

## ADDITIONS TO VASCULAR FLORA OF ROMANIA

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**Abstract:** Two new subspecies for Romanian flora are presented, *Delphinium fissum* Waldst. et Kit. subsp. *albiflorum* (DC.) Greuter et Burdet and *Pimpinella tragium* Vill. subsp. *titanophila* (Woronow) Tutin. Both of them are spread in Dobrogea. The second replace *Pimpinella tragium* Vill. subsp. *litophila* (Schischkin) Tutin.

**Keywords:** *Delphinium fissum* subsp. *albiflorum*, *Pimpinella tragium* subsp. *titanophila*, Romanian flora

### Introduction

Romanian vascular flora, even rather well known, still requires further research in order to be completed. In this paper two new subspecies are presented: *Delphinium fissum* Waldst. et Kit. subsp. *albiflorum* (DC.) Greuter et Burdet and *Pimpinella tragium* Vill. subsp. *titanophila* (Woronow) Tutin.

### Material and methods

The identification of the taxa was done using data from the literature (Todor 1958, Davis 1965, Tutin 1968, Asenov 1982, Pawłowski 1993). Herbaria specimens examined: BUCA [110757, 110758, 5981] for *Delphinium fissum* and BUCA [35333, 27969, 105986, 75755], BUAG [17315] for *Pimpinella tragium*.

### Results and discussion

1. *Delphinium fissum* subsp. *albiflorum*, considered as species by Davis (1965) and Pawłowski (1993), is close of *Delphinium fissum* subsp. *fissum*; the differential characters between these two subspecies are presented below:

– *Delphinium fissum* Waldst. et Kit. subsp. *fissum* is a glabrous or scattered hairy plant, with blue flowers, of 22–27 mm length (Pawłowski 1993) or 24–27 mm (Davis 1965), including spur; bracts are lanceolate-subulate, shorter than the pedicels, not membranous or narrow membranous margined. This subspecies has two varieties: var. *fissum* (var. *dinaricum* (Beck et Szysz.) Stoj. et Stef., ± glabrous plant, with glabrous fruits (Fig. 1a), and var. *pubescens* Heuff., whole plant, including the fruits, densely pubescent (Fig. 1b). Distribution: South of Europe towards northern Romania and centre of Ukraine.

– *Delphinium fissum* Waldst. et Kit. subsp. *albiflorum* (DC.) Greuter et Burdet (*D. albiflorum* DC.; *D. fissum* var. *albiflorum* (DC.) Simeon. et Penev) is like *Delphinium fissum* subsp. *fissum*, but with smaller pale blue flowers, of 19–23 mm length (Pawłowski 1993) or 18–25 mm (Davis 1965), including spur; bracts are ovate-lanceolate, longer than pedicels, broadly membranous margined (Fig. 1c). Distribution:

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Balkan Peninsula. In Romania is distributed in Tulcea County, to Caugagia Valley [BUCA 110757, BUCA110758] and Babadag Plateau – Poiana Cășăriei [BUCA 5981].



Fig. 1. *Delphinium fissum*:

- a. *Delphinium fissum* subsp. *fissum* var. *pubescens*
- b. *Delphinium fissum* subsp. *fissum* var. *fissum*
- c. *Delphinium fissum* subsp. *albiflorum*

## 2. *Pimpinella tragium* Vill. subsp. *titanophila* (Woronow) Tutin

In Romanian references published before 1970 (Prodan 1939a, Prodan 1939b, Borza 1949), *Pimpinella tragium* is presented without infraspecific taxa. There is only one exception: Todor (1958) publishes *Pimpinella tragium* f. *bipinnatisecta* Gris. ex Pant. which have lower leaves 2-pinnate. This infraspecific taxon was recorded to Doloșman Cape [BUAG 17315] (Fig. 2), Consul Hill and Filimon Sârbu village, in Tulcea County. After 1970, in Romanian botanic literature (Dihoru & Doniță 1970, Popescu & Sanda 1998, Ciocârlan 2000, Oprea 2005) *Pimpinella tragium* subsp. *litophila* (Schischkin) Tutin is reported.

According to data published in Bulgarian flora (Asenov 1982), *Pimpinella tragium* f. *bipinnatisecta* is synonym for *Pimpinella tragium* subsp. *titanophila*, taxon distributed to North of Balchik city. Analyzing the herbaria specimens from BUCA and BUAG, we concluded in Dobrogea only *Pimpinella tragium* subsp. *titanophila* grows (Tutin 1968, Asenov 1982), not *Pimpinella tragium* subsp. *litophila* (Schischkin 1950, Tutin 1968).

The differences between *Pimpinella tragium* subsp. *titanophila* and *Pimpinella tragium* subsp. *litophila* are given by basal leaves and area of distribution. Thus, *Pimpinella tragium* subsp. *titanophila* has 2-pinnate basal leaves and is distributed in S.E. of European former USSR (Tutin 1968), including Moldavia (Gheideman 1954), but absent from Krym (Tutin 1968). *Pimpinella tragium* subsp. *litophila* has simple pinnate basal leaves and is distributed in South of Europe, from Spain to Krym (Tutin 1968).

According to Schischkin (1950) there are other differences too between these taxa: number of rays, 5-9 for subsp. *litophila* and 10-20 for subsp. *titanophila*, as well as the size of fruits, about 1.5 mm length for subsp. *litophila* and 3-5 mm for subsp. *titanophila*.



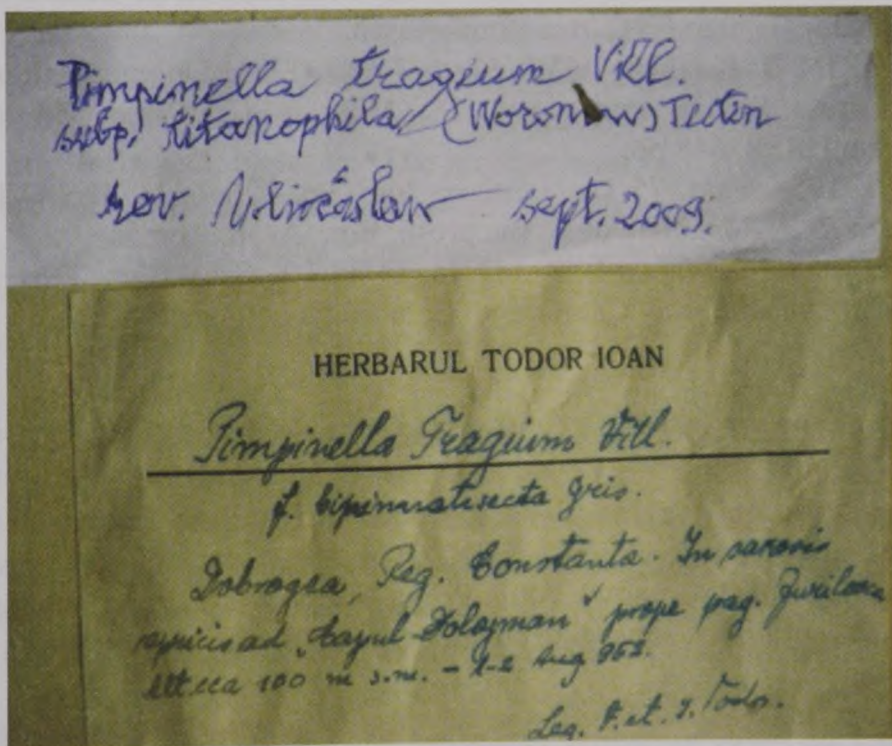


Fig. 2. *Pimpinella tragium* subsp. *titanophila* – herbarium specimen from BUAG

We do not exclude the presence of *Pimpinella tragium* subsp. *litophila* in Dobrogea, but the examined specimens from BUCA, collected from Enisala [BUCA 35333], Cerna [BUCA 27969], Atmagea [BUCA105986] and Caugagia [75755], correspond to *Pimpinella tragium* subsp. *titanophila*.



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## COMPLETĂRI LA FLORA VASCULARĂ A ROMÂNIEI

**Rezumat:** Autorul prezintă două subspecii noi în flora României: *Delphinium fissum* Waldst. et Kit. subsp. *albiflorum* (DC.) Greuter et Burdet și *Pimpinella tragium* Vill. subsp. *titanophila* (Woronow) Tutin. Prima subspecie crește în Dobrogea, în sudul județului Tulcea, iar a doua subspecie crește pe stâncării, tot în Dobrogea și înlocuiește subsp. *litophila*.

**Cuvinte cheie:** *Delphinium fissum* subsp. *albiflorum*, *Pimpinella tragium* subsp. *titanophila*, România