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CONTRIBUTIONS TO THE MALTESE FLORA

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ABSTRACT

This work is intended to give further contributions to the Maltese Flora, including the sighting of *Brassica tournefortii* near Ghadira s-Safra, a plant first recorded in 1874 and thought to be extinct, the confirmation of the *Aeluropus lagopoides* population at Dwejra, Gozo, and about 5 other uncommon species of flora including the first record of naturalized *Pennisetum villosum* in a rural environment.

Keywords: *Brassica tournefortii*; *Sedum litoreum*; *Ziziphus zizyphus*; *Aeluropus lagopoides*; *Melica ciliata*; *Brachypodium sylvaticum*; *Pennisetum villosum*; Maltese Islands.

SHORT NOTES

***Brassica tournefortii* Gouan (Fam. Brassicaceae)**– *Brassica tournefortii* Gouan was first recorded by Duthie (1874) as occurring in roadside near Rabat, Gozo and very scarce, but has never again been noted since. Sommier & Caruana Gatto (1915) did not encounter this species. Haslam *et al.* (1977) and Borg (1927) cite the record of Duthie as very rare from Gozo in the limits of Rabat. On the 2nd July 2009 during a field study at Ghadira s-Safra (a small marshland on the eastern coast at Ghallis) and its environs an unfamiliar, pale-flowered Brassicaceae was noticed. The flowers were small, its leaves were hispid, and the young fruits had conspicuous beaks. The fruits were held on semi-vertical stalks. The flowers and leaves were photographed, but being a Brassicaceae the author was unaware of its rarity. Later on in the following September it was revealed that the plant was *Brassica tournefortii* Gouan, and also confirmed by Edwin Lanfranco (pers. comm., Sep-2009). The plant was found among other (dry) vegetation including *Lotus cytisoides* L. and *Lotus edulis* L., some metres away from Ghadira s-Safra in a more or less disturbed spot. The author was not searching for Brassicaceae species and doesn't recall encountering any other specimens of *Brassica*. Being a Crucifer it could sometimes be overlooked or ignored by plant enthusiasts or botanists as being a species "lacking" interest and thus not recorded. This could account for its rarity; however the plant is also recorded as rare in neighboring Sicily and other parts of Italy (Pignatti, 2002). *Brassica tournefortii* is an annual to biennial herb that can be found growing in arid ground, especially maritime sands (Pignatti, 2002). Its flowers are small, pale yellow often violet at base, but whitish in drought (Pignatti, 2002; Blamey & Grey-Wilson, 1993). The petals of the plant found at Ghallis were white. Outside the Maltese Islands the plant is reported to grow also on disturbed sites such as roadsides and abandoned fields and is considered an invasive species (GISD). This invasiveness is apparently not shown by *Brassica tournefortii* in the Maltese Islands. Its native range is Africa, Asia and Europe, while it is an introduced plant in Australia and North America (USD-GRIN, 2003; Adkins *et al.* 1997; USDA-NRCS 200). Blamey & Grey-Wilson (1993) gives its range in the Mediterranean as in West and Central from Portugal eastwards to Italy and Greece including North Africa. Considering the species' native range it is not unusual that the plant inhabits the Maltese Islands, albeit rare.

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Figure 1: Flower of *Brassica tournefortii*



Figure 2: Young fruits showing conspicuous beaks.

***Sedum litoreum* Guss. (Fam. Crassulaceae)** - *Sedum litoreum* Guss. is perhaps one of the lesser known species of Stonecrop (*Crassulaceae*) that occur in the Maltese Islands. It inhabits rocky places by the sea (Haslam *et al.*, 1977), (coastal) cliffs, walls and gravel (Pignatti, 2002). Lanfranco & Lanfranco (2003) mention it as found near the sea. The species is frequent at Rđum id-Delli on the North West coast of Malta in the boundary of Il-Majjistral Nature and History Park as several specimens were noticed and photographed here in May 2009. Some were found growing close together in patches, others more sparse or solitary. One particular more or less shady area between boulders held several specimens growing on flat ground and among fine fragments of rock where much of the accompanying plants were *Senecio pygmaeus* DC. In other areas accompanying plants included *Valantia muralis* L. and *Parietaria lusitanica* L. Some specimens were also found growing out of small holes from rocks. *Sedum litoreum* plants were also noticed at I-Ahrax tal-Mellieha (in 2008) growing at the edge of a cliff face. This species is reported from other coastal areas in the Maltese Islands including Gozo, Comino and Cominotto (Tabone, 2008; Haslam *et al.*, 1977; Borg, 1927; Sommer & Caruana Gatto, 1915; Duthie, 1874). These records together with other recent sightings suggest that *Sedum litoreum* probably occurs in many suitable coastal habitats and in greater numbers than actually described. *Sedum litoreum* is also found in the southern parts of mainland Italy, on Sicily, Sardinia, Lampedusa and Linosa where its status is rare (Pignatti, 2002). Its range stretches from France to Cyprus, Turkey and Palestine (Blamey & Grey-Wilson, 1993).



Figure 3: *Sedum litoreum* at Rdum id-Delli, mid-April 2009.

***Ziziphus zizyphus* (L.) Meikle (Fam. Rhamnaceae)** - *Ziziphus zizyphus* (L.) Meikle (*Ziziphus jujuba* Miller) is not native to the Maltese Islands. It is not common and it was formerly cultivated for its edible fruits and according to Borg (1927) the species “naturalizes in many old gardens and valleys in Malta and Gozo, but reproduces itself mostly by suckers”. The Jujube grows into a shrub or a small tree and is armed with spiny stipules.

In May 2006 four specimens of *Ziziphus zizyphus* were encountered at Wied Ta’ l-Speranza, Mosta growing adjacent to each other and near old Carob trees *Ceratonia siliqua* L. Two of these had part of their main stems cut, but were regenerating again new shoots. The other two were a few metres high. Their stems were grey and fissured, and of old age. Lichens also grew on their bark. Young stems were grey and smooth, new ones green. These were in a zig-zag fashion. The shrubs produced flowers and later fruits.

Given that these *Ziziphus* were more or less in a line along with Carob trees, they must have been planted. It could be that the Carob trees and the Jujube were planted at the same time, years ago.

Neither Tabone (2008) nor Haslam *et al.* (1977) list *Ziziphus zizyphus* from Wied Ta’ l-Speranza. Borg (1927) did not mention any localities.

Ziziphus zizyphus has locally lost its value for its fruit (or wood!) and its local distribution and abundance appear to be decreasing. It is far less common than some other archaeophytic trees. Records of this tree are few and consist of scattered individuals/small populations, for which there is no extensive information available. So its conservation status cannot be properly assessed unless more data on the presence and distribution of this tree are known and presented. *Ziziphus zizyphus* is also not so popular for afforestation areas and so hardly, if ever, cultivated, especially from local stock. Planted *Ziziphus zizyphus* was however observed at Ta’ Qali gardens in August 2006, full of reddish-brown fruits. Such trees would probably be imported from abroad and not of local origin.



Figure 4: *Ziziphus zizyphus* at Wied l-Speranza, Mosta, May 2006.

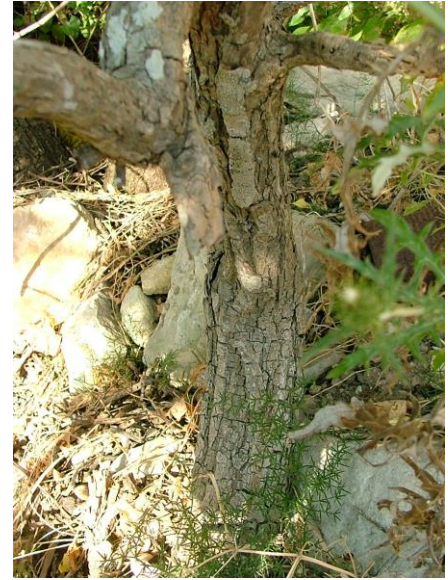


Figure 5: Fissured, grey bark.

***Aeluropus lagopoides* (L.) Trin. (Fam. Poaceae)** - *Aeluropus lagopoides* (L.) Trin. is a rare grass for the Maltese Islands. It was first discovered by Silverwood at Qalet Marku, and afterwards by Wolseley at Dwejra, Gozo. The Qalet Marku plants have gone extinct as a result of development, while the Dwejra (Gozo) population has not been seen for several years (Lanfranco, 1989). On the 7 June 2008 *Aeluropus lagopoides* was seen at Dwejra, Gozo thus re-confirming early records of the species at this locality. The plants were growing in a patch of rocky ground close to the sea. Accompanying plants included *Lotus cytisoides* L., *Capparis orientalis* Veillard. and *Helichrysum melitense* (Pignatti) Brullo, Lanfranco, Pavone & Ronsisvalle. This grass has stolons running over the ground, small distichous leaves and a dense spike-like terminal inflorescence. The habit, leaves and the inflorescence were particularly important features for the author to notice this plant while photographing flora in the area. Such a small and lone population is vulnerable especially given its locality in a coastal and popular place and is at risk from any kind of disturbance or habitat alteration. *Aeluropus lagopoides* also occurs in Sicily and Lampedusa and is very rare (Pignatti, 2002). Its range in Europe is only given in Sicily (GRIN). Its range is Sicily and Cyprus through the Middle East to Central Asia and India, Pakistan, and North Africa from Morocco to Somalia and is described as a plant of



Figure 6: *Aeluropus lagopoides* leaves and inflorescence.



Figure 7: The leaves are small and pointed, folded and with white hairs.

very arid places especially salt-impregnated soils (Flora of Pakistan). Given the species' rarity and range in the



Figure 8: Inflorescence- a dense spike-like panicle of ground, Dwejra, Gozo.



Figure 9: *Aeluropus lagopoides* covering a whole patch.

Mediterranean, the Maltese plants are very important especially from a conservation point of view.

***Melica ciliata* L. (Fam. Poaceae)** – *Melica ciliata* L. is not common in the Maltese Islands. It is recorded by Tabone (2007) in his list of rare vascular species from Wied il-Hesri, and by Haslam *et al.* (1977) as not frequent in arid rocky places and valleys in a few sites in Malta and Gozo. Borg (1927) also mentions it from Comino “in several places”. On the 29 April 2008 a *Melica ciliata* was noticed growing from a rubble wall in the limits of Mgarr, Malta. This rubble wall formed part of the walls surrounding arable fields. The plant was growing on the outside, facing a secondary road. Records available to the author do not include Mgarr, Malta, and this locality should be included for this species if it is not yet listed from here. *Melica ciliata* is reported as common in Corsica and throughout Italy including Sardinian and Sicily (Pignatti, 2002). The species' native range is widespread in Europe, including in the north as far as Finland, middle, eastern and south western countries, and also occurs in Asia (GRIN).



Figure 10: *Melica ciliata* growing out of a rubble wall limits of Mgarr, Malta.



Figure 11: Spikelets of *Melica ciliata*

***Brachypodium sylvaticum* (Hudson) Beauv. (Fam. Poaceae)** – *Brachypodium sylvaticum* (Hudson) Beauv. is an uncommon grass species (*Poaceae*) in the Maltese Islands inhabiting shady places including valleys and wooded areas. Both Haslam *et al.* (1977) and Borg (1927) describe it as rather rare in shady places in a few sites in Malta and Gozo (though Borg mentions that it is more frequent in Gozo). In its native range, *Brachypodium sylvaticum* is most commonly found in forests and woodlands, but may also occur in open habitats (Tutin *et al.*, 1980). Recent records of *Brachypodium sylvaticum* come from Tabone (2008). On the 16 June 2009 some plants of *Brachypodium sylvaticum* were found at Bingemma, Malta growing among other vegetation including *Erica multiflora* L., *Lonicera implexa* Aiton and *Pinus halepensis* Miller in a mostly maquis habitat. The bright green to yellowish-green leaves were rather conspicuous, as were the relatively long awns on the narrow spikelets. The species seems to be more or less frequent here and it can be said that a small and healthy population (that might be bigger than expected) of this plant occurs at Bingemma. All the records available for this species suggest that the plant seems to be well established in the Maltese Islands. The species is native in Europe including the Mediterranean (Haslam *et al.*, 1977)



Figure 12: *Brachypodium sylvaticum* plant at Bingemma, Malta.



Figure 13: Spikelets with long awns.



Figure 14: The bright green leaves.

***Pennisetum villosum* R. Br. (Fam. Poaceae)** - While walking a trail between Xemxija and Mizieb on the 5 January 2008, an unfamiliar grass was sighted growing by the side. The flowers were very showy, whitish, plume-like, and the spikelets had tufts of silky hairs. After close inspection of the spikelets, the plant was later identified as

Pennisetum villosum R. Br. It was growing with *Oxalis pes-caprae* L. The plant was in full bloom when discovered, but the flowers had withered by the end of February during the next visit, and the plant was hardly noticeable. This plant has a long history as an introduced plant in the Maltese Islands with the first records coming by Borg (published in *Flora melitensis Nova* of Sommier & Caruana Gatto, 1915). Borg (1927) stated that this grass was introduced at the botanical garden towards 1908 from where specimens have subsequently naturalized at Floriana. Lanfranco (1969) mentions it as rare in gardens and cultivated ground. The place where *Pennisetum villosum* was found growing suggests that it has not been planted but must have naturalized. Its seeds are dispersed by the wind, and also by adhering to the fur of animals or clothes of people. Being a plant of ornamental value its seeds could have dispersed from a cultivated plant in nearby dwellings, the nearest ones being around 150 metres. Its native range is in Africa (Eritrea, Ethiopia, and Somalia) and Asia (Yemen) (GRIN). Elsewhere it is an alien, occurring as an ornamental plant including in embellishment and landscaping projects, and naturalizing. Pignatti (2002) describes *Pennisetum villosum* from parts of mainland Italy as an ornamental plant and growing wild, but rare. Outside Europe its invasiveness is widely recognized and it has naturalized in many warm parts of the world including America, Australia, and South Africa, and described that it can suppress native plants (DPI; USDA & NRCS; SANA). In South Africa the species is invasive so much that it is described as Category 1- Invader plants that must be removed & destroyed immediately (SANA). Prior to this record, *Pennisetum villosum* has not been described growing in a rural environment. *Pennisetum villosum* is a rare alien for the Maltese Islands and was not known from this area (Edwin Lanfranco, pers. comm., Nov-2008). It is also worthy to mention that species of *Pennisetum* are sold locally from nursery shops, e.g. *Pennisetum setaceum*. This similar species is widely used for landscaping projects and is also invasive. Given its invasiveness potential, *Pennisetum villosum* could be expected to increase as naturalized flora in the future especially in the vicinity of landscaping projects involving this alien plant.



Figure 15: *Pennisetum villosum* growing wild at Xemxija



Figure 16: Spikelet showing silky hairs

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