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It is a pleasure to bring this month an article on Aeoniums of the Canary Island archipelago, from *Crassulaceae* enthusiast Marco Cristini. Many thanks to Frazer Henderson for introducing this author to this publication.

Cover image: *Aeonium valverdense*, El Pinar, El Hierro - photo by Marco Cristini

Marco Cristini, right, has been growing succulents, above all *Crassulaceae*, for more than 15 years. He is vice-president of the Italian Cactus and Succulent Society (AIAS), and editor of the journal *Piante Grasse*. He has written articles about succulents for Italian, English and German journals. He has recently published a monograph on aeoniums (*The Genus Aeonium*, AIAS, Rome 2022, 225 pages, with more than 250 photos), which describes all currently accepted taxa and deals



extensively with aspects of cultivation ranging from garden uses and propagation to care and health, as well as with the distribution of each taxon.

More information on his book can be found at <https://www.aias.info/the-genus-aeonium>.

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--- Crassulaceae Special ---

Aeoniums: Succulent Wonders on the 'Islands of the Blessed'

- Marco Cristini

Introduction

Aeoniums are among the most beautiful succulents growing in the Canarian Archipelago, which the ancient Greeks rightly called the 'Islands of the Blessed'. Widespread in almost every habitat, they thrive even on roofs and stone walls and their yellow or white flowers can cover whole hills in spring. However, it is not necessary to cross the Atlantic Ocean to admire these plants, since they are increasingly common in cultivation. They are often easy to grow, need little water if compared to many garden plants and are available in countless different forms and shapes. In this paper, I would like to offer a brief overview of a few species, dealing with both their main features, habitat and cultivation requirements. I will focus on plants

growing on the Canary Islands for the sake of simplicity, since the great majority of *Aeonium* species come from this archipelago, and describe more in detail a single taxon per island.



Aeonium arboreum in the *Codex Aniciae Iulianae* (a sixth-century manuscript).

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Before starting, however, a few words on the history, distribution and taxonomy of aeoniums are in order. The genus *Aeonium* has been cultivated since the Classical Age. Pliny the Elder (23-79 AD) mentions these succulents in his *Natural History* and an *Aeonium* is depicted in the *codex Aniciae Iulianae*, a sixth-century Greek manuscript containing a medical treaty. Linneus (1707-1778), the father of modern botany, placed a few *Aeonium* species within the genus *Sempervivum*, together with well-known Alpine plants such as *Sempervivum arachnoideum* and *S. tectorum*. It took almost a century for aeoniums to be separated from sempervivums. In 1841, Philip Barker Webb (1793-1854) and Sabin Berthelot (1794-1880) formally described the genus *Aeonium* in their *Histoire Naturelle des Îles Canaries (Natural History of the Canary Islands)*, a monumental work in several volumes which represents the starting point of the scientific study of the Canarian flora). The name *Aeonium* derives from the Greek αἰώνιος (aiònios), an adjective which means 'eternal'; it is the same etymological root of the genus *Sempervivum* (live-forever).

The genus *Aeonium* is usually associated with the Canary Islands, but is also found in two other Atlantic archipelagos (Madeira and Cape Verde), as well as in Morocco, East Africa and the Arabian Peninsula. Besides, several species and cultivars have now become naturalized in many Mediterranean countries, in Southern Europe, California (even on the island of Alcatraz!), Chile, Australia and South Africa. The Canaries, and especially the four westernmost islands, are the place where the greatest number of *Aeonium* species grow. For instance, Tenerife hosts 17 taxa (12 are endemic) and La Gomera 11 taxa (7 are endemic). The genus *Aeonium* has a disjunct distribution, i.e. it grows in areas widely separated from each other (Morocco and the Atlantic islands on the one hand and East Africa and Yemen on the other). A possible explanation consists in postulating the existence of one or more common ancestors which were spread throughout North and Central Africa before the desertification of the Sahara. The seeds of *Aeonium* are very small, so they may have been brought to the Canaries by the trade winds, which blow in a north-east / south-west direction. After the general warming which followed the end of the last ice age, the African aeoniums became extinct except for some residual populations located in Morocco (*A. arboreum* subsp. *korneliuslemsii*) and in East Africa (*A. leucoblepharum*, *A. stuessyi*), while the Canarian species continued to thrive and underwent a rapid evolutionary radiation. However, botanists have not reached unanimous conclusions yet as far as the evolutionary history of aeoniums is concerned and further genetic studies will be needed to better understand the origins of these plants.

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The geographical distribution of the genus *Aeonium*.

As far as taxonomy is concerned, the genus *Aeonium* belongs to the *Crassulaceae* family together with genera such as *Sedum* and *Sempervivum* and includes 43 taxa (34 species and 9 subspecies). The most controversial issue consists in the rank of section *Greenovia*, which was considered a genus in its own right until the end of the twentieth century, when phylogenetic studies showed that these species should be included in the genus *Aeonium*. Considering that aeoniums *sensu stricto* and greenovias hybridize freely, it seems reasonable to include them in the same genus.

Tenerife

With an area of 2034 square kilometres and a population of almost a million, Tenerife is the most important island of the Canarian Archipelago and the perfect place to look for aeoniums. Although its area is comparable to that of Lewis and Harris, Tenerife hosts very different habitats, ranging from a semi-arid zone in the south to the laurisilva (subtropical forest with high humidity) in the north and an alpine zone in the centre, where Mount Teide reaches an height of 3718 m. Thus, it is not surprising that Tenerife hosts a rich variety of aeoniums. One can for instance admire *Aeonium urbicum*, a stout plant almost 2 m tall, *Aeonium cuneatum*, which lives among moss and ferns in the laurisilva, and *Aeonium sedifolium*, a lovely bonsai with sedum-like leaves.

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The Teide (3718 m), a massive volcano that lies at the centre of Tenerife.



Aeonium urbicum, Las Manchas (Tenerife).

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Aeonium cuneatum at Roque Suárez (Tenerife). As you can see from my hand, this species is quite big...



Aeonium sedifolium in cultivation.

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However, few species are as intriguing as *Aeonium tabuliforme*, often called 'saucer plant'. It is a solitary succulent, very rarely with offsets. Its stems are absent or extremely short (rarely reaching 25 cm in older specimens), hidden by the leaves. It shows flat rosettes, 9-40 cm in diameter, consisting of 100-200 leaves, which are imbricate, pale green, 4-20 cm long, 2-4 cm wide, 3-6 mm thick, obovate to oblanceolate, rounded at the apex, mucronate, slightly pubescent when young, ciliate along the margins. Inflorescences are 15-30(-80) cm tall and bear many flowers with 7-9 pale, yellow petals, which are in anthesis between May and August. This species is mostly widespread in the northern part of the island, especially in the Teno area, along the northern coast and in Anaga. It grows on rocks, north- or north-east facing vertical cliffs and rocky outcrops, up to the edge of the laurisilva, in fairly humid environments. *A. tabuliforme* is not easy to cultivate, since it is often attacked by mealy-bugs and tends to grow asymmetrically if it only receives light from one direction, losing its flat appearance. In the wild, it is often seen on vertical cliffs, i.e. with the rosette perpendicular to the ground, a position that should be imitated in cultivation as far as possible. *A. tabuliforme* does not tolerate frost and becomes easily sunburned when exposed to direct sunlight. It should be grown in a north-facing position. Watering can continue even during the summer months, although water should never remain too long on the leaves.



Aeonium tabuliforme in the Barranco de Bucarón (Tenerife).

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Aeonium tabuliforme in the Barranco de Bucarón (Tenerife).



Aeonium tabuliforme in cultivation.



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La Gomera

La Gomera is much smaller than Tenerife (having an area of 370 square kilometres), but hosts a rich succulent endemic flora, as well as the Garajonay National Park, which has been designated World Heritage site by UNESCO, since it is considered one of the best remaining examples of laurisilva. Aeonium-watching can be a good excuse to spend a couple of days on this island and admire its beautiful landscapes. Among the most common aeoniums, there are *A. appendiculatum*, which is reminiscent of a small *A. urbicum*, and *A. decorum*, a nice, densely branched subshrub. At the other end of the spectrum there is the rare *A. saundersii*, a cascading shrublet with rosettes forming a small sphere during summer and then opening up in autumn after the first rains.



The laurisilva (laurel forest) at La Carbonera (La Gomera).

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Left: *Aeonium appendiculatum*, Pavón (La Gomera).

Below: *Aeonium saundersii* in cultivation.



Aeonium decorum, Targa, Barranco Santiago (La Gomera).

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Aeonium lindleyi subsp. *viscatum*, Majona (La Gomera).



Aeonium lindleyi subsp. *viscatum*, Barranco de Aguajilva (La Gomera)

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If you remain near the coast, you will probably find *Aeonium lindleyi* subsp. *viscatum*, a beautiful succulent which deserves a place in every collection of Canarian plants. It is a highly branched sub-shrub, up to 40 cm tall, with tortuous stems, 3-15 mm in diameter. Young stems can be pretty brittle, whereas older stems are woody and strong. Its rosettes are 4-9 cm in diameter and are formed by light or deep green leaves, 20-45 mm long, 6-16 mm wide, 3-4 mm thick, obovate-oblongate to obovate-spatulate, apiculate, slightly pubescent, with very small trichomes (0.04 mm). Inflorescences are 2-7 cm long and bear flowers with 7-9 yellow petals. Anthesis takes place between June and September. It is easy to recognize this species, since its leaves are slightly sticky and give off a balmy smell. It grows mostly on rocks, cliffs and slopes in the northern and eastern part of the island, for instance between San Sebastián and Túnel de la Cumbre, in Puntallana, Majona, Hermigua and Vallehermoso. *A. lindleyi* subsp. *viscatum* is not very common in cultivation, since it grows more slowly than *Aeonium lindleyi* from Tenerife and tends to remain a tiny shrublet, but it deserves to be more widespread given its regular features and bonsai-like aspect. It should be grown in a pot and kept in a bright location, although it can also be cultivated in shady places. When repotting, care must be taken to ensure that the leaves do not come into contact with the soil, otherwise it can stain them for months.



Sabinosa, a small village on El Hierro.

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El Hierro

El Hierro is the smallest and westernmost of the Canary Islands. Often called *Isla del Meridiano* (the *Meridian Island*), it was used as a key reference for maps in early modern Europe, since its meridian was considered the prime meridian (Greenwich was adopted at the 1884 International Meridian Conference). With an area of 269 square kilometres and a population of more or less ten thousand, El Hierro has not suffered from the impact of human activities as much as the other islands, being able to preserve its main ecosystems and biodiversity. Succulent plants grow in every habitat and can be easily observed while walking on one of the many paths and roads crossing the island (I recommend Camino de Jinama, which offers a good overview of the local succulent flora). El Hierro hosts some of the most beautiful *Aeonium* species, as *Aeonium hierrense* with its big rosettes, *Aeonium valverdense* with its stunning hues of reddish and the small *Aeonium spathulatum*, another bonsai-like *aeonium*, which sheds almost all leaves in summer.



Aeonium hierrense, La Cuesta (El Hierro).

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Aeonium valverdense, El Pinar (El Hierro).



Aeonium spathulatum in summer at La Cuesta (El Hierro).

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However, *Aeonium aureum* should be singled out for a special mention. It is a monocarpic succulent, with solitary rosettes, more rarely surrounded by stolons, with a diameter of 8-30 cm (in exceptional cases up to 40 cm), cup-shaped, with the inner leaves closed to form a sphere or cylinder during the dry season. Leaves are pale green or blue-green, pruinose, sometimes tinged with red, 5-11 cm long, 3-6 cm broad, imbricate, obovate-spatulate, rounded at the apex, glabrous, occasionally with short trichomes along the margins. Its inflorescences are 10-40 cm tall, with flowers 2-2.5 cm in diameter, with 20-35 deep yellow petals, blooming between February and May. This succulent grows on other islands as well (namely La Palma, Tenerife, La Gomera and Gran Canaria), but the specimens I photographed along the Camino de Jinama are among the best I ever saw. It prefers vertical cliffs located in areas which are reached by the clouds coming from the Ocean, although it is also found in the laurisilva and pine forest, sometimes even on horizontal rocky outcrops and stone walls. It often grows in semi-shaded or north-facing locations. *A. aureum* is a very decorative species, although not always easy to cultivate. It grows best in a shaded position and on a vertical surface, since it is prone to rot if water stagnates for too long between the leaves. In cultivation, plants should not be exposed to frost, especially if the soil is damp. During the summer season, the rosettes close to form a sort of bud, an evolutionary strategy that reduces considerably the need of water, given that the underside of the leaves has a lower number of stomata than the upper blade.



Aeonium aureum, Camino de Jinama (El Hierro).

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Aeonium aureum, Camino de Jinama (El Hierro).



A stone wall covered with *Aeonium aureum* at Cruz de los Reyes (El Hierro).

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La Palma

La Palma is the most north-westerly of the Canary Islands and is famous for its volcanos, one of which, called Cumbre Vieja, erupted for three months in 2021. Its lava covered over 1000 hectares, a powerful reminder of the fact that all Canary Islands were born (and continue to grow) thanks to volcanic eruptions. La Palma hosts several *Aeonium* species, often showing a high degree of variability. For instance, *Aeonium davidbramwellii* is possibly the most polymorphic species of the whole genus; within a few metres, there are specimens that resemble minute shrubs of *A. haworthii* and others that are quite similar to *A. urbicum*. It would be futile to divide this taxon into distinct species or varieties, because very different specimens grow side by side under the same environmental conditions and seeds from the same individual give birth to both solitary plants and branched specimens. Then, I cannot pass over in silence the delicate *Aeonium goochiae*, which has the thinnest leaves within the genus, so thin that young specimens could be mistaken for an aichryson.



Risco de la Concepcion, near the city of Santa Cruz (La Palma).

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Still, choosing a single species to represent this island is quite simple, since La Palma hosts what is considered by many as the most beautiful species of the genus, namely *Aeonium nobile*. It is a solitary plant, up to 60 cm tall, with smooth stems, 1-6 cm in diameter. Its rosettes are 10-80 cm in diameter, with yellow-green leaves, often tinged with orange or red, 7-40 cm long, 4-20 cm wide, 6-18 mm thick, obovate, sharp-edged or pointed, often keeled, sticky when young. Inflorescences are 20-40 cm tall and bear plenty of flowers with 7-10 dark red petals, blooming from April to June. This succulent is endemic to La Palma and grows throughout the island, often in difficult-to-reach places (one of the most easily accessible is Barranco de las Angustias). It thrives on vertical cliffs and south-facing slopes, also in the middle of grass. Growing *A. nobile* well is not always easy. It needs a sunny location and does not tolerate winter humidity, which can easily cause the plant to die when combined with low temperatures (I learned this the hard way...). In habitat, it often grows on lava in semi-desert locations, so it should be watered sparingly. *A. nobile* is monocarpic, but adventitious buds may develop on the stem of the inflorescence in rare cases and leaf cuttings are reported to root quite easily, unlike other aeoniums.



Nine different forms of *Aeonium davidbramwellii* photographed on La Palma in August 2019.

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Aeonium goochiae, El
Palmar (La Palma).

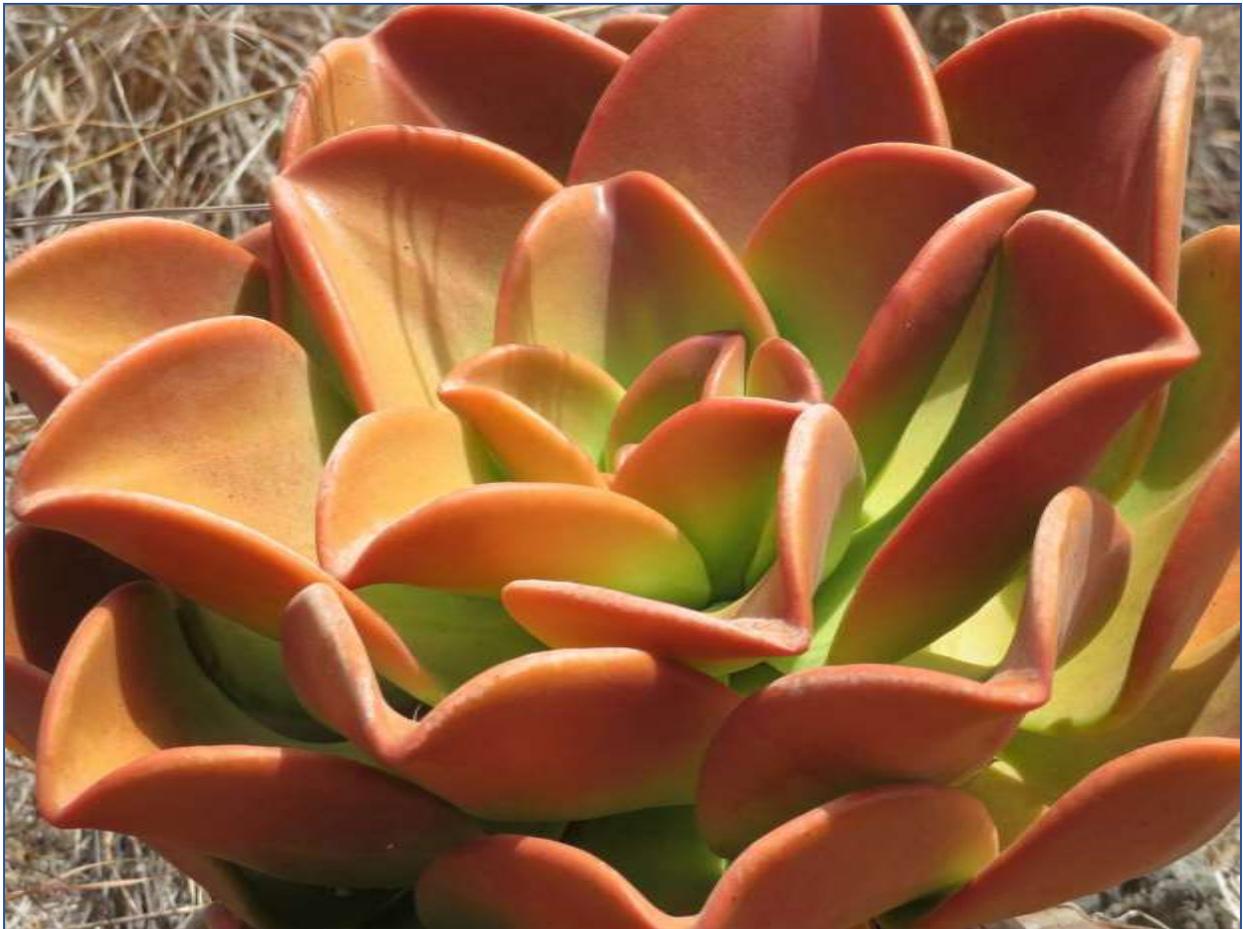
Aeonium nobile,
Barranco de las
Angustias (La
Palma).



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This page - variation in *Aeonium nobile*,
Barranco de las Angustias (La Palma).



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Gran Canaria

With an area of 1560 square kilometres and a population of 850,000, Gran Canaria is the second most important island of the Canaries. It is home to a rich flora and hosts many species of succulents, which can be found in almost every part of the island. Gran Canaria has been deeply transformed by the Spanish colonization. The laurel forest, which once covered most of the island's northern part, has disappeared almost completely and the pine forest was severely reduced before a few attempts at reforestation took place during the last century. On the other hand, man-made structures such as tiled roofs, stone walls or road embankments provided some *Aeonium* species with ideal habitats, enabling them to grow in a greater number of places. Gran Canaria hosts several nice aeoniums, such as the stout *Aeonium percarneum* and the sempervivum-like *Aeonium simsii*.



Tenteniguada, Los Roques (Gran Canaria).

The most famous species growing on this island is undoubtedly *Aeonium arboreum* subsp. *arboreum*. It is a branched shrub up to 2 m tall, sometimes epiphytic, with stems at first erect, then curved or entangled, 1-3 cm in diameter, smooth. Its rosettes are 12-25 cm in diameter,

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with flattened centre formed by smaller, imbricate leaves (the only ones to survive during the summer season). It has glossy light green leaves, often tinged with red, 8-15 cm long, 1-4 cm wide, 1.5-3 mm thick, obovate to oblanceolate, glabrous, with ciliate margins. Inflorescences are 10-25 cm tall and bear flowers with 10-11 yellow, oblong-lanceolate petals. It blooms all year round, probably depending on factors such as water availability, exposure and soil. *A. arboreum* subsp. *arboreum* is endemic to Gran Canaria, where it is widespread in the central and northern part of the island, in areas once occupied by the laurisilva, as well as at lower altitudes in the semi-arid zone. It grows on cliffs, outcrops, in woody areas, on rooftops and stone walls. It is sometimes found as an epiphyte on specimens of *Phoenix canariensis*. *A. arboreum* is easy to cultivate in areas with a Mediterranean climate, but it is not hardy and dislikes excessive humidity. It should be grown in full sun. In winter, it prefers temperatures around 10-15° C, similar to those of its habitat in the same season. Adventitious roots tend to develop in older specimens and stems take on an unattractive appearance due to their excessive length; in this case, the plant should be beheaded and replanted, preferably in spring. This succulent has been cultivated since the Classical Age, although it is not clear from what subspecies of *A. arboreum* the plants grown in Mediterranean countries originated.



Aeonium percarneum near Roque Grande (Gran Canaria).

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Aeonium simsii in cultivation.



Aeonium arboreum subsp. *arboreum*, Valsequillo (Gran Canaria).

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A rosette of *Aeonium arboreum* subsp. *arboreum*, Rincón de Tenteniguada (Gran Canaria).



An inflorescence of *Aeonium arboreum* subsp. *arboreum*, Rincón de Tenteniguada (Gran Canaria).

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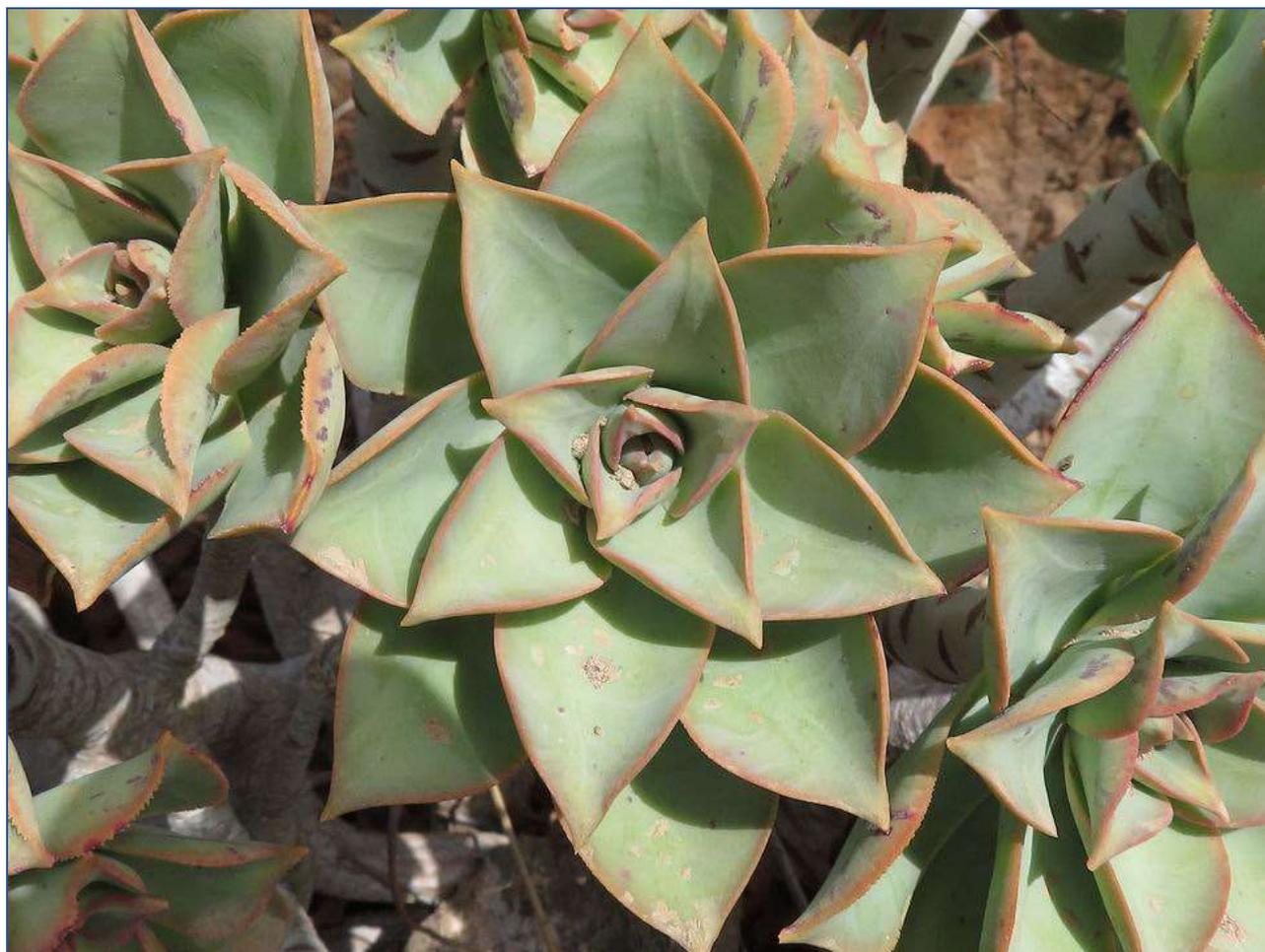
The northern tip of Risco de Famara on Lanzarote.

Lanzarote

Lanzarote is the fourth largest and easternmost of the Canary Islands. At first sight, it looks quite barren, since it is mostly covered by sand beaches, desert areas, lava fields and volcanoes, yet it hosts an interesting succulent flora, with many endemisms, among which there are also two *Aeonium* species, namely *A. balsamiferum* and *A. lancerottense*. The latter is by far the most widespread. A densely branched shrub up to 120 cm tall, *A. lancerottense* is often vaguely hemispherical in shape, with ascending, rather tortuous stems, 7-15 mm in diameter, often with adventitious roots. Its rosettes are 8-18 cm in diameter, rather flattened, with green or yellowish leaves, 5-9 cm long, 1.5-4 cm wide, 3-6 mm thick, obovate or oblanceolate-spatulate, acute, glabrous, with slightly ciliate margins, streaked with red along the margins and on the apex. The inflorescences are 8-30 cm tall, with flowers with 7-8 whitish petals, pinkish veined in the centre, blooming from March to July. *A. lancerottense* is a highly polymorphic species, sometimes reminiscent of *A. davidbramwellii*. Low, hemispherical bushes not dissimilar from *A. haworthii* grow side by side with *A. percarneum*-like shrubs 1-1.2 m tall and dwarf plants. The colour of the rosettes is quite variable: there are yellowish

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specimens, intense green ones, plants with leaves edged with red, pale, pinkish and reddish rosettes. *A. lancerottense* is widespread in the northern and central part of the island. One of the best places to observe its different forms is Valle de Malpaso, a valley south of Haría which is crossed by the most important path of the island (called GR-131). On both sides of the path, *A. lancerottense* grows profusely and displays its full range of variability. It can be found on rocks, stone walls, slopes and crevices, in sunny places often close to watercourses or easily reached by sea mists; the propensity of this succulent to grow in locations with considerable atmospheric humidity is indicated by the fact that it is often surrounded by lichens. This *Aeonium* is able to grow on eighteenth-century lava flows, which are still largely devoid of vegetation. *A. lancerottense* is uncommon in cultivation, despite its attractive appearance and its ability to withstand long periods of drought. The red-tinged leaves and pinkish-white pyramidal inflorescences are the most beautiful features of this succulent, which can be emphasized by reducing watering to a minimum during summer in order to imitate the environmental conditions of its habitat. It should be watered sparingly throughout the year and prefers a soil which is poor in organic elements.



A rosette of *Aeonium lancerottense* in Barranco de la Poceta (Lanzarote).

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A rosette of *Aeonium lancerottense* near Guinate (Lanzarote).



A bush of *Aeonium lancerottense* in Valle de Malpaso.

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Northern Fuerteventura seen from the top of Morro de los Rincones.

Fuerteventura

If you wish to travel to the Canary Islands to observe aeoniums in habitat, then you can safely skip Fuerteventura, since it hosts no endemic species. However, if you happen to spend an holiday on this island, which is famous for its long beaches and warm weather, and feel like doing a little aeonium-watching, you can look for some naturalised populations of *Aeonium balsamiferum*. It was allegedly brought here from Lanzarote by local fishermen, who used its sap to strengthen and waterproof fishing nets, although I suspect that it was mostly cultivated as an ornamental plant or used to treat some ailments, since I was unable to spot plants in villages near the sea. *Aeonium balsamiferum* is a branching shrub up to 1-1.5 m tall, which has a vaguely aromatic smell of balsam (hence the name). It consists of erect or ascending stems, smooth, 8-20 mm in diameter. Its rosettes are 7-18 cm in diameter, with the youngest central leaves imbricate. Leaves are grey-green, 3-7 cm long, 2.5-4 cm wide, 1.5-3 mm thick, obtrullate to spatulate, mucronate, glabrous, slightly sticky, with curved cilia on the margins, sometimes with dark streaks. Inflorescences, which are 15-25 cm tall, bearing flowers with 7-9 yellow petals, can be observed rarely; it seems that this species is a shy flowerer. The succulent is naturalized in several towns of northern and central Fuerteventura. You can find nice specimens in La Matilla, where I observed at least 4 populations, mostly in abandoned gardens or fields. Then, it grows in La Oliva, in the northern part of the city, and in Antigua. Betancuria hosts the best populations I saw, with plenty of healthy plants at the beginning of the path leading to Antigua and many others near the church, in the centre of the town.

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This page: Betancuria, path towards Antigua, *Aeonium balsamiferum*.





Betancuria, on path towards Antigua, *Aeonium balsamiferum*.

Conclusion

While finishing this article, I have in front of me two plants of *Aeonium dodrantale* in full bloom. They come from the north of Tenerife and are accustomed to grow on vertical rock faces, but they can be successfully cultivated in an east-facing room all year round without too many difficulties. This is an example of the high degree of adaptability of aeoniums. Although it is often difficult to match the plants observed on the Canaries, several species can be cultivated well in environments much different from their habitats, provided that they are given enough light and water during the growing season. I have been attempting to cultivate outside all year round some mountain species such as *A. simsii* and *A. spathulatum*, which could become valuable addition to a rock garden, but winters have been very mild recently and I live in Italy. I fear that cultivating these plants outside with no protection would be too risky in Northern Europe. Still, the small size of many species makes it easy to move them inside during the winter months and their bright flowers are often a welcome sign that spring has come.



Flowers of *Aeonium dodrantale* in cultivation.

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Ed.: Some photos of aeoniums from the SRGC Forum, grown by members -



Roma Fiddes in Aberdeenshire, north-east Scotland, grew this from seed as *Aichryson*.

Marco comments : photo, possibly of *Aichryson laxum*, but this **is** a species of another (albeit closely related) genus, namely *Aichryson*.

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Aeonium canariense, grown in Halifax, Nova Scotia, by John Weagle.



Right: *A. davidbramwellii*, grown in Halifax, Nova Scotia, by John Weagle.



Aeonium canariense, left, : *A. davidbramwellii* right.

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Aeonium palmense left, *A. glandulosum* centre, *A. hierrense* right, Halifax, Nova Scotia.

Marco comments: *A. palmense* is a synonym of *Aeonium canariense* subsp. *christii*.



Aeonium arboreum with butterfly – photos by Frazer Henderson.

Below: *Aeonium calderense*

Marco comments: *Aeonium calderense*: is a synonym of *Aeonium davidbramwellii*.



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Aeonium lindleyii – and below - *Aeonium lindleyii* inflorescence.



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Aeonium mascaense – detail - in Jardín Botánico Viera y Clavijo.

Marco comments: *Aeonium mascaense* is a problematic taxon: in my book, I argue that it is a hybrid and not a species. Be that as it may, the plant is native of Tenerife, not Gran Canaria.



Aeonium manriqueorum – inflorescence.

Marco comments: *A. manriqueorum* is a synonym of *A. arboreum* ssp. *arboreum*, the species I describe in the paragraph on Gran Canaria.



Aeonium inflorescences.

Frazer Henderson's photos taken in Gran Canaria.