

Historical Notes on Echeveria (1)

by J. C. van Keppel*

Had it not been for one of the tragedies of botanical history, the name *Echeveria*, now attached to a well-known genus of the Crassulaceae, might have been linked with the spiny *ocotillo*, which became, instead, *Fouquieria*. The botanical explorers Martin Sessé y Lacasta (d. 1809) and José Mariano Mociño (d. 1820), who spent fifteen arduous years from 1789-1803 describing and illustrating the Mexican flora, chose to commemorate one of their artists, Atanasio Echeverría, by naming the *ocotillo* in his honour. But their great work was fated to be unpublished until so out-of-date as to be of historical significance only, and the *ocotillo*, meanwhile, was dedicated to a Paris professor of medicine, Pierre Fouquier. It was left to the Swiss botanist De Candolle, who met Mociño after Sessé's death and realized the importance of their work, to make the happy choice of *Echeveria* for the colourful and ornamental genus with which we associate the name today.

The Sessé & Mociño *Flora Mexicana* was to have included three species later referred to *Echeveria*. These, like many other of the early discoveries, even after the description of *Echeveria*, were placed in *Cotyledon* and *Sedum*. Their '*Sedum spicatum*' was to become *Cotyledon coccinea*, described by Cavanilles in 1793 from seed they sent to Madrid; *Cotyledon gibbiflora* is now well-known as *Echeveria gibbiflora*; and the third species '*Sedum teretifolium*' has not been precisely identified for lack of basal leaves.

In a letter dated December 1826, A. H. Haworth, one of the leading authorities on succulents, wrote to the editors of the Philosophical Magazine that 'In all probability . . . *Cotyledon coccinea* of Cavanilles will be the type of another new genus . . . but these speculations must at present be relinquished for want of sufficient specimens' (Haworth in Phil. Mag. n.s. 1(4): 272. 1827). It was not long before his prediction was fulfilled: *Cotyledon coccinea* was designated type of the new genus *Echeveria* by De Candolle in 1828. Besides the other two Sessé & Mociño plants, *E. gibbiflora* and *E. teretifolia*, De Candolle included one more species, *E. caespitosa*, which had been described by Haworth in 1803 as *Cotyledon caespitosa*. (This species is nowadays included in *Dudleya*).

*Freely adapted and condensed from the author's series 'Echeveria, Historie en Nomenclatuur' published in the Dutch Journal *Succulenta*, 1976-7, and translated by Susan Roach. A complete translation of the series, without illustrations, has appeared in the *New Zealand Cactus and Succulent Journal*, 1977-8. Author's address: Jonkerlaan 14, Wassenaar, Netherlands. The illustrations, by F. Nolte and the author, are reproduced by kind permission of the editors of *Succulenta*.

Haworth (in Phil. Mag. n.s. 5: 262. 1828) himself followed up De Candolle's work with 'A New Account of the Genus *Echeveria*' and added a fifth species, *E. grandifolia* Haw. This was being grown by the London nurseryman Tate, of Sloane Street, from Mexican seed. It is almost identical with *E. gibbiflora* and is regarded by many writers as a synonym. In my opinion it is a somewhat atypical form of *E. gibbiflora*.

By this time, two South American species had also been described. Discovered by Alexander von Humboldt (1765-1859) and Aimé Bonpland (1773-1858) during their epic expedition through South America, these were published in 1823 in their *Nova Genera et Species Plantarum* under the names *Sedum bicolor* (*E. bicolor* (Kunth) Walther) and *S. quitense* (*E. quitensis* (Kunth) Lindley). The first was found near Caracas in Venezuela, the second near Quito in Ecuador.

In 1830 Schlechtendal and Chamisso described *Echeveria racemosa* (in *Linnaea* 5: 554), and this was followed in 1831 by *E. lurida* Haworth. Even now experts are not in agreement as to whether *E. lurida* should be regarded as a synonym of *E. racemosa* or whether it really is an independent species. D. F. L. von Schlechtendal (1794-1866) was professor of botany and director of the botanical garden in Halle, founder and editor of the journal *Linnaea*. From 1830-1858 he published work on *Echeverias* in various journals and in the *Hortus Halensis* (1853) he was the first to produce a monograph of the genus, in which the species known at that time were subdivided into five groups. He described a total of four new species: *E. racemosa*, *E. bifida*, *E. pubescens* and *E. mucronata*. Of these, *E. pubescens* is regarded as a synonym of *E. coccinea* (Van Keppel in *Succulenta* 53: 16-18. 1974; Moran in *CSJA* 48: 225-9. 1976). In 1858 he reported 24 species, including five nowadays referred to *Dudleya*.

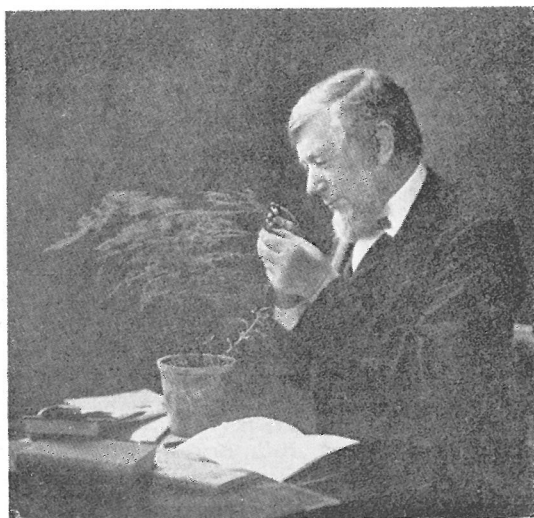
John Lindley (1799-1865), Professor of Botany at London, editor of the *Botanical Register* from 1829-1847 and the first editor of the *Gardeners' Chronicle*, described seven species of *Echeveria* in the first of these journals, including five which were new: *E. secunda* Booth, *E. acutifolia*, *E. rosea*, *E. retusa* and *E. scheeri*. Of these *E. retusa* is now regarded as synonymous with *E. fulgens* Lem. which had already been described by Lemaire in *Hort. Van Houtte* fasc. 1, 8 (1845). Other species described between 1830 and 1860 were *E. peruviana* Meyen (another S. American species); *Pachyphytum bracteosum* Klotzsch a plant often included in *Echeveria* by later writers but now accepted as meriting separation; *E.*

paniculata and *E. strictiflora* Gray, the latter species being the most northerly of the genus and the only one to extend into the USA (Texas); and *E. canaliculata* Hooker, which is no longer found in cultivation.

The *Echeveria* species described up to 1863 were summarized by Charles Lemaire (1801-71), Professor at Gent, in *L'Illustration Horticole* 10: 76-84 (1863). Two new species were included: *E. agavoides* and *E. linguifolia*. Amongst the 35 species mentioned, sixteen are now regarded as belonging to other genera. Additionally, Moran (in Bailey 19: 145, 1975) has transferred *E. linguifolia* to the genus *Cremnophila* Rose.

With Lemaire, the period in which the genus *Echeveria* was exclusively an object of interest for scholars more or less came to an end. Except for Dietrich, *Synopsis Plantarum* (1840) and Bentham & Hooker, *Genera Plantarum* (1862), who regarded *Echeveria* as a subgenus of *Cotyledon*, the name *Echeveria* was given practically universal acceptance. By 1870 *Echeverias* had become popular plants and an object of interest for amateurs as well as professionals.

With the Englishman John Gilbert Baker (1834-1920), who was employed at the Kew library and herbarium from 1866-99, latterly as Keeper of the Herbarium, we step into a new era with regard to knowledge of the genus. Baker was a very versatile botanist and wrote, amongst many other things, handbooks on the *Amaryllidaceae*, *Bromeliaceae*, *Iridaceae*, *Liliaceae* and ferns, and a

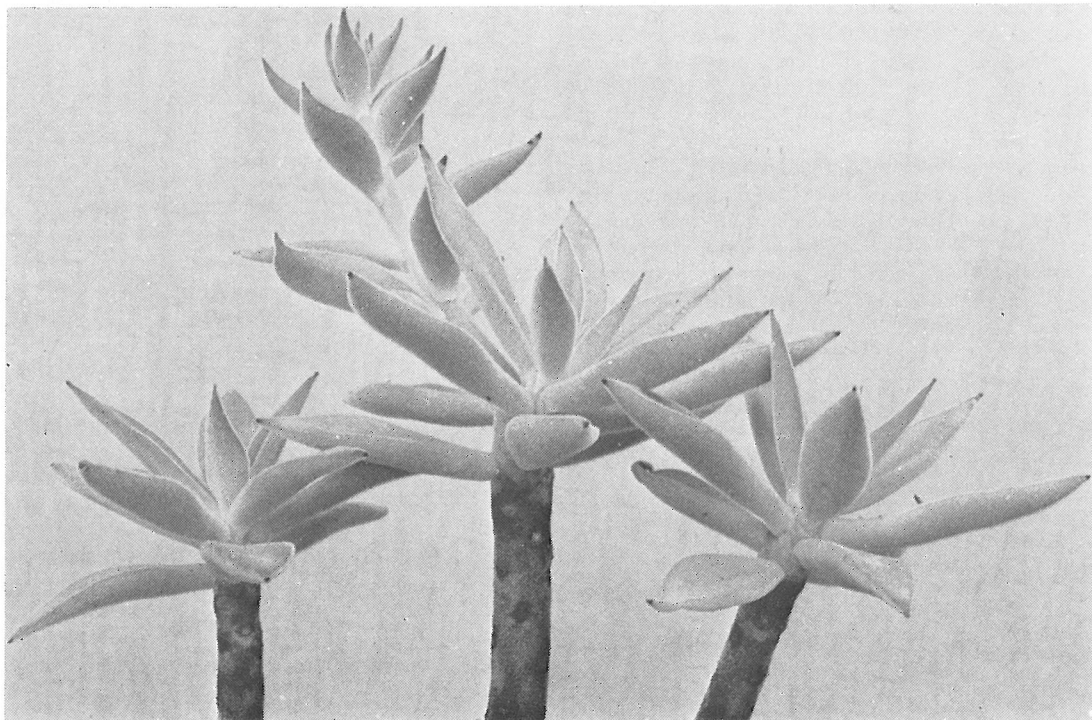


J. G. Baker (1834-1920)

Flora of Mauritius and the Seychelles. Of special importance to us is his account of *Echeveria*. That this came into being is in no small way thanks to W. Wilson Saunders, nurseryman and great plant-enthusiast of Reigate, Surrey, who seems to have had what was for that time a very considerable *Echeveria* collection and published Baker's monograph as part of the first volume of his

Echeveria coccinea, type species of the genus

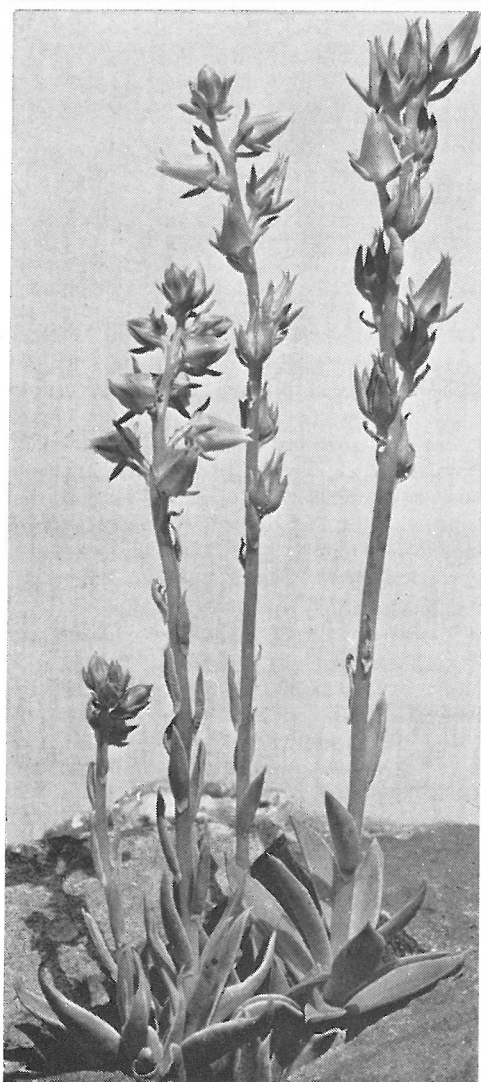
(photo: Buining)





Left, *E. racemosa*
(photo: Buining)

Below left, *E. paniculata*
(photo: Buining)
Below right, *E. bicolor*
(photo: Noltee)



periodical *Refugium Botanicum* (1869), with eighteen partly coloured plates, mostly of lesser known species. Following Bentham and Hooker, Baker considered the genus to be only a subgenus of *Cotyledon*. New species he described which are recognized to this day were *C. agavoides*, *C. nodulosa* and *C. nuda*, and he divided the (sub)genus into five groups whose names, except the last, also continue in use: *Spicatae*, *Racemosae*, *Secundae*, *Gibbiflorae* and *Caespitosae* (Dudleya). In 1870 he described *C. carnicolor* and *C. atropurpurea*, and in 1874 *C. peacockii* and *C. justus-corderoyi*, the latter now treated as a variety of *E. agavoides*.



E. elegans

(photo: Noltee)

The period 1870–1900 did not produce many other new species, but surveys of the genus were given by E. Otto in the *Hamburger Garten und Blumenzeitung* (1873) and by E. Morren in *La Belgique Horticole* (1874). This account also appeared in translation in *The Garden* (1874) with comments by J. Croucher, who had at one time looked after Saunders's collection and was also the first to exhibit *E. peacockii*. A large number of hybrids were produced at this time of which a few, such as *E. × scaphylla* and *E. × mutabilis* are still grown, but most have disappeared from cultivation. Their nomenclature still requires a great deal of research because the descriptions are often brief and the same crossing sometimes received several names.

Prior to 1900, few species had been described by Americans, but from about 1890 American expeditions and individual collectors were active in Mexico and further south. Two of the most important plant-collectors of the time were Carl Anton Purpus (1853–1914), a German who spent the last fifty years of his life in Mexico and sent the plants he found to the United States and to his brother Joseph Anton Purpus (1860–1932) who was head of the botanical garden in Darmstadt for 44 years up to his death; and Cyrus Guernsey

Pringle (1838–1911), whose name lives on in *E. pringlei* and who, like the Purpus brothers, was in close contact with Joseph Nelson Rose (1862–1928) at the United States National Herbarium. Rose himself made many expeditions and wrote a monograph of the American *Crassulaceae* as co-author with Nathaniel Lord Britton (1859–1934), founder and director of the New York Botanical Garden. Many new species and several new genera were described by Britton and Rose, and in their monograph *Echeveria* itself numbers 59 species. With the species described under *Oliveranthus*, *Urbinia* and *Courantia*, genera which are not now recognized, the total comes to 62 species. Most of the species are accepted as distinct, but there are a few exceptions: *E. subsessilis* is, in my opinion, a synonym of *E. peacockii*; *E. scopulorum* is a variety of *E. obtusifolia*; *E. pinetorum* is a variety or synonym of *E. sessiliflora*; *E. toluensis* and *E. byrnesii* are varieties of *E. secunda*; *E. purpusii* Britton, which was not the same as *E. purpusii* K. Schum. (*Dudleya purpusii*) was re-named *E. microcalyx* Britton & Rose; *E. gloriosa* is the same as *E. rubromarginata*. According to Walther, *E. holwayi* is synonymous with the little known *E. acutifolia* Lindley. In 1974 I received a cutting from the Royal Botanic Garden, Edinburgh under the

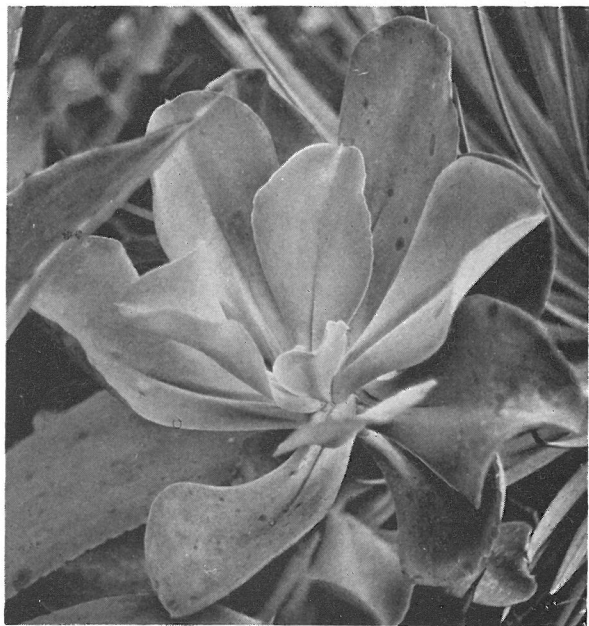


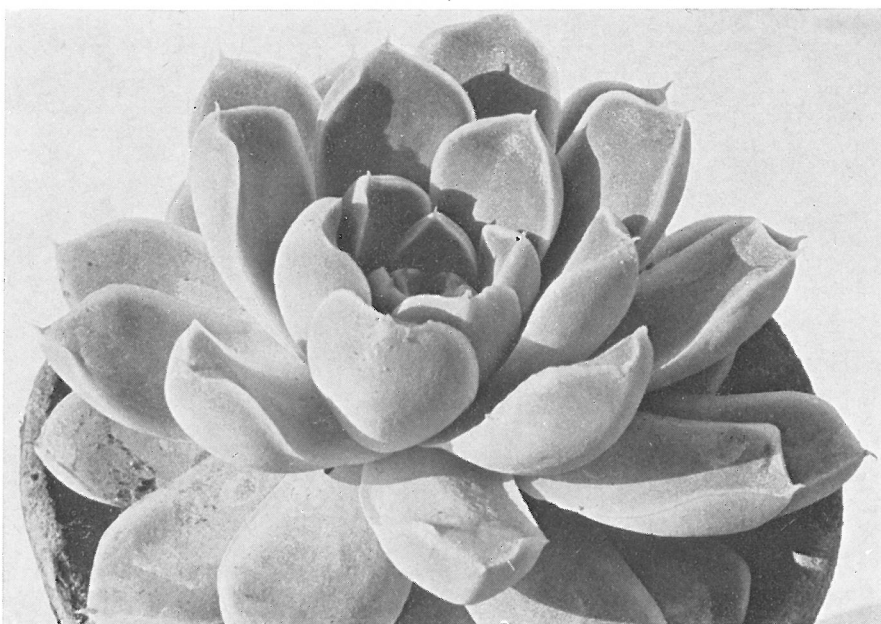
Three species named by J. N. Rose: top left, *E. subalpina* (photo: Noltee); top right, *E. lutea* (photo: Buining); bottom right, *E. holwayi* (photo: van Keppel)

name *E. holwayi* (no. 124/43) supposed to originate from Dr. Rose. This plant has since flowered and is clearly a form of *E. gibbiflora* and totally different from the *E. acutifolia* distributed by ISI, no. 172. *E. hoveyi*, described as a species, is a bright-leaved hybrid.

C. H. Thompson (1870–1931) of the Missouri Botanical Garden, who is commemorated in the generic name *Thompsonella* Britton & Rose, described *E. fimbriata* in 1911. This member of the *Gibbiflorae* is well-marked by its glaucous fimbriate leaves and has been in cultivation for several years. Hybrids of American origin are also distributed under this name.

In 1930 a new survey of the genus was included in a monograph of the Crassulaceae by Alwin Berger (1871–1931). Berger was a famous German expert on succulents who was in charge of the Hamburg Garden 'La Mortola' at Ventimiglia, Italy. Notwithstanding his great knowledge of succulents, it must be said that his work on *Echeveria* is nowadays of little significance. The novelties he described were mostly of hybrid origin.





E. albicans,
first described as
E. elegans var.
kesselringiana by
von Poellnitz
(photo: Noltee)

Karl von Poellnitz (1896–1945) published two articles in *Feddes Repertorium* in 1935–6, followed by a monograph of the genus. A German, like Berger, he took his subject very seriously and revised the genus with great thoroughness. But he was more a theorist, working from herbarium material and most of his 'new' species had been described already or belonged to other genera. Some of his more noteworthy novelties are as follows: *E. chihuahuensis*; *E. elegans* var. *kesselringiana* (upgraded to a species, *E. albicans*, by Walther—in my opinion correctly so); *E. columbiana* which has been re-collected in Colombia, and, I think, a separate species, though

E. chihuahuensis
(photo: Noltee)

united with *E. quitensis* by Walther. *E. backebergii* probably belongs to *E. chidensis*; *E. cuencaensis*, of Peruvian origin is not in cultivation, but is probably a distinct species. Von Poellnitz's views on synonyms and on named hybrids, with information about their origin are very valuable. He undoubtedly read many old catalogues of succulent growers and this part of his work is, for me, the basis for studies of *Echeveria* hybrids.

The second part of this article will review the work of the *Echeveria* expert, Eric Walther, who died in 1959, and some subsequent discoveries.

