



# Atlantic Aeoniums

by Colin C. Walker

*Aeonium* is a small, popular genus of Crassulaceae comprising 39 currently recognised species together with many more hybrids (both natural and artificial), variegates and cristates. The name *Aeonium* is derived from the Greek 'aionion' meaning 'everlasting plant', in recognition of the succulent nature and assumed longevity of the plants. The genus has an interesting natural distribution. Most species are endemic to the Atlantic Islands where the majority occur on just a single island. Travelling eastwards, there is a single species with a very localised distribution along the Atlantic coast of Morocco. The final two species occur in tropical east to northeast Africa and Yemen. The focus here is on the island species since I have yet to visit the three mainland African species in habitat. In terms of species totals therefore, I am surveying the 33 species that occur naturally in the Canary Islands (Bañares Baudet, 2015), together with two from Madeira and the lone species from the Cape Verde Islands.



Fig. 1 Aeoniums growing at Glasgow Botanic Gardens.

Across this wide geographical range the genus exhibits a moderate degree of diversity, ranging from small stemless rosettes that resemble houseleeks (*sempervivums*) to large, well-branched shrubs (Fig. 1). Flower colour is mainly yellow, but others are white, cream, pink or red.

The interesting disjunct distribution of the species has led to several studies into the evolution of this genus. The Atlantic Islands are species rich with diversity being greatest on the mountainous western islands. In contrast there are only three species in mainland Africa: one in Morocco, with a large disjunction between this and the two species in tropical northeast Africa and Yemen. In terms of evolution of the genus, the concept of adaptive radiation is applicable here, whereby evolution has been greatest on islands compared to the neighbouring continental land mass of Africa. The theory to explain this is that progenitor plants – most likely in the form of seed, which is dust-like – arrived by wind on the newly formed volcanic Atlantic islands and the resulting plants evolved rapidly to occupy the newly emerging habitats. Meanwhile, the large gap in the distribution across north Africa is probably due to the expansion of the inhospitable Sahara Desert leaving only remnants of a previously much more widespread genus in coastal Morocco and tropical northeast Africa and Yemen (Liu, 1989).

In addition to this interesting natural distribution, aeoniums have become naturalized in several parts of the world, a topic to which Schulz (2007) devotes a whole chapter of his book. Of particular note are records of established populations in several New Zealand coastal areas around Wellington and Christchurch. Other recorded locations are in coastal Australia, California (including around Alcatraz Prison near San Francisco), Chile, Gibraltar and Sicily.

In terms of cultivation these plants are generally easy to grow, easy to propagate and relatively trouble free. One exception here is *Aeonium appendiculatum* which in my limited experience I've found very difficult to grow for no obvious reasons. Aeoniums though are magnets for mealy bugs, particularly because most have rosettes of densely packed leaves where these bugs can easily hide and evade observation and subsequent treatment. Diligence and standard treatments are all I can advise, since I cannot offer a foolproof quick fix to rid a collection of these persistent pests.

The growing regime is interesting but straightforward if a few basic rules are followed. All the species from the Atlantic Islands grow naturally in the wetter winters in the northern hemisphere and flower when mature the following spring. In cultivation they can be readily persuaded to grow all year around and my protocol here in the UK, which obviously needs to be adjusted to New Zealand conditions, is set out here. In the winter I give my plants some heat; this can be little more than maintenance of frost-free temperatures. However, some of my plants have the luxury of life in the conservatory, where temperatures rarely drop below 12°C and they do benefit from these slightly higher winter temperatures. Since the plants are naturally in active growth at this time I water them regularly and generously. In the spring once the danger of frost is past I move the plants outdoors, generally following a repot. They're then either rained upon (which occurs often in Scotland!) or they are watered weekly during dry periods. Propagation is easy, either from stem or leaf cuttings or by seed raising. All aeoniums are monocarpic, so once a rosette has flowered it dies. Many branch, some profusely, so that after some rosettes have flowered there are more to continue the life of the plant. If a plant

has flowered profusely leaving just one or two rosettes it is best to restart the plant from cuttings otherwise untidy and even top-heavy specimens can result. A few of the smaller-growing species are very amenable to growing as a bonsai, as discussed and illustrated later.

Aeoniums have been well treated in terms of literature. The key modern books are those by Bañares Baudet (2015), Liu (1989), Lodé (2010) and Schulz (2007). Several books on the Canary Island flora, notably Bramwell & Bramwell (2001), cover aeoniums in some detail, as do more general books on the Crassulaceae. I briefly introduced the genus in my survey of the succulents of the Canary Islands and Morocco following my presentation at the New Plymouth convention (Walker, 2000). In the following two decades Marjorie and I made seven trips visiting five islands new to us. So here all the Atlantic Island aeoniums will be surveyed in more detail, island by island, starting with the Canary Islands, followed by Madeira and the Cape Verde Islands.

## Gran Canaria

I begin with this island because this was the first one I visited on my honeymoon with Marjorie in the summer of 1983. It is a roughly circular island with the highest point being Cruz de Tejeda at around 1,600 m (Bramwell & Bramwell, 2001). Seven aeoniums occur on this island of which four are endemic.



Fig. 2 *Aeonium simsii*.

*Aeonium simsii* (Fig. 2) is the smallest growing of all the aeoniums forming large clumps of small stemless rosettes. As a montane species growing mainly above 1,200 m, it is one of the least succulent species which most closely resembles a *Sempervivum* (houseleek) and perhaps is closest to the type of ancestral stock from which the genus evolved. In the summer resting state the leaves dry up substantially to form clumps of tightly inrolled leaves, often growing amongst cracks in the rock, making it very difficult to find. When growing it forms a more open rosette with bright green leaves mottled or striped in deep red with well ciliated leaf margins. The yellow flowers are typical of the majority of species.



Fig. 3 *Aeonium canariense* var. *virgineum* in the Barranco de Virgen, N. Gran Canaria.

*Aeonium canariense* is another *Sempervivum*-like – but larger-growing – plant that has a wide distribution across the five western Canary Islands, hence its name. Four subspecies occur on the islands of Tenerife (var. *canariense*), La Palma and El Hierro (var. *christii*), La Gomera (subsp. *latifolium*), whilst subsp. *virgineum* is endemic to Gran Canaria. The latter is restricted to the north side of the island up to 1,000 m but it was first discovered in the Barranco de Virgen, hence its name. It forms clumps of cup-shaped rosettes which, during the summer resting period, develop an attractive deep red hue (Fig. 3). The leaves are hairy, velvety, very glandular

and hence are quite sticky to the touch. Flowers are pale to light greenish-yellow (Liu, 1989).

*Aeonium percarneum* is a larger growing, moderately branched shrub up to 1.5 m tall with smooth or fissured bark. Its spoon-shaped (spathulate) leaves have short hairs on their margins, are arranged in terminal rosettes up to 20 cm across. The leaves are bright green when fully growing but with a pinkish hue, hence the name *percarneum* meaning ‘flesh-coloured’, but turn even dark pink in the summer resting period (Fig. 4). Flowers are whitish with pink streaks. On Gran Canaria it has a wide distribution from 100–1,300 m.



Fig. 4 *Aeonium percarneum* in habitat on Gran Canaria, August 1983.

*Aeonium undulatum* is the largest growing of the species considered here, forming shrubs up to 2.5 m tall. A unique feature amongst all aeoniums is that plants are unbranched well above ground, but branch modestly underground or just above ground, often resulting in a clumped appearance (Fig. 5). It grows at mid elevations at 300–1,500 m on Gran Canaria where it is common on banks and cliffs and occasionally grows epiphytically on trees (Liu, 1989). The terminal leaf rosettes are up to 30 cm across and are flattened in the centre. The leaves are spatulate, characteristically with undulate (wavy) margins, hence the name. I’ve not seen this species in flower and when I have visited the reserve collection at Kew early in the year

(March) the inflorescence was developing (Fig. 5), but I was probably about a month too early to see the open yellow flowers.



Fig. 5 *Aeonium undulatum* in cultivation at Kew.

*Aeonium aureum* has a wide distribution across all five western islands: La Palma, El Hierro, La Gomera, Tenerife and Gran Canaria. This species, along with three others, was formerly separated in the genus *Greenovia*, based on the principal feature of having a larger number of flower parts (up to 32 or more petals, etc). However, molecular studies showed that the four greenovias are not really distinct and so were merged into *Aeonium*. This species grows on banks in soft soils (Figs. 6 & 7) or on vertical cliffs. In the summer the stemless rosettes contract to form tight cups or even hollow balls surrounded by the dried leaf remains. In contrast when growing in the winter the rosettes open out to form rosettes of relatively thin succulent glaucous grey-green hairless leaves somewhat resembling a Mexican species of *Echeveria* (Fig. 8). Single unbranched rosettes die after producing the well-branched heads of yellow flowers, hence the name *aureum*. On Gran Canaria *A. aureum* occurs in the moist or forest zone in the centre of the island. Similar former species of *Greenovia* are *A. aizoon* (Tenerife), *A. diplocyclum* (El Hierro, La Palma and La Gomera) and *A. dodrantale* (Tenerife).



Fig. 6 *Aeonium aureum* in its summer resting state on Gran Canaria.



Fig. 7 *Aeonium aureum* in its summer resting state on Gran Canaria.

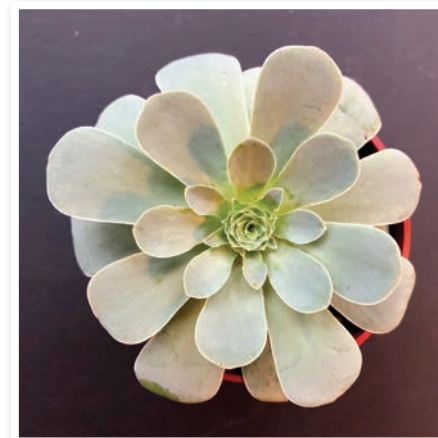


Fig. 8 *Aeonium aureum* in cultivation in growth in winter.

The other Gran Canarian species not discussed here are *A. arboreum* and *A. spathulatum*.

### Tenerife

This is the largest of the Canary Islands, most developed and hence very popular with tourists. Tenerife is roughly triangular in shape about 80 km long and 60 km wide at its widest point. The island is dominated by the central volcanic peak of El Teide (3,707 m), the highest point in the Canary Islands (Bramwell & Bramwell, 2001), which Marjorie and I visited by coach and cable car. The views from the top were stunning, but aeonium-free I regret to report! The focus of our two visits to this island was rest and relaxation rather than plant hunting. Consequently I have yet to see most of the 17 endemic aeoniums (Bañares Baudet, 2015) in their natural environment, so here just four of the most distinctive of these species are discussed.

*Aeonium haworthii* only occurs in Anaga, a small area in northwestern Tenerife, where it grows commonly on dry cliffs and rocks from sea level to 1,000 m altitude (Liu, 1989). It is a small shrub growing up to 60 cm tall with thin, wiry, tortuously-branched stems that produce many adventitious roots. The fleshy leaves are shiny or glaucous grey-green with ciliate margins forming rosettes up to 11 cm across (Fig. 9). The flowers are a



Fig. 9 *Aeonium haworthii* in cultivation at Kew.

typical pale yellow. The name *haworthii* commemorates the famous British botanist Adrian Hardy Haworth who specialised in succulents at the end of the 18th and early 19th centuries. He is more famously commemorated in the genera *Haworthia* and *Haworthiopsis*.

There are a number of cultivars of *A. haworthii*, one of which has attractive variegation with yellow and red-edged leaves. It has received a number of names including 'Variegata', 'Tricolor' and 'Kiwi', but the oldest and currently correct name appears to be 'Dream Color'. This was featured as one of my Presidential Potted Plants for the BCSS (Walker, 2021).



Fig. 10 *Aeonium mascaense* in a 10 cm pot.

The Barranco de Masca is a remote region in western Tenerife characterised by sheer cliffs and striking ravines resulting in stunning scenery and panoramic vistas. *Aeonium mascaense* (Fig. 10) was described from here in 1982 as a new species closely related of *A. haworthii*. It occurs at 400 m, growing amongst loose rocks and boulders beneath the high vertical cliffs of the valley below the hamlet of Masca. It is highly localised and probably the rarest of the Canary Island aeoniums (Bramwell, 1982). Since then it has had a somewhat chequered history. Its limited distribution suggested a hybrid origin with *A. haworthii* and *A. sedifolium* as the putative parents (Liu, 1989). Schulz

(2007) adopted this approach and hence did not recognise this species. However, it was resurrected as a distinct species by Bañares Baudet (2015). It is a delicate, dwarf-growing shrublet with stems only up to 25 cm tall with twiggy stems. The leaves are spatulate, shiny, streaked with red, velvety and edged with fine hairs (Fig. 10). The flowers are white to pale pink, in contrast to the yellow flowers of *A. haworthii*. In my limited experience it is a relatively slow growing, moderately branching plant. Whatever the final outcome of the deliberations over this most controversial species are, its unique features make it attractive compared to other larger and faster growing aeoniums.



Fig. 11 *Aeonium smithii* in cultivation.

*Aeonium smithii* is another small-growing Tenerife endemic (Fig. 11). It grows up to 60 cm tall forming a moderately branched shrublet. The unique feature clearly shown in Fig. 11 is the hairy covering to the stems, exhibited by no other

*Aeonium*. The hairs, technically known as multicellular trichomes, are up to 8 mm long, making them particularly obvious even to the naked eye. The undulate leaves are also hairy bearing a mixture of very small unicellular trichomes c. 0.3 mm long, and larger multicellular trichomes up to 0.5 mm long, which require a microscope to examine and appreciate in all their glory. This is not a unique species in having two different types of hairs and as yet, the function of these is unknown. The inflorescence is only about 15 cm tall bearing yellow flowers. This species occurs on rocks and cliffs most commonly in the forest zone at 150–2,150 m. It was named for Christen Smith (1785–1816), professor of botany at the University of Christiania (Oslo, Norway) (Liu, 1989).



Fig. 12 *Aeonium tabuliforme* featuring the overlapping leaves and prominent marginal hairs.

The fourth Tenerife species is the equally unique *A. tabuliforme* (Fig. 12). The name means literally 'table-like', for the flattened rosette up to 40 cm in diameter, produced at the end of a short rarely visible stem up to 25 cm tall. It produces a single monocarpic rosette, so once it reaches maturity and flowers it promptly dies. However, I've been successful in propagating this species from leaf cuttings: the leaves need to be carefully removed so that the base of the leaf with its dormant lateral bud is removed

from the stem intact. If complete leaves can be secured then rooting is generally highly efficient in my experience. Another way to propagate this desirable species is from the cristate clone which is commonly available in cultivation: this readily produces normal shoots which can be removed and rooted. Fig. 12 also illustrates clearly another attractive feature of this species: the long hairs (trichomes) on the leaf edges up to 2 mm long and again clearly visible to the naked eye. The inflorescence is up to 30 cm long bearing typical yellow flowers. *Aeonium tabuliforme* is common in crevices of rocks, soil banks and cliffs in fairly moist habitats up to 850 m in the northern sector of Tenerife (Liu, 1989).

#### La Gomera

This island closely resembles a smaller version of Gran Canaria being roughly circular in outline and indeed it is amongst the smallest of the inhabited islands. It rises to about 1,450 m in the centre from which a large number of barrancos (valleys) radiate. These are flanked by steep-sided cliffs and open narrowly to the sea. The south is hot and dry whilst the north is cooler and wetter (Bramwell & Bramwell, 2001).

La Gomera is home to 10 aeoniums of which seven are endemic, but here just one is considered: the unique *A. castello-paivae*. It is common on rocks, soil banks and cliffs at 200–900 m. It was named in honour of Barao [Baron] do Castillo de Paivae, a Portuguese officer who promoted scientific activities in the Canaries in the 19th century (Liu, 1989). It forms an attractive dwarf subshrub up to 70 cm tall that is well branched with slender, thin, tortuous stems that can be either erect or pendent depending on the growing conditions. Adventitious roots are frequently produced which provide support for flopping branches. The spatulate leaves are short, only up to 3.5 cm long, pale-yellow green, that

form loose rosettes at the branch tips. The flowers are greenish-white.



Fig. 13 *Aeonium castello-paivae* grown as a bonsai.

The growth form of this species makes it an ideal candidate for treatment as a bonsai subject (Fig. 13). It grows readily from cuttings and it takes little effort to produce an attractive bonsai in quite a short time. As is typical of bonsai trees, the inflorescence grows out of proportion to the bonsai plant. In my experience only one or two rosettes flower simultaneously, so it is easy to maintain the specimen by pruning away the dead branches after flowering, leaving barely noticeable scars.

*Aeonium castello-paivae* appears to be closely related to *A. haworthii* and *A. mascaense*, both of which are equally suitable as bonsai subjects (see Walker, 2021, for a bonsai specimen of *A. haworthii* 'Dream Color').

#### El Hierro

This island is almost semicircular in outline and hence maybe merely the remnant of an extinct volcano. It consists of a high plateau reaching about 1,500 m at its highest point with steep cliffs on all sides. It is the smallest of the inhabited islands (Bramwell & Bramwell, 2001). It is home to six aeoniums, only two of which are endemic, including *A. valverdense* discussed here, named for the town of Valverde in the northeast corner of the island where the species is abundant (Liu, 1989). The only other endemic species is *A. hierrense*, named for the island, a species I've yet to encounter either in the wild or in cultivation. *Aeonium valverdense* is common on rocks and cliffs up to 800 m. The plant forms a small, modestly branched subshrub up to 1 m tall. The pale brown to grey surface of the stems is rough, bearing smooth reticulate lines and prominent leaf scars. The leaves are obovate (inverted egg-shaped) up to 12 cm long, green to yellowish-green with a pink tinge and the margins are moderately hairy with prominent unicellular trichomes about 1 mm long.



Fig. 14 *Aeonium valverdense*.

The inflorescence is dome-shaped up to 30 cm tall bearing flowers that are whitish with median pink-variegation (Fig. 14). I have only flowered this species once when the largish plant produced four inflorescences resulting in the plant toppling over out of its pot due to being top heavy. I then discovered that for a large plant it was very shallowly rooted, hence the instability! I subsequently removed the two non-flowering rosettes and treated these as cuttings.

#### La Palma

This island is roughly pear-shaped, very rugged and mountainous with a large central crater, La Gran Caldera de Tabouriente, the outer rim of which forms the highest point on the island, Roque de los Muchachos [boys' rock] at 2,483 m. A caldera is a crater formed from the collapse of a volcano and this island is still volcanically active when an eruption occurred only as recently as 1971 (Bramwell & Bramwell, 2001).



Fig. 15 *Aeonium nobile* in cultivation.

La Palma is home to nine species of which just three are endemic, *A. nobile* being the most distinctive and desirable of all aeoniums. Its name was aptly chosen meaning 'noble' or 'aristocratic', for the large size of the rosettes. Indeed it forms rosettes up to 60 cm diameter (Fig. 15) on top of a short stem. The plant very rarely branches and since this is monocarpic, flowering of a single rosette results in death of the plant. The leaves are very succulent and chunky,

obovate, up to 30 cm long and 20 cm wide, making these the largest of all the aeoniums. They are yellowish-green occasionally with a few brown lines, but the plant takes on a reddish hue if kept dry in the winter. The margins are hairy with small unicellular trichomes only about 0.5 mm long. The magnificent inflorescence is dome-shaped, 20–40 cm tall and 30–60 cm diameter, bearing many reddish flowers, a unique colour for this genus (Liu, 1989). I tried once to remove some leaves for propagation when a specimen flowered but they all failed to root. Clearly seed raising is the most reliable way to maintain this plant in cultivation. *Aeonium nobile* occurs on dry slopes, banks and cliffs up to 750 m throughout La Palma, although it is absent from the northeastern corner of the island (Liu, 1989). According to Schulz (2007) it is one of only a few species that grows in grassland and it exhibits periodic mass flowering in habitat.



Fig. 16 *Aeonium davidbramwellii* side view.

*Aeonium davidbramwellii* was first described by Liu (1989) to commemorate the English botanist David Bramwell, who spent most of his career studying the Canary Island flora as Director of the Jardín Canaria, Gran Canaria. He, together with his wife Zoe, published two landmark books on the subject, such that the second of these remains the 'go to' guidebook on plants for visitors to these wonderful islands (Bramwell & Bramwell, 2001). His eponymous species is common on rocks, soil banks and cliffs up to 1,000 m (Liu, 1989).

This plant forms subshrubs up to 1 m tall (Fig. 16). Although the stem can be either unbranched or branched, all my specimens have remained unbranched in the 15 years I've been growing this species. I therefore suspect that branching is strongly genetically determined and I have material sampled from a population of non-branching individuals. The stem surface is reticulately smooth and marked by prominent leaf scars. The leaves which form a tightly flat-topped rosette (Fig.



Fig. 17 *Aeonium davidbramwellii* top view.

17), are obovate to spatulate, up to 12 cm or more long, 4 cm wide and relatively thick and succulent. They are dark green to yellow-green with a reddish margin and often red or brown tinged, especially if

plants are kept dry in the winter when the whole rosette can turn an attractive pale chocolately-brown. Leaf margins are hairy with unicellular trichomes only 0.5 mm long. The inflorescence is dome-shaped and up to 35 cm tall bearing white flowers with green variegation (Fig. 18).



Fig. 18 *Aeonium davidbramwellii* in flower.

My friend Tina Wardhaugh first raised seedlings of this species for me from seed distributed by the BCSS in 2005. The first batch of seedlings took around 7 years to reach flowering size and since the plants were all solitary and monocarpic they all died after flowering. However, I collected seed from which I raised a second batch

of seedlings (Fig. 19) which are now reaching maturity with the first two specimens flowering in February–April 2021 (Fig. 18). The rest of this second batch of seedlings will most likely flower in 2022.



Fig. 19 Seedlings of *Aeonium davidbramwellii*.

*Aeonium canariense* subsp. *christii* (formerly *A. palmense* or *A. canariense* var. *palmense*), despite its older names, is not endemic to La Palma because it also occurs on El Hierro. Not surprisingly, the plant is similar to *A. canariense* subsp. *virgineum* from Gran Canaria, but differs in having shorter, denser hairs. The rosettes again are cup-shaped, velvety and sticky to the touch (Fig. 20). Flowers are also similarly pale to light greenish-yellow (Liu, 1989).



Fig. 20 *Aeonium canariense* var. *christii* in cultivation.

Bañares Baudet (2017) records 49 interspecific hybrids amongst the Canary Island aeoniums, all of which have received names, of which just one is considered here from La Palma:

*A. x nogalensis* (*A. sedifolium* x *A. canariense* var. *christii*). It forms short branching stems with smallish rosettes of green, moderately hairy and sticky leaves (Fig. 21).



Fig. 21 *Aeonium x nogalensis*.

#### Lanzarote & Fuerteventura

These are the two most easterly of the Canary Islands and the closest to the African coast with the shortest distance between Fuerteventura and Morocco being a mere 90 km. Lanzarote is less mountainous than the western islands reaching only about 700 m in the north which is dominated by the mountain



Fig. 22 View from the Famara, N. Lanzarote.

range of the Famara (Fig. 22). Virtually all of the endemic plants of Lanzarote are concentrated in the Famara centred around the town of Haria. South of the Famara, the centre and south the island is composed of a low area with volcanic peaks and craters. The northern part of Fuerteventura consists of hill plains. The remote and rugged Jandía Peninsula, occupying the southwest corner, is the highest part of this island, now a national park with restricted access via a single dirt track road leading to a lighthouse. No aeoniums occur here but it is home to the localised endemic *Euphorbia handiensis* (Bramwell & Bramwell, 2001). Just two aeoniums occur on these two eastern islands: *A. balsamiferum* grows on both islands whereas *A. lancerottense* is endemic to Lanzarote.

Despite the distribution map provided by Bañares Baudet (2017) showing several locations on both islands, *A. balsamiferum* appears to be a rare plant which I've found only twice on Lanzarote and failed to locate on Fuerteventura. *Aeonium balsamiferum* is also said by Liu (1989) to be "common on cliffs in north and central parts of Lanzarote, Canary Islands, usually associated with *Aeonium lancerottense*; cultivated and naturalized in Fuerteventura".

*Aeonium balsamiferum* is named for the intense odour of balsam emitted by the plants – a unique characteristic of this plant. It forms a subshrub up to 1.5 m tall, branches moderately often just at the stem tips and forms dense heads of terminal rosettes up to 18 cm in diameter (Fig. 23). The leaves are spatulate, up to 7 cm long, greyish-grey with occasional brown stripes. They are velvety, slightly sticky to the touch and edged with small hairs up to 1 mm long. The inflorescence is up to 25 cm tall bearing yellow flowers, although none of my specimens has yet to oblige despite being in cultivation for 9 years.



Fig. 23 *Aeonium balsamiferum* in cultivation, 35 cm tall in a 13 cm pot.

*Aeonium lancerottense* is only distantly related to *A. balsamiferum* but is actually most closely related to *A. haworthii* according to Liu (1989). It is endemic to the Famara of Lanzarote (Fig. 24) where it is locally very common on rocks, rocky slopes and crevices, usually along streams or near water sources at 200–600 m (Liu, 1989). It is a well branched subshrub up to 60 cm tall with leaf rosettes up to 18 cm diameter. The leaves are obovate to spatulate, up to 9 cm long, green to yellowish-green with pink tinges, especially if kept dry during the winter. The dome-shaped inflorescence is up to 30 cm tall and 8–25 cm diameter, bearing pinkish flowers (Fig. 25).



Fig. 24 General view of the habitat of *A. lancerottense* near Haria, Famara, N. Lanzarote.



Fig. 25 *Aeonium lancerottense* in habitat near Haria, Famara, N. Lanzarote.

#### Madeira

Madeira is an autonomous Portuguese island in the Atlantic Ocean about 800 km off the north coast of Africa. This is an archipelago of three islands which originated more than 20 million years ago as a result of volcanic activity. The main inhabited island of Madeira is about 57 km long and 22 km wide and is very rugged and mountainous. Nearly 50% of the land lies above 700 m with the highest point being Pico Ruivo de Santana

at 1,862 m. There is very little flat coastal land and there are virtually no natural beaches but there are stunning vertical cliffs up to 600 m tall! This is the home to two endemic aeoniums.



Fig. 26 *Aeonium glandulosum* in habitat on Madeira.



Fig. 27 *Aeonium glandulosum* in cultivation, about 12 cm diameter.

*Aeonium glandulosum* is a coastal cliff-dwelling (cremnohytic) species which forms large populations along the steep north-facing cliffs of a narrow belt running along the north of the island. It



Fig. 28 *Aeonium glandulosum* in flower.

is especially abundant along the northern coast road. It favours the wetter and shadier north of the island. Its single stemless rosettes are flattish up to 25 cm across (Figs. 26 & 27) although most are often only half this size. Plants in the shade remain green whereas those fully exposed to the sun can turn bright red to deep burgundy. It grows naturally in the winter with peak flowering in May into June. This species has two different types of trichomes on the leaves. The larger trichomes on the leaf edge are each about 0.6 mm long. On the leaf surface away from the margin there are smaller trichomes only 0.2 mm long that glisten. These are glandular (hence the name of the species) and have been reported to secrete mucilage and so make the leaf surface slightly sticky. The inflorescence is up to 25 cm tall bearing yellow flowers (Fig. 28). The plants are unbranched and monocarpic, hence die after flowering, so this species is not often grown because of the need to raise it from seed on a regular basis.

*Aeonium glutinosum* is unrelated to and is very different from *A. glandulosum* and according to Liu (1989) its closest relative is *A. nobile* from La Palma, although the



Fig. 29 *Aeonium glutinosum* in habitat on Madeira with the author for scale. Photo: Marjorie Thorburn.

growth form of these species is rather different. *Aeonium glutinosum* is far more widespread than *A. glandulosum*. *Aeonium glutinosum* is found throughout the island on south, west and north-facing sea cliffs (hence is another cremnohytic species), although it is much commoner on the drier southern cliffs. Almost any rocky or poorly vegetated slope seems suitable with the exception of shady gorges in the wetter northwest. Sometimes it grows on man-made walls and roofs. It branches freely to form large clumps up to 1 m or more across (Fig. 29) with rosettes up to 20 cm in diameter (Fig. 30). Branches are weak and rosettes heavy, so the plant tends to lean over, making it rather an untidy plant in cultivation, requiring a large pan to accommodate it. The name *glutinosum* is apt because the stems are very sticky but the leaves less so. Insects get trapped on the glistening sticky surface. My plants grew fast and one flowered after just 4 years in cultivation producing two very loose (lax), very sticky



Fig. 30 Close up of the rosettes of *A. glutinosum* in cultivation on Madeira.



Fig. 31 A section of stem (1) and inflorescence (2) of *Aeonium glutinosum* (from Launay & Loiseleur-Deslongchamps, 1820, as *Sempervivum glutinosum*).

inflorescences about 1 m long bearing golden yellow flowers (Fig. 31).

Both *A. glandulosum* and *A. glutinosum* are very common on the cliffs of coastal Madeira and where their ranges overlap (termed sympatry) hybridisation occurs, albeit infrequently. I observed overlapping

distributions at two sites (Fig. 32) but did not myself see any hybrids. However, this means that together with the 49 named natural hybrids recorded by Bañares Baudet (2015) for the Canaries, there is a remarkable total of at least 50 naturally occurring *Aeonium* hybrids on record for the Atlantic Islands.



Fig. 32 *Aeonium glandulosum* (top) and *A. glutinosum* (bottom) growing together (sympatrically) on inland cliffs just south of Sao Vicente, N. Madeira.

### Cape Verde Islands

This archipelago is about 1,200 km south of the Canary Islands and lies fully within the tropics. Here *Aeonium gorgoneum* is the single endemic species that occurs on the three northernmost mountainous islands, but is absent from the other low-lying islands. It is a very distinctive species with no obvious really close relatives. However, of the species discussed here, it is apparently closest to *A. glutinosum* – which it resembles in habit – and *A. nobile* according to Liu (1989). It is distinguished by its extremely glaucous leaves and reddish leaf margins. It was named for the Gorgades, an old name for these islands. Marjorie and I have yet to visit these islands, so a report on this species, virtually unknown in cultivation, awaits a future sojourn south. However, for those wishing to know more about this species, it is discussed and illustrated by Schulz (2007).

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