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Rochelia (Boraginaceae), Rumex maritimus (Polygonaceae), and *Schivereckia doerfleri (Cruciferae),* new taxa for the flora of Bulgaria

Abstract

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Rochelia (R. disperma) is a new generic record for Bulgaria, having been discovered in the south-west (Struma valley) where Mediterranean influence is strongest. *Rumex maritimus,* on the contrary, was found at the northern border, along the Danube river. *Schivereckia (S. doerfleri)* is the confirmation of an old, unconfirmed record from the Central Stara Planina range. The Balkan distribution of all three species is mapped.

Introduction

This paper deals with some species recently discovered in Bulgaria, or whose presence in the country, while formerly in doubt, could be confirmed thanks to reliable herbarium material.

The squares mentioned after each localities are UTM grid squares used for mapping purposes, as defined by Kozuharov & al. (1983), whereas the map (Fig. 3) is based on the grid defined for the Balkan countries by Jordanov & al. (1976).

All specimens are deposited in the herbarium of the University of Sofia (SO).

Rochelia disperma (L. f.) K. Koch. – Struma valley: hill of Malak Kozuč, place called "Rupite" near the village of Pripečene, 41°28'N, 23°16'E (square FL-99), 100 m a.s.l., sandy, siliceous ground, 26 May 1991, *L Evstatieva & Č. Gusev* (SO, with flowers and fruits). (Fig. 1).

This therophyte was found in a scrub community of *Amygdalus ×delipavlovii* Seraf., *Paliurus spina-christi* Mill., *Carpinus orientalis* Mill., *Jasminum fruticans* L., *Pistacia terebinthus* L., *Colutea arborescens* L., *Quercus pubescens* Willd., *Rhamnus rhodopeus* Velen., *R. saxatilis* Jacq., *Fraxinus ornus* L., *Coronilla emerus* L., and *Osyris alba* L., together with Mediterranean species such as *Chrysopogon gryllus* (L.) Trin., *Melica cilia-*

ta L., *Danthonia alpina* Vest, *Bromus sterilis* L., *Dasypyrum villosum* (L.) P. Candargy, *Stipa capillata* L., *Avena barbata* Pott ex Link, *Nardurus maritimus* (L.) Murb., *Iris reichenbachii* Heuff., *Coronilla scorpioides* (L.) W. D. J. Koch, *Hippocrepis unisiliquosa* L., *Lotus angustissimus* L., *Astragalus monspessulanus* L., *Minuartia hamata* (Hausskn.) Mattf., *Minuartia attica* (Boiss. & Spruner) Vierh., *Minuartia rhodopaea* (Degen) Kožuharov & Kuzmanov, *Velezia rigida* L., *Silene flavescens* Waldst. & Kit., *Fumaria kralikii* Jord., *Aethionema saxatile* (L.) R. Br., *Hesperis laciniata* All., *Clypeola johnthlaspi* L., *Camelina sativa* (L.) Crantz, *Hornungia petraea* (L.) Rchb., *Alyssum saxatile* L., *Reseda lutea* L., *Sanguisorba minor* Scop., *Potentilla pindicola* (Nyman) Hausskn., *Erodium cicutarium* (L.) L'Hér., *Geranium robertianum* L., *G. rotundifolium* L., *Mercurialis annua* L., *Euphorbia barrelieri* subsp. *thessala* (Formánek) Bornm., *Euphorbia taurinensis* All., *Helianthemum aegyptiacum* (L.) Mill., *Fumana procumbens* (Dunal) Gren. & Godr., *Viola kitaibeliana* Schult., *Scandix pecten-veneris* L., *Asterolinum linum-stellatum* (L.) Duby, *Goniolimon collinum* (Griseb.) Boiss., *Convolvulus cantabrica* L., *Anchusa officinalis* L., *Buglossoides arvensis* (L.) I. M. Johnst., *Teucrium polium* L., *Acinos suaveolens* (Sm.) G. Don, *Ziziphora capitata* L., *Scrophularia canina* L., *Linaria simplex* (Willd.) DC., *Crucianella graeca* Boiss., *Sherardia arvensis* L., *Galium verticillatum* Danthoine, *Valerianella eriocarpa* Desv., *Valerianella coronata* (L.) DC., *Knautia orientalis* L., *K. integrifolia* (L.) Bertol., *Leontodon crispus* Vill., *Centaurea orientalis* L., *Crupina vulgaris* Cass., *Lactuca cretica* Desf., *Picris pauciflora* Willd., and *Anthemis tinctoria* L.

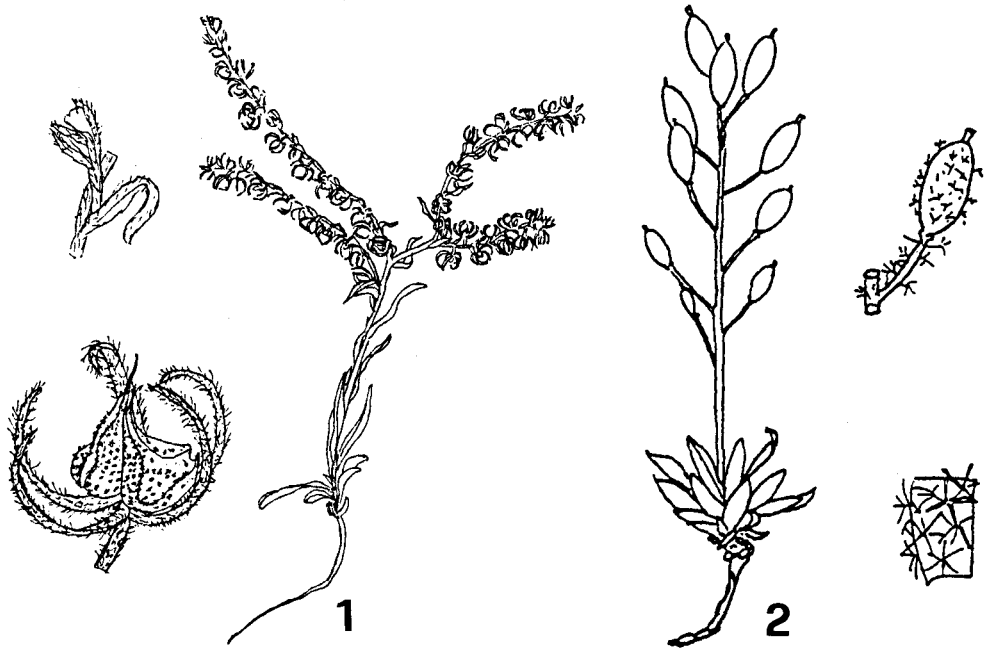

Fig. 1. *Rochelia disperma,* habit and details of the inflorescence and fruit. – Fig. 2. *Schivereckia doerfleri,* habit and details of fruit and indumentum.

According to Halácsy (1902) and Hayek (1928-1931) *Rochelia disperma* also occurs in Greece (Thessalia: Mt Ossa) and northern Dobrudja (Fig. 3). It is probably distributed by zoo- and/or anthropochory.

The genus *Rochelia* Rchb. is close to *Lappula* Gilib. and *Cynoglossum* L. *but* differs from both by forming only 2 (not 4) nutlets per fruit, and also by its characteristic, small starlike glochidia situated on warts but never on prickles. It was not previously known to occur in Bulgaria.

Rumex maritimus L. – Danube plain: island of Vardim near Svištov, 43°37'N, 25°27' E (square LJ-73), 7 Jul. 1992, *S. Kočeva* (SO, with fruits).

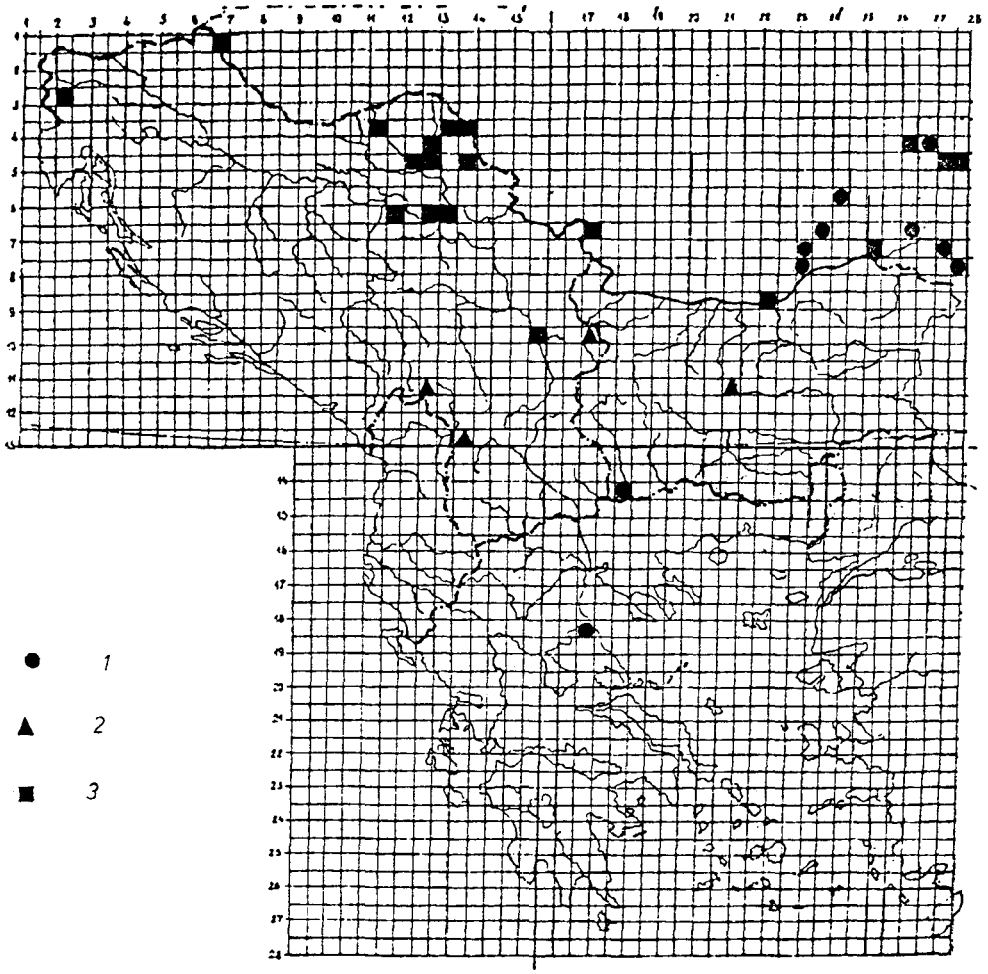

Fig. 3. Grid map of the Balkan distribution of the species treated. – 1, *Rochelia disperma;* 2, *Schivereckia doerfleri;* 3, *Rumex maritimus.*

This hygrophyte, not previously recorded from Bulgaria, is widespread in Europe and Asia except in the south and extreme north. It is not so far known from Greece (Greuter & al. 1989). In the Balkans, it mainly follows the banks of the Danube and its tributaries (Fig. 3). It is also said to grow in Albania (Paparisto & al. 1988), but no exact locality data are known.

Schivereckia doerfleri (Wettst.) Bornm. – Central Stara Planina range: summit Botev, 42°43'N, 24°45'E (square LN-33), calcareous rocks, 10 Aug. 1945, *B. Kitanov* (SO, with fruits) (Fig. 2).

The genus *Schivereckia* Andrz. ex DC. is very similar to *Draba* L. The only difference between them is in the filaments of the inner stamens, which in *Schivereckia* are winged, the wings ending in a short apical tooth, whereas in *Draba* they are unwinged but slightly dilated at the base.

The presence of *Schivereckia* in Bulgaria is mentioned with doubt in the relevant Bulgarian floras. Velenovský (1905) had reported its existence on Mt Botev in the Central Stara Planina range on the faith of a collection made by Adamović, a record long considered as doubtful but now confirmed by the above cited specimen.

This rare endemic of the Balkan peninsula and Anatolia (Greuter & al. 1986, sub *Draba doerfleri* Wettst.) is known from E. Serbia (Mt Belava), Kosovo (Prokletija, Bogićevica: Diklić in Josifović 1972) and the F.Y.R. Makedonija (Šar planina, Mt Kobilica: Bornmüller 1921) (Fig. 3).

Acknowledgements

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