

Davide Ubaldi

## **Taxonomic remarks on *Sesleria italica* (Pamp.) Ujhelyi**

(Monocotyledones Poaceae)

### **Abstract**

A contribute to the taxonomic knowledge of *Sesleria italica* (Pamp.) Ujhelyi compared to the related species *Sesleria nitida* Ten. is presented. The major taxonomic features of the former species are assessed on the basis of samples collected in an area halfway between southern Romagna, northern Marche, and east Toscana, through comparison with specimens of *Sesleria nitida* Ten. from Marche, Lazio, Campania, Basilicata and Calabria. The differences between the two species are shown to be stronger than previously reported. The infraspecific variability of *Sesleria italica* is also investigated, with the consequent proposal of a new subspecies, *Sesleria italica* subsp. *mariculensis*, that differs from the typical form, *Sesleria italica* subsp. *italica*, by a series of quantitative characters. In addition, *Sesleria italica* f. *macrostachya* (Pamp.) Ujhelyi and *Sesleria nitida* var. *pulchella* Chiosi, two rare taxa only known from herbarium materials, perhaps extinct in nature, are dealt with too. Finally, the circumscription of *Sesleria italica* with respect to *Sesleria pichiana* Foggi, Gr. Rossi & Pignotti is discussed.

### **Riassunto**

[*Note tassonomiche su Sesleria italica (Pamp.) Ujhelyi*]

In questo contributo sulla tassonomia di *Sesleria italica* (Pamp.) Ujhelyi si analizzano le differenze morfologiche tra tale specie e l'affine *Sesleria nitida* Ten., sulla base di materiale raccolto, per la prima specie, tra Romagna, Marche e Toscana orientale, e, per la seconda, nel Lazio, Campania, Basilicata e Calabria. Si rilevano differenze maggiori di quanto riportato in letteratura. Nella variabilità di *Sesleria italica* si riscontra la possibilità di ripartire tale specie in due sottospecie: *S. italica* subsp. *italica* e *S. italica* subsp. *mariculensis* subsp. n. Segue un breve cenno su due piante note solo in erbario, e forse estinte in natura, *Sesleria italica* f. *macrostachya* (Pamp.) Ujhelyi e *Sesleria nitida* var. *pulchella* Chiosi, riconosciuta anche quest'ultima come entità del gruppo di *Sesleria italica*. Il lavoro termina con un breve confronto tra *Sesleria italica* e *Sesleria pichiana* Foggi, G. Rossi & Pignotti, essendo state le due specie talvolta confuse in passato.

Key words: *Sesleria*, Italy, endemic species, taxonomy, new subspecies.

## Introduction

*Sesleria italica* (Pamp.) Ujhelyi is an endemic species of peninsular Italy, distributed along in northern-central Apennines, in a wide area including borders between Toscana and Romagna, northern Marche and Umbria, and the Republic of San Marino; in addition, the species is present in pre-Apennine area of southern Toscana and northern Lazio, apparently a separated area.

The distribution map of this species (fig. 1) is based on personal findings and specimens examined in FI and BOLO (see below). The map also reports distribution points of *Sesleria nitida* in the contact area with *Sesleria italica*, mainly based on records by BRULLO & GIUSSO DEL GALDO (2006).

*Sesleria italica* was established by UJHELYI (1959) on the basis of samples collected by Pampanini near Galeata (Romagna) and published under the name “*Sesleria coerulea* L. var. *italica* v. n.” (PAMPANINI, 1917). Holotypus is in FI! and also posted in the website of the “Museo di Storia Naturale dell’Università di Firenze”.

In the opinion of the compilers of Italian Floras (ZANGHERI, 1976; PIGNATTI, 1982; CONTI et al., 2005) *Sesleria italica* is a good species, in spite of its affinity

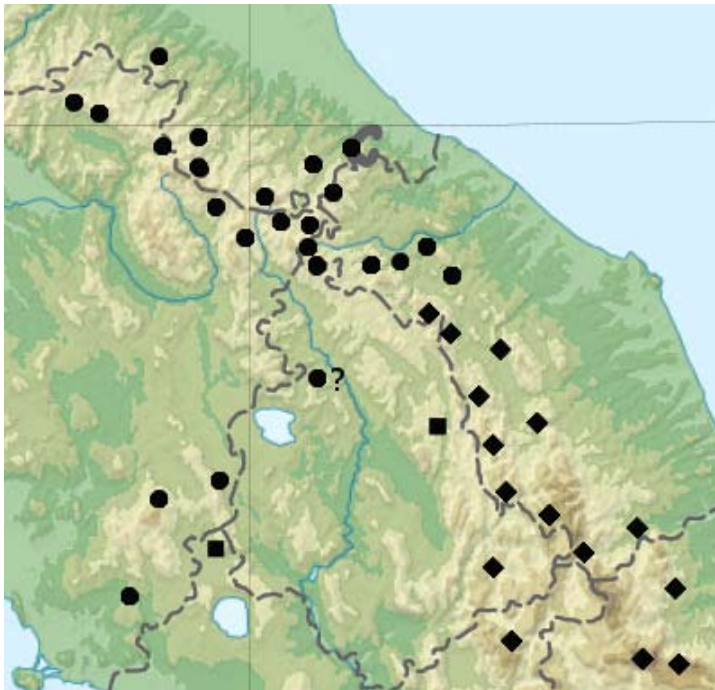


Fig. 1 – Distribution map of *Sesleria italica* (dots checked; squares not checked; question mark: dubious locality) and of the adjoining northernmost part of *Sesleria nitida* areal (oblique squares)

to *Sesleria nitida* Ten., and both are assigned to the same section *Argentae* Deyl (UJHELYI, 1959). Both species are endemic to Italy and the distribution of *Sesleria italica* appears as a northern extension of the *Sesleria nitida* areal in central and southern Italy and Sicily.

## Materials and method

As concerns *Sesleria italica* this study is based on samples collected in several localities in an area at the border between Romagna and the Marche, including part of eastern Toscana: Montecoronaro pass (near Mt. Fumaiolo), San Cristoforo pass and Motolano (near Alpe della Luna), Talamello, Montebello di Torriana, Sasso di Simone and Mt. Simoncello, Mt. Carpegna and Pietrafagnana, Gorgo a Cerbara gorge, Fossombrone (near the Monastery of Cappuccini).

In addition a number of *Sesleria italica* specimens was inspected in herbaria.

FI: Republic of San Marino, “R. Pampanini, *Sesleria nitida* Ten. var. *visianii* Pamp.” and “var. *brevidentata* Hack. f. *intermedia* Beck.”; Alpe della Luna and Marecchia valley, R. Chiosi, sub “*Sesleria nitida* Ten.”, for several localities, in part the same as for my collections or nearby (Mt. Maggiore, Poggio della Giavattina, Monterano, Mt. Sovara, Mt. Perticara); “Mugello Giovigiana, su suolo argilloso, leg. Adriano Fiori, 6 giugno 1922”, det. Arrigoni as *Sesleria italica*; “Mugello, Madonna dei Tre Fiumi, presso il torrente, 4 maggio 1958”; “Giogo di Scarperia, Mugello, leg. Martelli 18 maggio 1889”, det. Arrigoni as *Sesleria italica*; “M. Falterona, 30 aprile 1953”; “Alta Valle Tiberina, *Sesleria*, leg. R. Pichi Sermolli, 8 agosto 1935”, rev. Ujhelyi sub *Sesleria argentea*; “Alta Val Tiberina, Poggio delle Calbane, 879 m, leg. R. Pichi Sermolli, 15 luglio 1937”, det. both Ujhelyi and Arrigoni as *Sesleria italica*; “Pergola, *Sesleria italica*, leg. et det. Brillicattarini & Gubellini”; “Poggio La Sassaiola (Monte Labbro), *Sesleria italica*, leg. et det. F. SELVI, 25 maggio 1995”; “Sarteano, tenuta di Spineto, *Sesleria italica*, leg. et det. F. Selvi, 1 aprile 2013”; “Seggiano, località Pian di Bugnano, *Sesleria italica*, leg. et det. F. Selvi, 4 marzo 2007”; “Monte Coronae (referred to Monte Corona in Umbria with a question mark on the map, because a Montecorone in Emilia also exists, albeit less probable), *Sesleria nitida* Ten., Narducci, aprile 1877”, labeled *Sesleria italica* by Ujhelyi.

Specimens cited in two reports of *Sesleria italica* by UJHELYI (1959) were not found; the first “Rondinaio, Martelli & Baroni, 1889” is out of the present distribution map and very dubious considering its location in Tuscan-Emilian Apennine, in which *Sesleria italica* probably does not exist, while a similar species, *Sesleria pichiana*, is widespread (FOGGI et al., 2007); the second “Subasio, Frondosa, Gennari” is marked as not checked on the map, (considering geographical position, this sample could be *Sesleria nitida*). Also specimens of Mt. Rufeno and Paglia river (northern Lazio) mentioned in ANZALONE et al. (2010) were not examined and these records

too are marked on the map as not checked, by a single square, although I strongly believe they are exact, because of their location near the records of *Sesleria italica* from South Toscana mentioned above (samples of F. Selvi).

In BOLO General Herbarium there is only one specimen of *Sesleria italica*: “Casola Valsenio, lungo il fiume Senio, *Sesleria italica* (Pamp.) Ujhelyi, leg. et det. Cristina Buoso, 10 aprile 2001”.

From herbaria on line, finally, one interesting sheet of *Sesleria italica* on P (P03247980): “Herbarium Sommier, *Sesleria argentea* Savi forma spica brevior! Mugello, sopra Ronta, circa 500 m, 13 aprile 1908”.

For *Sesleria nitida*, the study material originates from Marche (Mt. Catria), Lazio (Mt. Terminillo), Campania (Mt. Cervati), Basilicata (Mt. Volturino) and Basilicata-Calabria borders (Mt. Pollino and Serra delle Ciavole): all this material, in my opinion, is assignable to subsp. *nitida*. Two records for *Sesleria nitida* are reported by UJHELYI (1959) sub *Sesleria italica* as I have checked in FI: “Rocabajarda (Mt. Catria), Piccinini 1864” (an equivalent specimen of Piccinini from Mt. Catria is posted on line in “Erbario Paolucci” and correctly determined as *Sesleria nitida* by Paradisi); “Acquasanta Trisungo, *Sesleria nitida* Ten., Parlatore, luglio 1861”, labeled *Sesleria italica* by Ujhelyi. These details are important to define the areal of each species exactly.

A comparison of the samples requires a careful inspection of a number of traits, all recorded in previous of *Sesleria* species: spikelets and panicle shape and size, leaf width, length of the culm uppermost leaf, leaf color. The lowermost leaves (usually 2 or 3), already dry at the time of the sampling, were measured apart in reason of their larger width. Immature leaves on young tillers occur during September sampling if the previous months were rainy (observed for *S. italica*), were excluded from measurements having different sizes during growth. The measure of the spikelet includes arista; the type of method adopted about this argument is not sometimes specified in the papers concerning *Sesleria*.

### ***Sesleria italica* compared to *Sesleria nitida***

Few clear-cut differences distinguish *Sesleria italica* (s. l.) from the related species *Sesleria nitida* Ten, mainly concerning the flower structure. It is well known that the middle awn of the lemma is significantly shorter in *S. italica* than in *S. nitida* and this is regarded as the most important diacritic feature between the two species. According to UJHELYI (1959) and PIGNATTI (1982) the middle lemma awn length is 0.5-1 mm (*Sesleria italica*) vs. 1-2 mm (*Sesleria nitida*). Values for *S. nitida* reported by BRULLO & GIUSSO DEL GALDO (2006), are 2-2.5 mm for subsp. *nitida* of central-southern Italy and 1.5-2.5 mm for subsp. *sicula* Brullo & Giusso Del Galdo of Sicily, whereas subsp. *aprutia* B. & G.DG. (central Italy) has relatively shorter awns of 1.2-2 mm.

In the plant samples studied for this work, awn length amounts to 0.5-1.5 mm for

*Sesleria italica* vs. 1.2-2.5 mm for *Sesleria nitida*; lemma length is 4.5-6 mm for *Sesleria italica* and 5.5-7.5 mm for *Sesleria nitida* (in both the cases middle awn included); UJHELYI (1959) and PIGNATTI (1982) report 4-4.5 mm and 5-6 mm, respectively (unclear if awn included or excluded). BRULLO & GIUSSO DEL GALDO (2006) state 5.5-7.5 mm for *S. nitida* subsp. *nitida* and 6.5-7 mm for subsp. *sicula*, but 4.5-4.7 for subsp. *aprutia* (in all of these cases awn excluded).

UJHELYI (1959) rightly observed the aspect of *Sesleria italica* panicles was visibly lighter and softer with respect to the robust and bristly rough panicles of *Sesleria nitida* characterized by greater length of the awns and larger size of the spikelets. In *Sesleria italica* panicles are cylindrical/oblong in shape and sometimes lax, at least in part, or ovate and obovate/ellipsoid, always dense in these latter case: 5-11 x 20-45 mm. On the other hand, in *Sesleria nitida* the panicles are always very dense, stiffer and usually thicker, cylindrical (8-11 x 25-30(45) mm) or ovoid to ellipsoid shape (9-12 x 15-20 mm), sometimes with a relatively long (about 5 mm) tube-like bract closely fitting around the culm at the base of the panicle (a structure never noticed in *S. italica*). The panicle size in *Sesleria nitida* as reported by UJHELYI (cit.) and PIGNATTI (cit.) is 10-15 x 20-35 mm; by BRULLO & GIUSSO DEL GALDO (cit.) 8-12 x 20-35 mm (subsp. *nitida*). In both species panicles are blue at flowering and this color is lost in time. Each plant usually presents panicles of a single shape, rarely two types in different branches of the same tuft.

The vegetative habitus of *Sesleria italica* is characterized by the prevalence of flat leaves, sometimes with a few duplicate ones in the subsp. *italica*. By contrast, *Sesleria nitida* tends to have all leaves duplicate in open places, while plants with flat leaves are found only in partially shaded places such as thin woods and woods margins. In both species the lowermost leaves (mostly dry) are flat regardless of the growth site, and definitely wider than other leaves: in *S. italica* 4-5(6) mm vs. 2-3(4) mm, in *S. nitida* 4-6 mm vs. 2-3 mm (flat leaves) or 1.0-2.5 mm (duplicate leaves). The length of the uppermost leaf is 3-9 cm in *Sesleria italica* and 1.5-6 cm in *Sesleria nitida*. The leaves of the two species are glabrous or subglabrous, green or dull green on both sides.

There are other, previously unnoticed differences between the two species, however. *Sesleria italica* usually exhibits two teeth at each side of the middle awn, rarely one alone; they can be both mucronate/awned or only the external one, rarely both unarmed. On the contrary, in *Sesleria nitida* all these teeth appear always clearly awned. Moreover, the awn length of the glumes is 0.7-1.5 mm in *S. italica* vs. 1.5-3.0 mm in *S. nitida*, although in this latter species the awn is sometimes short or even absent, in which case the glumes are only gradually thinned towards the top (like in the figure at p. 600 in UJHELYI, 1959). Finally, several or a few spikelets of each panicle of *S. nitida* present a pair of awned or unarmed extra glumes, whereas such structures are unseen in *S. italica*.

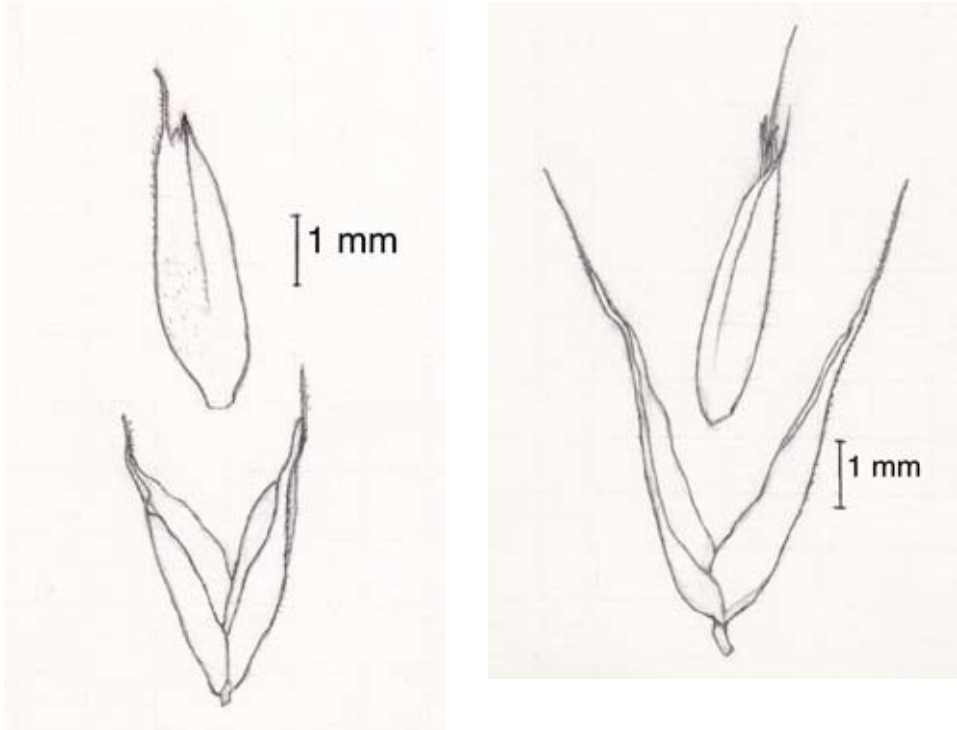


Fig. 2 – Lemma and glumes of *Sesleria italica* (left) and *Sesleria nitida* (right) (drawn about at the same scale)

### ***Sesleria italica* infraspecific taxa and habitat**

*Sesleria italica* presents two main population types, which are primarily characterized by their different sizes in panicle and leaves width. I propose two subspecies for these two types: subsp. *italica* (the nominal subspecies) includes plants with smaller measures for panicle and leaves width, whereas subsp. *mariculensis* subsp. n. plants with greater measures for the same parts. Considering habitats of these subspecies, the former appears more xero-thermophilic than the latter.

In the area of my collection (see “Materials and method”) *Sesleria italica* (s. l.) is widespread from hills to the mountains, at altitude ranging between about 300 to 1400 m. The distribution involves two altitudinal belts corresponding respectively to oak woods and beech woods. Habitats can be summarized as follows: (1) marly fine debris, or clay, on slopes and escarpments, (2) clear woods, wood margins and scrublands, (3) rocky sites on limestone or sandstone.

Subsp. *italica* is abundant only in habitat (1) on hills at altitude up to about 800 m, in a thermophilic plant community type named *Coronillo-Astragaletum* (BIONDI



Fig. 3 - A marly-arenaceous escarpment covered by a *Sesleria italica* plant community (Motolano, 1 July 2015)

et al., 1985), but it can reach 1200 m or more in very sunny places in other xero-thermophilic meadows. Subsp. *mariculensis*, on the other hand, is found in a greater range of different habitats, but all less xero-thermic and often shaded. It is abundant in type (1) sites, but usually at relatively high altitude, on mountains, and on deeper soil, in a plant community type named *Valeriano-Seslerietum* (UBALDI, 1974). It is also abundant in type (2) sites, including clear woods such as *Pinus nigra* plantations, thin *Quercus pubescens*/*Ostryacarpinifolia* woods and *Juniperus communis* or *Cytisophyllum sessilifolium* shrub communities. Less abundant, although frequent, in mountain rocky sites scarcely shaded too (3).

The ecological distribution of the two subspecies is not sharply separated. For instance, it was seen a few of scattered plants of subsp. *mariculensis* in *Coronillo-Astragaletum*, where subsp. *italica*, on the contrary, is abundant. On the other hand, rare plants of subsp. *italica* can be found in light *Pinus nigra* plantations together with the very more abundant subsp. *mariculensis*. This last is usually alone in more shaded habitat as *Quercus pubescens* and *Ostrya carpinifolia* woods. Among the habitats of *Sesleria italica* there are also gravels of fluvial terraces submerged in occasion of stronger floods. For this habitat further investigations are necessary.

#### *Sesleria italica* (Pamp.) Ujhelyi subsp. *italica*

This subspecies includes the type specimen (fig. 4), on which the following features are noticed. Leaves rather narrow, 1.5-2.5 mm wide, except the lowermost 3-4 mm wide. Length of the uppermost leaf 35-55 mm. Panicles shortly cylindrical, dense, rather squat, 8-10 x 20-25 mm, some asymmetric on the underside. Length of the middle awn of the lemma 0.8-1.5 mm, lateral teeth shortly awned.

The type specimen comes from Galeata, a locality of the northern part of the areal. Certain samples of subsp. *italica* also collected not far, in Mugello, show slightly larger panicles, up to 11 x 25-30 mm. On the contrary, plants of the central-southern part of the areal (beginning from Marecchia valley) exhibit usually slender panicles, 5-8(9) x 12-25(35) mm and the lateral lemma teeth are sometimes unarmed (see fig. 2), or only the external one mucronate/awned; the middle one usually 0.5-1.2 mm long. Also the uppermost leaf is slightly shorter, 25-35(50) mm. In samples of any origin the lowermost dry leaves are commonly 4 mm wide (such leaves are missing in the type specimen) and other leaves narrower and sometimes duplicate, 1.5-2.5(3) mm wide. The overall plant length is 25-30 cm at flowering stage and 35-70 cm at senescence.

The distribution of *Sesleria italica* subsp. *italica* corresponds to the whole range of the species.

An annotation is necessary now. UJHELYI (1959), in his description of *Sesleria italica*, reports that culm leaves vary from 8 to 10 cm, a surprising remark



considering the measures of the type specimen chosen by him and cited in the present work. DEYL (1980), too, mentions 8 cm as a minimum value for the culm uppermost culm leaf of his *Sesleria insularis* subsp. *italica*, probably borrowed from Ujhelyi without further control.

*Sesleria italica* (Pamp.) Ujhelyi subsp. *mariculensis* **subsp. nova**

Holotypus: "Mt. Simoncello (PU), cenge erbose del versante est, 1150 m, 31 maggio 1970, D. Ubaldi" (BOLO)". (fig. 5)

*A typo differt: foliis latioribus, infimis 5(6) mm, aliis 2.5-3(4) mm latis; folio supremo plerumque longiore, (3.5-4.5)5-9 cm; paniculis maioribus, (5)6-8(11) x 25-47 mm.*

The name *mariculensis* pertains to the Marecchia river (latin *Maricula*), that flows from eastern Toscana through southern Romagna, in a valley where the subspecies is frequent and the type specimen comes from.

The leaves in this taxon are flat and wider than in var. *italica*: the lowermost 5-6 mm, other leaves 2.5-3(4) mm; the uppermost leaf is usually 5-9 cm long (seldom less), whereas it rarely exceeds 5.5 cm in subsp. *italica*. Panicles are cylindrical or cylindrical-oblong, dense but often not uniformly so, and substantially longer than in subsp. *italica* (25-47 mm vs. 12-25(35) mm). The plant itself also reaches a larger size, from about 30 cm at flowering up to 85 cm at senescence in shaded environment. Length of the lemma middle awn 1-1.5 mm, lateral teeth usually armed (at least the external), similar to the type of subsp. *italica* above mentioned.

This subspecies is known for large part of the species areal, from Mt. Falterona to the north to Monte Corona southward. In Pampanini's herbarium (FI!) accompanying a study of the flora of San Marino Republic (PAMPANINI, 1927), this plant is present under the name "*Sesleria nitida* Ten. var. *visianii* Pamp.", in a case, and "*Sesleria nitida* Ten. var. *brevidentata* Hack. f. *intermedia* (Beck.)", in a second one, the latter together with a plant of subsp. *italica*.

Thanks to the considerable length of the panicle and the uppermost leaf, this subspecies may be reminiscent of *Sesleria argentea* (Savi) Savi, although the latter species is uncommon in the areal of *Sesleria italica*. The vegetative habitus of *Sesleria argentea* is similar enough to *S. italica* to make determination a delicate task, but it tends to flowers in middle or late summer, not early in spring as *S. italica*, and the panicle is longer, 35-55 mm or more, white-silvery. The awns of the glumes are also longer, up to 2.5 mm.

*Sesleria italica* f. *macrostachya* (Pamp.) Ujhelyi

This is a morph reported by PAMPANINI (1927) from the Republic of San Marino and attributed to *Sesleria nitida*, successively transferred to *Sesleria italica* by



Fig. 4 – Type specimen of *Sesteria italica* (Pamp.) Ujhely (from Herbarium of Museo di Storia Naturale dell'Università di Firenze).



Fig. 5 – Holotype of *Sesleria italica* subsp. *mariculensis* (about at the same scale of fig. 4)

UJHELYI (1959). It is a sturdy plant (FI!) showing stout cylindric panicles 12-15 x 37-54 mm and the lowermost leaves 7 mm wide, the other leaves 3-4 mm, the uppermost leaf 7-9 cm long. The lemma awn reaches 2 mm, a measure overlapping *Sesleria nitida*. However, plant height and length of the uppermost leaf resemble *Sesleria italica* subsp. *mariculensis*. Unfortunately, the possible relationship between this subspecies and f. *macrostachya* cannot be investigated, because the latter morph is likely to be now extinct in nature. To explain its features, UJHELYI (1959) simply supposed this rare plant to grow on humus-rich soil.

#### *Sesleria nitida* Ten. var. *pulchella* Chiosi

Under the name *Sesleria nitida* Ten. var. *pulchella* CHIOSI (1930) are listed a number of plants of very small size (FI!) collected on Alpe della Luna “da Motolano a Colcellalto” on clay soil (so on the label), eastern Toscana. According to my measurements on herbarium specimens, mostly coincident with Chiosi’s description, the plants are 9-11.5 cm tall; panicle ovate or oblong, 6-8 mm wide and 10-22 mm long, generally dense (not lax as in Chiosi’s image), similar to panicle of *Sesleria italica* subsp. *italica* and so also the spikelets. On the contrary leaves are very particular, sharply shorter, the uppermost leaf only 0.5-3 cm, the other ones no more than 6 cm long, strictly duplicate, about 2 mm wide. These plants could be considered as a new species to place beside *Sesleria italica*, visibly distinct thanks to its vegetative habitus. In July 2015 I surveyed the dry clay slopes by the road near the village of Motolano, where *S. italica* is common (with abundant subsp. *italica* and rare subsp. *mariculensis*), without finding any plant resembling those of Chiosi. Also the type sample of Chiosi’s variety is posted in website of the “Museo di Storia Naturale dell’Università di Firenze”.

UJHELYI (1959) listed this taxon among the synonyms of *Sesleria insularis* Somm. This is really difficult to understand. However, Ujhelyi’s determination of Chiosi’s specimen is missing, and his conclusion could perhaps result from a misinterpretation of Chiosi’s work.

#### **Conclusive remarks**

Finally, a brief account of the taxonomic misadventures of *Sesleria italica*, often mistaken for species of *Sesleria insularis* group. Two cases are worth recalling. The first case concerns the above mentioned Pampanini’s work on San Marino flora. The material of this study (FI) includes samples of both *Sesleria italica* and *Sesleria pichiana*, together sub *Sesleria nitida* Ten. (FOGGI et al. 2007). *Sesleria pichiana*, distributed along northern Apennines from Liguria to San Marino, is closely related to *Sesleria insularis* Somm. of Sardinia, Corsica and Majorca, and was once included in the latter species (UJHELYI 1939, 1959; DEYL, 1946; ROSSI & UBALDI, 1995), of which *Sesleria pichiana* represents the North-Apennines

vicariant. In fact, all these authors mention *Sesleria insularis* as present in northern Apennines (“Etruria”, DEYL 1946), although all *Sesleria insularis*-like samples from this area can be assigned to *Sesleria pichiana* according Foggi et al. (2007). The morphological differences are slight and consist in smaller panicle and spikelet awn (Foggi et al., 2007), but the species are clearly separated by the karyotype (*Sesleria pichiana* 2n=56; *Sesleria insularis* 2n=28).

A similar mistake was made by DEYL (1978) and was more serious. This author transferred *S. italica* to *S. insularis* as a subspecies (without justifying comments), so the name “*Sesleria insularis* Somm. subsp. *italica* (Pamp.) Deyl” was accepted in Flora Europaea (TUTIN et al., 1980) and is still perpetuated in “The Plant List” website (Royal Botanic Gardens, Kew and Missouri Botanical Garden).

Several morphological differences distinguish *Sesleria italica* from the *Sesleria insularis* group. I shall briefly summarize them with a focus on *Sesleria pichiana* alone, because it is partially sympatric with *Sesleria italica*, as mentioned above, and some errors may depend on this. The most constant, reliable and easily observed difference with respect to *Sesleria italica* concerns the leaves (the species is rather variable). These are stiff, straight and narrow, 2 mm wide (but up to 4 mm in the 1-2 lowermost leaves), usually flat or rarely duplicate (the latter are 1-2 mm wide), whitish glauco-pruinose on the upper side, more markedly so in plants from sunny places, with a patent hyaline edge. In addition, the spikelets are 5-6(7) mm long, hence larger than in *S. italica*; lemma and palea are hirsute on veins and teeth/awns (only ciliolate or scabrous in *Sesleria italica*), from subglabrous to hairy between the veins (glabrous or in part slightly hairy in *S. italica*), sometimes villous below. Length of lemma middle awn similar to *Sesleria italica*, 1.0-1.5 mm. The size of the panicle, too, may be similar to *S. italica* (s.l.); in some populations it amounts to 10 x 40 mm, in other populations (typical ones) the panicle is 7-8 mm wide and less than 30 mm long (FOGGI et al., 2007). Finally, the length of the uppermost leaf varies from 1 to 10 cm, according to the same authors, but a length of only 1-3 cm seems most frequent (3-4 cm in *S. italica* subsp. *italica* and around 6 cm or more in subsp. *mariculensis*).

Several variable features of *Sesleria pichiana* seem related to the habitat and others perhaps to the particular geographic distribution in the whole area, e.g. panicle size, lemma and palea hair covering, unarmed or awned secondary teeth of lemma, and so on. It seems likely that a thorough field survey of the morphological traits of *Sesleria pichiana* would shed some light on its infraspecific variability.

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Author's address:

Davide Ubaldi  
via Mascarella, 77/7°, 40126 Bologna, Italy  
*e-mail*: [davide.ubaldi@unibo.it](mailto:davide.ubaldi@unibo.it)