Ononis catalinae (Fabaceae), a new species from Canary Islands

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Ononis catalinae Reyes-Betancort & Scholz sp. nova (Ononideae, Fabaceae) is proposed as a new species with a distribution restricted to the eastern Canary Islands of Lanzarote and Fuerteventura. Its morphological, biogeographical and ecological features are discussed, together with its relationship to, and differences from, the other species of Ononis subsect. Biflorae.

Key words: Fabaceae, new species, Ononis, taxonomy

The genus Ononis contains around 75 species distributed throughout Europe, the Atlantic islands and the Mediterranean, eastwards through western Asia to Iran and, in East Africa, south to Ethiopia (Boulos 1999). Until now four species were recognised in Ononis subsect. Biflorae: O. biflora, O. hebescarpa, O. polysperma, and O. zygantha (Širjaev 1932, Maire & Wilzeck 1935, Maire 1936, 1941). Of those O. hebescarpa occurs in the Canary Islands where it is endemic (Webb & Berthel 1842, Bramwell & Bramwell 1990, Acebes \textit{et al.} 2004). Ononis hebescarpa was described on the basis of material collected from the Famara massif in northern Lanzarote, on cliffs near the way down to El Río in front of La Graciosa islet (cf. Webb & Berthel 1842). Due to its annual habit and morphological characteristics, such as 2-flowered primary branches of the inflorescence, this species has been included in the subsection Biflorae (Širjaev 1932). The smooth seeds of the species were used by Širjaev (1932) to define a monotypic series Laeves within subsection Biflorae.

Ononis hebescarpa was regarded as a Lanzarote endemic until Burchard collected it in Fuerteventura on the western slopes of the Jandía massif (Burchard 1929), after which it has been considered an eastern Canary Islands endemic (Burchard 1929, Kunkel 1977, Bramwell & Bramwell 1990, Hansen & Sunding 1994, Acebes \textit{et al.} 2004). However, a detailed study of plant material from Fuerteventura (Burchard’s material included), Lobos, and the south of Lanzarote showed that the plants from this area have a distinctive combination of characters, making assignment to O. hebescarpa impossible. Morphological evidence is provided here for the recognition of plants from Fuerteventura, Lobos and southern Lanzarote as a distinct species.
**Ononis catalinae** Reyes-Betancort & Scholz, *sp. nova* (Fig. 1)

*Ononis hebecarpa* auct., non Webb & Berthelot 1842.

Annual. Caules a basi ramose, procumbentes vel adscendentes (10–20 cm altae), laxe, breviter et patule glandulosos pilosi et praeterea unilateraliter pilis simplicibus obsiti. Stipulae adnatae 4–8 mm longae, ovatae, breviter dentatae, subauriculata, apice obtusae. Folia inferiora et superiora unifoliolata, caetera trifoliolata; foliolis suborbicularis, elliptico-orbiculoatis aut obovatis, plerumque 8–12 × 6–7 mm, basi excepto 5–13 inciso-dentatis. Inflorescentia laxa; pedunculi axillares solitarii, erecto-patuli, folio valde longiores, biflori, aristati (arista usque ad 4 mm longa). Calyx ca. 6 mm longus, undique glandulosos pilosus, tubo 15-nervio, 2 mm longo, campanulato, lacininis usque ad 3 mm longis, subaequalibus, linearibus, acutiusculis, 1-nerviis. Corolla flava, undique glabra; vexillo 12–14(15) mm longis, rotundato; alae oblongae, apice late emarginato, basi in unguem 2–2.3 mm longum contractae; carina ca. 8 mm longa, alae ca. aequans. Legumen 18–22 × 2.5–3(4) mm, lineare, compressum, pilis brevibus conicos glandulosis hispidulum, 30–50 spermum; semina ambitu triangulato-reniformia, glauca, sordide luteola vel brunnea, grosse tuberculata, 1.2–1.4 × 1–1.2 mm.


Etymology. Named after Prof. Dr. Catalina León Arenchibia (University of La Laguna) in recognition of her educational work and its friendship.

Annual; procumbent or ascending up to 10–20 cm; stems branching from base, pubescent with eglandular and glandular hairs (in
Ononis catalinae, a new species from Canary Islands

Ononis catalinae is characterized by its glandular-hairy stem with unilateral, long, eglandular hairs (not intermixed glandular and eglandular hairs), legume with conical hairs (absent in O. hebecarpa) and numerous smaller, coarsely tuberculate (rather than smooth) seeds. From O. biflora, O. catalinae can be distinguished by its shorter stipules (4–6 mm long vs. 10–15 mm long), shorter calyx (6 mm long vs. 9 mm long), yellow corolla (not yellowish or whitish-pink), narrower legume (3.5–4.5 mm wide vs. 7–8 mm) and 1.2–1.4 mm long seeds (not 2–4 mm). Ononis polysperma, the species morphologically most similar to O. catalinae, is distinguished by (i) its narrowly linear leaflets that are coarsely toothed with 3–6 teeth in contrast to the 5–13 toothed suborbicular to elliptical or obovate leaflets of O. catalinae, (ii) its smaller corolla (10–12 mm vs. 12–14(15) mm), and (iii) its triangular rather than triangular-reniform shaped seeds. Leaflet and seed shape characters also distinguish O. catalinae from O. zygantha as the latter has sparsely 3–6 toothed leaflets that are oblong (middle) or linear (uppermost) and have subacute apices, and triangular V-shaped seeds. Corolla colour further distinguishes these two species: the corollas of O. zygantha are whitish-pink and those of O. catalinae are yellow. Table 1 summarizes the characters differentiating these five species. The close relationship between O. catalinae and the two endemic Moroccan species O. polysperma and O. zygantha requires further investigation.

Ononis catalinae has a well-defined distribution not shared with any other species of subsect. Biflorae. It is known from Fuerteventura, Lobos and the southern half of Lanzarote (Fig. 2). Biogeographically, these territories belong to the eastern Canary Island Province (Rivas-Martínez et al. 1993), in which O. catalinae can be regarded as endemic. According to bioclimatic studies of these islands (Reyes-Betancort et al. 2001, Rodríguez-Delgado et al. 2005), this species has been observed in the Inframediterranean stage, under arid and semiarid ombroclimates. It grows in herbaceous communities of sandy or clayish-stony soils and is generally frequent in

Fig. 2. Distribution map of the Canary Islands endemic Ononis catalinae (black dots) and O. hebecarpa (black rhombuses).
Fuerteventura, but rare in Lanzarote.

As with other therophytes from arid regions, the species experiences dramatic changes in the population size, related to the amount of rainfall. In the South of Fuerteventura, 2005 was a very rainy year and the increase of the population of *O. catalinae* was spectacular, giving large areas of the landscape a colourful yellow colour when the species was in bloom in March. It was scarcer in 2006, and very few plants were found.

**Selected Specimens Examined.** — *Ononis catalinae* (paratypes): **Spain.** Canary Islands. Fuerteventura: Pájara, Jandía, Risco del Paso, 02.IV .2005, S. Scholz 37887+ dupl. (ORT); Costa de Cafete (28R ES 52 06), 18.III.2005, E. Svent. 37934 (ORT); Al SE de Tesejerague (28R ES 88 27), 19.III.2005, E. Svent. 37926 (ORT); Jable de Jandía, IV .2005, E. Svent. 38528 + dupl. (ORT); Montaña de Tao, IV .2005, E. Svent. 39066 (ORT); La Oliva, salida de Cotillo (28R ES 99 73), 25.IV .2006, A. Santos & J.A. Reyes-Betancort 38999 (ORT); Cafete 350 m.s.m., 02.IV.1957, E. Svent. 21409 (ORT); Ibid., 1946, E. Svent. 21397 (ORT); Tiscamanita 400 m.s.m., 29.III.1946, E. Svent. 21408 (ORT); Vinamar, 08.IV.1955, E. Svent. 21381 (ORT); sine loc., sine die, E. Svent. 21382, 21384, 21388, 21389 (ORT); El Jable de Jandía, III.1912, O. Burchard 236 (ORT). Lobos: sine loc., 28.III.1854, R.T. Lowe 000226876 (K); Ibid. 000056116 (BM); c. del Faro, 06.IV.1944, E. Svent. 24110 (ORT); dunas noroeste, 27.III.1956, E. Svent. 24109 (ORT); dunas parte S, 05.IV .1955, E. Svent. 24111 (ORT). Lanzarote: Tías, avuctía Arrecife-Tías (28RFT 34 03), 15.II.1996, J.A. Reyes-Betancort 38658 (TFC); Yaiza, Vega de Temeume 150 m.s.m. (28RFT 21 01), 25.III.2005, E. Svent. 37886 (ORT).

**Table 1.** Morphological comparison of *Ononis* species in subsect. *Biflorae*.

<table>
<thead>
<tr>
<th></th>
<th><em>O. catalinae</em></th>
<th><em>O. hebecarpa</em></th>
<th><em>O. biflora</em></th>
<th><em>O. polysperma</em></th>
<th><em>O. zygantha</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leaflets</strong></td>
<td>rounded, elliptical to obovate, 5–13 toothed</td>
<td>rounded, elliptical to obovate, 5–9 toothed</td>
<td>ovate, elliptical to obovate, 5–9 toothed</td>
<td>narrowly oblongo-linear, sparsely 3–6 toothed</td>
<td>oblongo-linear, sparsely 3–6 toothed</td>
</tr>
<tr>
<td><strong>Corolla</strong></td>
<td>12–14 mm long, yellow</td>
<td>10–12 mm long, yellow</td>
<td>13–16 mm long, yellowish to whitish-pink</td>
<td>10–12 mm long, yellow</td>
<td>10–12 mm long, whitish-pink</td>
</tr>
<tr>
<td><strong>Conical hairs on legume</strong></td>
<td>present</td>
<td>absent</td>
<td>absent</td>
<td>present</td>
<td>present</td>
</tr>
<tr>
<td><strong>Seeds</strong></td>
<td>30–50, 1.2–1.4 mm long, triangular-reniform, coarsely tuberculate</td>
<td>8–20, 2–2.5 mm long, orbicular-reniform, smooth</td>
<td>12–14, 2–4 mm long, orbicular reniform, acutely tuberculate</td>
<td>30–50, 1.2–1.4 mm long, V-shaped, coarsely tuberculate</td>
<td>number not known, 1.3–1.5 mm long, V-shaped, coarsely tuberculate</td>
</tr>
</tbody>
</table>

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**References**


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