

Maireana brevifolia (Chenopodiaceae), an Australian xenophyte established recently in southeastern Morocco

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Abstract

MAIREANA BREVIFOLIA (CHENOPODIACEAE), AN AUSTRALIAN XENOPHYTE ESTABLISHED RECENTLY IN SOUTHEASTERN MOROCCO.— The presence of the xenophyte plant *Maireana brevifolia* is reported for the first time in Morocco. The species is native to Australia and is currently colonizing a disturbed saline oasis in Skoura, province of Ouarzazate, though it might likely occur elsewhere in similar habitats. A brief illustrated description and precise geographical Moroccan location of *Maireana brevifolia* are presented. The voucher specimen is deposited in the National Herbarium (RAB) of Morocco, at the Scientific Institute of Rabat.

Key words: alien plant; chorology; Morocco; new record; oasis flora; xenophytes.

Resumen

MAIREANA BREVIFOLIA (CHENOPODIACEAE), UN XENÓFITO AUSTRALIANO ESTABLECIDO RECIENTEMENTE EN EL SURESTE DE MARRUECOS.— Se cita por primera vez en Marruecos la presencia del xenófito *Maireana brevifolia*. Esta especie es nativa de Australia y actualmente está colonizando un oasis salino alterado en Skoura, provincia de Ouarzazate, aunque probablemente pueda encontrarse en otros hábitats similares. Se presenta una breve descripción ilustrada y ubicación geográfica precisa de *Maireana brevifolia* en Marruecos. Un pliego testigo se ha depositado en el Herbario Nacional de Marruecos (RAB), en el Instituto Científico de Rabat.

Palabras clave: corología; Marruecos; nueva cita; oasis flora; planta alóctona; xenófito.

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INTRODUCTION

During a successful botanical excursion in December 2022, the first author spotted and collected plant sample that was identified as belonging to a new genus for Morocco, *Maireana* Moq. (subfam. Chenopodioideae, tribe Sclerolaeneae), which was named to honor the French naturalist Charles Lemaire (1800–1871). This genus is now composed of *ca.* 59 accepted species, all of them endemic to the Australian continent (POWO 2022).

Maireana is most closely related to *Bassia* All., and it was previously classified as a member of the genus *Kochia* Roth. *Maireana* is distinguished from *Bassia* by flowers that are usually solitary or paired at the leaf axils, versus solitary flowers or flowers arranged in spicate inflorescences in *Bassia*. *Maireana* has a flat to cup-shaped, mostly glabrous perianth, that becomes hardened and winged in fruit, whereas *Bassia* shows an urn-shaped perianth that produces membranous, scarious wings or a spine-like or tubercle-like appendage per piece in fruit (Wilson, 1975).

Maireana brevifolia (R. Br.) Paul G. Wilson (*Kochia brevifolia* R. Br.) is a well-known species of the genus that has been introduced, either intentionally or accidentally, in many countries, including Chile, France, Israel, Mexico, Namibia, Pakistan, South Africa, Spain (Canary Islands) and the United States (California) (Marticorena, 1997; Barrett, 2000; Danin 2000; Ilyas *et al.*, 2000; Reyes-Betancort *et al.*, 2002; Mucina & Snijman, 2011). In some areas, it has been regarded as an alien invasive species (GBIF, 2023).

Mucina and Snijman (2011) have already predicted a gradient of high vs. low probability of occurrence of *M. brevifolia* under the given climate-niche scenario, and some regions of Morocco were highlighted with a high probability of occurrence.

This newest addition to Moroccan Chenopodiaceae was botanically identified as *Maireana brevifolia* and confirmed by Australian botanists. In this paper, we present a brief description, discussion, and illustration of the *Maireana brevifolia* individuals, found in Morocco.

TAXONOMIC TREATMENT

Maireana brevifolia (R. Br.) Paul G. Wilson

Maireana brevifolia, also known as Australian bluebush or cotton bush, is an erect rounded shrub that grows to *ca.* 1.3 m tall (Fig. 1). Its branches are striate and sparsely woolly (Fig. 2). The leaves are succulent, alternate, obovoid to narrowly fusiform, 2–5 mm long, narrowed into a short petiole, glabrous (Fig. 2). Flowers are bisexual, solitary, ebracteolate, ciliate on perianth lobes, otherwise glabrous. Fruiting perianth up to 9 mm in diameter, glabrous, flat at apex; tube *ca.* 2 mm diam., thin-walled, hemispherical and weakly 10-ribbed below wings; wings 5, spreading, fan-shaped, papery, dark-veined; perianth lobes domed, spongy, prominent at base of wings; radicular slit not apparent (Wilson, 1975). Fruits are harvested in Morocco primarily between November and January.

Specimens examined. Morocco, south-east of Morocco: Ouled Mnia, Skoura, Ouarzazate province, 31° 04' 16.986" N, 6° 34' 52.104" W, 1220 m, 20.XII.2022, A. Homrani Bakali & L. Giardi (RAB 111166) (Fig. 1).

Distribution in Morocco. *Maireana brevifolia* has been found well established on the disturbed saline oasis of Skoura (Fig. 3), occurring along the road, mixed with alfalfa crops, under olive trees, etc. *Maireana brevifolia* might have been unintentionally introduced to Morocco from Australia as a result of seed admixtures with *Atriplex nummularia* Lindl. or *Medicago sativa* L. Its presence is highly probable in similar oases between Dadès to Tafilalet. Therefore, new inspection efforts are required in ecologically similar Moroccan oases to circumscribe the distribution of the species and better evaluate its local status and distribution.

CONCLUSIONS

The particular orography and vastness of the territory of Morocco confer country-specific soils and climatic conditions that are very diversified and



Figure 1. Voucher specimen of *Maireana brevifolia* from Morocco (RAB 111166).

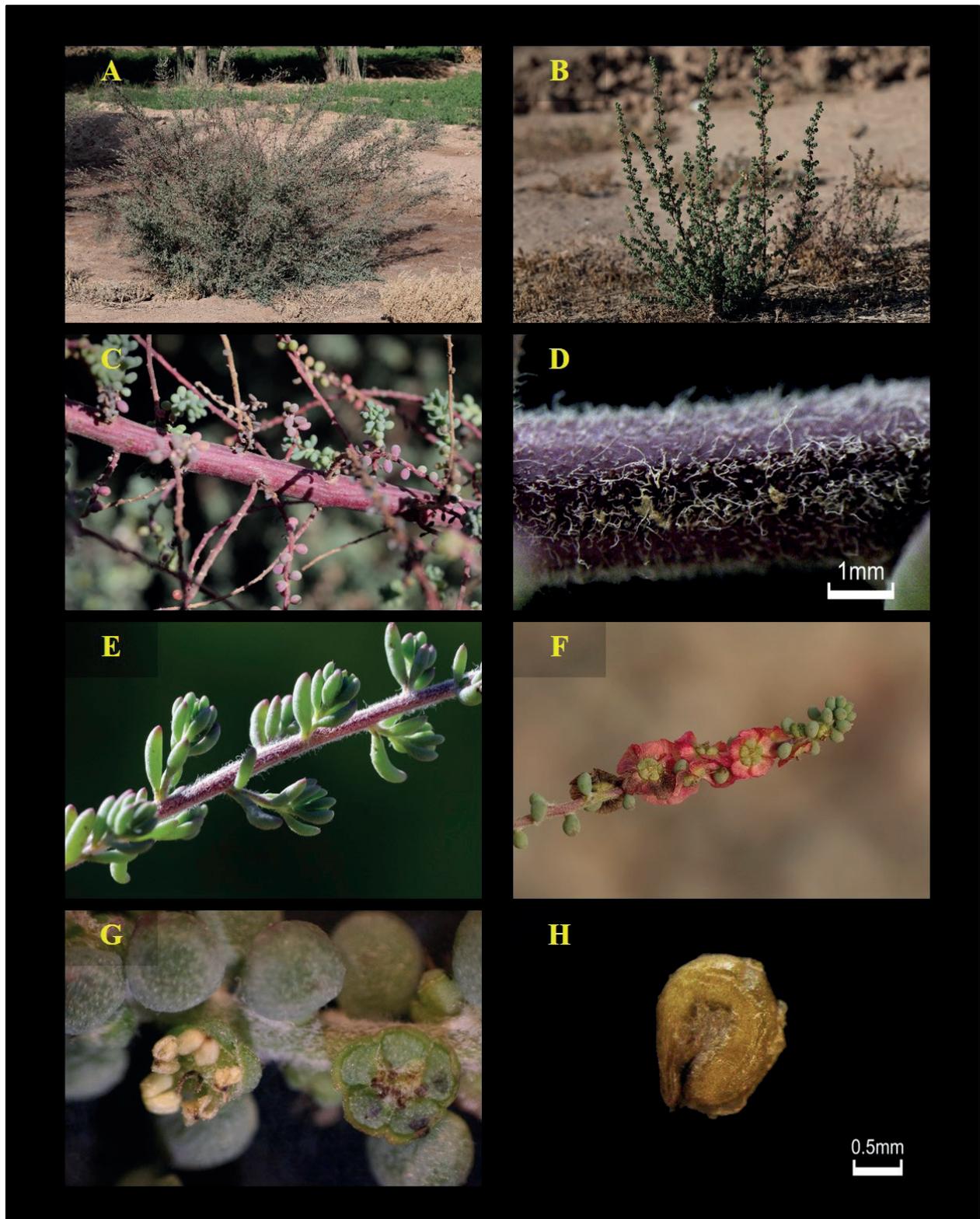


Figure 2. *Maireana brevifolia* and its habitat: (A), large plant in disturbed oasis habitat; (B), small plant; (C), striate stem; (D), stem indumentum; (E), basal leaves; (F), upper leaves with fruiting perianth; (G), bisexual flowers; (H), embryo.

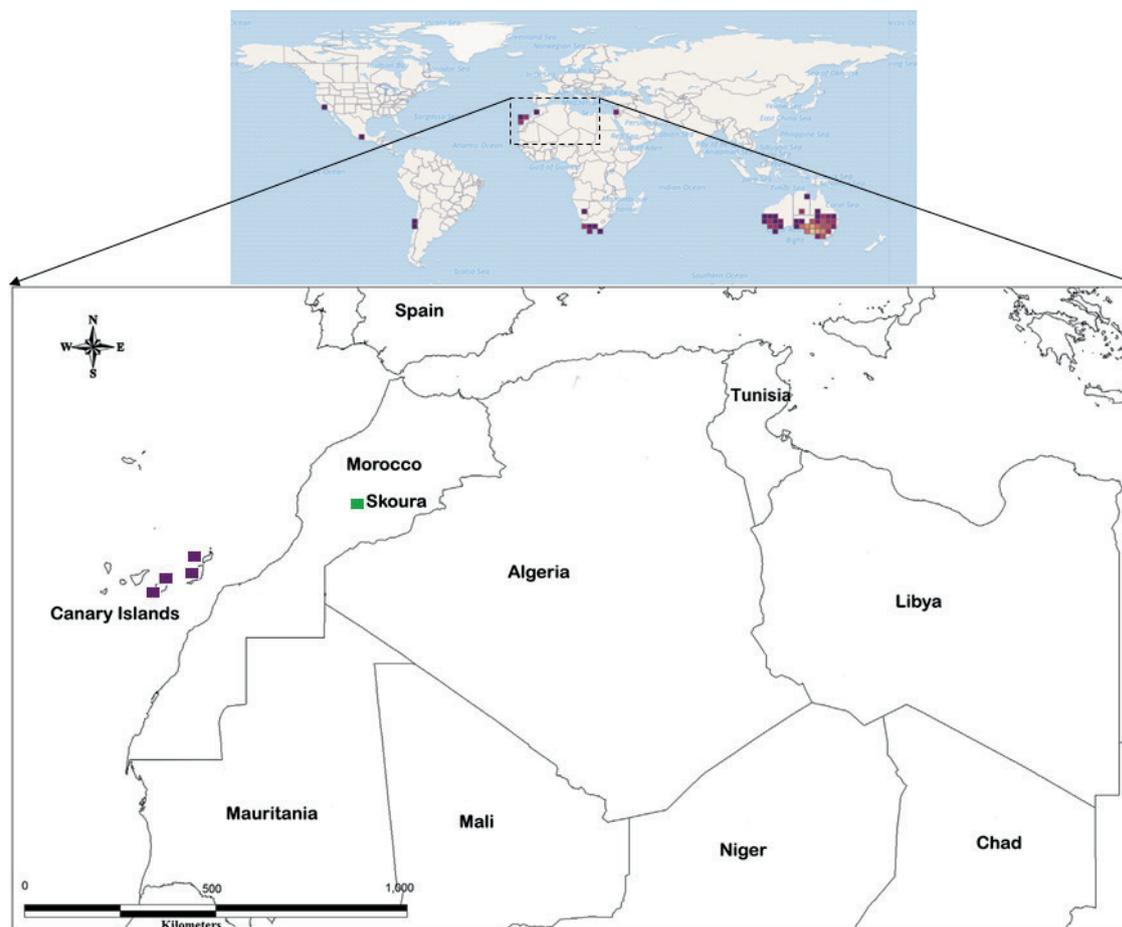


Figure 3. Distribution map of *Maireana brevifolia* in NW Africa and the Canary Islands. The green square is the new occurrence in Morocco, the other purple squares are taken from GBIF.org (13 January 2023; GBIF Occurrence Download <https://doi.org/10.15468/dl.ms9wj>)

favorable for the development of many remarkable species. Consequently, intensive field research in Morocco is of paramount importance for new findings that will improve our knowledge on and will complete the floristic catalogue of this remarkable African area.

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