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Taxonomic Notes on the Genista ephedroides Group (Fabaceae) from the Mediterranean Area

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ABSTRACT. A revision of the taxa belonging to the Genista ephedroides group (Fabaceae, Cytiseae) occurring in the Tyrrhenian area is presented. The study, carried out on the basis of the literature, herbarium material, and field and karyological investigations, allows the recognition of 13 taxa. Eight are already known: G. cilentina Vals., G. demarcoi Brullo, Scelsi & Siracusa, G. dorycnifolia Font Quer, G. ephedroides DC., G. gasparrinii (Guss.) C. Presl, G. numidica Spach, G. tyrrhena Vals., and G. valsecchiae Bruullo & De Marco, and five are new to science. Genista bocchierii Bacch., Brullo & Feoli Chiapella, Genista insularis Bacch., Brullo & Feoli Chiapella, Genista insularis subsp. fodinae Bacch., Brullo & Feoli Chiapella, and G. ovina Bacch., Brullo & Feoli Chiapella are described from Sardinia, Italy, while G. tyrrhena subsp. pontiana Bruullo & De Marco is described from the Pontine Archipelago of Latium, Italy. Karyologically, most of the taxa are characterized by the somatic number 2n = 48 (G. bocchierii, G. cilentina, G. demarcoi, G. dorycnifolia, G. gasparrinii, G. tyrrhena subsp. tyrrhena, G. ephedroides, G. valsecchiae, G. insularis), with accessory chromosomes occasionally yielding higher counts. In addition to 2n = 48, the new report of 2n = 44 is noted for the new species G. ovina. A new count of 2n = 48 is reported for G. tyrrhena subsp. tyrrhena, whereas higher counts (2n = 48 + 0–2B, 72, 96) are reported for the new subspecies G. tyrrhena subsp. pontiana. For each examined taxon, notes are given on the nomenclature, karyology, ecology, and chorology, while a detailed iconography is lacking only for G. numidica and G. dorycnifolia. An analytical key for the G. ephedroides group is presented. Lectotypes are designated for G. numidica and Spartium gymnoperutum Viv.

Key words: Fabaceae, Genista, Genista ephedroides group, IUCN Red List, Mediterranean.

A contribution to the taxonomical investigations on the genus Genista L. (Fabaceae, Cytiseae) focused on the taxa belonging to the G. ephedroides group is presented. According to Valsecchi (1986a, 1986b, 1993a, 1993b), De Marco et al. (1987), Brullo et al. (1993), Bruullo and De Marco (1996), Estabrook (2001), De Castro et al. (2002), and Pardo et al. (2004), the species so far known within this group are: G. cilentina Vals., G. demarcoi Brullo, Scelsi & Siracusa, G. dorycnifolia Font Quer, G. ephedroides DC., G. gasparrinii (Guss.) C. Presl, G. numidica Spach, G. tyrrhena Vals., and G. valsecchiae Bruullo & De Marco. On the basis of the literature, as well as herbarium and field investigations, these taxa are morphologically well distinguished from the other Mediterranean species of Genista. According to Spach (1844) and Valsecchi (1993b), the G. ephedroides group must be referred to Genista sect. Ephedrospartum Spach, which includes unarmed and ephedrifform shrubs with 1- to 3-foliolate leaves, long racemose and many-flowered inflorescences, and entire and caducous bracts and bracteoles.

The morphological study was carried out mostly on living material collected during field investigations, as well as on herbarium specimens from various herbaria (BC, BM, C, CAG, CAT, FI, G, LG, M, NAP, OXF, P, PAL, RO, TO, TSB, W, WU).

These investigations revealed other taxa that are morphologically distinct from any known species of the group. Like the previously recognized taxa within the Genista ephedroides group, the new taxa are distributed in the central Mediterranean area, predominantly in the Tyrrhenian area. In particular, G. ephedroides, G. valsecchiae, and three new species are circumscribed to Sardinia; G. gasparrinii and G. demarcoi occur in Sicily; both the autonymic subspecies of G. tyrrhena and one new subspecies occur in the Aeolian and Pontine Islands, respec-
Feoli Chiapella occur. This area is unique from a floristic point of view mainly for its palae-ontoxyylon forest association (Braun-Blanquet, 1926; Favarger & Contandriopoulos, 1961; Cardona & Contandriopoulos, 1979; Arrigoni, 1983). According to the distribution of the taxa of the Genista ephedroides group, three main centers of speciation were identified: the southeastern Tyrrhenian coast (Sicily and southern Italy), the southwestern Tyrrhenian islands (Ibiza and Sardinia), and Maghreb (Algeria). In particular, a significant concentration of taxa has been observed in southwestern Sardinia (Sulcis-Iglesiente sector), where G. valsecchiae, G. bocchierii Bacch., Brullo & Feoli Chiapella, G. insularis Bacch., Brullo & Feoli Chiapella subspp. insularis, and G. ovina Bacch., Brullo & Feoli Chiapella occur. This area is unique from a floristic point of view from mainly for its palaeogeographic history (Bacchetta, 2006; Bacchetta et al., 2007). Many endemics grow in this sector, as other species of Genista: G. arbusensis Vals., G. sulcitana Vals., and G. morisii Colla (Valsecchi, 1976, 1984, 1986a), all localized on siliceous substrates (granite, metamorphic, and volcanic rock). In southwestern Sardinia, diverse other species of Genista are present, as G. sardoa Vals., endemic to the western coastal zone; G. aetnensis (Biv.) DC., endemic to Sardinia and Mount Etna in Sicily; G. corsica (Loisel.) DC., endemic to Sardinia and Corsica; and G. jenox Poir., distributed in Algeria, Tunisia, and the western zone of Sardinia (Arrigoni & Vannelli, 1967; Valsecchi, 1977, 1981, 1984). In the southeastern Tyrrhenian area, the species of Genista (G. cilentina, G. gasparrinii, G. demarcoi, G. dorycnifolia, G. gasparrinii, G. tyrrhena subsp. tyrrhena, G. ephedroides, G. valsecchiae, and G. insularis), sometimes with two or four accessory chromosomes. Different counts were made only for G. ovina (2n = 44), while for G. tyrrhena subsp. pontiana Brullo & De Marco, in addition to 2n = 48, counts of 2n = 72 or 2n = 96 were also made. The number 2n = 48 traces back to the basic number x = 12, which is by far the most common secondary basic number in Genista and in other genera of the Cyteaeae (Sañudo, 1979; Gusma Velari & Feoli Chiapella, 1994; Gusma Velari et al., 2003). All the taxa of the G. ephedroides group are therefore tetraploid.


Species in the Genista ephedroides group include: G. cilentina, G. demarcoi, G. dorycnifolia, G. ephedroides, G. gasparrinii, G. numidica, G. tyrrhena, and G. valsecchiae. Five new taxa are proposed in this paper, including two new subspecies and three new species. Based on their ephedriform habit, 1- to 3-foliate leaves, long and many-flowered inflorescences, and entire and caducous bracts and bracte-
oles, all the new taxa described here clearly belong to *Genista* sect. *Ephedrospartum*.

The new species described from southern Sardinia are closely related to *Genista valsecchiae* and *G. ephedroides*. In particular, *G. ovina* seems to be morphologically more strongly differentiated from these taxa because it is characterized by a compact and pulvinate habit; well-developed bracts; ovate-triangular bracteoles; a corolla with longer wings and shorter keel; longer, elliptical-lanceolate, rounded, and not apiculate anthers; and sometimes an aneuyploid chromosome complement (2n = 44). *Genista insularis* is well differentiated from the other Sardinian species belonging to this group by its longer bracts, retuse standard, and shortly nerved calyx. Within this species, we recognize two morphologically and ecologically well-differentiated taxa, which are here treated at subspecific level. They are *G. insularis* subsp. *insularis* and *G. insularis* subsp. *fodinae* Bacch., Brullo & Feoli Chiapella. The latter can be distinguished from the type in having larger bracts and flowers, linear-subulate bracteoles, and smaller anthers, as well as by its exclusive localization on metalliferous substrates. Finally, *G. bocchieri* is very peculiar because it is characterized by a habit that typically tends to the arborescent form, bracts and bracteoles that are very narrow and long apiculate, and calyx teeth that are narrowly triangular-subulate and long apiculate. This species is also differentiated ecologically by growing very near the sea on loose substrates. Within *G. tyrhena*, we recognize the new subspecies *pontiana*, which is differentiated from the type in having longer bracts, shorter and narrower bracteoles, a calyx with thin veins and shorter teeth, and buds with wings exerted from the standard. On the other hand, both subspecies share some characters, such as the long and many-flowered inflorescences, the calyx with straight lower lip teeth, the rounded and apiculate standard, the apiculate anthers 1.2–1.4 mm long, and the legume longer than 8 mm. Furthermore, both subspecies grow on volcanic substrates but have allopatric distribution ranges.

**KEY TO THE SPECIES OF THE GENISTA EPHEDROIDES GROUP**

1a. Calyx 2–3 mm long with lips subequal, 1–1.8 mm long; calyx teeth triangular, obtuse.

2a. Leaves 3–7 mm long; bracts 2.5–2.7 mm long; bracteoles subulate; standard retuse at the apex, 5–7 mm long; wings 6–7 mm long with glabrous lateral lobe ................................................. *G. gasparrinii*  
2b. Leaves 8–18 mm long; bracts 1–1.2 mm long; bracteoles ovate; standard rounded at the apex, 8–8.5 mm long; wings 8–9.5 mm long with a tuft of hairs on the lateral lobe ................................................. *G. dorycnifolia*  

1b. Calyx 3–7 mm long with lips unequal, 1.8–4.2 mm long; calyx teeth linear to ovate-triangular, acute to acuminate.

3a. Lower lip of the calyx with central tooth shorter than the lateral ones; standard with short apiculum at the apex; legume 8–11 mm long.  
4a. Bracteoles lanceolate to ovate, 2–4.5 mm long; lower lip of the calyx 2.5–4 mm long, with teeth 0.8–2 mm long .................................................. *G. tyrhena* subsp. *tyrhenana*  
4b. Bracteoles lanceolate-subulate to subulate, 1.8–2 mm long; lower lip of the calyx 2–2.7 mm long, with teeth 0.7–1 mm long .......................................................... *G. tyrhena* subsp. *pontiana*  
3b. Lower lip of the calyx with central tooth longer than the lateral ones or subequal; standard without apiculum at the apex; legume 5–8 mm long.  
5a. Bracteoles 2–3 mm long; calyx 5.5–6.5 mm long; wings with a notably ciliate, lateral furrow .......................................................... *G. cilentina*  
5b. Bracteoles 0.5–1.5(–2) mm long; calyx 3–5 mm long; wings without a ciliate lateral furrow.  
6a. Lower lip of the calyx with central tooth much longer than the lateral ones; anthers 0.5–0.75 mm long, aristate; legume 5.5–6 mm long .................................................. *G. numidica*  
6b. Lower lip of the calyx with teeth subequal or with the central one slightly longer than the lateral ones; anthers 0.8–1.3 mm long, apiculate or rounded; legume 7–8 mm long.  
7a. Standard retuse at the apex.  
8a. Pulvinate shrub, 30–80 cm tall; bracts 1.5–2.5 mm long; bracteoles subulate, 1.5–2 mm long; calyx with lower lip teeth 0.9–1.5 mm long ........................................... *G. demarcoi*  
8b. Erect shrub, 100–200 cm tall; bracts 3.5–6.5 mm long; bracteoles lanceolate or triangular-lanceolate, 1.2–1.5 mm long; calyx with lower lip teeth 0.4–0.8 mm long.  
9a. Bracts linear, 3.5–4 mm long; calyx 3.5–4 mm long; standard 6.5–7 mm long; wings 6.5–7 mm long; keel 8–8.5 mm long; anthers 1.2–1.3 mm long ................................................................. *G. insularis* subsp. *insularis*  
9b. Bracts oblong-linear, 5–6.5 mm long; calyx 4–4.5 mm long; standard 8–9 mm long; wings 7.5–8.5 mm long; keel 9–10 mm long; anthers ca. 1 mm long ................................................................. *G. insularis* subsp. *fodinae*  
7b. Standard rounded or obtuse at the apex.  
10a. Branches contracted; standard 6–6.5 mm long, obtuse at the apex ................................................................. *G. valsecchiae*  
10b. Branches loose; standard 7–8 mm long, rounded at the apex.
1. Genista bocchierii Bacch., Brullo & Feoli

Chiapella, sp. nov. TYPE: [Italy. Sardinia:] Santa Margherita di Pula, Pula (CA), deposits alluvionali quaternari, 9 June 1998, G. Bacchetta & S. Brullo s.n (holotype, CAT; isotypes, CAG, CAT, FI). Figures 1A 4,B 4,3 A 6,B 6.

Haec species a Genista valsecchiae Brullo & De Marco habitu arborescenti usque ad 300 cm alto, ramis flexuosis acutis inermibus, bracteolis lineari-subulatis, calycis labio inferiore 1.8–2 mm longo, dentibus erectis 1–1.2 mm longis, vexillo ad apicem rotundato 7–8 mm longo 6–6.5 mm lato, alis ca. 7.5 mm longis, carina ca. 8.5 mm longa atque alis in alabastro et vexillo leviter exsertis differt.

Erect shrub to arborescent, robust, lax, 100–300 cm tall, with branches flexuous, alternate or subclustered, acute at the apex, striate, pubescent. Leaves 3-foliate, uppermost often simple, sessile, linear-lanceolate, revolute, sericeous, 2–10 mm, caducous. Inflorescence ± dense, 2.5–5 cm, 5- to 12-flowered; bracts linear-subulate; calyx with lower lip 3–3.5 mm long; anthers ovate-lanceolate, apiculate, 2–2.2 mm; floral buds with wings shortly exserted from the standard; corolla yellow; standard ovate-cordate, retuse at the apex, 7–9 mm, sericeous on the back; wings 7–8 × 6–6.5 mm, sericeous on the back; wings ca. 7.5 mm, with a tuft of hairs on basal gibbosity; keel ca. 8.5 mm, sericeous on outer faces; anthers ovate-lanceolate, apiculate, 1–1.1 mm. Legume totally pubescent, ovate-beaked, 8 mm.

Chromosome number. 2n = 48 (Pula, San Margherita di Pula, Km 38.750 [Cagliari], 16 Mar. 1997, G. Bacchetta s.n [TSB]; Calaverde, Pula (Cagliari), 18 Apr. 1998, G. Bacchetta s.n. [CAG, TSB]; Calaverde (Sta. Margherita di Pula), Pula (CA), 18 Apr. 1998, G. Bacchetta s.n. [CAG]).

Distribution and ecology. Genista bocchierii is known only from San Margherita di Pula, near Cagliari in southwestern Sardinia, where it grows on granitic sands and alluvial substrates at altitudes from 0 to 30 m. It is a component of acidophilous maquis vegetation and represents the dominant shrub. The bioclimate is Mediterranean pluviseasonal-oceanic, with thermotype upper thermomediterranean and ombrotype upper dry (Bacchetta, 2006).

IUCN Red List category. Genista bocchierii is assessed here as Endangered (EN) according to IUCN Red List criteria (IUCN, 2001, 2003).

Etymology. The species is named in honor of Emanuele Bocchieri (1941–), botanist at Cagliari University.

Paratypes. ITALY. SARDINIA: Santa Margherita, 6 June 1971, N. Kaae s.n (holotype, FI). Figures 2A 5,B 5,3 A 10,B 10.


Erect shrub, robust, intricate, 50–180 cm tall, with branches rigid, alternate or subclustered, acute at the apex, striate, pubescent. Leaves 3-foliate, uppermost often simple, sessile, linear-lanceolate, revolute, sericeous, 4–13 mm, caducous. Inflorescence ± dense, 3–12 cm, 10- to 35-flowered; bracts triangular-lanceolate to linear-sublanceolate, 3–13 mm, slightly longer than the pedicel; bracteoles linear-subulate, 2–3 mm, inserted at the calyx base. Calyx sericeous, conic-campanulate, 5.5–6.5 mm, with veins incrassate and decurrent only in the lip, lower lip longer than the upper, 1.8–2 × 1.5–1.8 mm, with teeth subequal, triangular-subulate, erect, 1–1.2 mm, upper lip with teeth 1-nerved, triangular-subulate, apiculate, 1.5–1.8 mm; floral buds with wings exserted from the standard; corolla yellow; standard ovate-cordate, rounded at the apex, 7–8 × 6–6.5 mm, sericeous on the back; wings ca. 7.5 mm, with a tuft of hairs on basal gibbosity; keel ca. 8.5 mm, sericeous on outer faces; anthers ovate-lanceolate, apiculate, 1–1.1 mm. Legume totally pubescent, ovate-beaked, 8 mm.

Chromosome number. 2n = 48 (Pula, San Margherita di Pula, Km 38.750 [Cagliari], 16 Mar. 1997, G. Bacchetta s.n. [TSB], new count).
10 mm, sericeous on the outer faces; anthers ovate, apically obtuse, 0.9–1.1 mm. Legume totally pubescent, ovate-beaked, 5–6 mm.

Iconography. Valsecchi (1993a, fig. 1).

Chromosome number. 2n = 48 (Marina di Ascea; Pizzolongo, 1961).

Distribution and ecology. *Genista cilentina* is localized in a short stretch of the Cilento coast in southern Italy, where it grows on flysch substrates. It is a component of *Juniperus turbinata* Guss. maquis and acidophilous garigue vegetation at altitudes of 50–200 m. The bioclimate is Mediterranean pluviseasonal-oceanic, with thermotype ranging between upper thermomediterranean and lower mesomediterranean, and ombrotype between upper dry and lower subhumid (Rivas-Martínez, 2007).

IUCN Red List category. *Genista cilentina* has been previously evaluated as Critically Endangered (CR) according to IUCN Red List criteria (Scoppola &amp; Spampinati, 2005).

Additional specimens examined. ITALY. Campania: Kampanien, prov. Salerno, ca. 5 km von Palinuro under Strasse nach Pisciotta, 6 June 1968, D. Podlech 5555 (M), 6 June 1968, Haeuser 2266 (C); Pisciotta, Golfo di Policastro, 11 May 1983, G. De Marco s.n (CAT); Cilento (Salerno), 27 July 1997, D. Pescitelli s.n (TSB); Cilento, Marina di Ascea presso Fiumicello (Pisciotta), 16 May 1993, S. Brullo, F. Scelsi & G. Siracusa s.n (CAT); Marina di Ascea presso Fiumicello (Pisciotta), 16 May 1993, S. Brullo, F. Scelsi & G. Siracusa s.n (CAT); Marina di Ascea presso Torre del Telegrafo (Pisciotta), 16 May 1993, S. Brullo, F. Scelsi & G. Siracusa s.n (CAT); Cilento (Salerno), 27 July 1997, D. Puntillo s.n (TSB); Cilento, Marina di Ascea, sotto la torre del Telegrafo (Salerno), 24 Apr. 2000, M. Tretiach s.n (TSB).


Pulvinate, intricate, 30–80 cm tall, with branches flexuous, slender, alternate or subclustered, obtuse at the apex, striate, sericeous. Leaves 3-foliate, uppermost often simple, sessile, linear-lanceolate, revolute, sericeous, 4–14 mm, caducous. Inflorescence ± dense, 1.5–7 cm, 3- to 11-flowered; bracts linear-subulate, 1.5–2.5 mm, much longer than the pedicel; bracteoles subulate, 1.5–2 mm, inserted at the calyx base. Calyx sericeous, conic-campanulate, 3.5–5 mm, with veins thin and extended almost up to the base, lower lip longer than the upper, 2.5–2.6 × 0.8–1 mm, with teeth unequal, lanceolate-subulate, divaricate, lateral ones 0.8–1 mm, central one 1–1.5 mm, upper lip with teeth 1-nerved, triangular, apiculate, 1.5–2 mm; floral buds with wings wholly covered by the standard; corolla yellow; standard ovate-triangular, subretuse at the apex, 8–9 × 7–8 mm, sericeous on the back; wings 7–9 mm, with a tuft of hairs on the basal gibbosity; keel 10–12 mm, sericeous on the outer faces; anthers ovate, apiculate, ca. 1 mm. Legume sparsely pubescent, subcircular or broadly ovate, 7–8 mm.

Iconography. Brullo et al. (1993, figs. 1, 4A2, 4B2).

Chromosome number. 2n = 48 (San Maria di Isnello [Palermo], 18 June 1997, E. Schimenti s.n [TSB], new count).

Distribution and ecology. *Genista demarcoi* is a punctiform endemic species, localized only in the Madonie massif near Isnello in northern Sicily. The species is linked to Mesozoic limestone, growing on cliffs and in rupestrian garigue scrubland at altitudes between 300 and 1000 m. The bioclimate is Mediterranean pluviseasonal-oceanic, with thermotype upper mesomediterranean and ombrotype lower subhumid (Brullo et al., 1996).

IUCN Red List category. *Genista demarcoi* has been previously evaluated as Critically Endangered (CR) according to IUCN Red List criteria (Scoppola &amp; Spampinati, 2005).

Additional specimens examined. ITALY. Sicily: Isnello alle Madonie, s.d., G. Gasparri s.n (NAP-GUSS), G. Gassone s.n (FI); Isnello, 8 July 1830, A. Todaro s.n (PAL), 16 June 1870, M. Lojacono s.n (FI), 1 June 1896, S. Brullo s.n (CAT); Sicilia, 1841, G. Gassone s.n (G); in Sicilia, 1845, A. Alexander s.n (BM); in apricis Nebrodomi prope Isnello, 19 June 1855, A. Huert du Pavillon s.n (BM, G, M, OXF); Gafali, June 1856, Mandralisca s.n (PAL); Pizzo di Pilo, June 1859, Mandralisca s.n (PAL), 9 July 1973, S. Brullo (CAT); Madoniarum prope Isnello, 18 June 1873, G. Strob s.n (G, M); Madonie, 3 June 1902, H. Ross s.n (G); Madonie, Isnello, 5 June 1902, H. Ross 321 (FL, G, M, WU); Madonie, June 1903, H. Ross s.n (BM, M); Tra Castelbuono e Roccarossa, Madonie, 14 May 1973, S. Pignattini s.n (TSB); Palermo, ca. 22 km S of Gafali, N side of Isnello, 26 May 1979, P. H. Davis & B. Sutton 63796 (BM); S. Maria di Isnello (Palermo), 18 June 1997, E. Schimenti s.n (TSB).


Erect shrub to arborescent, robust, 70–300 cm tall, with branches lax, flexuous, alternate or subclustered, obtuse at the apex, striate, sericeous. Leaves 3-foliate, uppermost often simple, subsessile, linear to linear-oblong, revolute, sericeous, 8–18 mm, caducous. Inflorescence dense and capitulate, 1–2 cm, 5–to 18-flowered; bracts linear-oblanceolate, 1–1.2 mm, longer than the pedicel; bracteoles ovate, 0.6–0.8 mm, inserted at the calyx base. Calyx pubescent, campanulate, 2–3 mm, with veins thin and extended almost up to the base, lower lip subequal to the upper, ca. 1 × 3 mm, with teeth subequal, triangular, obtuse, not divaricate, ca. 0.5 mm, upper lip with teeth 1-nerved, triangular-ovate, obtuse, ca. 1.8 mm; floral buds with wings wholly covered by the standard; corolla yellow; standard ovate, rounded or sometimes emarginate at the apex, 8–8.5 × 5–6 mm, sericeous on the back; wings 8–9.5 mm, with a tuft of hairs on the basal gibbosity; keel 10–13 mm, sericeous on the outer faces; anthers ovate, apiculate, 0.9–1.2 mm. Legume sericeous, ovoid-beaked, 8–9 mm.

**Iconography.** Talavera (1999, lám. 21).

**Chromosome number.** 2n = 48 (Ibiza; Santos, 1944–1945; Cardona & Contandriopoulos, 1983).

**Distribution and ecology.** Genista dorycnifolia is endemic to Ibiza (Balearic Islands), where it grows in garigue scrubland and forests of Pinus halepensis Mill. at altitudes of 0–200 m. The bioclimate is Mediterranean pluviseasonal-oceanic, with thermotype upper thermomediterranean and ombrotype between upper dry and lower subhumid (Scoppola & Spampinato, 2005).

**IUCN Red List category.** Genista dorycnifolia is assessed here as Near Threatened (NT) according to IUCN Red List criteria (ICUN, 2001, 2003).

**Additional specimens examined.** SPAIN. Balearic Islands: Cala d’Hort (Ibiza), 1 Apr. 1990, M. Herrera Gallastegui [Société pour l’échange des Plantes vasculaires de l’Europe et du Bassin Méditerranéen] 13209 (TSB).


Erect shrub to arborescent, robust, intricate, 100–180 cm tall, with branches flexuous, alternate or subclustered, mucronate at the apex, striate, pubescent. Leaves 3-foliate, uppermost often simple, sessile, linear-lanceolate, revolute, sericeous, 3–10 mm, caducous. Inflorescence ± dense, 4–9 cm, 8- to 16-flowered; bracts triangular-lanceolate, 1–3 mm, subequal to pedicel; bracteoles triangular-lanceolate, 1–1.5 mm, inserted at calyx base. Calyx sericeous, conic-campanulate, 3–4 mm, with veins incrassate and decurrent only in the lip, lower lip longer than the upper, 1.8–2.2 × 1.5–1.8 mm, with teeth subequal, linear-subulate, slightly divaricate, lateral ones 0.7–0.8 mm, central one 0.8–1 mm, upper lip with teeth 1-nerved, ovate-triangular, apiculate, 1.4–1.8 mm. Floral buds with wings exerted from the standard; corolla yellow; standard ovate-cordate, rounded at apex, 7–7.5 × 6–7 mm, sericeous on back; wings 5.5–6.2 mm, with a tuft of hairs on the basal gibbosity; keel 9–9.5 mm, sericeous on the outer faces; anthers ovate-lanceolate, apiculate, 1–1.1 mm. Legume totally pubescent, ovate-beaked, ca. 8 mm.

**Iconography.** De Candolle (1826, tab. 36); Valsecchi (1980a, fig. 1); Brullo and De Marco (1996, fig. 3).

**Chromosome number.** 2n = 48 (Santa Teresa di Gallura; Villa, 1980).

**Distribution and ecology.** Genista ephedroides occurs in Capo Testa and Santa Teresa di Gallura in northeastern Sardinia. It grows on granite substrates in thermophilous garigue vegetation at altitudes between 0 and 60 m. The bioclimate of the coastal area is Mediterranean pluviseasonal-oceanic, with thermotype upper thermomediterranean and ombrotype between upper dry and lower subhumid (Rivas-Martínez, 2007).

**IUCN Red List category.** Genista ephedroides has been previously evaluated as Least Concern (LC) according to IUCN Red List criteria (Scoppola & Spampinato, 2005).

**Additional specimens examined.** ITALY. Sardinia: Sarden, s.d., M. H. Vahl s.n. (G-DC); Sardaigne, J. H. Moris s.n. (G); “Sardaigne ...à St. Teresa Gallura,” 5 May/ 26 June 1881, L. Millet s.n. (G); Arrondissement de Tempio, Santa Teresa, E. Reverchon 93 (BM, C, G, WU); Gallura, Capo Testa westlich S. Teresa, H. Merxmüller & F.

Erect shrub, often compact-pulvinate, intricate, 25–60 cm tall, with branches subrigid, slender, alternate or subclustering, obtuse at the apex, striate, sericeous. Leaves 3-foliate, uppermost often simple, sessile, linear-lanceolate, revolute, sericeous, 3–7 mm, caducous. Inflorescence ± dense, 1–5 cm, 3- to 11-flowered; bracts linear-subululate, leafy, 2.5–2.7 mm, much longer than pedicel; bracteoles subulate, 0.7–1 mm, inserted at calyx base. Calyx sericeous, campanulate, 2.8–3 mm, with veins thin and extended almost to base, lower lip subequal to upper, 1–1.2 × 1.5–2 mm, with teeth subequal, widely triangular, obtuse, apiculate, slightly divaricate, ca. 0.5 mm, upper lip with teeth 1-nerved, widely triangular, obtuse, apiculate, ca. 1 mm; floral buds with wings wholly covered by the standard; corolla yellow; standard ovate-cordate, retuse at apex, 5–5.7 × 5–7 mm, sericeous on back; wings 6–7 mm, with glabrous lateral lobe; keel 8–10 mm, sericeous on outer faces; anthers ovate-triangular, 1.3–1.6 mm, with veins incrassate and decurrent only in the lip, lower lip subequal to upper, 2–2.2 mm longo, much longer than the pedicel; bracteoles triangular-lanceolate, 1.3–1.5 mm, inserted at calyx base. Calyx sericeous, conic, 3.5–4 mm, with veins incassate and recurrent only in the lip, lower lip longer than the upper, 2–2.2 × 1.3–1.6 mm, with teeth unequal, triangular, slightly divaricate, lateral ones 0.4–0.5 mm, central one 0.6–0.7 mm, upper lip with teeth 1-nerved, ovate-triangular, apiculate, 1.5–1.8 mm; floral buds with wings covered by the standard; corolla yellow; standard ovate-cordate, retuse at the apex, 6.5–7 × 5–5.6 mm, sericeous on the back; wings 6.5–7 mm, with a tuft of hairs on the basal gibbosity; keel 8–8.5 mm, sericeous on outer faces; anthers oblong-lanceolate, apiculate, 1.2–1.3 mm. Legume totally pubescent, ovate-beaked, ca. 8 mm.

Iconography. Brullo et al. (1993, figs. 2, 4A1, 4B1).

Chromosome number. 2n = 48 (Colombo et al., 1979).

Distribution and ecology. Genista gasparrinii is exclusive to Mt. Gallo, near Serracavallo in northern Sicily. It is a chasmophyte growing on Mesozoic limestone cliffs, near the sea in areas with northern exposures, at altitudes from 50 to 100 m. The bioclimate is Mediterranean pluviseasonal-oceanic, with thermotype upper thermomediterranean and ombrotype upper dry (Brullo et al., 1996).

IUCN Red List category. Genista gasparrinii has been previously evaluated as Critically Endangered (CR) according to IUCN Red List criteria (Scoppola & Spampinato, 2005).

Additional specimens examined. ITALY. Sicily: Sicile, s.d., G. Gassone s.n. (G); Prope Panormum, s.d., G. Gasparrini s.n. (FL); Serracavallo, s.d., G. Gasparrini s.n. (FL); Mt. Gallo presso Palermo, s.d., G. Gussone s.n. (FL); Mt. Gallo, 1827, G. Gasparrini s.n. (FL), 10 July 1840, T. Heldreich s.n. (G), s.d., A. Todaro s.n. (WU), Oct. 1848, A. Todaro (PAL), May 1856, A. Huet du Pavillon (G), M. Lojacono 477 (BM, G), 1 Oct. 1977, S. Brullo s.n. (CAT), 24 May 1992, F. Scelsi & G. Siracusa s.n. (CAT); Palermo a Mt. Gallo, s.d., G. Gussone s.n. (FL), 16 May 1996, E. Schimenti & G. Scafidi s.n. (TSB); Mt. Gallo, prope Panormum, 1828, G. Gassone s.n. (G); Panomini a Serracavallo, 25 Apr. 1835, F. Parlatore s.n. (FL); Mt. Gallo, Serracavallo, s.d., F. Parlatore s.n. (G), 4 July 1992, F. Scelsi s.n. (CAT); Palermo a Serracavallo, 1844, F. Parlatore s.n. (G), s.d., A. Todaro s.n. (WU), May, A. Todaro 227 (BM, M, OXF, PAL), C. C. Lactaia 323 (BM); Palermo, May, M. Lojacono s.n. (M); Capaci, June 1896, Mandralisca s.n. (PAL).

Genista insularis Bacch., Brullo & Feoli Chiappella, sp. nov. TYPE: [Italy. Sardinia:] Sardegna, Domus de Maria (CA), 7 June 2002, G. Bacchetta, S. Brullo & G. Giussu s.n. (holotype, CAT; isotypes, CAG, CAT, CAT, FL). Figures 1A5, B5, 3A3, B3.

Haec species a Genista valsecchiae Brullo & De Marco ramis flexuosis acutis inermibus, bractea lineari vel oblongo-lineari 3.5–6.5 mm longa, bracteolis lanceolatis vel triangulari-lanceolatis, calyx labio inferiore 2–2.2 mm longo, vexillo ad apicem leviter retuso 5–7 mm lato, carina 8–10 mm longa atque anthers oblongo-lanceolatis 1–1.3 mm longis differt.

Erect shrub, robust, lax, 100–150 cm tall, with branches flexuous, alternate or subclustered, acute at the apex, striate, pubescent. Leaves 3-foliate, uppermost often simple, sessile, linear-lanceolate, revolute, sericeous, 3–7 mm, caducous. Inflorescence ± dense, 3–7 cm, 4- to 9-flowered; bracts linear, 3.5–4 mm, much longer than the pedicel; bracteoles triangular-lanceolate, 1.3–1.5 mm, inserted at calyx base. Calyx sericeous, conic, 3.5–4 mm, with veins incrassate and recurrent only in the lip, lower lip longer than the upper, 2–2.2 × 1.3–1.6 mm, with teeth unequal, triangular, slightly divaricate, lateral ones 0.4–0.5 mm, central one 0.6–0.7 mm, upper lip with teeth 1-nerved, ovate-triangular, apiculate, 1.5–1.8 mm; floral buds with wings covered by the standard; corolla yellow; standard ovate-cordate, retuse at the apex, 6.5–7 × 5–5.6 mm, sericeous on the back; wings 6.5–7 mm, with a tuft of hairs on the basal gibbosity; keel 8–8.5 mm, sericeous on outer faces; anthers oblong-lanceolate, apiculate, 1.2–1.3 mm. Legume totally pubescent, ovate-beaked, ca. 8 mm.
Chromosome number. $2n = 48 + (0–2B)$ (Domus de Maria, S’Isca Manna [Cagliari], 2 June 2000, G. Bacchetta, G. Sotgiu Cocci & M. Casti s.n. [CAG], new count).

Distribution and ecology. The new species is circumscribed to the southwestern part of the Sulcis massif in southern Sardinia (Punta Is Laghixeddas, Riu s’Accorradroxiu, S’Isca Manna–Domus de Maria). *Genista insularis* grows on granite and metamorphic substrates at altitudes from 80 to 360 m, where it is frequent in garigue vegetation occurring in oak wood clearings. The bioclimate is Mediterranean pluviseasonal-oceanic, with thermotype ranging between upper thermomediterranean and lower mesomediterranean, and ombrotypes between upper dry and lower subhumid (Bacchetta, 2006).

IUCN Red List category. *Genista insularis* is assessed here as Least Concern (LC) according to IUCN Red List criteria (IUCN, 2001, 2003).

Etymology. The specific epithet is from the Latin “insula,” meaning “island.”

Paratypes. ITALY. Sardinia: Domus de Maria, 13 June 1971, N. Koae s.n. (C); Domus de Maria, M.ti Sa Guardia, 18 Apr. 1998, G. Bacchetta s.n. (CAG, TSB), 9 June 1998, G. Bacchetta & S. Brullo s.n. (CAT); S’Isca Manna, Domus de Maria (CA), 9 June 1998, G. Bacchetta & S. Brullo s.n. (CAT); Domus de Maria, SS. 195, 4 km direzione Teulada (Cagliari), 1 July 1998, G. Bacchetta s.n. (CAG); Domus de Maria, S’Isca Manna (Cagliari), 2 June 2000, G. Bacchetta, G. Sotgiu Cocci & M. Casti s.n. (CAG); Riu s’Accorradroxiu-Domus de Maria (Cagliari), 25 Mar. 2004, G. Bacchetta & C. Pontecorvo s.n. (CAG, TSB).


A *Genista insularis* Bacch., Brullo & Feoli Chiapella subsp. *insularis* bracteae oblongo-lineari 5–6.5 mm longa, bracteolis lanceolatis, calyce 4–4.5 mm longo dentibus labii inferioris erectis 0.7–0.8 mm longis, vexillo 8–9 mm longo 6–7 mm lato, alis 7.5–8.5 mm longis, carina 9–10 mm longa atque antheris ca. 1 mm longis distint.

Erect shrub, robust, lax, 100–200 cm tall, with branches flexuous, alternate or subclustered, acute at the apex, striate, pubescent. Leaves 3-foliate, uppermost often simple, sessile, linear-lanceolate, revolute, sericeous, 3–7 mm, caducous. Inflorescence ± dense, 2–4 cm, 4–to 8-flowered; bracts oblong-linear, 5–6.5 mm, slightly longer than the pedicel; bracteoles lanceolate, 1.2–1.5 mm, inserted at calyx base. Calyx sericeous, conic-campanulate, 4–4.5 mm, with veins incrustate and decurrent only in the lip, lower lip longer than the upper, 2–2.2 × 1.5–2 mm, with teeth subequal, triangular-subulate, erect, 0.7–0.8 mm, upper lip with teeth 1-nerved, ovate-triangular, apiculate, 1.2–1.5 mm; floral buds with wings covered by the standard; corolla yellow; standard ovate-cordate, retuse at the apex, 8–9 × 6–7 mm, sericeous on the back; wings 7.5–8.5 mm, with a tuft of hairs on the basal gibbosity; keel 9–10 mm, sericeous on the outer faces; anthers oblanceolate, apiculate, ca. 1 mm. Legume totally pubescent, ovate-beaked, ca. 8 mm.

Chromosome number. $2n = 48$ (Su Zurfuru-Fluminimaggiore [Cagliari], 210 m, 10 July 2002, G. Bacchetta & C. Pontecorvo s.n. [CAG], new count).

Distribution and ecology. *Genista insularis* subsp. *fodinae* is endemic to the Iglesiente subsector in southwestern Sardinia, Italy, and in particular occurs in the mining areas of Monte Conca’s Omu and Su Zurfuru, near Fluminimaggiore. The new subspecies grows on metalleriferous metamorphic substrates at altitudes from 120 to 215 m, where it colonizes the rocky places and loose substrates within pioneer plant communities. The bioclimate is Mediterranean pluviseasonal-oceanic, with thermotype ranging between upper thermomediterranean and lower mesomediterranean, and ombrotypes between lower and upper subhumid (Bacchetta, 2006).

IUCN Red List category. *Genista insularis* subsp. *fodinae* is assessed here as Near Threatened (NT) according to IUCN Red List criteria (IUCN, 2001, 2003).

Etymology. The subspecific epithet refers to the Latin “fodina,” meaning “mine,” because the new taxon grows in the mining areas of Iglesiente, in southwestern Sardinia.

Note. Two subspecies are recognized within *Genista insularis*. They are quite different from both the morphological and eco-chorological viewpoint. These taxa share the same habit with flexuous and loose branches that are acute and not mucronate-pungent at apex; inflorescences with up to eight to 10 flowers; and a calyx with incrustate veins, retuse standard, and wings that are covered by the standard in the bud. *Genista insularis* subsp. *fodinae* differs from the autonymic subspecies in having oblanceolate bracts 5–6.5 mm long (vs. linear bracts 3.5–4
mm long in subspecies insularis), lanceolate bracteoles (vs. triangular-lanceolate), the calyx 4–4.5 mm long with lower lip teeth 0.7–0.8 mm long (vs. 3.5–4 mm long with lower lip teeth 0.4–0.7 mm long), the standard 8–9 × 6–7 mm (vs. 6.5–7 × 5.5–6 mm), wings 7.5–8.5 mm long (vs. 6.5–7 mm long), the keel 9–10 mm long (vs. 8–8.5 long), and anthers ca. 1 mm long (vs. 1.2–1.3 mm long). In addition to these morphological differences, there are some relevant ecological and chorological differences. *Genista insularis* subsp. *insularis* occurs in a small area of southern Sardinia (near Cagliari), where it grows on granitic and compact metamorphic substrates, while the subspecies *fodiene*, which is also extremely circumscribed, has a northernmost localization (near Iglesias), where it is found on mettalliferous loose substrates.


Erect shrub to arborescent, robust, 60–250 cm tall, with branch lax, flexuous, alternate or subclustered, acute at the apex, striate, glabrescent. Leaves 3-foliate, uppermost often simple, sessile, linear-lanceolate, revolute, sericeous, 5–13 mm, caducous. Inflorescence ≥ dense, 1.5–10 cm, 5 to 30-flowered; bracts linear to linear-lanceolate, 3.5–4 mm, much longer than pedicel; bracteoles linear, 2–2.5 mm, inserted at calyx base. Calyx sericeous, conic-campanulate, 3–5 mm, with veins thin and extended almost to base, lower lip longer than upper, 2.5–3 × 0.5–1 mm, with teeth unequal, triangular to sublinear, slightly divergate, lateral ones 0.5–0.6 mm, central one 0.8–1 mm, upper lip with teeth 1-nerved, triangular, acute, 2–2.5 mm; floral buds with wings wholly covered by standard; corolla yellow; standard ovate-cordate, retuse at apex, 8–9 × ca. 5 mm, sericeous on back; wings 6–8 mm, with a tuft of hairs on basal gibbosity; keel 9–11 mm, sericeous on outer faces; anthers oblong, aristate, 0.5–0.75 mm. Legume totally pubescent, ovoid-beaked, 5.5–6 mm.

**Iconography.** Maire (1987, fig. 54).

**Chromosome number.** Unknown.

**Distribution and ecology.** *Genista numidica* is circumscribed to Algeria, where it grows in garigue and maquis ecosystems at altitudes between 0 and 1100 m. The bioclimatic is Mediterranean pluviseasonal-oceanic, with thermotype ranging between upper thermomediterranean and upper mesomediterranean, and ombrotype between upper dry and upper subhumid (Rivas-Martínez, 2007).

**IUCN Red List category.** *Genista numidica* is assessed here as Data Deficient (DD) according to IUCN Red List criteria (IUCN, 2001, 2003).

**Note.** In the protologue of *Genista numidica*, Spach (1844) indicated as synonym *Spartium sphaerocarpum* Desf. (in Herb. Flor. Atlant. quod flores solum[,] in sched.). This unpublished name, written by Desfontaines on the label of a specimen coming from his own *Flora Atlantica* collection, is a nomen nudum. This name is unavailable for use because it is a later homonym of *S. sphaerocarpum* L. Therefore, this name being illegitimate, Spach (1844) proposed a different epithet (*numidica*) for this species. However, Spach failed to designate a type for the species. For this reason, a type needs to be assigned for *G. numidica* from among the Desfontaines specimens that he identified as *S. sphaerocarpum*. There is a Desfontaines specimen at FI-W of *Flora Atlantica* labeled “*Spartium sphaerocarpum, Numidia*,” which is here designated as lectotype.

**Additional specimens examined.** ALGERIA. Saffsaf, Philippeville, 11 May 1853, R. Gallerand s.n. (B); entre Stora et Philippeville, 3 June 1858, S. Choulette s.n. (B, P); Kabylie, Tifnit, 30 May 1866, A. Letourneux s.n. (P); Caroubiers, Bône, 22 Apr. 1866, Tribout s.n. (B), May 1875, A. Meyer s.n. (P), May 1841, M. C. Durieu de Maisonneuve s.n. (LG); Coteaux du Fort Genois, Bône, 21 May 1892, D. Luizet s.n. (B); Bône, entre la Ville et le Cap de Garde, 10 May 1906, H. Romieux s.n. (B); Djidjeli, 23 Apr. 1938, G. Andreoinsky s.n. (B); Dept. d’Algier, Tamgout d’Azazga, 6 June 1952, L. Faurel s.n. (LG); Dépt. d’Orléansville, entre Ain N’Sour et Tizi Franço, 17 May 1964, A. Dubuis et L. Faurel s.n. (LG); Annaba, Wilaya Annaba, 7 July 1979, A. Dubuis [Soc. l’éc. Pl. vasc. l’Europe Bass. Méd.] 17084 (LG); Wilaya de Jijel, entre Jijel & Ziama-Mansouria, 9 June 1984, A. Dubuis s.n. (LG); Parc Natl. l’Akfadan, Yakouren, 27 May 1984, A. Bologna s.n. (CAT); Wilaya Jijel, 16 June 1984, D. Podlach s.n. (LG); Parc Natl. d’Akkadou, Wilaya Tizi-Ouzou, 40 km à l’E de Tizi-Ouzou, 25 May 1989, A. Dubuis [Soc. l’éc. Pl. vasc. l’Europe Bass. Méd.] 17085 (LG).

9. *Genista ovina* Bacch., Brullo & Feoli Chiapella, sp. nov. TYPE: [Italy. Sardinia:] Capo Pecora, Portoixeddu–Fluminimaggiore, metamorfoliti pale-
Genista ovina is a very localized species, known only from Capo Pecora and Portixeddu, near Fluminimaggiore, in southwestern Sardinia, where it grows on metamorphic substrates at altitudes between 40 and 100 m. The specific epithet is from the Latin “ovinus,” meaning “sheep.” In Italian, the word “pecora” also refers to sheep, and the plants grow on rocky coastal cliffs. The species is rare and confined to a small area, with less than 250 mature plants. Its conservation status is critically endangered (CR) under the IUCN Red List criteria (IUCN, 2001, 2003).

**Distribution and ecology.** Genista ovina is a very localized species, known only from Capo Pecora and Portixeddu, near Fluminimaggiore in southwestern Sardinia, where it grows on metamorphic substrates at altitudes between 40 and 100 m. The new species is dominant in thermophilous garigue vegetation occurring along the rocky coast. The bioclimate is Mediterranean pluvisessional-oceanic, with thermotype upper thermomediterranean and ombrotype upper dry (Bacchetta, 2006).

**IUCN Red List category.** Genista ovina is assessed here as Near Threatened (NT) according to IUCN Red List criteria (IUCN, 2001, 2003).

**Etymology.** The specific epithet is from the Latin “ovinus,” meaning “sheep.” In Italian, the word “pecora” also refers to sheep, and the plants grow on rocky coastal cliffs. The species is rare and confined to a small area, with less than 250 mature plants. Its conservation status is critically endangered (CR) under the IUCN Red List criteria (IUCN, 2001, 2003).

**Chromosome number.** $2n = 44, 48$ (Capo Pecora, Portixeddu, Fluminimaggiore [CA], 9 June 2004, G. Bacchetta, U. Gamper & C. Pontecorvo s.n. [TSB], new count).

**Iconography.** Valsecchi (1986b, fig. 2); Brullo et al. (1993, figs. 3, 4A3, 4B3).
volcanic substrates, in thermophilous garigue vegetation at altitudes of 0–800 m. The bioclimate is Mediterranean pluviseasonal-oceanic, with thermotype ranging between upper thermomediterranean and lower mesomediterranean, and ombrotype between upper dry and lower subhumid (Brullo et al., 1996).

IUCN Red List category. Genista tyrrhena is assessed here as Least Concern (LC) according to IUCN Red List criteria (IUCN, 2001, 2003).

Additional specimens examined. ITALY. Sicily: In insulis Aeolitis, s.d., s. coll. (BM); Vulcano al piano Casa Sperlazi, 8 May 1844, s. coll. (PAL); Lipari, Oct. 1858, Mandralisca s.n. (FI), 29 May 1933, J. F. N. Bormilleri 514 (C); Isole Eolie in tutte le isole, May 1877, M. Lojacoeno s.n. (WU); Lipari, June 1881, A. Borzo s.n. (WU); Vulcano (Eolie), Apr. 1902, G. Zodda s.n. (Fl), July 1902, L. Niciota s.n. (FI), June 1881, A. Borzo s.n. (Fl), 22 Apr. 1962, C. M. Christensen s.n. (C); Stromboli, 8 Apr. 1913, F. K. M. Veerhapper s.n. (WU); Vulcano Italian, 22 Apr. 1962, K. Larsen s.n. (C); Lipari Acqua Calda, 20 May 1869, S. Brullo s.n. (CAT); Vulcano, Isole Eolie (Messina), 22 May 1969, D. Laurisi s.n. (TSB); Stromboli, Isola Eolie (Messina), 25 May 1969, D. Laurisi s.n. (TSB); Lipari, Marina Piccola, Isola Eolie (Messina), 1 June 1869, S. Pignatti s.n. (TSB); Stromboli, Isola Eolie (Messina), 25 May 1969, D. Laurisi s.n. (TSB); Lipari, Marina Piccola, Isola Eolie (Messina), 1 June 1869, S. Pignatti s.n. (TSB); Salina, 14 May 1970, S. Brullo s.n. (CAT); Vulcano, Isole Eolie (Messina), 22 May 1969, D. Laurisi s.n. (TSB); Stromboli, Isola Eolie (Messina), 25 May 1969, D. Laurisi s.n. (TSB); Lipari, Marina Piccola, Isola Eolie (Messina), 1 June 1869, S. Pignatti s.n. (TSB); Salina, 14 May 1970, S. Brullo s.n. (CAT); Gava di Pomice, Lipari, 13 May 1972, S. Brullo s.n. (CAT); Porticello, Lipari, 25 Apr. 1982, S. Brullo s.n. (CAT); Isole Pontine, 16 May 1993, Minisale s.n. (CAT); Panarea, 28 Apr. 1982, S. Brullo s.n. (CAT); Stromboli sopra Fico Grande, 5 May 1990, S. Brullo, P. Minisale, F. Scelsi & G. Spinapinto s.n. (CAT); Lipari, Capistrello, Isola Eolie (Messina), 6 July 2002, S. Pasta s.n. (TSB).

10a. Genista tyrrhena subsp. tyrrhena.


A Genista tyrrhena Vals, subsp. tyrrhena bractea lineari-triangulares vel linearisubulata 3–13 mm longa, bracteodis lanceolato-subulata vel subulata 1.8–2 mm longis, calyce 3.5–5.5 mm longo labio inferiore 2.7–2.8 mm longo labio superiore 1.4–1.8 mm lato dentibus 0.7–1 mm longis atque alis in alabastro et vexillo exsertis differt.

Erect shrub to arborescent, robust, 100–250 cm tall, with branches flexuous, lax, alternate or subclustered, truncate or obtuse at the apex, striate, sericeous. Leaves 3-foliate, uppermost often simple, sessile, linear-lanceolate, revolute, sericeous, 7–12 mm, caducous. Inflorescence ± dense, 5–12 cm, 10–to 30-flowered; bracts linear-triangualr to linear-subulate, 3–13 mm, much longer than pedicel; bracteoles lanceolate-subulate to subulate, 1.8–2 mm, inserted at calyx base. Calyx sericeous, conic-campanulate, 3.5–5.5 mm, with veins thin and slightly extended toward base, lower lip longer than upper, 2–2.7 × 1.4–1.8 mm, with teeth unequal, linear-subulate, not divaricate, lateral ones 0.9–1 mm, central one 0.7–0.8 mm, upper lip with teeth 1-nerved, ovate-triangualr, apiculate, 2–2.7 mm; floral buds with wings exserted from the standard; corolla yellow; standard ovate-subcircular, rounded at the apex, 9–11 × 7–8 mm, sericeous on back; wings 8–9 mm, with a tuft of hairs on basal gibbosity; keel 8–10 mm, sericeous on outer faces; anthers oblong-lanceolate, apiculate, 1.2–1.4 mm. Legume totally pubescent, ovate-beaked, 10–11 mm.

Chromosome number. 2n = 48 + (0–2B, 72, 96) (Zannone, M. Pellegrino, Isole Ponziane [Latina], 6 May 2000, P. Mayer s.n. [TSB], new count).

Distribution and ecology. Genista tyrrhena subsp. pontiana is circumscribed to the Pontine Islands off the coast of west-central Italy and grows on volcanic substrates, in thermophilous garigue vegetation at altitudes of 0–280 m. The bioclimate is Mediterranean pluviseasonal-oceanic, with thermotype ranging between upper thermomediterranean and lower mesomediterranean, and ombrotype between upper dry and lower subhumid (Rivas-Martínez, 2007).

IUCN Red List category. Genista tyrrhena subsp. pontiana is assessed here as Least Concern (LC) according to IUCN Red List criteria (IUCN, 2001, 2003).

Etymology. The specific epithet refers to the Pontine Archipelago.

Paratypes. ITALY. Latium: Ponza, sulle rupi marittime presso il semaforo, 27 Apr. 1900, A. Beguinot (Fl); Zannone, M. Pellegrino nel bosco, May 1950–June 1951, B. Anzalone s.n. (RO); Palmarola, 11 Apr. 1966, B. Anzalone s.n. (RO); Isola di Ponza, 16 May 1993, S. Brullo, F. Scelsi & G. Siracusa s.n. [Arcipelago Ponziano], Mt. Guardia, 9 Apr. 1969, B. Anzalone s.n. (RO), 10 May 1982, G. De Marco s.n. (CAT); Piana d’Incenso, 9 Apr. 1969, B. Anzalone s.n. (RO); Li Conti, 9 Apr. 1969, B. Anzalone s.n. (RO); Isola di Gavi, 18 Apr. 1971, L. Veri s.n. (RO); Isola di Ponza, tra Ponza e il M. Pagliaro, 20 May 1987, M. G. Mariotti s.n. (Fl); Zannone, M. Pellegrino, Isola Ponziane (Latina), 6 May 2000, P. Mayer s.n. (TSB).

Erect shrub, robust, intricate, 30–150 cm tall, with branches rigid, alternate or subclustered, mucronate, pungent at the apex, striate, pubescent. Leaves 3-foliate, uppermost often simple, sessile, linear-lanceolate, revolute, sericeous, 3–10 mm, caducous. Bracts linear-pungent at the apex, striate, pubescent. Leaves 3-branches rigid, alternate or subclustered, mucronate, 3 extended almost up to the base, lower lip longer inserted at the calyx base. Calyx sericeous, conic-pedicel; bracteoles linear-lanceolate, 0.5–1.5 mm, longer than the floral buds with wings covered by the standard; corolla yellow; standard having supplied us with seeds.

Chromosome number. 2n = 48 (Sant’Antioco (Cagliari), 27 Apr. 1984, L. Rizzi Longo s.n. [TSB], new count).

Distribution and ecology. *Genista valsecchiae* is widespread in southwestern Sardinia between Cape Frasca and Pula, including the islands of San Pietro and Sant’Antioco. It grows on granitic, metamorphic, and volcanic substrates at altitudes of 0–100 m, where it is a structural species of thermophilous garigue ecosystems, near the coast. The bioclimate is Mediterranean pluviseasonal-oceanic or xeric-oceanic, with thermodrome upper thermomediterranean and ombrotype upper dry.

IUCN Red List category. *Genista valsecchiae* is assessed here as Near Threatened (NT) according to IUCN Red List criteria (IUCN, 2001, 2003).

Additional specimens examined. ITALY. Sardinia: Figola by Antioco, s.d., s. coll. (OXF); St. Antioco, May, F. Müller s.n. (M); Antioco, Sardinia, 1828, F. Müller s.n. (OXF); Pula, May 1829, J. H. Moris s.n. (TO); Capo Spartevento nei colli fra il Golfo Malfitano e Domus de Maria, 21 Apr. 1893, U. Martelli s.n. (FI); Cagliari, Porto S. Efisio, Pula, 14 Apr. 1894, U. Martelli s.n. (FI); Isola di S. Antioco, M. Perdas de Fugu, 26 Apr. 1894, U. Martelli s.n. (Fl); Portovesme, 6 Apr. 1896, U. Martelli s.n. (FI); Isola di S. Antioco, macchie under Strasse 3 km südöstlich Calasetta, 9–20 Apr. 1966, H. Merxmüller & F. Oberwinkler 21037 (M); Carlafort, Isola di S. Pietro, 30 July 1970, L. Massa & G. Mira s.n. (CAG); Sant’ Antioco Island, 4 km S of Antioco town, 12 Apr. 1973, J. H. Moris s.n. (M); Carloforte, Isola di S. Pietro, 1 May 1984, L. Massa s.n. (CAG); Portoscuso, 11 May 1994, S. Brullo, G. De Marco & P. Pavone s.n. (CAG); St. Antioco Island, 3 Mar. 1975, Milia & L. Massa s.n. (CAG); Isola di S. Antioco, 20 Apr. 1975, L. Camarda s.n. (CAG); Pula, Agumu, 25 Mar. 1982, E. Bocchieri & G. Zedda s.n. (CAG); S. Pietro, Pietro, 23 Apr. 1983, G. De Marco s.n. (CAG); Domus de Maria, Isola su Cardulinu, 11 Nov. 1983, E. Bocchieri 3675050 (CAG); S. Antioco (Cagliari), 27 Apr. 1984, L. Rizzi Longo s.n. (TSB); Carloforte, Isola di S. Pietro, la Caletta, 1 May 1984, L. Massa s.n. (CAG); Portoscuso, 1 May 1994, S. Brullo, G. De Marco & P. Pavone s.n. (CAG); Chia-Domus de Maria (Cagliari), 21 Apr. 1997, C. Giusto s.n. (TSB).

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Literature Cited


