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Margrit Bischofberger

Corrections in Genus Echeveria - 1

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c/o Margrit Bischofberger
Guggenbühlstrasse 20
CH-8355 Aadorf

Mail
margrit.bischofberger@enersol.ch

Table of Contents

<i>Echeveria corallina</i> Alexander, 1941.....	5
<i>Echeveria cuspidata</i> var. <i>gemmula</i> Kimnach, 2005	6
<i>Echeveria desmetiana</i> De Smet, 1874.....	7
<i>Echeveria elegans</i> var. <i>kesselringiana</i> von Poellnitz, 1936	9
<i>Echeveria goldiana</i> E. Walther 1959.....	10
<i>Echeveria holwayi</i> Rose, 1911.....	11
<i>Echeveria hyalina</i> E. Walther, 1958.....	12
<i>Echeveria parrasensis</i> E. Walther, 1959.....	13
<i>Echeveria rauschii</i> van Keppel, 1969.....	14
Validation of <i>Echeveria sanchez-mejoradae</i> E. Walther, 1972	15
<i>Echeveria sessiliflora</i> Rose, 1905, & <i>E. pinetorum</i> Rose, 1905	18
<i>Echeveria subspicata</i> (Baker) Berger, 1930	19
<i>Echeveria tamaulipana</i> Martínez-Ávalos, Mora & Terry, 2009	20
<i>Echeveria walpoleana</i> Rose, 1905.....	21

Since the publication of Eric Walther's monograph of the genus *Echeveria* in 1972, this book - long-awaited by all interested in echeverias - has been considered the standard work and - with few exceptions - subsequent authors as well as botanists have relied upon it blindly failing to verify Walther's remarks and thus perpetuating his countless errors and inexactitudes. The present volume is the first of a series dealing mainly (but not exclusively) with corrections and rectifications of errors in Walther's book.

Echeveria corallina Alexander, 1941

REINSTATED AS A DISTINCT SPECIES.

Alexander compared *E. corallina* with *E. mucronata*. Nonetheless Walther considered it synonymous with *E. sessiliflora* ; he actually copied Alexander's description of *E. corallina* and published it as the description for *E. sessiliflora* (Walther, *Echeveria*, p. 384, 1972). Thomas MacDougall, the collector of the plant, clearly disagreed with Walther and stated : "It is unfortunate that Walther did not have access to types at the N.Y.B.G. As one result, we do not agree that *E. sessiliflora* and *E. corallina* are the same" (book review of Walther's *Echeveria*). Because Kimnach, responsible for Genus *Echeveria* in the *Illustrated Handbook of Succulent Plants*, did not question the publications in Walther's posthumous book this error has been perpetuated. Herewith it is corrected - *E. corallina* is reinstated as a distinct species.

Series *Mucronatae*

Type : T. MacDougall B.4, collected south of Nuevo Zapaluta (La Trinitaria), Chiapas, Mexico, winter 1938-39.

Etymology : Named for the flower colour.

Distribution : Mexico (Chiapas).

First Description by Alexander in *Cactus and Succulent Journal* (US) **13**(8): 135-136. 1941 :

"Plant short-caulescent.

Stem 2 - 3 cm long, eventually branching below.

Leaves in a loose terminal rosette, oblanceolate, abruptly acute, 6 - 8 cm long, 15 - 16 mm broad, pale green with brownish purple margins and red apiculus, the whole leaf frequently shaded with brownish pink, very glaucous, the glaucescence producing a soft pinkish tone to the foliage.

Inflorescence 40 - 50 cm tall, erect, with **bracts** similar to the leaves but more green and reduced upwards, the flowering portion roseate-salmon with a glaucous overcast.

Flowers 20 - 25, multilaterally arranged, sessile or on 1 mm **pedicels** which are oblique bulges off the rachis, **calyx** slate blue-green, the tube 0.5 mm long, the lobes appressed to the corolla, ovate to ovate-lanceolate, acute, very unequal, the two longest 7 mm long, the intermediate 6 mm long, the two shortest 4 mm long, **corolla** oblong-conical, 14 mm long, coral red, the **petals** 3 mm wide with recurved-spreading tips, **stamens** opposite the petals 6 mm long, the **filament** terete or nearly so, scarcely enlarged at the base, **anthers** 1.5 mm long.

A rather unattractive plant, but beautiful in flower because of the unusual pastel coloring of the inflorescence. Related to *E. mucronata*, differing principally in its strongly glaucous character and closely appressed calyx-lobes."

Echeveria cuspidata var. gemmula Kimnach, 2005**REDUCED TO A SYNONYM OF *Echeveria cuspidata* var. *zaragozae*.**

In *Cactus and Succulent Journal US* **77**(1): 28 ff, 2005, Myron Kimnach described two plants which had been in cultivation since several years as 2 varieties of *Echeveria cuspidata* :

- *E. cuspidata* var. *zaragozae* and
- *E. cuspidata* var. *gemma*.

In view of the fact that the type localities are only 100 m distant and that the differences between the two varieties are insignificant, *E. cuspidata* var. *gemma* herewith is reduced to a synonym of *E. cuspidata* var. *zaragozae*.

(The information that var. *gemma* has also been found in Jalpan, Queretaro, is wrong. The respective plant has been collected near Zaragoza. Pers. com. G. Köhres)

Echeveria desmetiana De Smet, 1874

CORRECT NAME FOR THE PLANT HITHERTO CALLED *Echeveria peacockii*.

The first (very short) description of *Echeveria peacockii* by Croucher in The Gardeners' Chronicle (23 May 1874) referred to a plant with pulverulent leaves, introduced from California. A little later, in August of the same year, Baker published a much more detailed description of the same plant as *Cotyledon (Echeveria) peacockii*. He explained that "it comes nearest the well-known and now widely-spread *Cotyledon (Echeveria) pumila*" - at that time the name for *Dudleya cymosa* var. *pumila* - but that it is larger and has a spicate instead of a racemose inflorescence.

In view of the origin of this plant - according to Croucher California, according to Baker New Mexico - , in view of its "intensely glaucous colour and persistence of the waxy coating" and its spicate inflorescence there is no doubt that the plant in question was a *Dudleya (D. pulverulenta)* and not an *Echeveria*. That means the name *peacockii* belongs to the synonymy of *D. pulverulenta* and cannot be used for a central Mexican *Echeveria* species. The earliest legitimate name for the latter is *E. desmetiana*.

Synonyms :

Echeveria peacockii T.Moore (1875) [non Croucher] nom illeg. (Art. 53.1).

Cotyledon desmetiana (Morren) Hemsley (1880)

Echeveria subsessilis Rose (1905)

Taxonomic history of *Echeveria desmetiana* & its synonyms

by Roy Mottram

desmetiana

Echeveria desmetiana De Smet, in Morren, Esquisse du genre *Echeveria* DC. avec la figure de l'*Echeveria gibbiflora* DC. var. *metallica*, *La Belgique Horticole* **24**: 159. 1874.

Cotyledon desmetiana (De Smet) Hemsley, *Biology of Central America* **1**: 389. 1880.

Etym: Named for the Belgian horticulturist Louis DE SMET (1810-1887), owner of a nursery at Ledeborg, Ghent, which specialised in succulent plants.

T: Mexico, high mountains.

HT: No original material is known to be extant. Requires neotypification.

peacockii

Echeveria peacockii T.Moore, *Echeveria Peacockii*, *The Florist and Pomologist*, ser.3 **8**: 121. 1875 nom illeg. (Art. 53.1). [non Croucher = *Dudleya pulverulenta* (Nutt.) Britton & Rose]

Etym: Named for the plantsman John T. PEACOCK, of Sudbury House, Hammersmith, London, whose extensive private collection of succulent plants was purchased by Kew in 1889.

T: Mexico.

HT: Plate accompanying the protologue in *The Florist and Pomologist*, ser.3 **8**: 121. 1875. Autotype.

Obs: The protologue includes a reference to a different taxon first described as *Echeveria peacockii* Croucher, in *The Gardeners' Chronicle* (23 May 1874). That referred to a plant with pulverulent leaves, introduced from California. A little later, in August of the same year, Baker published a much more detailed description of the same plant as *Cotyledon peacockii*. He explained that "it comes nearest the well-known and now widely-spread *Cotyledon pumila*", at that time the name for *Dudleya cymosa* var. *pumila*, but that it is larger and has a spicate instead of a racemose inflorescence.

In view of the origin of this plant, according to Croucher in California and according to Baker in New Mexico, where only dudleyas occur, in view of its "intensely glaucous colour and persistence of the waxy coating" and its spicate inflorescence, there can be no doubt that the plant in question was a *Dudleya* (*D. pulverulenta*) and not an *Echeveria*, as confirmed by a later engraving of a *Dudleya* under the name *Echeveria peacockii*. That means the name *E. peacockii* belongs to the synonymy of *D. pulverulenta* and cannot be used for a central Mexican *Echeveria* species.

Ref: *Echeveria desmetiana* De Smet.

subsessilis

Echeveria subsessilis Rose, in Britton & Rose, *North American Flora* **22**(1): 19. 1905.

T: Mexico, Puebla, nr. Tehuacan; *William TRELEASE* 718, 719, 720.

HT: MO 1300430.

Ref: *Echeveria desmetiana* De Smet.

Echeveria elegans var. kesselringiana von Poellnitz, 1936

REINSTATED AS A VARIETY OF *Echeveria elegans*.

The wild origin of *E. elegans var. kesselringiana* is not known, however there is no doubt, that it has a wild origin. It has been described from plants the seeds of which had been collected by F. Ritter and sent to his sister H. Winter in Frankfurt who offered seeds for many years.

Of course Walther knew the description by von Poellnitz and when in 1958 he described *E. albicans* he listed *E. elegans var. kesselringiana* von Poellnitz as a synonym of *E. albicans*. However this is not correct. The two plants differ not only considerably in size but above all in the shape of the leaves - *E. albicans* having a distinct slender apiculus, totally absent in *E. elegans var. kesselringiana*. Moreover in contrast to von Poellnitz' plant *E. albicans* was described from cultivated plants without known origin. Its description as a distinct species was questionable right from the beginning as it is hardly distinguishable from *E. elegans* and *E. potosina*.

C.H. Uhl : " These three species [*E. elegans*, *E. potosina* and *E. albicans*] seem not very distinct from each other and probably [...] are better considered variations of the same species" (*Haseltonia* 4, 1996).

E. elegans var. kesselringiana is not a synonym of *E. albicans* as Walther claimed and all subsequent authors have adopted, it is in fact the only plant of this complex really distinctly different from the type and deserving at least varietal rank.

Type : Ritter 532, type locality unknown.

First Description by von Poellnitz in *Fedde's Repertorium Specierum Novarum Regni Vegetabilis* **39**: 239. 1936 :

Blätter dicker, besonders unterseits sehr stark verdickt, am Rande weniger durchscheinend, auch bei Kultupflanzen oft nur 3 cm lang, 1.5 cm breit, 8 mm dick. / **Leaves** thicker, particularly below very much thickened, margins less translucent, also in cultivated specimens only 3 cm lang, 1.5 cm broad, 8 mm thick.



Photo M. Bischofberger

Stengelblätter bis 8 mm lang. / **Bracts** to 8 mm long.

Stielchen 7 - 8 mm lang. / **Pedicels** 7 - 8 mm long.

Kelchzipfel bis 4 mm lang, sehr ungleich, rechtwinklig absteigend oder aufsteigend. / **Sepals** to 4 mm long, very unequal, spreading at right angle or ascending.

Kronröhre 3 - 4 mm lang. / **Corolla tube** 3 - 4 mm long.

This plant is commonly known as *Echeveria albicans* or *E. elegans* 'Albicans'. However this is not its correct name - this is *E. elegans var. kesselringiana*.

Echeveria goldiana E. Walther 1959

REINSTATED AS A DISTINCT SPECIES.

Walther published *E. goldiana* and *E. halbingeri* as two separate species. Kimnach (Haseltonia 5: 51. 1997) reduced *E. goldiana* to a variety of *E. halbingeri*. However an accurate comparison of the respective descriptions and of the photos of the two plants published by Walther reveals conspicuous differences in leaf shape as well as in the shape of the flowers. Therefore Kimnach's reduction is not plausible and *E. goldiana* is herewith reinstated as a distinct species.

Synonym : *Echeveria halbingeri* var. *goldiana* (E.Walther) Kimnach (1997)

Series *Urbiniae*

Type : CAS 413601 (not 413901 as indicated in the Spanish First Description).

Etymology : Named for Dudley B. Gold who according to Walther had collected the plant.

Distribution : Unknown. The putative collector Dudley B. Gold disclaimed any knowledge of this plant.

First Description (in Spanish) by Walther in *Cactáceas y Suculentas Mexicanas* 4: 27. 1959 :

Plant glabrous, stemless, with offsets none or produced belatedly.

Rosettes densely leafy.

Leaves to 40 or more, broadly obovate-cuneate, very turgid, beneath rounded and not keeled, above shallowly convex and only slightly flattened near apex, the latter truncate and minutely mucronate, to 4 cm long, 25 mm wide near apex, less than 15 mm broad at base, lettuce green to dull light coffee-coloured.

Inflorescences 2 - 3, each a simple, secund raceme, **peduncle** to 40 cm tall, slender, erect, with 10 - 12 **bracts**, these linear-lanceolate, acuminate, flat above, beneath rounded, slightly spreading to recurved, to 14 mm long, **pedicels** slender, to 15 mm long, somewhat turbinate below calyx.

Flowers 8 - 10, strongly nodding in bud, **sepals** very unequal, longest to 10 mm long and lanceolate, others much shorter, deltoid, acute, lettuce green to dull light coffee coloured, **corolla** conoid-urceolate, 13 mm long and to 9 mm broad near base, only 4 mm in diameter at mouth, begonia-rose at base, greenish at apex, **petals** not keeled and only slightly hollowed within base, with small subulate apiculus below tips, **carpels** 7 mm long, **nectaries** to 2 mm broad, reniform, oblique.

(Translation Margrit Bischofberger)

Echeveria holwayi Rose, 1911

REINSTATED AS A DISTINCT SPECIES.

***Echeveria holwayi* Rose is not a synonym of *E. acutifolia* Lindley as E. Walther postulated (*Echeveria*, p. 203. 1972). His description was made from a presumable clonotype of *E. holwayi* Rose, cultivated at Huntington Botanical Gardens. *E. acutifolia* Lindley has never been found in the wild and may well have been a hybrid. Therefore *E. holwayi* has to be reinstated as a distinct species.**

Series *Gibbiflorae*

Type : US 399680, collected by E.W.D. Holway near Oaxaca, Mexico, November 1903.

Distribution : Oaxaca.

First Description by Rose in *Contributions from the US National Herbarium* **13**: 295. 1911:

“Caulescent, in cultivated specimens the stem short and stout.

Leaves forming a dense rosette at top of stem, pale green, slightly glaucous, sometimes purplish, obovate, obtuse, mucronate, narrowed at base into a stout, short petiole, the margin somewhat wavy, 10 - 12 cm long.

Flowering stem 90 - 120 cm long, often deep red and glaucous, its leaves scattered, inflorescence a much-branched panicle, main branches axillary, 5 - 15-flowered, flowers arranged in a secund raceme, **pedicels** short, often only 1 or 2 mm long.

Flowers : **Sepals** erect or ascending, linear, acute, very unequal, **corolla** 12 mm long, rose-coloured when fully open, its lobes acute, with spreading tips.

This species flowered in Washington at the side of *E. gigantea*. It is of similar stature to this, but has much lighter and differently margined leaves, redder stems, longer flowering branches and different flowers.”

Echeveria hyalina E. Walther, 1958**REINSTATED AS A DISTINCT SPECIES.****CORRECT NAME FOR THE WRONGLY NAMED *E. SANCHEZ-MEJORADAE*.**

Kimmach in his treatment of genus *Echeveria* in the Illustrated Handbook of Succulent Plants, 2003, listed *E. hyalina* as a synonym of *E. elegans*. However the former is much closer to *E. simulans* than to *E. elegans* and is therefore reinstated as a distinct species.

Series *Urbiniae***Type** : CAS 234168, from plants in cultivation in Mexico City.**Distribution** : Mexico (Guanajuato, Hidalgo, Queretaro, San Luis Potosí).**First Description by Walther** in *Cactus and Succulent Journal US* **30**(2): 43-44. 1958, from living plant received from Sr. Halbinger in 1934 :**Rosettes** stemless, belatedly caespitose.**Leaves** numerous, densely crowded, obovate-cuneate, cuspidate, to 6 cm long and 35 mm broad, whitish-crystalline, rather thin, with thin, hyaline margins, tips greyish pink.**Inflorescence** a simple raceme, scape to 30 cm tall or more, slender, flexuous, erect, lower **bracts** linear-oblongate, acuminate, to 14 mm long, appressed, **pedicels** to 10 mm long, turbinate thickened below calyx, becoming erect after anthesis.**Flowers** 14 - 20, **sepals** very unequal, deltoid, spreading, longest to 5 mm long, much connate below, **corolla** urceolate, 11 mm long, 8 mm in diameter at base, scarcely pentagonal, pink below, greenish above, **petals** slightly spreading at tips, **nectaries** obliquely reniform.

Flowering time : January-February.

Cytology : Type species n = 34, Wiggins n = 32, plants from SLP n = 31, 32, a collection from Queretaro n = 60.

Note :

Sr. Halbinger who had shared this plant with Walther was unable to recall its original source. A plant collected by Wiggins 1955 in Guanajuato was identified by Walther as *E. hyalina*, later similar plants were also found in Queretaro and San Luis Potosí. The plants occurring in Hidalgo, incorrectly named *E. sanchez-mejoradae*, are the same species.

Echeveria parrasensis E. Walther, 1959

The type of *Echeveria parrasensis* is a plant collected at Parras by C.A. Purpus in 1904, identified by Rose as *Echeveria cuspidata* - this means that *E. parrasensis* is the same as *E. cuspidata*. The name is superfluous.

Echeveria parrasensis E. Walther – a highly inglorious tale.

The name suggests that the plant in question originates from Parras, however the specimen Walther used for his description was Moran 6294, collected at a mountainside above Puerto Flores, 22 miles ± SE of Saltillo and almost 100 miles from Parras. This seems incomprehensible and illogical – but the explanation can be found in Walther's remarks following the protologue : «When in Parras in 1937 we failed to locate any trace of this [*E. parrasensis*], and only the recent rediscovery by Dr. Reid Moran enables us to settle the matter finally» - very apparently Walther had failed to take notice of the correct origin of Dr. Reid Moran's plant and was convinced to describe a plant from near Parras.

As type he named a specimen collected by C.A. Purpus 1904 (Rose 965) at Parras which Rose had identified as *E. cuspidata*. Why he didn't designate a type that did belong to the same gathering as that on which he based his description is not comprehensible. And as paratype he even cited the type collection of *E. cuspidata* Rose – a complete nonsense. Moreover he indicated Chayo Grande as a common locality for both species, *E. parrasensis* and *E. cuspidata*.

In *Monatsschrift für Kakteenkunde* 1907 Joseph Anton Purpus, then director of the Botanic Garden at Darmstadt, published the description and a photo of a plant he had received from his brother Carl Albert Purpus from Ixmiquilpan, Mexico, under the name *E. cuspidata*. J.A. Purpus apparently was not really familiar with *E. cuspidata* Rose and/or Mexican geography otherwise he would have known that what his brother had sent him could not be this species at all, having been collected in Ixmiquilpan, Hidalgo - not in Coahuila where *E. cuspidata* is native.

Of course Walther knew this article and very apparently he also did not take seriously the origin of the plant in question. But unlike J. A. Purpus he was aware that the plant on the photo was not identical to Rose's *E. cuspidata*. His conclusion : This clearly represented his new species *E. parrasensis* ! That it did not correspond to Moran 6294, the plant he had used for his description, he evidently ignored completely.

As it happens however there is no doubt that the photo in the German journal shows *E. tolimanensis*, described by Matuda in 1958, only a few months prior to the publication of *E. parrasensis*. Of course Walther not only knew the publication by Matuda very well, he also knew *E. tolimanensis*. He wrote : « I have had this remarkable new species under observation for several years and am grateful to Professor Matuda for placing it on record with a definite locality. » Moreover he had also made a description of his own « plants cultivated locally long before discovery of definite habitat in Mexico ». Though obviously he was very familiar with this species, he failed to identify correctly the photo in question.

Even more astounding is Walther's remark regarding the description in the German journal - he calls it a compromise between the descriptions of *E. cuspidata* and *E. parrasensis* - as it happens, it is the literal German translation of Rose's description of *E. cuspidata*. Walther was born in Germany in 1892 and emigrated only in 1909 - so no problem for him to understand a German text.

Having succeeded in describing plants from the same locality as two different species, to top it all Walther also considered it as proven that they belonged to two different series, *E. cuspidata* to series *Secundae* and *E. parrasensis* to series *Urceolatae*.

Echeveria rauschii van Keppel, 1969**REINSTATED AS A DISTINCT SPECIES.**

Kimnach (2003) has reduced *Echeveria rauschii* to a synonym of *E. whitei*. In view of the very different chromosome numbers - *E. whitei* $n = 150 \pm 4$, *E. rauschii* $n = \sim 100$ - published by C.H. Uhl in *Haseltonia* 13, 2007, and the differences in flower colour this is no longer justifiable and therefore *E. rauschii* is reinstated as a distinct species.

Series *Racemosae***Type** : van Vliet nr. 8 (van Keppel 6852), 15 km NW from Sucre, Bolivia, 2800 m, collected May 29, 1968.**Etymology** : Named for Walter Rausch, Austrian *Lobivia* and *Rebutia* specialist.**Distribution** : Bolivia (Dept. Chiquisaca, Sucre), growing in cracks and hollows filled with humus and / or limestone on very steep, often unreachable slopes, mostly in full sun for some hours each day.**First Description by van Keppel** in *Cactus and Succulent Journal Great Britain* 24(4): 91. 1969:

Habit caulescent.

Stems short, ca 5 cm long, 1 - 2 cm thick, erect, or very thin, longer and decumbent; branching at base.**Rosette** with 10 - 15 closely arranged leaves, 5 - 12 cm diameter.**Leaves** fleshy, oblong-oblong to ovate-deltoid, acute, with a red mucro, upper part flat to concave, backside convex, faintly keeled, colour fresh green, not glaucous, with strong dark red edges, 4 - 7 cm long, 8 - 15 mm broad.**Floral stems** reddish, erect, 10 - 25 cm long, 2 - 4 mm broad at base; inflorescence part a single, equilateral raceme ca 10 cm long with 5 - 10 spreading to ascending leaves below, the largest 3 - 4 cm long, oblong, concave; **bracts** linear-oblong, small, scarcely spurred.**Flowers** 7 - 20, on reddish, erect, **pedicels** up to 2 cm long with 2 filmy bracteoles which soon wither; **sepals** horizontally spreading to ascending, green, linear-oblong, unequal, 3 - 10 mm long; **corolla** orange to orange-red, orange-yellow within with yellow edges; **petals** ca 10 mm long, 6 mm broad at the base, sharply pentagonal, 2 - 3 mm wide at the apex, tips recurved, sharply keeled dorsally; **carpels** green.

Flowering time : September to October.

Cytology : $n = \sim 100$.

Validation of *Echeveria sanchez-mejoradae* E. Walther, 1972

Echeveria sanchez-mejoradae E. Walther, *Echeveria*: 108-110, 213. 1972 nom. inval. (Art. 8.2, 40.1).

This taxon was based on two separate gatherings, made on 31 Mar 1959 & 5 May 1959, represented by 2 CAS sheets, 414603 & 414549, both labelled by Walther as "holotype". This lack of clear indication of the type renders the name invalid.

Although the name has been in widespread use, no validation of the name has so far occurred. In order to rectify this, a type selection is made here.

Echeveria sanchez-mejoradae E. Walther ex Bischofberger **sp. nov.**

Holotype: CAS 414603. Bar-code: CAS 0002668. Gathered on 31 Mar 1959, along the road from Venados to Zacualtipan.

The sheet CAS 414549 (0002669) is a syntype as it was given equal status by Walther, and is certainly the same taxon, but it represents a different gathering.

Description by Walther in *Echeveria*, p. 108-109, 1972 :

Plant glabrous, stemless, **cespitose**, with even small, young plants consisting of two or more rosettes.

Leaves numerous, crowded, linear-oblongate to obovate-cuneate, long-attenuate to base, at apex aristate-apiculate, slightly recurved, obscurely keeled beneath, to 6 cm long and 15 mm broad. **Colour spinach-green, not glaucous.**

Inflorescences three to five, sometimes to 50 cm tall, simply secund-racemose; **peduncle** slender, flexuose, light yellowish olive; **bracts** distant, oblanceolate, aristate-acute, subtriquetrous, to 20 mm long, colour as leaves, but tinged army-brown.

Flowers 10, spreading; **pedicels** to 9 mm long, vinaceous-fawn to army-brown; **sepals** very unequal, longest to 11 mm long, acute, spreading to ascending, deltoid to lanceolate, colour as bracts; **corolla** urceolate, 11 mm long, 8 mm in basal diameter, 5 mm at mouth, jasper-pink at base, javel-green above; **petals** not at all keeled, nor hollowed, colour inside javel-green; **carpels** 7 mm long, light lumiere-green; **styles** apple-green; **nectaries** narrowly lunate, oblique, 2 mm wide, light lumiere-green.

Notes :

1. Walther prepared this description in 1959, shortly before he died. However it took 13 years until it was finally published in his posthumous book *Echeveria* in 1972. Until that time contemporaries only knew that Walther had collected a new species along the road from Venados to Zacualtipan in the Mexican state of Oaxaca and that he had decided to name it for Sr. Hernando Sanchez-Mejorada.

In autumn 1959 Reid Moran collected plants in the same region, they had solitary rosettes with glaucous leaves. As they had been found near the type locality Walther had indicated, it seemed likely that they corresponded to Walther's *E. sanchez-mejoradae* and they were distributed with this name. Because Walther's description was not accessible a verification was impossible.

When - finally - in 1972 the description was made public, *E. sanchez-mejoradae* as a plant with solitary rosettes and glaucous leaves was so well established that apparently nobody checked the protologue and the erroneous identification was not detected.

This means that from the very beginning the name *E. sanchez-mejoradae* was used for two distinctly different plants :

- Firstly and correctly for Walther's freely offsetting plant with spinach-green leaves said to have come from the above mentioned locality and

- secondly and incorrectly for a plant with a solitary rosette with whitish leaves evidentially from the same region – clearly an impostor as it does not correspond to Walther's description.

[Unfortunately Walther's plant has never been found again in the wild. Either he has not remembered correctly the locality or – more likely – the plant he has described as *E. sanchez-mejoradae* had been confused in Reiter's garden where it was cultivated.]

With respect to the impostor : While it does not correspond to Walther's description of *E. sanchez-mejoradae* it corresponds all the better to *E. hyalina*, a species present in the neighbouring states of Guanajuato, Queretaro and San Luis Potosí ; i.e. the incorrectly named *E. sanchez-mejoradae* from Hidalgo represents in fact the occurrence of *E. hyalina* in this state. Retrospectively it is difficult to understand why its similarity with *E. hyalina* has not been noticed already a long time ago.

2. The editors of the book enhanced Walther's text with two black-and-white photos (Fig. 48 & 49, p. 109 & 110) and a colour photo of the flowers (pl. 17, p. 213). The caption of the former reads : «Photographed in San Diego 16 April 1961; part of the type collection (UCBG 59.403).» However

a) in Walther's text no UCBG type collection is mentioned at all and

b) plants of this so-called type collection, offered as ISI 455 in 1965, were described as having white rosettes ! So obviously the type collection was not identical with Walther's *E. sanchez-mejoradae*.

On the other hand the colour photo of the flowers does not represent the UCBG type collection but is Moran 7798, the plant he collected in 1959 (the locality indicated in the caption however is not correct).

That means none of the three photos shows Walther's species. They all show the *E. sanchez-mejoradae*-impostor which in fact is *E. hyalina*.

3. There is another plant nurseries have been selling as *E. sanchez-mejoradae*; it is a plant collected by Felipe Otero at "Metzquititlan near Metztitlan", his number FO-48. However this is an offsetting plant and its flowers are different. Whether this is still the correct FO-48 or an impostor cannot be verified because Otero left no description.

4. In 1998 Kimnach classified *E. sanchez-mejoradae* Walther as a variety of *E. halbingeri*. However the differences between *E. halbingeri* and *E. sanchez-mejoradae* are so striking that this decision is not comprehensible and is not followed here.

Echeveria sessiliflora Rose, 1905, & **E. pinetorum** Rose, 1905

ECHEVERIA SESSILIFLORA IS A SYNONYM OF E. PINETORUM NOT OF E. CORALLINA.

The types of *E. pinetorum* and *E. sessiliflora* have been collected at the same locality : 20 miles southeast of Teopisca, Chiapas, and at the same time : May 8 and May 24, 1904, and both have been described by Rose in 1905. The descriptions are almost identical, the only difference worth mentioning is the colour of the leaves : *E. pinetorum* has green leaves with red margins while *E. sessiliflora* has pale blue leaves which are somewhat glaucous. This means that Rose did not describe two different species but two a bit different clones of one and the same species. He already was aware that the true relationship of *E. pinetorum* is with *E. sessiliflora*.

Unfortunately and not understandably Walther considered *E. corallina* as identical with *E. sessiliflora* and published the latter with the description of the former with the result that *E. pinetorum* and *E. sessiliflora* henceforth appeared as two distinct species.

Thomas Macdougall, the collector of *E. corallina*, already in 1972 draw attention to Walther's error but none of the subsequent authors dealing with genus *Echeveria* made an effort to correct it. Herewith *E. sessiliflora* is separated again from *E. corallina* and reduced to a synonym of *E. pinetorum*.

Synonyms :

Echeveria sessiliflora Rose (1905)

Echeveria sessiliflora var. *pinetorum* (Rose) von Poellnitz (1936)

Echeveria huehueteca Standley & Steyermark (1944)

Series *Mucronatae*

Type : Goldman 1013, collected in pine woods 20 miles southeast of Teopisca, Chiapas, Mexico, May 8, 1904.

Etymology : Named for the occurrence in pine forests.

Distribution : Mexico (Chiapas, Oaxaca), Guatemala.

First Description by Rose in *North American Flora* 22: 20. 1905 :

Acaulescent, forming very dense rosettes of leaves.

Leaves bright-green, the margin tinged with red, narrowly oblanceolate, 2 - 4 cm long, 1 - 1.5 cm broad, rounded beneath, acute and mucronate-tipped.

Flowering stem, including the inflorescence, 10 - 25 cm long, bearing closely set leaves 2 - 3 cm long, below, and small ovate ones above.

Inflorescence an open-flowered equilateral raceme or spike.

Flowers subsessile, **sepals** ovate, acute, somewhat unequal, **corolla** 8 - 10 mm long, its lobes acute.

Echeveria subspicata (Baker) Berger, 1930

REINSTATED AS A DISTINCT SPECIES.

Baker listed *Cotyledon subspicata* under "Imperfectly known species". Evidently he had described it from a dried specimen. Also Walther, when combining it in 1935 with *E. bicolor*, knew only dried material. More than 130 years after Baker's description, Uhl wrote : "Particularly important would be living plants of *E. subspicata* from the immense isolated peak of Santa Marta (5'800 m), just south of the Caribbean in the northern tip of Colombia, near the Venezuelan border " (Cact. & Succ. Journal US, 1992). Because of lack of living material and because of the fact that the type locality of *E. subspicata* is at ca 4500 m asl. while *E. bicolor* is occurring in areas of much lower elevations (1'000 - 1'500 m asl.) Uhl did not accept Walther's combination. Herewith *E. subspicata* is reinstated as a distinct species.

Synonyms :

Cotyledon subspicata Baker (1869)

Echeveria bicolor var. *subspicata* (Baker) Walther (1935)

Series *Nudae*

Type : Not designated. Collected by Alexander Purdie (1817-1857). [He was in Colombia 1844-1845.]

Etymology : Referring to the spike-like inflorescence.

Distribution : Colombia : On rocks near the snow line, Nevada de Santa Marta.

First Description by Baker as *Cotyledon subspicata* in Saunders, *Refugium Botanicum* 1:30, 1869 :

Caulescent, glabrous.

The **leaves** densely rosulate, oblong, slightly spatulate, acute, the largest in a dried specimen two inches long by an inch broad.

Flowering branch erect, about a foot high. Flowers thirty or forty in a dense equilateral raceme, the upper ones sessile, the lower spreading or slightly cernuous.

Flowers : **Calyx**-teeth ascending, lanceolate, a quarter of an inch long, **corolla** red, pentagonal, half an inch long.

Near *E. coccinea*, but glabrous, and the flowers slightly stalked.

Echeveria tamaulipana Martínez-Àvalos, Mora & Terry, 2009**SUPERFLUOUS RE-DESCRIPTION OF *Echeveria walpoleana*.**

The authors claim to have collected a "species new to science". However they err. They have failed to check the ISI offerings of the past, otherwise they would have known that plants from the vicinity of Ciudad Victoria, Tamaulipas, have been distributed already in 1991 as *Echeveria walpoleana* (ISI 91-43). Moreover they based their comparison of *E. tamaulipana* and *E. walpoleana* on Walther's unuseable description (*Echeveria*, p. 252, 1972), having failed also to check C.H. Uhl's comments in *Haseltonia* 6, 1998. That means their description is a superfluous re-description and re-naming of *E. walpoleana*. The name is to be listed in the synonymy of *E. walpoleana*.



Fig. 12. *Echeveria walpoleana*.

ISI 91-43. *Echeveria walpoleana* Rose. A desirable species with compact rosettes of narrow green, red-margined leaves and bright orange and yellow flowers.

Rooted cuts of HBG 53254, a plant collected by Folsom (#11061), Brown, Dice & Wier, at 1215 m alt. on a rocky outcrop 2 km N of Altos Cumbres, along route 101 between **Ciudad Victoria** and Tula, Tamaulipas, Mexico.

Echeveria walpoleana Rose, 1905

CORRECT DESCRIPTION OF *Echeveria walpoleana*.

Instead of consulting the original description by Rose, Kimnach based his summary in the *Illustrated Handbook of Succulent Plants*, 2003, on Walther's description of *E. walpoleana* (*Echeveria*, p. 252, 1972) – ignoring the annihilating criticism published by C.H. Uhl in *Haseltonia* 6, 1998 :

“*Echeveria walpoleana* did not fare well in Walther's (1972) monograph. He apparently misidentified some collections of this species, including a probable topotype, as *E. schaffneri* (n = 12), and this led to confusion in his characterization and in his keys. Localities for *E. walpoleana* that he cited in Coahuila and Guanajuato much more likely apply to *E. strictiflora* (n = 12) and *E. bifida* (n = 12). And, judging from its broader leaves and its interior locality, at least one of the plants that he illustrated as *E. walpoleana* (Fig. 134) is probably *E. cuspidata*.”

Synonym : *Echeveria tamaulipana* Martínez-Ávalos et al. (2009)

Series *Angulatae*

Type : Palmer s.n., collected near Las Canoas, San Luis Potosí, November 1902. Rose 506. US 399856.

Etymology : Named for the botanical artist Frederick A. Walpole.

Distribution Mexico (San Luis Potosí, Nuevo León, Hidalgo, Tamaulipas).

First Description by Rose in *Contributions from the United States National Herbarium* 8: 295. 1905 :

Acaulescent or becoming in age shortly caulescent.

Leaves forming a dense rosette, at first pale green with reddish margins but becoming deeply tinged with red throughout, thickish, rounded on the back, boat-shaped above, sharply acute, 6 to 8 cm long, 2 to 2.5 cm broad, glabrous.

Inflorescences : Flowering stems 30 – 40 cm long, its leaves thickish, acute, inflorescence two-branched, each branch a second raceme of 8 to 10 flowers, **pedicels** very short.

Flowers : **Sepals** spreading, ovate, acute, green, **corolla** about 14 mm long, deeply orange-coloured, the **lobes** erect, very thick, triangular in cross section, acute, **stamens** about half the length of the corolla lobes and attached near the top of the corolla tube, **carpels** erect.

Cytology : n = 13.

Distributed by ISI n° 268 (1959) and ISI n° 91-43 (1991).