (Topolovgrad distr.), with flowers and fruits, 29.05.2001, MG-45, SC (BA & RV), SO 101493.

According to Anchev (1992), the species is known from the Valley of Strouma River and Mt Strandzha. It was also recorded from the Eastern Rhodopi Mts (Gussev & al. 1998b).

***Ranunculus fontanus* C. Presl**

Rila Mts: in swamps along Gramadnata River, below the Treshtenik chalet, 21.08.1997, with flowers and

fruits, GM-16, SC (BA), SO 98877; *ibid.*, 25.07.2002, GM-16, SV (BA).

Rhodopi Mts (*Western*): in damp places and among mosses along the old road between the Kartela and Beglika localities, with flowers and fruits, 22.07.2002, KG-63, SC (BA), SOM 157897.

Listed as a rare plant in Appendix I of the Bern Convention. So far known to occur in the Central Balkan Range, Znepole region, West Frontier Mts, Rhodopi Mts, Pirin Mts, and the Thracian Lowland (Cheshmedzhiev & Vodenicharov 1998).

The population in the Rila Mts consists of a great number of individuals, spread out on a territory of approximately 2 dca, in association with *Sphagnum* spp., *Eriophorum* spp., *Carex rostrata* Stokes, *Drosera rotundifolia* L., etc.

Concerning the second reported locality, the authors thought it important to indicate this find, because *R. fontanus* was reported from the Western Rhodopi Mts by Cheshmedzhiev & Vodenicharov (1998) on the basis of a single specimen collected as far back as 1912 by Ivan Urumov, near the Youndola locality. Thus our record confirms the present occurrence of the species in this part of the mountain.

***Rhagadiolus stellatus* (L.) Gaertn.**

Toundzha Hilly Country: in the vicinities of Sveta Troitsa Monastery, nearby Topolovgrad, with flowers and fruits, 15.05.2001, MG-45, SC (BA & RV), SO 101724.

This species has been so far known from the Southern Black Sea Coast, Southern Valley of Strouma River, Eastern Rhodopi Mts, and Mt Strandzha (Peev 1992).

***Scabiosa argentea* L.**

Balkan Range (*Western*): in dry grassy places between the villages of Voinyagovtsi and Lokorsko, with flowers and fruits, 04.09.2002, GN-03, SC (BA), SOM 157897.

Vitosha region: Mt Plana, in dry grassy slopes between the village of Zheleznitsa and Kokalyane Monastery, with flowers and fruits, 29.08.2002, FN-91, SC (BA), SOM 157147.

Rila Mts: above Yakoruda village, along the road to Treshtenik locality, cca 900 m, with flowers and fruits, 18.08.2002, GM-25, SC (BA), SOM 157146.

This species has been so far known from the Black Sea Coast, Northeast Bulgaria, Thracian Lowland (Petrova 1992), the Valley of Strouma River (Denchev



& al. 1997), Northern Pirin Mts (Dimitrov & Denchev 1997), and Eastern Rhodopi Mts (Gussev & al. 1998b).

***Serratula radiata* (Waldst. & Kit.) M. Bieb.**

Znepole region: dry stony calcareous places in the higher parts of Konyavska Planina Mt, southern of Choklyovo Blato marsh, in fruits, 21.07.1943, FM-49, SV (D. Jordanov), SO 102785; in dry grassy and stony places on the slopes of Mt Chepun nearby Dragoman, with flowers, 10.05.2001, FN65, SC (BA), SO 101489; Mt Golo Bardo, in dumetis *Amygdaleto nanae*, cacum. Velova Vodenitsa, ad cca 1100 m, in fruits, 09.09.1936, FN-61, SV (N. Stojanov & B. Achtarov), SOM 83631; in graminosis siccis ad Kolonitza, mt. Golo Bardo, ca 1050 m s.m., solo calc., in fruits, 26.07., s. a., FN-61, SV (A. Radoslavov & N. Stojanov), SOM 83632; Golo Burdo Mt, dry grassy places at the road to the chalet of Slavej, with flowers, s. d., FN-61, SV (C. Gussev), SO 96666; in pasquis saxosis Mt. Mechka supra stat. Zemen, distr. Kyustendil, ad ca 1110 m, in fruits, 04.08.1932, FN-40, SV (N. Stojanov & B. Achtarov), SOM 83633

This species has been reported from the Znepole region (Urumov 1935; Stojanov & Stefanov 1948). Peev (1992) did not include this region in the distribution range of *S. radiata*.

***Silene dioica* (L.) Clairv.**

Znepole region: Erma Gorge nearby Trun town, with flowers, 25.05.2000, FN-34, SC (BA), SO 100940; moist places along Erma River nearby Trun, with flowers, 17.05.1973, FN-34, SV (P. Panov), SOM 129288.

West Frontier Mts: Mt Osogovska, in beech forest nearby Osogovo Chalet, with flowers, 12.07.1967, FM-37, SV (P. Panov), SOM 127134.

Data concerning the occurrence of *S. dioica* in Bulgaria are found in the papers of many authors, but this species remained unconfirmed for a long time, until Panov reported it for the Znepole region (Panov 1975a), West Frontier Mts (Mt Osogovska) and in the Western Balkan Range (Panov 1975b). However, this contribution was omitted later. In the latest account (Petrova 1992) the species is listed for the Western Balkan Range and the Toundzha Hilly Country.

The herbarium specimens collected by Panov (SOM 127134, 129288) from both localities in the Znepole region and Mt Osogovska are correctly determined by him as *S. dioica*. The specimen from the Western Balkan Range cited by Panov (1975b) was not found either in SO, or in SOM.

***Tozzia alpina* L. subsp. *carpathica* (Wol.) Dostál**

Rhodopi Mts (*Western*): In wet grassy places at the water catchment in Beglika locality, with flowers, 30.06.2002, KG-63, SV (BA).

A single individual with flowers was found in the cited locality and thereby not collected. *Tozzia alpina* is an extremely rare plant, so far found in the Western and Central Balkan Range, Mt Vitosha, Pirin Mts, and Rila Mts (Andreev 1995). This is the first record of this species from the Western Rhodopi Mts, but a further search and a supporting herbarium specimen is desirable.

***Tragus racemosus* (L.) All.**

Balkan Range (*Western*): In grassy places above Voinyagovtsi village, 04.09.2002, FN-94, SC (BA), SOM 157148.

The species is widely distributed throughout the warmer regions of the country, but has not been reported from Western Balkan Range (Kozhuharov 1992; Assyov & al. 2002).

***Veronica orchidaea* Crantz**

Mt Sredna Gora (*Western*): Mt Lozenska, in grassy places between the villages Gorni Lozen and Dolni Pasarel, with flowers, 14.07.1997, GN-01, SC (BA), SO 101941; in brushwood, on the slopes above Pancharevo Water Reservoir, with flowers and fruits, 15.09.2001, FN-91, SC (BA), SO 101942.

Peev (1992) reported this species as widespread throughout the country. Later Fisher & Peev (1995, sub *Pseudolysimachion orchidaeum*) gave more detailed data about its distribution, but Mt Sredna Gora (*Western*) was not mentioned in their work.

***Viola biflora* L.**

Balkan Range (*Central*): wet shady rocks nearby Stara River, below the Houbavets Chalet, cca 900 m, with flowers, 27.07.2000, LH-22, SC (BA & RV), SO 101483.

An unusual and interesting record, because this species has been so far known to occur above 1700 m (Delipavlov 1979; Anchev 1992).

***Viola canina* L. subsp. *canina***

Znepole region: in grassy places on the slopes of peak Rouy, 1600–1700 m, with flowers, 24.05.2000, FN-24, SC (BA & B. Sidjimova), SO 100403; Mt Rouy, with flowers, 16.06.1895, FN-24, SV (D. Mihailov), SO 52057.

Rila Mts: in grassy and stony places nearby Souhoto Lake, with flowers, 15.07.1998, FM-96, SC (BA), SO 101486.

This subspecies was reported from the West Frontier Mts, Mt Sredna Gora and from Western and Central Rhodopi Mts (Anchev 1992). Petrova & al. (1998) recently indicated it for the Eastern Rhodopi Mts.

#### ***Viola elatior* Fries**

Sofia region: in shrubs and brushwood near-by Belidie Han, with flowers, 10.05.1995, FN-84, SC (BA), SO 101053.

The species is already known from Northeast Bulgaria, Mt Sredna Gora, Thracian Lowland, Toundzha Hilly Country (Anchev 1992), and Znepole region (Vutov & Dimitrov 2002).

#### ***Viola rupestris* F. Schmidt**

Znepole region: Mt Golo Burdo, peak Ostritsa, in grassy and stony places, with flowers, 28.04.2000, FN-61, SC (BA), SO 100404.

It is a new record of the species for the flora of Znepole region, which is known to occur in the Central Balkan Range, Vitosha region, West Frontier Mts, Mt Slavyanka, Pirin Mts, Mt Sredna Gora, and Western and Central Rhodopi Mts (Anchev 1992).

#### ***Viola sieheana* W. Becker**

Znepole region: Mt Golo Burdo, in the brushwood below peak Ostritsa, with flowers, 28.04.2000, with flowers, FN-61, SC (BA), SO 100405.

Until now *V. sieheana* has been also found in the Forebalkan, Central Balkan Range, Western and Central Rhodopi Mts (Anchev 1992), Mt Strandzha (Gussev & al. 1998a), the Danubian Plain (Tzonev 2000), Eastern Balkan Range (Sopotlieva & Petrova 2001), Northeast Bulgaria, the Southern Black Sea Coast (Vutov & Dimitrov 2002), and the West Frontier Mts (Dimitrov & Sidjimova 2003).

#### ***Viola tricolor* L. subsp. *macedonica* (Boiss. & Heldr.) A.W.F. Schmidt**

Znepole region: peak Rouy, 1600–1700 m, with flowers, 24.05.2000, FN-24, SC (BA & B. Sidjimova), SO 100406; Trun, Gorochevtsi – Golemi Vruh, with flowers, 14.05., (s. a.), UTM-Grid indeterminable, SV (D. Jordanov & A. Janev), SO 99550.

This subspecies has been so far recorded from the Pirin Mts, Western and Central Rhodopi Mts (Anchev 1992). It was also recently found in the Eastern Rhodopi Mts (Gussev & al. 1998b).

#### ***Xeranthemum cylindraceum* Sm.**

Black sea coast (*Northern*): Kaliakra Reserve, with flowers, 25.05.1999, PJ-10, SV (A. Petrova), SOM 158941; in pasquis siccis Dobrodzhae, circa urbem Balchik, with flowers, s. d., NJ-90, SV (B. Davidov), SOM 82285, 82286; between the villages of Dish Boudak and Kroumovo, Varna distr., in fruits, 19.07.1924, NH-87, SV (D. Yordanov), SOM 76991.

Black sea coast (*Southern*): dry grassy places between the village of Primorsko and Perla Hotel, with flowers, 16.06.2004, SC (BA & H. Pedashenko), SOM 160869; dry grassy places at Maslen Nos cape, with flowers, 17.06.2004, SC (BA & H. Pedashenko), SOM 160870.

Northeast Bulgaria: Razgrad, with flowers, s. d., GP-04, SV (S. Gruncharov), SOM 82320, 82321; Razgrad, with flowers, s. d., GP-04, SV (s. coll.), SOM 82299, 82300; in pascuis siccis Deli Orman, circa urbem Novi Pazar, with flowers, 06.06.1902, NH-19, SV (B. Davidov), SOM 82287; in pascuis siccis Dobrodzhae ad pagum Chairli-Gyol, in fruits, 09.07.1901, NJ-81, SV (B. Davidov), SOM 82288; Kuyu-Kyoi, in fruits, 07.07.1901, NJ-81, SV (A. Yavashov), SOM 82306; ad marginem arborum prope urb. Popovo, ad cca 390 m s. m., with flowers, 15.08.1951, MH-39, SV (I. Penev), SOM 82305, SO 76998, 84647.

Forebalkan (*Western*): Gorna Verenitsa village, distr. Mihailovgrad, dry calcareous places, with flowers, 07.06.1953, FP-61, SV (S. Ganchev), SOM 131121; grassy places at the northeastern slopes of Vrushka Chouka crest, with flowers, 14.06.1963, FP-15, SV (D. Yordanov), SO 76996; at the village of Karash, with flowers, 06.1916, GN-37, SV (S. Gruncharov), SOM 82312, 82313, 82315; at the village of Reselets, with flowers, 07.06.1986, KH-59, SV (P. Ivanova), SOM 145210.

Forebalkan (*Eastern*): in graminosis siccis prope Lovech, with flowers, 1885, LH-17, SV (I. Urumov), SOM 82284, 82291; in vinetis prope vic. Dzhouluyunitsa, distr. Veliko Turnovo, in fruits, 03.08.1969, MH-17, SV (N. Vihodcevsy), SOM 121251, SO 76999; Gabrovo, at the village of Kaya-Bash, with flowers, s. d., LH-55, SV (A. Yurkovsky), SOM 82307; Sevlievo, with flowers, 06.1901, LH-46, SV (I. Neichev), SOM 82314.

Balkan Range (*Central*): in dry places in the meadows in the town of Gabrovo, in fruits, 08.1898, FM-63, SV (I. Neichev), SO 76989; dry grassy places in the lo-

cality of Pezlova Niva (Gabrovo), 06.1903, FM-63, (I. Neichev), SOM 82289, 82290.

Balkan Range (*Eastern*): dry places in old vineyards at Osman-Pazar (Omourtag), with flowers, 23.06.1923, MH-57, SV (D. Yordanov), SO 76990; Avrenska Planina (s. l. ex.), with flowers, 07.08.1901, SV (B. Davidov), SOM 82296; Kamchijska Planina (s. l. ex.), with flowers, 20.08.1901, SV (B. Davidov), SOM 82297.

Sofia region: In declivibus herbosis supra pag. Katina, distr. Sofia, in fruits, 30.07.1969, FN-84, SV (N. Vihodcevsy), SO 76994; Sofia city, the "Mladost" complex, grassy places, in fruits, 16.08.1970, FN-91, SV (N. Vihodcevsy), SO 77000; grassy slopes in the locality of Mogilata, western from the village of Pozharevo, Sofia distr., in fruits, 07.08.1970, FN-73, SV (N. Vihodcevsy), SO 77001; inter Dragalevtsi et Sofia, with flowers, 07.1901, FN-82, SV (I. Mrkvichka), SOM 82316, 82317.

Znepole region: Ad vias sub pag. Zegrilovci, distr. Tran, with flowers, 15.07.1972, FN-23, SV (N. Vihodcevsy), SO 77002; Chepun Mt, in fruits, 27.07.1989, FN-23, SV (E. Chaneva), SO 94540; Golo Burdo Mt, grassy places at the slopes of the peak of Primochliak, in fruits, 08.07.1969, FN-61, SV (P. Vasilev), SOM 123857; Golo Burdo Mt, calcareous slopes, northern from the village Staro Selo at the road between Sofia and Dupnitsa, with flowers, 12.07.1998, FN-70, SV (A. Petrova), SOM 155245; northeastern of the village of Aldomirovtsi, in a stony meadow in direction of the village of Opitsvet, with flowers, 03.06.1968, FN-64, SV (M. Anchev), SO 76995.

Vitosha region: Lyulin Mt, in fields above the village of Gorna Banya, in fruits, 11.09.1968, FN-82, SV (N. Vihodcevsy), SO 76993; Vitosha Mt, at the road between Vladaja and Dragichevo, with flowers, 30.06.2000, FN-82, SV (D. Stoyanov), SO 100658; Vitosha Mt, in a meadow nearby the monastery Sveti Yoakim and Anna nearby the village of Zheleznitsa, with flowers, 26.05.1999, FN-91, SV (A. Petrova), SOM 157955; in collibus siccis declivibus meridionalibus, ad pagum Alino, 1050 m alt., with flowers, 15.07.1910, FM-99, SV (B. Davidov), SOM 82238.

Mt Slavyanka: the village of Yanovo, in abandoned fields and dry grassy places by the river, with flowers, GL-08, SV (I. Pashaliev), SOM 151742.

Rila Mts: in collibus siccis mt. Rilo merid., ad pagum Draglište, 1000 m alt., with flowers, 26.07.1915, UTM-Grid indeterminable, SV (B. Davidov), SOM 82298.

Rhodopi Mts (*Central*): at the calcareous hills, southern of the village of Kozarsko, distr. Pazardzhik, with flowers, 21.07.1976, KG-85, SV (B. Kuzmanov), SOM 133933.

Rhodopi Mts (*Eastern*): in a meadow in the locality of Likan Cheshma, between the villages of Mandra and Svirachi, with flowers, 19.07.1997, MF-28, SV (A. Petrova, D. Venkova), SOM 153450.

Thracian Lowland: along the railroad in the vicinity of Sadovo, Plovdiv distr., in fruits, 26.08.1893, LG-26, SV (V. Střibrný), SO 76987; idem, 07.1894 (s. d. ex.), LG-26, SV (V. Střibrný), SO 76988; Sadovo, in fruits, 07.1910, LG-26, SV (V. Střibrný), SOM 82292; Sadovo, in fruits, 06.1894, LG-26, SV (V. Střibrný), SOM 82323; in graminosis ad Kochachevo, with flowers, 19.06.1914, LG-26, SV (I. Mrkvichka), SOM 82319; Haskovo, in the locality of Karamahmoutlii, in fruits, 19.07.1980, LG-74, SV (P. Rahov), SOM 142060.

Toundzha Hilly Country: dry grassy places nearby the village of Beykyoy (Karavelovo), Elhovo distr., with flowers, 26.07.1929, MG-68, SV (D. Yordanov), SO 76992; at the road above the village of Topolovgrad, with flowers, 23.07.1962, MG-45, SV (N. Vihodcevsy), SO 76997; Karnobat, in fruits, 12.08.1888, MH-92, SV (S. Georgiev), SO 76986; Kulo Kyoy, in fruits, 04.07.1901, MG-78, SV (A. Yavashov), SOM 82309.

Mt Strandzha: Vitanovo Reserve, in the locality of Golemia Pazlak, with flowers, 14.06.1995, NG-44, SV (Ch. Gussev), SO 98247; meadows and pastures, widespread in Strandzha Mt, with flowers, 24.06.1920, UTM-Grid indeterminable, SV (B. Achtarov), SOM 82293, 82294.

*Xeranthemum cylindraceum* was considered relatively widespread throughout the country in most publications on the Bulgarian flora (Stojanov & Stefanov 1925, 1933, 1948; Stojanov & al. 1967). However, in more recent works (Peev 1992; Anchev 1999) the wide distribution of *X. cylindraceum* was not supported. For instance, Peev (1992) gives the following information about the distribution of this species: "... D (-0,5)", which according to the abbreviation used means "... Danubian Plain, up to 500 m".

The existence of such a conflict in the literary sources (already noted by Petrova & al. 1998) and our personal observations urged us to check on the specimens kept in the Herbarium of the Institute of Botany (SOM) and in the Herbarium of Sofia University (SO). A list of the floristic regions in which the species was collected together with the corresponding specimens is given above.



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