

THE GENUS *AEONIUM* WEBB & BERTHELOT IN GIBRALTAR

Brian M. Lamb / Conservador del Gibraltar Botanic Gardens

The genus *Aeonium* Webb & Berthelot belongs to the family Crassulaceae often referred to as the Houseleek family. Some 32 species are endemic to the Canary Islands, two to the Cape Verde Islands, two to Madeira, one to Morocco and possibly today three on the other side of Africa from northern Kenya through to Arabia.

The three species that can be seen in Gibraltar are:

<i>A. undulatum</i>	native to Gran Canaria
<i>A. haworthii</i>	native to Tenerife
<i>A. arboreum</i>	native to Morocco.

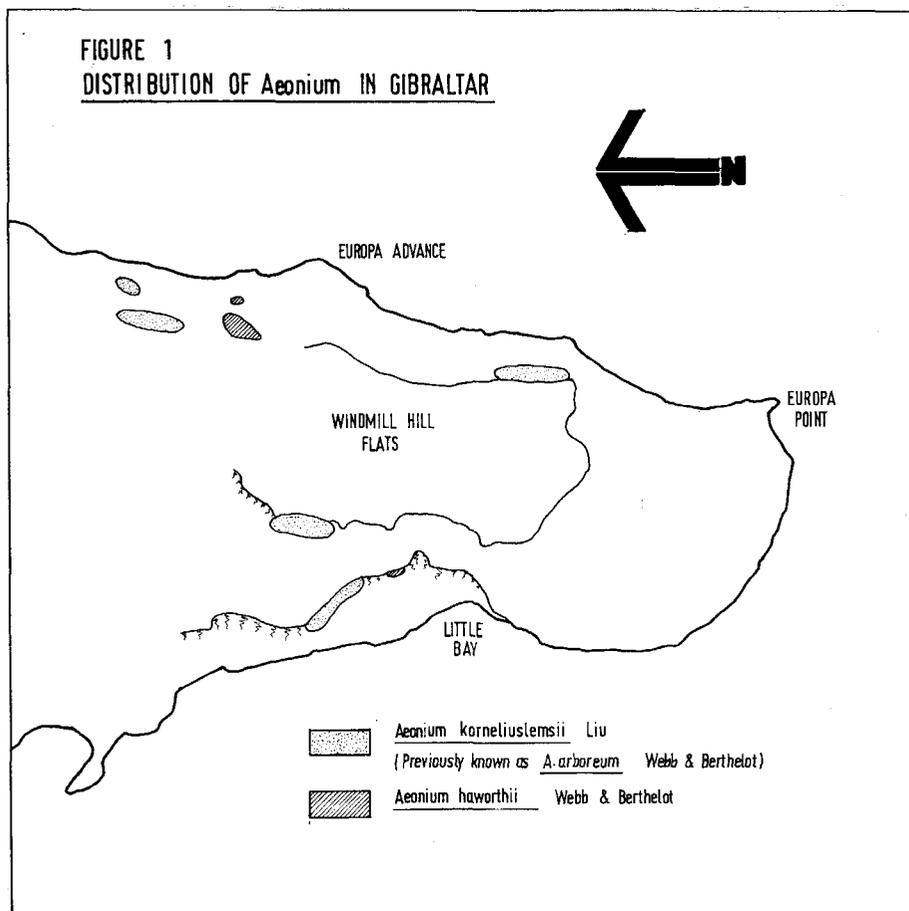
The two Canarian *Aeoniums* have almost certainly been introduced by man, probably during the latter part of the 19th century, particularly *A. undulatum* which is usually only found as a cultivated plant grown only on a small scale.

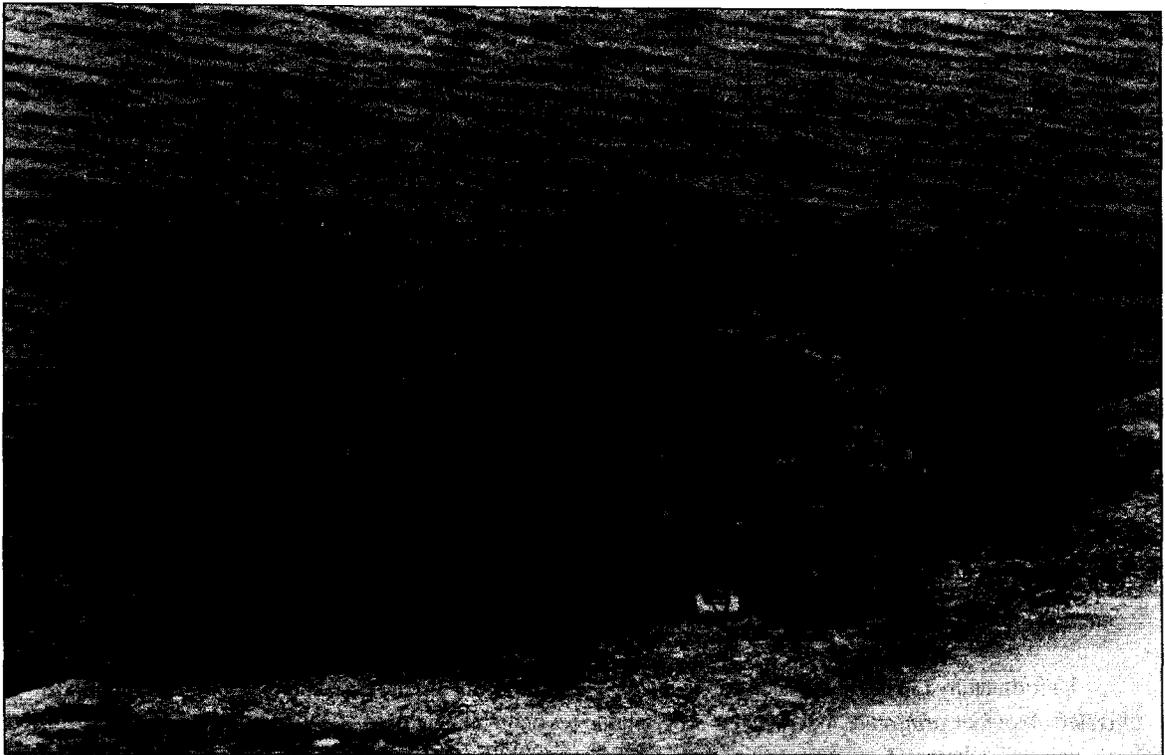
However, *A. haworthii* is to be found in a number of places in Gibraltar, as naturalised colonies growing from pockets or fissures in the limestone rock, particularly on the eastern side, southwards from Catalan Bay, while on the western side a sizeable colony exists below Bleak House and a small one is now forming near Camp Bay, growing in association with native *Sedum*. *A. haworthii* seems to be quite a popular patio and verandah plant, as it is not a giant growing species, and has lovely red edged glaucous leaves. The flower colour is variable, from white or pale yellow through to rose-pink. The seeds of *Aeonium* are very small, as with most members of the family Crassulaceae, produced in great abundance, and are easily distributed by the wind. In view of its popularity as a cultivated decorative plant, it is not surprising that *A. haworthii* has become naturalised in Gibraltar, where the climate is not dissimilar to that in its native habitat, below 500m in north-western Tenerife, where it also grows on rocky slopes.

The third species is *Aeonium arboreum*, or the plant that is generally referred to as that, and supposedly originating from Morocco, but naturalised around the Mediterranean.

As with most of the earlier described species, they were described under *Sempervivum* or *Sedum*. In fact *Aeonium arboreum*, as most people know it, was originally described by Linnaeus as *Sempervivum arboreum* in 1753, and transferred to *Aeonium* in 1840 by Webb & Berthelot in their *Histoire Naturelle des Iles Canaries*. In Gibraltar there are many vast colonies of an *Aeonium* which almost certainly is identical to the Moroccan species, on relatively remote limestone cliffs. It has been suggested, but to the best of my knowledge without any substantiation, that it was taken to Gibraltar by the Moors, after their settling in Gibraltar in A.D. 711. I have doubts as to this, as it is not a useful plant as are certain other species of *Aeonium*, such as *A. balsamiferum* from Lanzarote and Fuerteventura, *A. viscatum* from Gomera and *A. glutinosum* from Madeira. In the past, before the days of synthetic fishing lines, the leaves of these *Aeonium* were crushed and used for preserving fishing lines.

My theory is that the seed was brought to Gibraltar by south-westerly winds a very long time ago and that Gibraltar's colonies are natural ones. Even though the south-westerly is not the prevailing wind, there are many





Aeonium haworthii on a sea-wall in Gibraltar.

south-westerlies during the late winter months, when the seed ripens, whereby this is a more northerly extension of its habitat range, rather than a naturalised introduction. Its habitat in Morocco is on Cape Cantin and Cape Rhir, some 750 kilometres southwest of Gibraltar, a short distance for wind dispersal of dustlike seeds.

There are a number of references to *Aeonium arboreum* being distributed around the Mediterranean, but beyond these colonies in Gibraltar I do not know of any exact location.

Liu (1989) in *Systematics of Aeonium* refers to *Aeonium korneliuslemsii* H. Y. Liu, giving Cape Cantin, Morocco, as the type locality, with reference to a collection made there originally by J. Gattefosse on 5th December 1936. This new name honours Kornelius Lems, a Dutch/American botanist who in the 1960s studied the evolution of growth forms of *Aeonium*.

Unfortunately no type material in Linnaeus's herbaria in London, Paris, Stockholm and Uppsala has been found of his *A. arboreum*. It is possible that Linnaeus may have used garden material, as it was in cultivation at the Uppsala boatnic garden. This absence of type material is not uncommon with earlier described succulents, due to the problems of pressing them. However, in 1957, Stearn came upon a reference to the fact that Linnaeus had examined Burser's herbarium at Uppsala and found on sheet 52 of volume 16 a specimen that had been examined and determined by Linnaeus as *Sempervivum arboreum*. As no other specimen has been found in any other herbarium, Burser's specimen

has been designated as the lectotype. But this plant matches the description of *A. manriqueorum* from Gran Canaria. The name *A. arboreum* pre-dates it, so the name *A. manriqueorum* now becomes synonymous with *A. arboreum*. An important vegetative feature is that in the resting stage the rosette is flat or slightly domed whereby the leaves are recurved, in contrast to the Moroccan *A. korneliuslemsii* which is somewhat cup-shaped. *A. arboreum* can be separated from its related varieties by its puberulent pedicels and sepals, and by its inconspicuous nectariferous glands.

In the 1932 monograph by Praeger, he separated *Aeonium arboreum* from its wild progenitors by a more strict and upright habit, and the shorter cuneate leaf. He suggested that this taxon originated in Morocco. Liu considers that none of these characters are consistent enough to separate the cultivated from the wild ones, previously called *A. manriqueorum*. I am very familiar with all the habitat locations of this plant in Gran Canaria and have grown it in the United Kingdom alongside the plant which until now has been accepted as *A. arboreum* (including some originating in 1936 from J. Gattefosse in Morocco). In some cases with the more robust forms I had been wondering whether some were inter-specific hybrids between *A. undulatum* also from Gran Canaria and *A. manriqueorum*. In the Canary Islands alone there are some 25 interspecific hybrids of *Aeonium*.

Despite the size of the colonies on Gibraltar, and probably due to the dry 1992/93 winter, no plants were observed to flower, so I have not yet been able to examine the flowers closely. Hopefully in another year I can confirm that this *Aeonium* in Gibraltar is without doubt the *A. korneliuslemsii* from Morocco.

Unfortunately Liu has not studied the *Aeoniums* in Gibraltar, nor around the Mediterranean. He still refers to the cultivated *Aeonium arboreum*, but without description, beyond stating that it is tetraploid as is the Moroccan *A. korneliuslemsii*, whereas *A. manriqueorum* from Gran Canaria, now to be known as *A. arboreum*, is diploid. He also states that some of the plants in cultivation and known as *A. arboreum* were identical to *A. korneliuslemsii*.

What does puzzle me is that Liu still refers to *A. arboreum* var. *atropurpureum* and *A. arboreum* var. *variegatum*. Vegetatively they are identical to *A. korneliuslemsii*, so that I think that they are variegated forms of this Moroccan species. Only floral studies could say otherwise.

A. korneliuslemsii is closely related to *A. arboreum* (syn. *A. manriqueorum*) from Gran Canaria and *A. balsamiferum* from Fuerteventura and Lanzarote, and possesses broader and more elliptical petals and obovate/spathulate leaves. Hopefully I shall have a chance of examining flowers in the 1993/94 winter to finalise my conclusions.

To conclude I feel that through Stearn's discovery that Linnaeus had examined Burser's herbarium and determined that the specimen on sheet 52 was *A. arboreum*, we must accept that it is a Canarian species, not a Moroccan one, whereby Liu's naming of the Moroccan species as *A. korneliuslemsii* almost certainly means that this is the species in Gibraltar, not *A. arboreum* as we know it.

References

- PRAEGER, R.L., 1932. *Sempervivums*.
STEARNS, W.T., 1957. An introduction to the "Species Plantarum" and cognate botanical works of Carl Linnaeus (Prefixed to Ray Society facsimile of Linnaeus, Species Plantarum, vol. 1) London.
WEBB, P.B., & BERTHELOT, S. 1840. Histoire Naturelle des Iles Canaries.
YIU, HO YIH. 1989. Systematics of *Aeonium*. Taiwan.