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**About the presence of *Sesleria insularis* f. *macrochaeta*,
Sesleria barbaricina and *S. barbaricina* subsp. *morisiana*
in Corsica, Majorca and Provence**

(Monocotyledones: Poaceae)

Abstract

Sesleria insularis subsp. *insularis* f. *macrochaeta* (Hack.) comb. et stat. nov. is established for Corsica and Majorca, deriving its name from *Sesleria coerulea* (L.) Ard. var. *corsica* Hack. subvar. *macrochaeta* Hack. described by Hackel in Prodrome de la Flore Corse of Briquet.

In reason of their good reciprocal similarity, *Sesleria barbaricina* and *Sesleria morisiana*, both described for Sardinia by ARRIGONI, at first as subspecies of *Sesleria insularis*, are now admitted as a pair of heterotypic synonyms, of which the name *Sesleria barbaricina* has been chosen as priority for the rank of species, while *Sesleria morisiana* can remain at the rank of subspecies, but subordinated to *Sesleria barbaricina*, not to *Sesleria insularis*. So the new combination *Sesleria barbaricina* subsp. *morisiana* is proposed. Both these taxa are now recognized also for Corsica and Majorca and only *Sesleria barbaricina* subsp. *barbaricina* even for Provence on the base of two herbarium sheets online from the National Museum of Natural History of Paris (MNHN-P), a find of exceptional importance regarding the Paleobiogeography of the western Mediterranean insular area.

Key words: *Sesleria insularis* species group, taxonomy, distribution, Corsica, Majorca, Provence.

Riassunto

[Sulla presenza di *Sesleria insularis* f. *macrochaeta*, *Sesleria barbaricina* e *S. barbaricina* subsp. *morisiana* in Corsica, Maiorca e Provenza]

Viene stabilita per la Corsica e Maiorca *Sesleria insularis* subsp. *insularis* f. *macrochaeta* (Hack.) comb. et stat. nov., nome derivato da *Sesleria coerulea* (L.) Ard. var. *corsica* Hack. subvar. *macrochaeta* Hack., pubblicato da Hackel nel Prodrome de la Flore Corse di Briquet.

Essendo tra loro piuttosto somiglianti, *Sesleria barbaricina* e *Sesleria morisiana*, entrambe descritte da ARRIGONI per la Sardegna, all'inizio come sottospecie di *Sesleria insularis*, sono ora considerate come una coppia di sinonimi eterotipici, di cui il primo viene scelto come nome prioritario di specie, mentre il secondo rimane come sottospecie, ma riferita a *Sesleria barbaricina*, non a *Sesleria insularis*, da cui la nuova combinazione *Sesleria barbaricina* subsp. *morisiana*. Entrambi questi taxa vengono ora riconosciuti anche per la Corsica e Maiorca, mentre la sola *Sesleria barbaricina* subsp. *barbaricina* è stata vista in due campioni online del Museo di Storia Naturale di Parigi (MNHN-P)

provenienti da una località costiera della Provenza, un reperto di eccezionale importanza per la Paleobiogeografia delle isole del Mediterraneo occidentale.

Introduction

In older works, *Sesleria* plants of the western Mediterranean islands were attributed to *Sesleria caerulea* (L.) Ard., for example by BARBEY (1884) for Sardinia and by CAMBESSÈDES (1827) and KNOCHE (1921) for Majorca, or sometimes also to *Sesleria argentea* Savi or *Sesleria cylindrica* DC., as on herbarium sheets of CAMBESSÈDES himself (MNHN-P online). Also SOMMIER (1905), describing for Sardegna his *Sesleria insularis*, reports that on this island there is probably also *Sesleria coerulea*, an affirmation that makes us suspect that he had sensed another presence out his *Sesleria insularis*. After SOMMIER the more frequent attribution was *Sesleria insularis*: so for Corsica (CONTANDRIOPOULOS, 1962; GAMISANS, 1971; JEANMONOD & GAMISANS, 2007; JEANMONOD, 2018), for Majorca (BONAFÉ BARCELÓ, 1977; ALONSO et al. 2011) and for Sardinia and Corsica PIGNATTI (1982, 2017).

HACKEL ex BRIQUET (1910) had completely overlooked the work of SOMMIER (1905), attributing the Corsican plants in the genus *Sesleria* to *Sesleria coerulea* (L.) Ard. var. *corsica* Hack., dividing it in two sub-varieties, *macrochaeta* Hack. and *microchaeta* Hack.

Also UJHELYI (1938) primarily ignores the SOMMIER's name *Sesleria insularis* and believed that *Sesleria coerulea* (L.) Ard. var. *corsica* Hack. as a new species, proposing it under the name *Sesleria corsica* (Hackel) Ujhelyi. However, shortly after, UJHELYI (1939), realizing the existence of the result obtained by SOMMIER and so admitted the synonymy of *Sesleria coerulea* (L.) Ard. var. *corsica* Hack. with *Sesleria insularis* Sommier. Moreover, he recognized the Hackel's subvar. *microchaeta* of *Sesleria coerulea* (L.) Ard. var. *corsica* Hack. as a new variety of *Sesleria insularis* stating consequently this combination: *Sesleria insularis* var. *microchaeta* (Hackel) Ujhelyi, whose he furnishes a Latin diagnosis. In the same paper UJHELYI reported the typical *Sesleria insularis* and var. *microchaeta* also for the northern Apennines, but subsequently, in a review of *Sesleria* genus in Italy (UJHELYI, 1959b), forgets var. *microchaeta*, mentioning only *Sesleria insularis* "tout court". The Apennine *Sesleria insularis* admitted by UJHELYI and some other authors (f. e. ROSSI & UBALDI, 1995) later was recognized by FOGGI et al. (2007) as a different polyploid species with the name *Sesleria pichiana* Foggi, Rossi & Pignotti.

Also DEYL (1946) thought *Sesleria insularis* were also in the Apennines and later, in Flora Europaea (1980), recognized that it is represented there by a subspecies that he called *Sesleria insularis* subsp. *italica* (Pamp.) Deyl, involving so *Sesleria coerulea* var. *italica* (PAMPANINI, 1917). This last taxon had been

recognized by UJHELYI (1959) as a new species of the section *Argenteae* with the name *Sesleria italica* (Pamp.) Ujhelyi, which was treated by PIGNATTI (1982) and DI PIETRO ex PIGNATTI (2017) as close to *Sesleria nitida* Ten., therefore admitting its position in *Argenteae* section. UBALDI & GARAVAGLIA (2018), even regard *Sesleria italica* as a form of *Sesleria nitida* Ten. and mention both in the section *Argenteae*. So *Sesleria insularis* subsp. *italica* (Pamp.) Deyl would be a confusing name because it combines the names of two species of different section: *Sesleria insularis*, well known as representative of section *Calcariae* and *Sesleria italica*, confirmed as a taxon of the section *Argenteae*.

An absolute novelty arrived with ARRIGONI (1983), who found in Sardinia besides *Sesleria insularis* subsp. *insularis* also two other new subspecies, *S. insularis* subsp. *barbaricina* and *S. insularis* subsp. *morisiana*, both considered as endemic of the island, distributed into this in areas separated between them and with respect to *Sesleria insularis*. ARRIGONI admitted that *Sesleria insularis* subsp. *barbaricina* is found only on the mountains of central-eastern area, *S. insularis* subsp. *morisiana* in southwestern (Mount Marganai), while *Sesleria insularis* subsp. *insularis* had been already described by Sommier (1905) for along a short trait of coast of nordeastern Sardinia. Subsequently ARRIGONI (2006), raised both his sub-species to the rank of species, i.e. *Sesleria barbaricina* and *Sesleria morisiana*, probably also in reason of their believed isolation within Sardinia.

Materials and method

This study is based mainly on Corsican material, 17 herbarium sheets from G (Herbier Burnat) received on loan and other 7 scans of the same herbarium, among which the lectotypus of *Sesleria coerulea* var. *corsica* Hack. subvar. *macrochaeta* Hack. (G00830020) and that of subvar. *microchaeta* Hack. (G00185263), both designated by JEANMONOD (2018). This material regards two distinct areas in the north of the island, respectively Saint Florent - Col de Teghime and Caporalinu - Lanu - Massif de San Petrone, and another one rather away, in the southern part of the island, in the land of the massifs of Incudine and Bavella. In addition, we have received seven collections from A. DELAGE (Conservatoire Botanique National de Corse) from northern Corsica. Also, some scans online of herbarium sheets in W, USNH and GAP have been checked and so also two foils of a taxon similar to *Sesleria insularis* found in MNHN-P online from Provence, a region never before indicated in the distribution area of this species in the more known works.

From Majorca, five online samples by MNHN-P and one by MPU have been seen, but only the last equipped with a millimeter ruler as so also a picture seen in the website Herbari Virtual del Mediterrani Occidental.

Relatively few samples have been seen for Sardinia as scans or images online,

from the site of Natural History Museum of the University of Florence. This material includes the *typus* of *Sesleria insularis* Sommier indicated by UJHELYI on the foil itself (FI-007267), then validate by ALONSO et al. (2016), moreover, two similar samples collected in the same locality along a short stretch of coast in NE Sardinia (FI-007268 and FI-007269). We also saw the *typus* of *Sesleria insularis* subsp. *barbaricina* Arrigoni (FI-007270) coming from the mountains of central-eastern Sardinia and that of *S. insularis* subsp. *morisiana* Arrigoni (FI-007271) from SW. For central-eastern Sardinia (loc. Ulassai) we have found the sheet WAG. 1961986, determined *Sesleria insularis* by E.L.A.N. Simons 2014 and also some photos indicated as *S. insularis* subsp. *barbaricina* in the website "www.sardegnaflora.it" published by G. CAMPUS.

Other interesting samples come from SW Sardinia: two scans from FI (058739, 058740) are labelled *Sesleria morisiana* by ARRIGONI, and another sample online (TAIF-Z187141) collected by Stud. biol. Turic. in itinere no. 92-72 d.d. 10.04.92, labelled *Sesleria insularis* Sommier by H. HOFMANN, currently cancelled from the web. At last a herbarium sheet examined in BOLO, on whose tag BERTOLONI wrote "Ex Sardinia misit Moris 1827", while MORIS annotates "*Sesleria caerulea* Scop." sine loco. As we will say, this sample will be recognized as *Sesleria barbaricina* subsp. *morisiana*, according to the system proposed below.

The method used for this work is a traditional study consisting in comparisons made at sight between the available samples, starting from the samples closer the *typus* and then those that can be considered as part of the variability. Among the checked characteristics, a particular attention is paid to the width of the leaves, the length of the upper leaf, the size of the panicle, the shape of the glumes, being these the more important features in our experience for distinguishing in *Sesleria* genus taxa of various levels, as can also be deduced from the literature (DEYL, 1946, 1980; UJHELYI, 1939, 1959a, 1959b).

Results

Based on the inspected materials, it has been observed that *Sesleria insularis* from Corsica and Majorca does not exactly correspond to the *typus* from Sardinia, and so a new form is proposed: *Sesleria insularis* f. *macrochaeta* (Hack.) comb. et stat. nov. It corresponds to *Sesleria coerulea* var. *corsica* Hack. subvar. *macrochaeta* Hack. described by Hackel ex Briquet (1910), a name that is maintained. Instead the name *Sesleria coerulea* var. *corsica* Hack. subvar. *microchaeta* Hack. equally published by the same author in Briquet (cit.) is now by us referred to *Sesleria barbaricina* (Arrigoni) Arrigoni, as above mentioned together with *Sesleria morisiana* (Arrigoni) Arrigoni. Due to the high similarity of these taxa, we recognize them as a pair of heterotypic synonyms (Art. 11.5 of the International Code of Botanical Nomenclature) and between them we establish as a priority the name *Sesleria barbaricina*, while we consider the other

valid for the level of subspecies, as in the first evaluation made by ARRIGONI (1983). Ultimately, we propose the following combination: *Sesleria barbaricina* subsp. *morisiana* (Arrigoni) comb. nova.

Regarding the geographic distribution, *Sesleria barbaricina* subsp. *barbaricina* has been found not only in Sardinia, but also in Corsica and Majorca and so, also its subsp. *morisiana*. Moreover, we deduce that in Corsica *Sesleria insularis* and *Sesleria barbaricina* are distributed in fairly distinct areas (Fig. 1 on the left), as reported by ARRIGONI (1983) for Sardinia (see also Fig. 1 on the right), but this author considers separated in an own area also *Sesleria barbaricina* subsp. *morisiana* (sub *S. insularis* subsp. *morisiana*) i. e. in the area of Mount Marganai (southwestern Sardinia). Therefore, we have recognized *Sesleria barbaricina* subsp. *morisiana* in the foil WAG. 1961986, bringing plants collected in central-eastern Sardinia, an area considered by ARRIGONI as exclusive to *Sesleria barbaricina* subsp. *barbaricina* (sub *S. insularis* subsp. *barbaricina*). Vice versa, we recognize samples of *Sesleria barbaricina* subsp. *barbaricina* also in the Mount Marganai area (FI-058739, FI-058740; TAIF-Z187141), so we can admit that there is no territorial distinction between the two taxa, which is also observed in Corsica. On the other hand, we can say almost nothing about the distribution in Mallorca, because the herbarium sheets examined are mostly without locations.

In Corsica *Sesleria insularis* f. *macrochaeta* is found in coastal sites or hilly ones not too far from the sea, up to an altitude of 750 m, while in Sardinia the typical form only on the coasts. *Sesleria barbaricina* subsp. *barbaricina* is instead distributed in both islands from hilly to mountainous areas, while *S. barbaricina* subsp. *morisiana* perhaps prefers mountain and high mountain altitudes, up to over 1900 m in Corsica. This latter seems rather rare and is found scattered into the *S. barbaricina* subsp. *barbaricina* areas, both in Corsica and Sardinia.

Then we report the presence of a taxon of the *Sesleria insularis* group on the Provence coast, based on two samples online of the 1821-1822 published by MNHN-P (P02223914, P02658105) both collected nearby the town of Ollioules. Being these specimens provided by scarcely awned spikelets, we assign them to *Sesleria barbaricina*, although they are different from the typus due to the narrower linear panicles, a form, perhaps to be placed in a new subspecies or variety, a problem that we haven't been able to solve for the moment. Very similar specimens are found in Corsica, in the area of M. San Petrone (G00220475, G00220245) and on Bavella massif (G00220238). Some other samples online found in the same Provencal Var department, at Le Luc and Le Bar sur Loup, are probably also attributable to *Sesleria barbaricina*, but these are less evident. These finds in Provence can be interpreted as a floristic remaining after the middle-late Ordovician detached of the Sardinian-Corsican massif from the

French coasts.

In the introduction, we have told the contribute of UJHELYI (1939) about the interpretation of the names *Sesleria coerulea* var. *corsica* Hack. subvar. *microchaeta* Hack. and subvar. *macrochaeta* Hack. Now we can say that this author in defining his *Sesleria insularis* Sommier var. *microchaeta* (Hackel) Ujhelyi refers probably to *Sesleria barbaricina* subsp. *morisiana*, while considering subvar. *macrochaeta* as equivalent to *Sesleria insularis* probably he made a mix with *Sesleria barbaricina* subsp. *barbaricina*. All this can be deduced on the base of his descriptions, sketches and samples by him indicated.

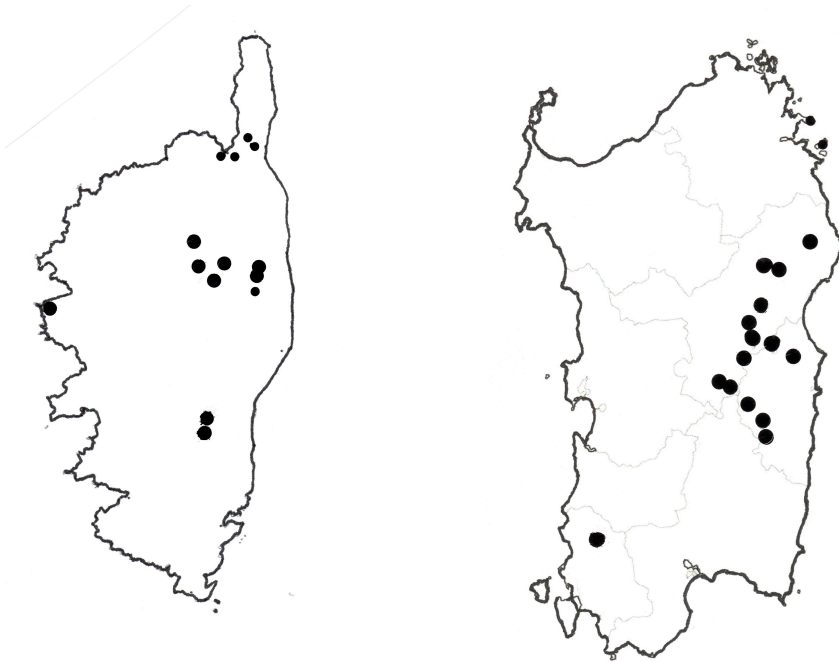


Fig. 1 - Distribution map in Corsica (to the left) and Sardinia (to the right), this second adapted from ARRIGONI (1983). Small dots = *Sesleria insularis* f. *macrochaeta* (Corsica) and *S. insularis* s. str. (Sardinia); large dots = *Sesleria barbaricina* subsp. *barbaricina*, including subsp. *morisiana*.

***Sesleria insularis* Sommier subsp. *insularis* f. *macrochaeta* (Hack.) comb. et stat. nov.**

Basionymus: *Sesleria coerulea* var. *corsica* Hack. subvar. *macrochaeta* Hack. (Hackel in Briquet, 1910).

Lectotypus a D. Jeanmonod (2018) in *Candollea* 73 designatus: G00830020, "Année 1907. Voyage botanique en Corse de John Briquet, Commandant A. Saint-Yves et François Cavillier. (18 avril - 18 mai). *Sesleria caerulea* (L.) Ard. var. *corsica* subvar. *macrochaeta* Hackel, Mont San Angelo près de Saint Florent, Rocailles, Calcaire, 250 m, 24/IV".

Typical plants of *Sesleria insularis* from Sardinia show leaves only about 0.5 - 1.5 mm wide, tender (according to Sommier, 1905), floating-wavy, while in f. *macrochaeta* reach a major width, (0.5) 1-2 (2.2) mm and distinguish also because straight or slightly arched, rigid and pungent on their sharp and straight tip. The upper leaf is not only slightly longer than 2-3 cm, as reported by ARRIGONI (1983) for the typical species, but can reach 40-65 mm, while the minimum is 15 mm. Furthermore, the culm can be quite robust, 0.8 mm thick up, 50 cm long, not slender and delicate as described by Sommier for the typical specimens and as it appears on these ones too (FI-007267, FI-007268, FI-007269). The spikelets are briefly or rather well pedunculate, up to 6.5 mm, glumes ovate-lanceolate, usually long elongated and well awned as in the typical *Sesleria insularis* (up to 2.5 mm), but sometimes ovate-acute and briefly awned (only 0.5 mm, Fig. 2: specimen on the right), lemma not only puberulent as reported by ARRIGONI (cit.) for this last, but with a variable indumentum, different also between the spikelets of the same panicle: from the glabrescent to the villous ones, especially on the veins and along the edge of the distal part.

Similar to the typical *Sesleria insularis*, in f. *macrochaeta* leaf blades are ciliate, panicles loose or about dense, linear or irregularly-cylindrical, 4 - 8 x 16 - 30(40) mm, rarely ovate (8 x 18 - 20 mm), spikelets 5.5 - 7.5 mm long (6 - 8 mm in ARRIGONI (1983) for the typical specimens); central awn of the lemma (1)1.5-2.5(3) mm (1.5 - 3 mm for the typical ones). The leaves are more or less glaucous over, with edges scarcely marked and just scabrid; in addition the basal sheaths underlying on outermost one are scarious-shining.

From the taxonomic point of view a form, in the case *Sesleria insularis* f. *macrochaeta*, has a little relevance, but it can serve to ask questions about the distributive and evolutionary history of this species. One may wonder why two distant islands (Corsica and Majorca) have in common a population of *Sesleria insularis* different than that of Sardinia, an island close to Corsica. According to the usual paleogeographic reconstructions, Sardinia was in the past close also to Majorca on its southern side. Therefore, it can be assumed that f. *macrochaeta*

is probably the ancestral form of *Sesleria insularis*, once common to all three islands, but then evolved in *Sardinia* up to the present typical form.



Fig. 2 - Panicles of *Sesleria insularis* f. *macrochaeta* from plants collected at Barbaghju (Corsica) by A. DELAGE.

Samples of *Sesleria insularis* f. *macrochaeta*:

- *Corsica*

J. Briquet, W1916-0032781: 24.5.1907, Corsica, Mont San Angelo près de Saint Florent, rocailles calcaires, 250 m; J. Briquet, USNH01165221: 24.5.1907, Corsica, Mt San Angelo près de Saint Florent, rocaille calcaire, 250 m; R. De Litardière, G00011877: 6 avril 1936, défilé des Strette, près St. Florent, base de la P.ta di Fortino, rochers calc., 30-80 m; Herbarium Edouard Chas, GAP003411: 12.4.1987, Corse, les Strette de St. Florent; A. Delage: 26.04.2017, Barbaghju, Punta di u Fortinu; R. De Litardière, G00011873: 9.4.1936, Mt Secco, près le col du Teghime, rochers de cipolins vers 580 m; J. Gamisans & Guyot, G00220239: 6.5.1990, Crête au S de Bocca Teghime, Monti Rossi, versant W, rochers calcaires, 570 m; R. De Litardière, G00011878: 27.05.1953, entre Felce et Pied'Alesani, rochers de schistes lustrés à gauche de la route, au tournant de Pinzuti, 724 m env.

- *Majorca*

L. H. Knoche - J. Cambessèdes, MPU216063: 26.3.1825, Ad rupes in montibus Esporles, *Sesleria insularis* Sommier, det. Malagarriga, 17.5.1982.

Sesleria barbaricina* (Arrigoni) Arrigoni subsp. *barbaricina

As above reported, the *typus* of *Sesleria barbaricina* is published online by the Natural History Museum of University of Florence (FI-007267) under the *basionymus* *Sesleria insularis* Sommier subsp. *barbaricina* Arrigoni.

Based on the description provided by ARRIGONI (1983) and the samples seen from Corsica, we point out the most important differences compared to *Sesleria insularis* (typical and f. *macrochaeta*). Leaves wider, reaching 3 mm, (0.5) 1 - 2 (3) mm, quite flat and tender, devoid of cilia along the edge and never pungent at the tip, which is obtuse, bringing a minuscule mucro folded to the side. The spikelets are usually almost sessile or very short pedunculate (1 - 2 mm), with glumes ovate-acute, usually shorter, 4.5 - 6 mm vs. 6 - 7 (8), unarmed or briefly mucronate vs. 0.5 - 2 mm awned in *Sesleria insularis*; length of the central awn of the lemma (0.1) 0.5-1.5 (2) mm long in the specimens from Corsica, described similar by ARRIGONI (1983) for ones of Sardinia, (1)1.5 - 2.5(3) mm.

It is to add that in the Corsican samples, glumes and lemma can be from glabrous, or glabrescent between the veins, to a little hairy or even hirsute along the edge and on the veins. We are unable to confirm a such type of variability also for the Sardinian plants, not having had specimens in hand and description about this topic is missing in ARRIGONI's diagnosis. We also note that in Corsica the upper leaf of specimens quite close to the *typus* of *Sesleria barbaricina* subsp. *barbaricina* measures just 1 cm, but in a lush specimen collected by Delage on Monte a Supietra, and here reported in Fig. 3 on the right, the upper leaf is about

3 cm. On the basis of the description and illustration furnished by ARRIGONI, we suspect that such sample is even closer to the Sardinian plants, while the other could belong to a Corsican form that remains to be studied more carefully.

Sesleria barbaricina has a high variability in Corsica also concerning the shape and size of the panicle, but we cannot do a such valuation for Sardinia due to the few specimens seen for this region. Samples with panicle more similar to the typus are found especially in localities of northern Corsica (Caporalinu, Lanu, Santa Reparata di Moriani, Mte Tre Pieve). In these samples the panicle is always dense, elongated, ovate and also like geniculate at the apex, on average slightly wider and shorter than in *Sesleria insularis*, 6 - 8(10) x 12 - 20 mm, or just more slender, 5 - 6 x 28 - 30(35) mm, in this last case exactly cylindrical-linear, with uniform thickness.

About other samples of northern and southern Corsica it is noted some curious specimens with narrow-cylindrical panicles, 3-4 (5) x 14-18-25 (32) mm, sometimes collected with typical ones. These samples remain to be studied thoroughly to see if they can be configured as a particular subspecific taxon (form or variety?). It should be emphasized that these correspond to the specimens of *Sesleria barbaricina* above mentioned from the town of Ollioules in Provence. Finally, we report a sample from Punta di u Fornellu (G00220478) in which two specimens bring a narrow and loose panicles with single sessile spikelets regularly outdistanced on the rachis, a curious coronet shape seen also on a Majorcan sheet (MNHN-P-P02657947, specimens on the right of this foil).

Samples of *Sesleria barbaricina* subsp. *barbaricina*

- *Sardinia*

P.V. Arrigoni & C. Ricceri, FI007270: 26.5.1968, *Sesleria insularis* Sommier ssp. *barbaricina* Arrigoni (Holotypus), Sardegna - Oliena, campi carreggiati e doline fra Sos Prados e la cima di M.te Corraisi; P.V. Arrigoni: FI-058739 & FI-058740, 27.6.1984, *Sesleria morisiana* (Arrigoni) Arrigoni, Sardegna - Fluminimaggiore Gutturu Pala; H. Hofmann, Z187141: 10.04.1992, *Sesleria insularis* Sommier, Prov. Cagliari, Iglesias, an der Strasse unterhalb des Gipfels des P.ta S. Michele, ca. 890 m ü. M. (Sheet TAIF online currently cancelled).

- *Corsica*

J. Briquet, G00830019: 13.5.1907, env. de Corté, Montagne de Caporalino, rochers calcaires, 450-650 m; J. Briquet, W32780: 11.5.1907, env. de Corte, Montagne de Caporalino, rochers calcaires, 450 - 650 m; J. Briquet, USNH0-1231685: 11.5.1907, env. de Corte, Montagne de Caporalino, rochers calcaires, 450-650 m; A. Delage, 21.04.2017: Monte a Supietra (Caporalinu-Omessa); A. Delage, 21.04.2017: Punta Aragone-Monte Olmelli (Santa Reparata di Moriani); R. De Litardière, G00185262: 20.8.1930, Massif du San Petrone (Mte Tre Pieve), rochers (schistes lustrés) de la falaise, versant de l'Orezza,

1100-1200 m; J. Gamisans, G00220243: Monte Tre Pieve; R. De Litardière, G00011874: 3.4.1928, Monte Pollino, falaise calcaire au S. du col. 450 m env.; J. Gamisans, G00220237: 12.6.1990, Cortenais, écaille calcaire de Compettine, à l'W de Castellare di Mercurio, pelouse sur l'arête, 900 m; J. Gamisans, G00220475: 2.7.1968, France (Corse), Massif du San Petrone, Mont Sant Aghjulu di Lanu, versant E, 1180 m; J. Gamisans, G00220241: 12.7.1971, Mte Tre Pieve; J. Gamisans, G00220242: 12.7.1971, Mt. Tre Pieve; J. Gamisans, G00220245: 12.7.1971, Mt. Tre Pieve; J. Gamisans, G00220236: 13.6.1990, Corsica, Monte Sant'Angelo de Lano, au pied de la falaise, versant N, pesant, 1075 m; J. Gamisans, G00220240: 20.05.1988, sect. Rotondu, côte presque île du Capu Rossu, près de l'étranglement, 150-170 m, rochers, granite; J. Gamisans, G00220238: 23.07.1969, Bavella, cheminée dominant la rive D du ravin de Polischello, granulite, 1750 m; J. Gamisans. G00220244: 19.7.1971, Ravin de Polischello, à la base NE de la tour VII; J. Gamisans, G002200476: 18.07.1967, France (Corse), massif de Bavella, Punta di u Fornellu, versant N-NE, rochers calcaires, 1890 m; R. De Litardière, G00011876: 1.7.1956, Fourches de Bavella, pentes de rochers granulitiques, leg. J. Bonfils et J. Panis; J. Gamisans, G00220246: 29.6.1970, Calanca Murata; J. Gamisans, G00220247: 29.06.1970, Calanca Murata; D. Jeanmonod, Palese R., Rouget D., G00185261: 25.6.1987, France, Corse, secteur d'Incudine-Bavella, près du Bocca di Maro sur le versant S de la Punta di u Fornellu, 1650 m. (with also some specimens of subsp. *morisiana*).

- *Majorca*

J. Cambessèdes (attributable to), MNHN-P-P02657950: 14 Juin, Sesleria cylindrica DC., Majorque, Barranco de Soller; J. Cambessèdes, MNHN-P-P02657952: 1827, Sesleria cylindrica, Majorque; J. Cambessèdes, MNHN-P-P02657948: without date, Sesleria cylindrica Balbis, Îles Baleares; J. Cambessèdes, MNHN-P-P02657947: Sesleria coerulea, Îles Baleares (without locality); J. Cambessèdes (attributable to), MNHN-P-P02657949: 20.4.1825, Sesleria cylindrica DC. etc. ad rupes in montibus prope Lluc; J. Duvigneaud, BR0000024643979 (Herb. Horti Bot. Nat. Belg.): Sesleria insularis Somm., Formentor, Majorque, Baléares, falaise exp. nord, à la Cala Figuera, in avril 1963; Herbari Virtual del Mediterrani Occidental: a zoomable photo with millimeter reference, without locality of collection.



Fig. 3 - Specimens of *Sesleria barbaricina* subsp. *barbaricina* from northern Corsica, collected by A. DELAGE at Caporalinu-Omessa and Santa Reparata di Moriani, April 21, 2017.

***Sesleria barbaricina* (Arrigoni) Arrigoni subsp. *morisiana* (Arrigoni)
comb. nova**

Basionymus: *Sesleria insularis* subsp. *morisiana* Arrigoni in Arrigoni (1983).
Holotypus in FI: "Iglesias, M.te Marganai, presso la Punta San Michele" Arrigoni,
4.VII.1969, published online by the Natural History Museum of University of
Florence.

Compared to *Sesleria barbaricina* subsp. *barbaricina*, this taxon stands out thanks
to its ovate small panicles measuring only 4-6 x 10-15 mm, consisting sometimes
even of only 4-5 spikelets. The glumes are widely ovate, acute, only 4.5 - 5.5
mm long; lemma and palea are about glabrous or slightly hairy only on the distal
edge and on the ribs; lemma shows a minuscule central awn of 0.1-0.4 (0.8) mm.
Leaves are narrow, 0.5 - 1.5 mm, duplicated, very short compared to the culm
height in mature or senescent specimens.

This description fits well with both Sardinian and Corsican materials, except the
indication of 8-11 nerves in the section of the leaf reported by ARRIGONI (1983):
indeed, it is available a leaf section with 14 nerves, drawn by DE LITARDIÈRE on
the Corsican sheet G00011875.

Finally, we also note that in this taxon, like in *Sesleria insularis* and in *Sesleria
barbaricina* subsp. *barbaricina*, the basal sheaths are scarious-shiny, a characteristic
which together with the slightly marked and just rough leaf margin (however we
have not checked it on the fresh in the subsp. *morisiana*), would be typical of what
can be called the "group of *Sesleria insularis*".

Samples of *Sesleria barbaricina* subsp. *morisiana*:

- *Sardinia*

P.V. Arrigoni, FI007271: 4.7.1969, *Sesleria insularis* Sommier subsp. *morisiana*
Arrigoni (Holotypus), Sardegna - Iglesias, M.te Marganai, presso la Punta San
Michele; Moris in Herbarium Bertoloni (BOLO!), *Sesleria a coerulea* diversa
(handwriting of Moris), ex Sardinia (without locality), Misit Moris (handwriting
of Bertoloni); E.L.A.N. Simons, WAG.1961986: 24 April 2014, *Sesleria insularis*
Sommier, Italy, Sardinia, Ulassai. Limestone rocks and grasslands, Alt. 500 m.

- *Corsica*

R. De Litardière, G00011872: 3.4.1928, Monte Pollino, sur un bloc calc. au col.
425 m env.; R. De Litardière, G00011875: 9.8.1953, *Sesleria insularis* Sommier,
Punta di Fornello, garigue rocailleuse et lapiez de la plate-forme culminale, calc.,
1930 m, leg. G. Malcuit; D. Jeanmonod, Palese R., Rouget D., G00185261:
25.6.1987, France, Corse, secteur d'Incudine-Bavella, près du Bocca di Maro sur
le versant S de la Punta di u Fornellu, 1650 m. (with also some specimens of
subsp. *barbaricina*).

- *Majorca*

Rijksherbarium Leiden (Herb. Lugd. Bat.), N° 463693: Mallorca, zuidkant van Cala Figuera, ca. 5 km WZW van Cabo Formentor, 23.III.1980.

Conclusions

It is substantially confirmed the validity of the taxonomy established by ARRIGONI (1983, 2006) for the taxa of *Sesleria* present in Sardinia next to *Sesleria insularis* Sommier, that is *S. barbaricina* (Arrigoni) Arrigoni and *S. barbaricina* subsp. *morisiana* (Arrigoni) comb. nova. The same entities have also been recognized for Corsica and Majorca, while only *Sesleria barbaricina* has been found in Provence, as a probable geographic relic due to the drift of the Sardinian-Corsican system.

How these taxa can be maintained within each island without an apparently adequate spatial distancing is to understand, considering that an unique chromosome number was found, $2n = 28$, by UJHELYI (1959b) in Sardinia, DE LITARDIÈRE (1949) in Corsica and CARDONA (1976) in Majorca. As far as we know, there are also no differences in flowering phenology, except for a suspicion about the early flowering of *Sesleria barbaricina* subsp. *morisiana* compared to *S. barbaricina* subsp. *barbaricina* deduced from a mixed sample (G00185261) relating to a high mountain station in Corsica. However, it should be noted that in Sardinia and Corsica, the two largest and best known islands, *Sesleria insularis* and *S. barbaricina* occupy distinct areas, probably for ecological reasons which remain to be well defined, and this would suffice to keep the populations genetically distinct. But in northern Corsica at least one station of *Sesleria insularis* has been observed rather close to those of *Sesleria barbaricina*. This regards a collection site between Felce and Pied'Alesani (G00011878), marked in Fig. 1 by one alone little dot on the southeast margin of the cloud of large dots representing *Sesleria barbaricina*. Spatial contacts and consequent hybridizations could explain certain features of *Sesleria insularis* f. *macrochaeta*, recalling *Sesleria barbaricina* as the width of the leaves and also, sometimes, the squat shape of the glumes. On the other hand also the great variability of *Sesleria barbaricina* regarding the shape and size of the panicle could be due to the same phenomenon.

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