Taxonomic and nomenclatural notes on Crassulaceae of the Canary Islands, Spain

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Abstract

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Aeonium decorum var. alucense and Aichryson laxum var. latipetalum, from eastern La Gomera and southern Tenerife, respectively, are described as varieties new to science and illustrated. New combinations in Aeonium (A. arboreum subsp. holochrysum, A. canariense subsp. christii, A. canariense subsp. latifolium, A. canariense subsp. virgineum, A. lindleyi subsp. viscatum), Aichryson (A. tortuosum var. bethencourtianum) and Monanthes (M. minima subsp. adenoscepes) are validated. M. polyphylla subsp. amydros, thought to be endemic to La Gomera, is also reported for the island of La Palma. Additional descriptive data for M. wildpretii are provided. Special attention is paid to the morphological characteristics that differentiate some closely related taxa.

Additional key words: Aeonium, Aichryson, Monanthes, taxonomy, chorology

Introduction

Praeger’s (1932) study of Canarian Crassulaceae was updated by the monographs of the genera Aeonium Webb & Berthel. (Liu 1989) and Monanthes Haw. (Nyffeler 1992). Aichryson Webb & Berthel. was revised by Bramwell (1968) but this genus requires further study. The three genera also have been the focus of several papers regarding molecular phylogeny and evolution (see Mort & al. 2002 and references therein). Concluded from both molecular and morphological studies, Greenovia Webb & Berthel. has been widely accepted as a section of Aeonium (Mes 1995; Mort & al. 2002; Nyffeler 2003).

In the present study, we propose a number of taxonomic changes within the three genera, based on extensive studies of populations in the field and of herbarium material. We describe two varieties of Aeonium decorum Webb ex Bolle and Aichryson laxum (Haw.) Bramwell, respectively, to accommodate single isolated and morphologically deviating populations. We propose new combinations for four species of Aeonium that had been reduced to varietal rank by Liu (1989) and that we consider to be more appropriately recognized as subspecies. Aichryson tortuosum (Aiton) Webb & Berthel. and A. bethencourtianum Bolle were found by us to represent varieties, endemic to Lanzarote and Fuerteventura, respectively, of a single species, A. tortuosum.
A comparative study of the morphological features of *Monanthes polyphylla* Haw., currently reported as endemic to Gran Canaria, Tenerife, La Palma (subsp. *polyphylla*) and La Gomera (subsp. *amydros* Nyffeler), has revealed that the plants from La Palma, also named *Sempervivum monanthes* var. *filicaule* Kuntze (1891) and later confusingly reported as *M. cf. subcrassicaule* (Kuntze) Praeger, are identical to *M. polyphylla* subsp. *amydros*. A comparison of the northern and southern populations of the Tenerife endemic *M. minima* Bolle with *M. adenoscepes* Svent. corroborated the conspecificity of the latter with *M. minima*, first stated by Nyffeler (2003), but revealed that it deserves recognition as a separate subspecies distributed in southern Tenerife. Re-evaluation of *M. wildpretii* Bañares & S. Scholz, which was also included in *M. minima* by Nyffeler (2003), produced new evidence for its status as a separate species.

**Results**

*Aeonium arboreum* subsp. *holochrysum* (H.-Y. Liu) Bañares, **comb. & stat. nov.**


[– *Aeonium holochrysum* auct., non Webb & Berthel.]

**Remarks.** – *Aeonium arboreum* subsp. *holochrysum* is mainly differentiated from subsp. *arboreum* (confined to Gran Canaria) and the closely related *A. korneliuslemsii* H. Y. Liu from Morocco by its glabrous sepals. After a detailed study in the distribution area of *A. holochrysum* (Tenerife, La Palma, La Gomera and El Hierro), Praeger (1932) concluded that the plant with pubescent calyx, described by Webb & Berthel. as *A. holochrysum*, as is also obvious from two sheets in the Webb herbarium (Liu 1989), does not belong to the taxon that has been identified with this name. Although the name “*holochrysum*” does not characterise the plants, it was taken up by Liu because of the wide use of the epithet, but treated as a new name and typified according to the established concept of the taxon.

**Distribution.** – Common on rocks and cliffs from sea level to altitudes of up to 1000 m in La Palma and to 1600 m in Tenerife, present in the northern zone of El Hierro (over Frontera, San Andrés) and rare on La Gomera, where the chorologic delimitation from *Aeonium arboreum* var. *rubrolineatum* (Svent.) H.-Y. Liu has not been sufficiently studied (see Voggenreiter 1973, 1974, 1999).

**Representative specimens.** – **TENERIFE:** Masca, 2.2004, Á. Bañares 46853 (ORT); S. José above La Rambla, 350 m, 24.1.1969, D. Bramwell 584 (TFC); Valle de la Orotava, over roofs, 14.4.1949, C. González 12388 (ORT); La Ladera - Agache, 6.3.1981, O. Rodríguez & P. G. Cabrera 12805 (TFC); Buenavista, 24.5.1944, E. R. Sventenius 12364 (ORT); Puerto de la Cruz, Montaña de la Horca, 1.4.1944, E. R. Sventenius 12434 (ORT); ibid., 31.12.1944, E. R. Sventenius 12390 (ORT); ibid., 3.1.1947, E. R. Sventenius 12398 (ORT); El Mocanito, 22.6.1945, E. R. Sventenius 12393 (ORT); Roque de Garachico, 26.6.1949, E. R. Sventenius 23838 (ORT); Los Quemados (Masca), 14.1.1963, E. R. Sventenius 12392 (ORT); Masca, Mocanito, 22.6.1966, E. R. Sventenius 12394 (ORT). - **LA PALMA:** Velhoco, 12.1987, F. Cabrera Rodríguez 25627 (TFC); Las Paredes, carr. hacia Barlovento, 2.7.1987, A. Marrero & M. Jorge 12818 (LPA); Breña Alta, 5.5.1989, A. Roca & A. Marrero 16507 (LPA); El Llanito, 6.5.1989, A. Roca & A. Marrero 16551 (LPA); Los Galguitos, 6.8.1989, A. Roca & A. Marrero 16546, 16547 (LPA); between Hacienda del Cura and Lomo Alto, 900 m, 23.5.1949, E. R. Sventenius 3295 (ORT); Tenerer, 16.4.1962, E. R. Sventenius 23838 (ORT). - **EL HIERRO:** La Frontera, Fuente de los Tincos, 580 m, 4.5.1959, E. R. Sventenius 18057 (ORT); La Frontera, El Rincón, 26.7.1968, E. R. Sventenius 18050 (ORT); below Fuente de los Tincos, 7.4.1971, E. R. Sventenius 18052 (ORT).
Aeonium canariense subsp. christii (Burchard) Bañares, comb. nov.

Remarks. – We consider this and the following two taxa for their morphological features and geographical distribution better recognized at subspecies than at varietal rank.

Distribution. – Abundant within forests and on humid walls in northern La Palma and El Hierro, ranging from almost sea level to 900 m (see Voggenreiter 1973; Santos 1983).

Representative specimens. – LA PALMA: Near Puenteallana, 6.2004, Á. Bañares 46858 (TFC); Velhoco, 5.1988, F. Cabrera Rodríguez 25563 (TFC); Barranco del Lorado, Tijarafe, 600 m, 30.6.1987, A. Marrero & M. Jorge 12792, 12799 (LPA); Tigalate, 30.6.1987, A. Marrero & A. Roca 12794, 12795 (LPA); Cuesta de Jinamar (ex hort J.B.C.), 5.1989, A. Roca 16550 (LPA); Barranco Fernando Porto, Garafia, 6.5.1989, A. Roca & A. Marrero 16539, 16540 (LPA); Los Galguitos, 6.5.1987, A. Roca & A. Marrero 16543, 16544, 16545 (LPA); Barranco de las Angustias, south slopes, 8.7.1944, E. R. Sventenius 3302 (ORT); Barranco de las Angustias, close to the channel, 21.4.1962, E. R. Sventenius 3301 (ORT). – EL HIERRO: Pozo de la Salud, Sabinosa, 50 m, 14.7.1987, A. Marrero & A. Roca 12849, 12859 (LPA); laderas de Sabinosa, 12.7.1987, A. Marrero 12845, 12846, 12847, 12848 (LPA); riscos de Bascos (mirador), 14.7.1987, A. Marrero & A. Roca 12796 (LPA); ladera baja de Jinamar, Frontera, 400 m, 14.7.1987 A. Roca & A. Marrero 12796, 12797, 12851, 12852 (LPA).

Aeonium canariense subsp. latifolium (Burchard) Bañares, comb. nov.

Distribution. – Abundant within the forest and on humid walls located on the northern slopes of La Gomera and sporadically in cool southern hillsides, ranging from almost sea level to 1000 m (see Voggenreiter 1999).

Representative specimens. – LA GOMERA: Fuente de la Araña, El Bailadero, 5.2006, Á. Bañares 46856 (TFC); Agulo, 7.5.1945, E. R. Sventenius 5648 (ORT); cumbre de Las Carboneras, Hermigua, 18.5.1945, E. R. Sventenius 5649 (ORT); Barranco del Cabrito, Risco Bermejo, 750 m, 18.5.1958, E. R. Sventenius 5650 (ORT); Vallehermo, Ancón del Carnero, 23.5.1969, E. R. Sventenius 5670 (ORT).

Aeonium canariense subsp. virgineum (Webb ex Christ) Bañares, comb. nov.

Distribution. – Abundant on rocks and hillsides in northern and western Gran Canaria, from almost sea level to 1000 m (see Suárez 1994).

Representative specimens. – GRAN CANARIA: Cuesta de Silva, 5.2006, Á. Bañares 46857 (TFC); Moya, 1.4.1969, D. Bramwell 11069 (LPA); pr. opidulum Cabo Verde, 250 m, 4.4.1980, J. Fernández
Fig. 1. *Aeonium decorum* var. *alucense* – A: plant and rosette; B: bark; C: rosette leaves; D: leaf margin with unicellular trichomes; E: flowers, petals and stamens; F: nectaries. – Scale bars: A = 4 cm; C = 5 mm; D = 1 mm; E = 2 mm; F = 0.3 mm; drawings after the holotype.
Aeonium decorum var. alucense Bañares & M. V. Marrero, var. nov.
Holotypus: Spain, Canary Islands, La Gomera, “Aluce-Avalo”, 300 m, 5.2002, Á. Bañares & M. V. Marrero 46850 (TFC). – Fig. 1.

A varietate typica rosulis minoribus (2.5-5 cm diametro), ramis 0.3 cm diametro, foliis obovatis vel oblanceolatis, 1.5-2.5(-3) × 0.6-1.3 cm et inflorescentia ramificata, 7-11 cm longis differt.

Perennial subshrub, up to 20 cm tall, very densely branched; branches thin, c. 0.3 cm in diameter, tortuous, ascending or pendant, with adventitious roots and rough scaly bark. Rosettes with ascending or spreading leaves, 2.5-5 cm in diameter when leaves are spreading. Leaves obovate to oblanceolate, 1.5-2.5(-3) × 0.6-1.3 cm, green with reddish tinge especially on the margin, puberulent with multicellular trichomes, acuminate and mucronate; margin ciliate with 0.8 mm long unicellular trichomes. Inflorescence dense, 7-11 × 5-7 cm, simple or dichotomously branched from the base or in the upper half; peduncle pubescent, 2-4(-5) cm long, with 5-13 small lanceolate bracts and 5-7 flowers. Flowers 7-8-merous; calyx pubescent, segments acute, 3-3.5 × 1.6-1.8 mm; petals pinkish white, lanceolate, 8-9 × 2.3-2.6 mm, abaxially puberulent; stamens puberulent, the antepetalous ones 6-7 mm, the antipetalous ones 4-5 mm long, anthers whitish to faint yellow; nectaries quadrate, 1 × 0.5 mm; carpels with ovaries 2.3-2.8 × 1.3 mm; styles c. 3.5 mm long. – Flowering March to May.

Remarks. – The diagnostic differences between the new taxon and the type variety are given in Table 1. Populations are found isolated from the type variety, which is widely distributed in southern La Gomera and rare on western Tenerife (Masca). Most plants are growing on a unique geological substrate (salic domes, phonolites) and in an extremely arid climate, close to other local endemics such as Helichrysum alucense García Casanova & al., and the sole population of Aeonium sedifolium (Webb ex Bolle) Pit. & Proust on La Gomera (García 1990; García & al. 1994). A. decorum var. alucense maintains its particular morphology, when growing together, ex situ, with the typical variety under identical conditions.

Distribution. – Common in a relatively small area in northeastern La Gomera (from Avalo to Aluce) (UTM-Hayford/Pico de las Nieves: 28RBS929124; 28RBS928126), from 200 to 330 m (Fig. 7), associated with xerophytic species in N and E-SE exposition (Euphorbia balsamifera Aiton subsp. balsamifera, Neochamaelea pulverulenta (Vent.) Erdtman, Tetrapogon villosus Desf.) on dry rocks and walls, especially salic domes (phonolites).

Table 1. Differential characters of the varieties of Aeonium decorum.

<table>
<thead>
<tr>
<th></th>
<th>var. decorum</th>
<th>var. alucense</th>
</tr>
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<tbody>
<tr>
<td>Habit</td>
<td>up to 50 cm tall, branched, branches up to 0.8 cm in diam.</td>
<td>up to 20 cm tall, densely branched, branches c. 0.3 cm in diam.</td>
</tr>
<tr>
<td>Leaves</td>
<td>2.5-5(-7) × 1-1.5(-2) cm</td>
<td>1.5-2.5(-3) × 0.6-1.3 cm</td>
</tr>
<tr>
<td>Inflorescence</td>
<td>lax, simple, 15-30 × 8-20 cm, peduncles to 20 cm, with 10-15 flowers</td>
<td>dense, simple or dichotomously branched, 7-11 × 5-7 cm, peduncles 2-4(-5) cm, with 5-7 flowers</td>
</tr>
</tbody>
</table>
Fig. 2. A-D. Aichryson laxum var. latipetalum, A: plants and rosette leaves; B: leaf margin; C: flowers, petals and stamens; D: nectaries. – E: A. laxum var. laxum, flower, petals and stamens. – Scale bars: A = 3 cm; B = 0.5 mm; C, E = 2 mm; D = 0.2 mm; A-D after the holotype, E after Bañares, Acevedo & Marrero 43449 (TFC).
Aeonium lindleyi subsp. viscatum (Bolle) Bañares, **comb. nov.**

**Remarks.** – We consider this taxon for its morphological features and geographical distribution better recognized as a subspecies.

**Distribution.** – Locally abundant on dry rocks and walls from sea level to 800 m in northern and eastern La Gomera, around San Sebastián, from Hermigua to Vallehermoso (see Voggenreiter 1999).

**Representative specimens.** – La Gomera: Near Agulo, 7.2004, Á. Bañares 46854 (TFC); Uteza, 10.5.1975, M. Fernández Galván 26011 (ORT); sine loco, 27.6.1946, E. R. Sventenius 7176 (ORT); Barranco de Haragán, 500 m, 3.7.1952, E. R. Sventenius 5655 (ORT); Barranco de La Laja, 300 m, 2.8.1952, E. R. Sventenius 5654 (ORT); hillsides over San Sebastián, road from the Villa to the tunnel, 6.6.1970, E. R. Sventenius 5634 (ORT).

Aichryson laxum var. latipetalum Bañares & M. V. Marrero, **var. nov.**
Holotypus: Spain, Canary Islands, Tenerife, “Barranco de Añavingo”, 950 m, 6.2003, Á. Bañares & M. V. Marrero 46860 (TFC). – Fig. 2.

A varietate typica floribus 7-9-meris et petalis elipticis, 4-5.5 × 1.7-2 mm differt.

**Remarks.** – Praeger (1929: 462) mentioned this interesting plant from Añavingo and also reported the above characters differentiating it from typical Aichryson laxum. The morphological peculiarities of this taxon are maintained in ex situ cultivation. The evident isolation of the ravine where the population maintains its unique morphology led us segregate it as a new variety. The type variety is a widespread taxon in the Canaries and also present in the lower and more exposed parts of Añavingo (c. 600 m), outside the area of var. latipetalum, as well as in nearby ravines in southern Tenerife (Barranco de Badajoz, Barranco del Agua). Praeger collected also A. porphyrogennetos Bolle in Añavingo (Praeger 1929) but the presence of this endemic of Gran Canaria has not been confirmed by later authors (Bramwell 1969; Bañares 2002); it is clearly distinguished from our new variety by its divaricate (not dichotomous) branches, the leaves with the lamina broadest in the middle, the apex not emarginate and the margin protuberantly papillose, the lax and elongated inflorescence with sessile to subsessile leaves and the aristate petals (apiculus up to 1 mm). The hybrids A. laxum × punctatum and A. laxum × porphyrogennetos, also mentioned by Praeger (1929) for Añavingo, differ from the new variety, too, but were not found by us.

**Distribution.** – Locally common in a deep, long ravine in southern Tenerife (Barranco de Añavingo, also called Barranco del Espigón de Tea) from 800 m (UTM Hayford/Pico de las Nieves: 28RCS585363) to 1050 m, on steep, rocky ground (Fig. 7).


Aichryson tortuosum var. bethencourtianum (Bolle) Bañares & S. Scholz, **comb. nov.**
Fig. 3. A-C: *Aichryson tortuosum* var. *tortuosum*, A: plant; B: rosette leaves; C: leaf margin [after Bañares 46866 (TFC)]. – D-G: *A. tortuosum* var. *bethencourtianum*, D-E: rosette leaves and leaf margin from Jandía Peninsula [after Bañares & S. Scholz 46869 (TFC)]; F-G: rosette leaves and leaf margin from Montaña de la Muda [after Bañares & S. Scholz 46868 (TFC)]. – Scale bars: A = 1.5 cm; B-G = 2 mm.
Remarks. – Its confusion with the Lanzarote endemic *Aichryson tortuosum* in northern and central areas of Fuerteventura are surely related to the compactness of the plants in those stations, which differs from the generally loose and erect habit of *A. bethencourtianum* in its type locality (Jandía). *A. bethencourtianum* has traditionally been differentiated from *A. tortuosum* by its broader, orbicular, basally sometimes shortly narrowed and more densely pubescent leaves with hairs to 0.6-0.7 mm (*A. tortuosum* has typically cuneate leaves, with very short hairs, to 0.2-0.3 mm). The calyx has also hairs to 1 mm (instead of up to 0.5 mm in *A. tortuosum*). Our studies of northern and central populations in Fuerteventura revealed that the pubescence of the leaves are shorter than in the original location, almost transitional to the Lanzarote endemic, probably due to its strong dependence on environmental factors. However, because the shape of the leaves differentiates the two taxa, we propose their recognition as varieties (Fig. 3).

Distribution. – Rare on walls and rocks facing windward in several localities of Fuerteventura. Traditionally, it was only reported from its type locality in the Jandía peninsula (southern Fuerteventura). However, Bolle’s taxon was also identified by us in some northern (near La Oliva in “Morro Tabaiba”, “Morro de los Rincones” and “Montaña de la Muda”, also along crags over Tefía and La Fortaleza) and central (Riscos del Carnicero) areas on this island above 400 m (Fig. 4), where it has been reported as *Aichryson tortuosum* (Praeger 1932; Bramwell 1968; Kunkel 1977; Sventenius in shed., see representative specimens).

Representative specimens. – FUERTEVENTURA: Montaña de la Muda, 7.2004, Á. Bañares & S. Scholz 46868 (TFC); Fuente del Culantrillo, Jandía, 7.2004, Á. Bañares & S. Scholz 46869 (TFC);
Monanthes minima subsp. adenoscepes (Svent.) Bañares, **comb. nov.**  
≡ Monanthes adenoscepes Svent. in Addit. Fl. Canar. 1: 18. 1960. – Typus: Canary Islands, Tenerife, above “Guimar”, 250 m, 27.8.1956, Carlos González Martín s.n. (searched for but not located at ORT where most of the herbarium specimens of Sventenius are deposited).

**Remarks.** – The diagnostic differences between subsp. adenoscepes and the type subspecies are presented in Table 2 and Fig. 5. Nyffeler (1992) considered Monanthes adenoscepes as conspecific with *M. minima*. However, comparison of both taxa at inter- and intrapopulation level from their isolated type localities (*M. minima* from the “Anaga region” of northern Tenerife and *M. adenoscepes* from “Ladera de Guimar” in southern Tenerife) and the study of the original material (see Representative specimens) led us to consider *M. adenoscepes* as a separate subspecies. Furthermore, plants of both taxa maintain their characteristics after a long time of cultivation.

**Distribution.** – Locally common on the relatively humid and underexposed slopes of rocks and walls found in Tenerife’s southern lowlands (from Ladera de Guimar to Granadilla) from 30 to 550 m (see Bañares & Scholz 1990).


*M. minima* subsp. adenoscepes: TENERIFE: Ladera de Guimar, 5.1998, Á. Bañares 46861 (TFC); Ladera de Guimar, 350 m, 3.2001, Á. Bañares 46863 (TFC); La Ladera (c. camino real), 19.3.1984, O. Rodríguez 28001 (TFC).

Monanthes polyphylla subsp. amydros Nyffeler in Bradleya 10: 73. 1992  
Holotypus: Gomera, Degollada de la Cumbre, rocks NW of the N portal of tunnel (road San Sebastian to Hermigua), 630 m, 22.3.1990, Nyffeler152 (Z; isotypi: ORT!, ZSS)  

**Remarks.** – Nyffeler (1992) reported Monanthes polyphylla subsp. polyphylla for Gran Canaria, Tenerife and La Palma, and subsp. amydros for La Gomera. This author suggested that the ambiguous name *M. subcrassicaulis* (Kuntze) Praeger, identified as synonymous with *M. muralis* (Webb ex Bolle) Hook. f., was improperly assigned by several authors to specimens of *M. polyphylla* subsp. amydros from La Gomera and to intermediates (most probably hybrids) between *M. polyphylla* subsp. polyphylla and *M. muralis* in La Palma. Later, Nyffeler (2003: 186) questioned the presence of *M. polyphylla* subsp. polyphylla on La Palma.

Our study of plants from several locations in La Palma and La Gomera revealed the occurrence of Monanthes polyphylla subsp. amydros on both La Palma and La Gomera, whereas subsp. polyphylla is not present on La Palma. *M. subcrassicaulis* from those islands (Praeger 1932; Sventenius in sched., see Representative specimens) corresponds to subsp. amydros. Plants of subsp. amydros on La Palma are found outside the range of other representatives of the genus, along some eastern ravines above 600 m (Barranco del Carmen, Barranco de la Madera, Barranco de Río) and several northern and central locations (common inside Taburiente National Park at Roque de los Cuervos and La Cumbrecita). Our examination of plants collected in the type locality of Sempervivum monanthes var. filicaule Kuntze (La Palma, Barranco del Carmen) also revealed that Kuntze’s plant corresponds to *M. polyphylla* subsp. amydros. *M. polyphylla* subsp. polyphylla is confined to Gran Canaria and Tenerife, or probably only to Tenerife, since on Gran Canaria it
Table 2. Differential characters of the subspecies of *Monanthes minima* and of *M. wildpretii*.

<table>
<thead>
<tr>
<th>Character</th>
<th><em>M. minima</em> subsp. <em>minima</em></th>
<th><em>M. minima</em> subsp. <em>adenoscepes</em></th>
<th><em>M. wildpretii</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosettes</td>
<td>single, very rarely offsetting, lax, with 60-80 leaves, 20-40 mm in diam.</td>
<td>single, very rarely offsetting, dense, with 70-85 leaves, 15-25 mm in diam.</td>
<td>abundantly offsetting, dense, with 100-120 leaves, 10-20 mm in diam.</td>
</tr>
<tr>
<td>Axes</td>
<td>cylindrical</td>
<td>cylindrical</td>
<td>globular</td>
</tr>
<tr>
<td>Leaves</td>
<td>spathulate, 10-20 mm long, apex rounded (to 4 mm wide), attenuate towards base, densely glandular-pubescent, slightly papillose</td>
<td>spathulate, 10-15 mm long, apex rounded to subrhomboidal (2-2.5 mm wide), abruptly contracted into a filiform base, densely glandular-pubescent, slightly papillose</td>
<td>oblancoolate, 5-8(-10) mm long, apex acute (1-2.5 mm wide), attenuate towards base, glandular-pubescent, prominently and abundantly papillose</td>
</tr>
<tr>
<td>Calyx</td>
<td>slightly papillose, segments ovate, concave, 1.2-1.5 mm wide</td>
<td>slightly papillose, segments lanceolate, 0.8-1 mm wide</td>
<td>prominently and abundantly papillose, segments lanceolate, 1-1.5 mm wide</td>
</tr>
</tbody>
</table>

Fig. 5. A-C: *Monanthes minima* subsp. *minima*, A: plants; B: rosette leaves; C: leaf margin [after Bañares 46851 (TFC)]. – D: *M. minima* subsp. *adenoscepes*, rosette leaves [after Bañares 46863 (TFC)]. – E: *M. wildpretii*, rosette leaves [after Bañares 46849 (TFC)]. – Scale bars: A = 1.5 cm; B, D-E = 2 mm; C = 1 mm.
Fig. 6. A-C: *Monanthes polyphylla* subsp. *polyphylla*, A: plant; B: rosette leaves; C: leaf papillae [after Bañares 43448 (TFC)]. – D-E: *M. polyphylla* subsp. *amydros*, D: rosette leaves; E: leaf papillae [after Bañares 46864 (TFC)]. – Scale bars: A = 1 cm; B-D = 1.5 mm; C-E = 1 mm.
may have been extinct since 30 years (Kunkel 1977) as our search for *M. polyphylla* in Gran Canaria was in vain, too (Fig. 7).

The diagnostic differences between subsp. *amydros* and the type subspecies are presented in Table 3 and Fig. 6, see also Nyffeler 1992: 74.

**Distribution.** – Locally common on humid and shady walls and rocks, from 200 to 900 m in northern and eastern La Gomera, and ranging from almost sea level to 1500 m in La Palma (Fig. 7).

### Table 3. Differential characters of the subspecies of *Monanthes polyphylla.*

<table>
<thead>
<tr>
<th></th>
<th>subsp. <em>polyphylla</em></th>
<th>subsp. <em>amydros</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosettes</td>
<td>leaves densely arranged, laterally hemispheric, 6-10 mm in diam.</td>
<td>leaves laxly arranged, laterally cylindrical to obovate, 7-15(-20) mm in diam.</td>
</tr>
<tr>
<td>Axes</td>
<td>to 1 mm in diam.</td>
<td>to 2 mm in diam.</td>
</tr>
<tr>
<td>Leaves</td>
<td>oblong obovate, 2 mm wide, apex truncate or rounded, papillae to 0.1 mm in diam., at leaf apex only</td>
<td>obovate to narrowly obovate, to 3(-4) mm wide, apex acute to subacute, papillae to 0.2(-0.3) mm in diam., at apex and margins</td>
</tr>
</tbody>
</table>


Holotypus: Tenerife, cercanías de Chinamada, 700 m, 5.1988, Ángel Bañares 27454 (TFC).  

Herbaceous perennial up to 2 cm tall, with abundant offsetting rosettes forming dense mats. Rosettes dense, 1-2 cm in diameter, with 100-120 leaves. Axes globular. Leaves 5-8(-10) × 1-2 (-2.5) mm, oblong obovate, attenuate to the base, apex acute (never rounded), glandular-pubescent, prominently papillose. Inflorescence simple, lateral and ascendant, with spreading leaves similar to that of the rosettes and small lanceolate bracts; pedicels pubescent. Flowers 4-5 mm in diameter; calyx pubescent, segments subovate to lanceolate 2-3 × 1-1.5 mm, densely papillose; petals lanceolate, acute, puberulent abaxially; nectaries cuneate, bilobate, with margin fimbriate; carpels glabrous to glabrate, papillose.

Remarks. – On the basis of the original description Nyffeler (1992) regards this taxon as conspecific with *Monanthes minima*, suggesting that its deviating characteristics cannot be regarded as a basis for specific delimitation. However, our study of the holotype of the latter species (Santa Cruz de Tenerife. Oberer Valle Seco. 1856. Bolle s.n., B) confirmed that *M. wildpretii* in fact is a distinct, geographically isolated species. Our revision of the morphological variation at inter- and intrapopulation level and the cultivation of both taxa revealed important differences in leaf morphology,
abundance of papillae, rosette density, and axes and calyx morphology. *M. wildpretii* differs from Bolle’s plant by its strongly ramified and dense habit, smaller and denser rosettes, globular axes (as in *M. brachycaulos* (Webb & Berthel.) Lowe, and the oblong-ellate, smaller, less pubescent, prominently and abundantly papillose and apically acute leaves (Fig. 5E, Table 2).

**Distribution.** – A single population is known on humid rocky walls around potential laurel forest communities, on the northern slopes of Anaga, Tenerife (c. Chinamada) at 700 m (Bañares & Scholz 1990; Bañares & al. 2003).


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