

RESEARCH ARTICLE

Critical taxonomical notes on poorly known *Johrenia porteri* Post ex Boiss. (*Apiaceae*)

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Abstract

In addition to the incomplete type from Turkey, *Johrenia porteri* Post ex Boiss. is known from only two herbarium specimens of doubtful systematic position from Turkey-Syria border. The deficiencies in both type and other herbarium samples have been caused uncertainty and debate about the taxonomic position of the species. In this article, *Johrenia porteri* is epitipified and its taxonomic position has been clarified. The description of the species has been expanded with the studies conducted within the scope of the samples collected in different developmental periods from the type locality as well.

Keywords: Eudicots, epitipification, *Johrenia*, Turkey

Introduction

The genus *Johrenia* (*Apiaceae*), known in Turkey with the Turkish name “Irazotu” (Güner et al. 2012), was described by Candolle (1829) based on *J. dichotoma* DC. According to the latest taxonomic analysis on some of the genera in *Apiaceae*, the generic name *Dichoropetalum* Fenzl has been restored and some species of *Johrenia* s.l. in Turkey have been transferred to *Dichoropetalum* (Pimenov et al. 2007). After this taxonomic arrangement, which was not adopted in the “Türkiye Bitkileri Listesi (Damarlı Bitkiler)” the number of taxa of the genus *Johrenia* distributed in Turkey has become 3. These taxa are *Johrenia silenoides* Boiss. et. Bal., *J. porteri* and *J. dichotoma* DC. (Chamberlain 1972; Pimenov et al. 2007; Menemen 2012).

Johrenia porteri is a poorly known species due to many taxonomic confusions. This species has been published from Kahramanmaraş (Boissier 1888), depending on the flowering and young fruity type specimens whose rosette leaves were missing (in G and BEI). In addition, the species has been known from doubtful specimens from another locality in Turkey (Hatay/Gaziantep: Kurd Da., in BEI and B) and from Syria (Chamberlain 1972; Pimenov et al. 2007).

Unlike type specimens, the specimens from Hatay/Gaziantep are stemless and consist only of rosette leaves.

Therefore, it has been reported that the origin of these specimens is not known and may represent another species (Pimenov et al. 2007). Bormüller (1930) reported that these samples belong to *Pimpinella saxifraga* L., but Pimenov et al. (2007) stated that this sample may be more suitable for *Pimpinella corymbosa* Boiss.

The taxonomic confusions do not allow the taxon identified as the *Johrenia porteri* to be accurately attributed to any genus, and type specimens in G and BEI and the others in B and BEI are not sufficient to clarify the taxonomic position of it. As the most probable taxonomic solution, it has been proposed to attribute the type specimens in BEI and G to *Peucedanum junceum* (Boissier) Mouterde and the others in B and BEI to *Pimpinella corymbosa* (Pimenov et al. 2007). The studies on more complete specimens from around the type locality are required (Pimenov et al. 2007). Although some studies have been done on the materials collected from the type locality before (Dogan et al. 2010; Ceter et al. 2012; Bagci and Dinc 2012), there is no published comprehensive study on the solution of taxonomic confusion. In this study, it is aimed to clarify the taxonomic position of *J. porteri* within the scope of the samples collected around the type locality.

Results

Figure 1 consists of two panels. Panel (a) shows a dried plant specimen of *Plantago montana*, featuring several thin, brown stems with small, dark, dried flower heads. Panel (b) shows the original handwritten label for the specimen. The label is a piece of aged, yellowed paper with some tape repairs. It contains the following text: "Plantago montana Syriae borealis." in a printed font, followed by "Ex Herb. Postian. apud Colleg. Syriens. Protest." in a smaller printed font. Below this, there is a handwritten signature "Therese Postian" and a date "Sept 13, 1880".

365 Barbey

Plantae Syriae borealis.

Ex Herb. Postian. apud Colleg. Syriens. Protest.

Polarenia Polari, Post.

Kind Bagh,
Apr. 11, 1873

Epitype

KNYA HERBARIUMU
Sakarya Üniversitesi
Fen-Edebiyat Fakültesi Biyoloji Bölümü

Fam. Yoskunkulaceae
Nomen. Johrenia pastori Paul ex B.S.P.

Loc. Ç. K. Maray, Kapasay, Kocaeli
Yedigöller Isl. Yedigöller

Date: 17.06.2011
Ca. 480-650

Det. _____
Loc. Yayuz BACCI No. 1159

Taxonomy

***Johrenia porteri* Post ex Boiss., Fl. Or. Suppl. 266 (1888)**

Type: [Turkey C6 Maraş] in Syriae borealis collibus siccis
and Kapukhan ditionis Marasch (lecto. G, isolecto. BEI photo!)
(Fig. 1)

Epitype (designated here): [Turkey] C6 Kahramanmaraş: Kapuçam Mevkii, Karaçam topluluğu içi açık ve taşlık-kayalık yerler, 600 m-650 m, 15.04.2011, Bağcı 4139 and M. Dinç (KNYA) (Fig. 3).

Description: Tall perennial herbs. Rootstock thick, branched, crowned by a weak fibrous collar. Stem up to 200 cm long, strongly glaucous dichotomously branched above the middle, 5 mm-10 mm diameter, striate below and above, with withered petioles remaining from former year at base. Basal leaves 1-pinnate, up to 15 cm, oblong in outline, with 4-6 paired leaflets, ultimate leaf segments pinnatifid to pinnatisect, with linear to oblong lobe, glabrous, drying before anthesis; lower and median cauline leaves smaller with 2-3 paired undivided or trisect leaflets; upper leaves wholly reduced, simple and sessile. Basal leaf petioles up to 5 cm long and 3 mm-5 mm wide. Inflorescence dichotomously branched, umbels unequally 5-12 rayed, rays diffuse in flowering time, nearly erect in fruiting time; bracteoles 5-8, herbaceous, 3 mm-4 mm long, triangular lanceolate, strongly deflexed at fruiting time. Peduncles 0.5 cm-20 cm, rays 0.5 cm-2.5 cm, pedicels 4 mm-5 mm in fruiting. Flowers yellow, minute. Stylopodium plane or slightly conic. Ripe fruit oblong-elliptic to ovoid, (5.2 mm-6.2 mm) × (3.3 mm-4.0 mm), exterior vittae embedded in the thick white margin, central area remaining green and differentiated (Figs. 3 and 4).

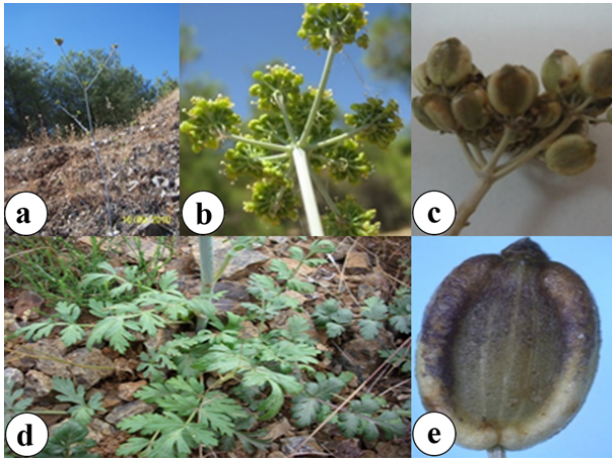


Figure 4. Natural views of *Johrenia porteri* in different development period; (a): general view; (b): inflorescence; (c): infructescence; (d): radical leaves; (e): mature fruit (a, c, e from Bağcı 4134 and M. Dinç in September; b from Bağcı 4133 and M. Dinç in June; d from Bağcı 4139 and M. Dinç in April).

Discussion and Conclusion

The observations during field studies indicate that the deficiencies in herbarium samples that cause taxonomic confusion are due to the development characteristics of the species because at the beginning of the stem development, the rosette leaves dry and crumble completely. Therefore, herbarium samples were collected incompletely and this caused taxonomic controversy and confusion. In this study, the taxonomic status of the species was clarified by eptipification.

The specimens in each development period obtained from the type locality, especially with their flower and fruit characters (yellow petals, the wingless mericarps, green in the middle, white and swollen-spongy at the margins, interior three ridges on the center of the mericarp reduced to raised lines, exterior two embedded in the thick margin etc.), are clearly compatible with the genus *Johrenia*. Therefore, it is suitable for this species to remain taxonomically in the genus *Johrenia*.

It has been reported that stemless *J. porteri* specimens from Hatay/Gaziantep may represent another species included in the genus *Pimpinella* L. (Bormüller 1930; Pimenov et al. 2007). Within the scope of the study, the comparative examination of the samples collected from the type locality of *J. porteri* indicates that the samples of Hatay/Gaziantep belong to *J. porteri*.

The only recorded specimen of *J. porteri* from Syria is identified by Mouterde (1970). However, Pimenov et al. (2007) stated that unlike the type of *J. porteri*, with the well-developed bracteoles that characteristically surpass umbellule, it probably belongs to recently described *Peucedanum longibracteolatum* (Parolly and Nordt 2005) or its close relative. In none of *J. porteri* samples collected from the type locality, the bracteoles do not exceed the umbellules. This situation supports the opinion of Pimenov et al. (2007) about the systematic position of the Syrian example.

Conservation status

The data obtained from the study show that *J. porteri*

is a stenoendemic species known from only two localities approximately 100 km apart from each other in Turkey. The EOO (Extent of occurrence) is less than 100 km², the AOO (Area of Occupancy) is less than 10 km², and total number of mature individuals is approximately 100. The population at type locality is very near to picnic area, and under the serious threat of overgrazing. Based on these data and by the application of the criterion B1, B2ab (i,ii,v), this species is here assessed as Critically Endangered (CR) according to IUCN (2019).

Acknowledgments

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