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A new report on the vascular flora of the island of Alborán (Spain)

Abstract

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Two new visits to Alborán have added a new species, *Salsola kali* L., to its flora. An attempt to reintroduce a few plants of the apparently extinct in the wild endemic *Diplotaxis siettiana* Maire was performed, and a small seed sample of the other endemic *Senecio alboranicus* Maire was collected. *Triplachne nitens* (Guss.) Link and *Frankenia pulverulenta* L. could not be found.

Introduction

The small island of Alborán (Spain, province of Almería) is a flat piece of land at around 10 m above sea level that occupies slightly more than 7 ha in the W. Mediterranean Sea, between the Spanish and Moroccan coasts. It was visited by naturalists on several occasions during the last century, and relevant reports have been published during the last decades by Esteve & Varo (1972) and Génova & al. (1986, 1990). These include information on previous expeditions and detailed accounts of the flora and vegetation of the island. According to the different authors, a total of 14 vascular species have been recorded for Alborán, although four of them were found only once. Two out of the remaining 10 species are endemic to the island, *Diplotaxis siettiana* Maire and *Senecio alboranicus* Maire.

Two additional, short botanical visits to Alboran were made in July 1995 and May 1996. The specimens collected were deposited in the Herbarium of the Real Jardín Botánico de Madrid (MA).

A new report

Interestingly, *Salsola kali* L. *(Chenopodiaceae)* was found on the two visits reported here, growing abundantly in the S. W. area, between the lighthouse, the barracks and the heliport. The corresponding voucher specimen is MA 592714. This species had not been mentioned in the previous reports and constitutes a new adventice in Alborán.

The remaining species found were already known to the island. *Diplotaxis siettiana* Maire *(Cruciferae),* one of the two endemics, was discovered by Sietti (1933) near the lighthouse, described as a new species by Maire (1933), and found more or less abundantly by subsequent expeditions until 1984 and 1986, when Génova & al. (1986, 1990) were unable to

find it. The plant was not found on later visits by Sagredo (1987), Gómez-Campo in 1988 (personal communication) or the two visits reported here. It is an annual species and visits performed in summer might miss the already dead and dried up plants that grew during the previous spring, or its seeds might not germinate in remarkably dry years. The 1996 visit was carried out in the spring of a rather rainy year. All available data seem to indicate that this plant might have become extinct in nature, probably as a result of anthropic disturbance of its habitat, as already suspected by Génova & al. (1986, 1990). Fortunately, a sample of its seeds was collected by Gómez-Campo (1978), grown on and multiplied and kept in the seed bank of the Departamento de Biología Vegetal, Universidad Politécnica de Madrid, under long term preservation conditions. Plants obtained from these seeds have been studied for various research purposes and also used for two attempts of reintroduction. The first, in 1988 (Gómez-Campo, personal communication), was unsuccessful. The second one was carried out in May 1996, by planting 3-5 plants in each of three spots: on the border of the heliport, by the barracks, and within a round, low wall between the barracks and the lighthouse. The results have not been checked so far.

The second endemic plant species of the island, *Senecio alboranicus* Maire *(Compositae),* was also discovered by Sietti (1933) near the lighthouse, described by Maire (1933), and found abundantly in several places across the island by Esteve & Varo (1972). Génova & al. (1986) found only a few specimens in the S. W. area in 1984, but as many as 250 more widespread plants in 1986 (Génova & al. 1990). These authors concluded that the size of the population varies considerably, something confirmed by the fact that in July 1995 there were scarcely 25 plants (W. of the lighthouse and along the drainage channel of the barracks), but in May 1996 nearly 100 plants were found (MA 592712) all around the lighthouse, especially downslope towards the E. dock, also to the N. W. and near the heliport. A small sample of its cypselae was gathered and are now kept in the seed bank of the Departamento de Biología Vegetal, Universidad Politécnica de Madrid.

Esteve & Varo (1972) mentioned a new, endemic species called *Anacyclus alboranensis* Esteve & Varo *(Compositae),* but according to Génova & al. (1986) its morphological traits fall within the range of variation of *Anacyclus* gr. *valentinus* L. Furthermore, the fact that the plant had not been noticed on any previous visits strongly suggests that it would be a recent introduction, rather than an endemic species, as also noted by Génova & al. (1986). It appears abundantly in the W. half (MA 592708, 592709), and less so towards the centre of the island. The Iberian endemic *Lavatera mauritanica* Durieu subsp. *davaei* (Cout.) Cout. *(Malvaceae)* seems to have reached Alborán rather recently, as it was first mentioned by Esteve & Varo (1972). All authors have found it since then, and it keeps growing abundantly in the W. half of the island (MA 592706, 593489, 593498). A few plants of *Spergularia bocconei* (Scheele) Graebner *(Caryophyllaceae)* were located in May 1996 in the W. area near the heliport (MA 592713, 593495). This short-lived annual was found by Esteve & Varo (1972) for the first time, and again reported by Génova & al. (1986), but it was not found in 1995 nor was it mentioned by Sagredo (1987), perhaps because of the season – summer, in both cases. Sietti (1933) also reported *Chenopodium murale* L. *(Chenopodiaceae)* and, although Esteve & Varo (1972) and Sagredo (1987) do not mention it, Génova & al. (1986) did find several plants of this species. This species seems to be increasing, since a considerable number of plants were found this time (MA 592711, 593493) in several spots between the lighthouse, the barracks and the heliport. Both *Mesembryanthemum nodiflorum* L. *(Aizoaceae)* and *Frankenia corymbosa* Desf. *(Frankeniaceae)* are known to grow in Alborán since the last century and were mentioned by almost all reports. They cover a large proportion of the surface of the island and constitute the only plants growing extensively along its E. half.

In May 1996 all plants of *Frankenia corymbosa* were in flower and, apart from the plants with the usual pink flowers (MA 593490, 593491, 593492), one specimen unusually had yellowish-white petals (MA 593494).

Some plant species were found in Alborán by one or few authors but not mentioned by others nor found during the two visits herein reported. According to Génova & al. (1986) Webb & Berthelot found *Lycium europaeum* L. and *Asphodelus* sp., but no other author mentioned them. Only Esteve & Varo (1972) found *Polycarpon tetraphyllum* (L.) L., whereas *Carpobrotus acinaciformis* (L.) L. Bolus was seen by Gómez-Campo in 1974 (personal communication) but not otherwise reported. These plants seem to have reached the island and then failed to establish themselves. *Triplachne nitens* (Guss.) Link was found by Esteve & Varo (1972) and later by Génova & al. (1986), but it was not seen in the two last visits, perhaps because the plants had already dried up. The only one specimen of *Frankenia pulverulenta* L. growing near the lighthouse, reported by Esteve & Varo (1972) and Génova & al. (1986), was thoroughly, although unsuccessfully, searched for in July 1995 and May 1996. The island of Alborán has been subjected to considerable anthropic influence (Génova & al. 1986) in recent times, as shown by the several buildings and debris that can be seen in its small area. As consequences of this disturbance, either the arrival or the disappearance of species might have taken place at a rather intense rate.

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