

GORTANIA - Atti Museo Friul. di Storia Nat.	18 (1996)	91-94	Udine, 31.III.1997	ISSN: 0391-5859
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HORDEUM GENICULATUM ALL. AND *OXALIS DILLENII* JACQ.
TWO NEW OR NEGLECTED SPECIES OF THE FLORA
OF FRIULI-VENEZIA GIULIA

HORDEUM GENICULATUM ALL. E *OXALIS DILLENII* JACQ.
DUE SPECIE NUOVE O DIMENTICATE PER LA FLORA
DEL FRIULI-VENEZIA GIULIA

Abstract - Two species of vascular plants not included in the recently published Chorological Atlas of Vascular Plants in Friuli-Venezia Giulia have been found to occur or to have occurred in the discussed territory. One herbarium sheet with *Hordeum geniculatum* collected at the beginning of the century in the vicinity of Trieste was discovered during revision work at the LJU herbarium, and *Oxalis dillenii* was recorded in 1994 in Palmanova and Gorizia. The first species is most probably only a casual, and the second a neophyte in the phase of spreading throughout Europe.

Key words: Friuli-Venezia-Giulia (NE Italy), Flora, *Hordeum geniculatum*, *Oxalis dillenii*.

Riassunto breve - Sono state trovate due specie di piante vascolari, la presenza delle quali non è segnalata nel recentemente pubblicato Atlante corologico delle piante vascolari nel Friuli-Venezia Giulia. L'esiccata di un esemplare della specie *Hordeum geniculatum*, trovato all'inizio del secolo nei dintorni di Trieste, è stata rinvenuta durante la revisione dell'erbario LJU; *Oxalis dillenii* è stata invece segnalata negli ultimi anni a Palmanova e a Gorizia. Ambedue le specie sono avventizie: la prima è probabilmente soltanto casuale, mentre la seconda è una neofita nordamericana, che attualmente si sta propagando in Europa.

Parole chiave: Friuli-Venezia-Giulia, Flora, *Hordeum geniculatum*, *Oxalis dillenii*.

Introduction

The recently published Chorological Atlas of Vascular Plants in Friuli-Venezia Giulia (POLDINI, 1991) was not only a marvellous presentation of chorological data, it was also a spur to further investigation and the filling-in of "gaps", blank base areas of under-recorded species on one hand and species not included in the Atlas on the other. In a similar way the Red Data Book of Slovenian Flora (WRABER & SKOBERNE, 1989), although far less complex and thorough, caused an increase of interest in species denoted as "insufficiently known". Hence, the systematic searching stimulated by the Red Data Book has resulted in the elucidation of the actual occurrence of about 10% of the included species over the last few years.

The present article is a similar response to Poldini's Atlas. It deals with two new (or overlooked) species of the Friuli-Venezia Giulia region. The first species was found during the revision work on Poaceae at the herbarium of the University of Ljubljana (LJU); it was collected at the beginning of the century and its occurrence in Friuli-Venezia-Giulia was probably only ephemeral. The second species is a neophyte in the phase of expansion. It was recorded recently and its localities are only the first two discovered, but undoubtedly it will become (or most probably already is) much more widespread.

1. *Hordeum geniculatum* All. (*Hordeum hystrix* Roth, *H. gussoneanum* Parl.)

10348 Italia: Friuli-Venezia Giulia, "Biva na pustih krajih ob morju pri Sv. Savi blizu Trsta" (Growing in abandoned places along the sea coast at S. Sava near Trieste). Leg. R. Justin, 1903, det. N. Jogan, 1995 (LJU 17307, sub *H. marinum*).

H. geniculatum is one of the so-called "microspecies" from the *H. marinum* aggregate. It can be distinguished reliably from typical *H. marinum* Huds. only by the narrower inner glumes of the lateral spikelets (BOTHMER et al., 1989; BOR, 1970; MELDERIS, 1985; TZVELEV, 1976; NEVSKIJ, 1941). Other less reliable differences mentioned in the literature include the presence/density and length of hairs on lower leaf-sheaths (according to HUMPHRIES, 1980 and STACE, 1991, the hairs in *H. geniculatum* are at least 0.5 mm long while in *H. marinum* they are absent or no longer than 0.25 mm, although in the Balkans, the leaf-sheaths of both taxa can be similarly hairy – BOTHMER et al., 1989), the disarticulation of the inflorescence axis (more expressed in *H. geniculatum* – NEVSKIJ, 1941), and continentality (the area of distribution of *H. geniculatum* which is said to be mostly continental while that of *H. marinum* is limited to the coastal regions).

It is not always easy to distinguish between the "narrow" and the "wide" inner glumes of the lateral spikelet, and inexact descriptions of width in many keys have often been a source of confusion: in an analysis of material from KOSOVO (MAYER & MICEVSKI 1964), an overlapping of the widths between the two taxa in the range of 0.45-0.55 mm was observed (the total width range was 0.25-0.75 mm) and so the authors proposed the formal delimitation of the two taxa at the level of forma (*H. marinum* f. *marinum* vs. *H. marinum* f. *gussoneanum* (Parl.) Mayer & Micevski). In some more recent works, the delimitation width between the two taxa is much higher, e. g., 0.6 mm in HUMPHRIES (1980) and even 0.7 mm in STACE (1991) (total width range 0.3-1.2 mm). According to Stace, (almost) all the material of Mayer & Micevski belongs to *H. geniculatum*, which is also in accordance with its continental distribution. On the other hand, TZVELEV's (1976) opinion is that there is no overlapping of the widths between the two taxa and that the inner glumes of lateral spikelets of *H. geniculatum* are not more than 0.4 mm wide while

that of *H. marinum* are 0.6-1.4 mm wide. Thus the determination of plants from the *H. marinum* aggregate with their inner glumes of the lateral spikelets (0.4) 0.45-0.6 (0.7) wide remains doubtful.

In the LJU herbarium, there are two herbarium sheets with material from Friuli-Venezia Giulia, both collected in the vicinity of Trieste. The plants on the sheet from "Flora Exsiccata Austro-Hungarica" (No. 1898, ... inter Mugiam et Tergestum..., leg. Marchesetti, LJU 17301) with their inner-glume-of-the-lateral-spikelet width up to 1 mm represent typical *H. marinum*, while those collected by Justin in 1903 have their glumes less than 0.3 (0.4) mm wide and therefore undoubtedly belong to *H. geniculatum*.

According to the continental and Eastern Mediterranean nature of *H. geniculatum*, its occurrence in Trieste was probably only ephemeral.

2. *Oxalis dillenii* Jacq. (*O. stricta* L., sensu Flora Europaea)

10145 Italia: Friuli-Venezia Giulia, Palmanova, in front of the southern city wall entrance. Leg. & det. N. Jogan, 12.11.1994.

10047 Italia: Friuli-Venezia Giulia, Gorizia, ruderal sites in the city. Leg. & det. N. Jogan, 7.1995.

O. dillenii is a North American species spreading across Europe (YOUNG, 1968). In northern Italy, it has already been recorded in Trentino (PIGNATTI, 1982), in Austria it is quite widespread (ADLER, 1994), and ten scattered localities have been found in Slovenia since 1989 (three in Ljubljana, two in the Subpannonian region, and five – Most na Soči, Branik, Dobrovo, Izola, Piran – in the Submediterranean phytogeographical region). According to its morphological features, *O. dillenii* is somehow between *O. fontana* Bunge and *O. corniculata* L., but superficially it is much closer to *O. fontana*, and for this reason these two species are frequently confused.

O. dillenii can be distinguished from *O. fontana* for (1) the absence of stolons, (2) the absence of multicellular hairs (it is densely covered only with appressed unicellular hairs), (3) the presence of scale-like stipules, (4) umbellate inflorescence, (5) deflexed fruit pedicels, and (6) the structure of sclerotesta. *O. dillenii* shares three of these features (3, 4, 5) with *O. corniculata*, from which it can be distinguished by the erect or ascending (never decumbent or rooting at the nodes) stem, the green colour of the vegetative parts (not tinged dark red), and not so deeply lobed leaflets.

The habitats of *O. dillenii* are similar to those of the other two mentioned species: it grows predominately on ruderal sites (according to MELZER, 1968; 1986; especially graveyards) and also in segetal communities.

Acknowledgments

Thanks are due to Prof. Dr. L. Poldini for giving me his Chorological Atlas, to Prof. Dr. T. Wraber for help with the literature, to Wayne Tuttle for correcting the English text, and to Aleš Jezovnik for the translation of the abstract into Italian.

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