

Comment to *Echeveria oswaldiana*

(1) In 1834 Meyen did not have the collection Lechler 1775. It was only Baker who in 1869 used it for his description of *Cotyledon peruviana*.

This concerns **pp. 177 & 178**.

(2) The facts regarding *Echeveria ballsii* are as follows :

Aug 4, 1942 Walther prepared a herbarium specimen of a plant growing in his collection in Strybing Arboretum, Golden Gate Park, San Francisco (CAS 297644) without any determination. Some time later the determination label was completed by the following text : "*Echeveria colombiana*. Grown from plant, coll. by E.K. Balls, n° 7587, Siachoque, Boyaca, Colombia 25/5/1939." That means the plant from Strybing Arboretum, with no known origin, was stated to have been originated from B 7587 and thus had become *E. columbiana*. However, in 1957, Walther redetermined CAS 297644 as "*Echeveria ballsii* sp. nov." and published this new species in *Cact. Succ. J.* (Los Angeles) 30: 44, 1958. Under OCCURRENCE the protologue indicated : "Colombia : Dept. Boyaca, near Siachoque (Type-material), also **US: 1779205 & UC: 682828**".

US 1779205 was prepared "8.25.1939". The determination label bottom right reads : "Plants of Colombia. *Echeveria columbiana* Poell., det. E. P. Killip, no. 7587, Edward K. Balls, collector". A label bottom left provides the following text : "*Echeveria*. Siachoque, dep. Boyaca, Colombia. 25.8.1939. 8,55 ft. Flowers scarlet and yellow, rather short, rounded bells. Slender stems to 12" tall. Leaves small pointed and rather rounded (longwise) small terminal rosettes on grey, woody stems. Growing on the tops of dry, Adobe walls, 7587".

UC 682828 was also prepared "**August 25, 1939**". The determination label reads : "Expedition to the Andes, 1938-1939, Colombia, *Echeveria columbiana* Poell. Dupl. det. E. P. Killip. Altitude 8,500 feet. Siachoque, dept. Boyaca. E. K. Balls B7587."

That means : The 2 herbarium specimens **US 1779205** and **UC 682828** refer to the same collection, namely **E. K. Balls 7587**, determined as *E. columbiana* Poell., and this not by anyone but by E. P. Killip who formerly had collected the type of *E. columbiana* Poell., and as the first undated determination of CAS 297644 proves, Walther himself likewise considered B-7587 as *E. columbiana*.

However by 1957 at the latest, Walther changed his mind :

11/20/57 CAS 297644 was redetermined as *E. ballsii* sp. nov. type.

10/23/57 US 1779205 was redetermined as *E. ballsii* sp. nov. isotype, and

8/24/58 UC 682828 was redetermined as *E. ballsii* topotype.

In short, *E. columbiana* Poelln. had become *E. ballsii* Walther. He seems to have completely tuned out the fact that B 7587 was undisputedly identified as *E. columbiana*, i.e. was not a "novel species" needing a name. However : The description of *E. ballsii* was made from the plant of unknown origin

from Strybing Arboretum, "immortalised" as CAS 297644 – an almost sessile plant with very small leaves and a rather long inflorescence with small flowers – clearly not corresponding to von Poellnitz's description of *E. columbiana*. In other words : The Strybing Arboretum plant cannot possibly have been "grown from plant, coll. by E.K. Balls, n° 7587, Siachoque, Boyaca, Colombia 25/5/1939", as some time after the preparation of CAS 297644 was added on the determination label. And the photos published with the protologue and again in the monograph are irrefutable evidence. *E. columbiana* is a distinctly caulescent plant. This is – another - fraudulent attempt by Walther to enhance the value of a plant with unknown origin from his collection, i.e. its origin from Ball's collection is nothing other than a lie.

Conclusion : *E. ballsii* is one of the numerous plants of unknown origin in Walther's collection at Strybing Arboretum, documented as CAS 297644, certainly long lost to cultivation, and it is pointless to search for it in Colombia or anywhere in Central or South America.

Comment :

To summarise : According to the protologue *E. ballsii* has its origin in the Strybing Arboretum, Golden Gate Park, i.e. in Walther's collection, origin unknow. For the publication in the monograph the plant was upgraded by the additional remark "received from E.K. Balls" and under TYPE this remark was supplemented by the addition "collected in 1939 by E.K. Balls n° 7587, near Siachoque, Dept. Boyaca, Colombia, elevation 8500 feet (CAS n° 297644)". However B 7587 is *E. columbiana*, determined by Killip, the collector of the type of *E. columbiana*, so doubtlessly correct, that means B 7587 cannot possibly represent *E. ballsii*. Walther's redetermination of *E. columbiana* specimens to type, isotype and topotype of *E. ballsii* is an act of fraud. Walther's *E. ballsii* is a - most likely - no longer existing plant. As its origin is completely obscure, it may even have been a hybrid. Walther's text is full of lies that are supposed to make you forget the fact that his *E. ballsii* is without origin. Needless to state that the description is of no relevance at all.

The "mystery" of *E. ballsii* results from the fact hat nobody ever questioned Walther and made the effort to verify his indications. It is and remains incomprehensible that even Kimnach (responsible for the treatment of genus *Echeveria* in IHSP 2003) - who had been involved in the situation after Walther's death and knew how problematic the book was - based himself unreservedly on Walther thus spreading his errors for decades.

While – as hopefully now clearly explained – it is pointless to search for *E. ballsii* Walther in Colombia, it would however be interesting to know what is presently growing near Siachoque

This concerns pp. **176, 177, 178 & 179.**

(3) Flowering stem leaves are **bracts**. p. **181**

(4) A calyx can only be called **discoid** if the sepals are **spreading**, which is not the case here. p. **181**

(5) Neither the protologue nor Moran's description <https://www.crassulaceae.ch/de/artikel?akID=48&aaID=2&aiID=C&aID=1129> nor Kimnach's summary 2003 indicate the leaf margins of *E. coccinea* as **red**. **p. 183**

(6) The inflorescence of *E. coccinea*, is not racemose, it is a **spikes**. **p. 183**

(7) The petals of *E. coccinea* are not entirely hairy, inside they are glabrous. **p. 183**

Comment to *Echeveria adrianae*

(8) The comparison with *E. cuencaensis* is obsolete and the description of the latter is wrong. It was described by Pino & Montesino 2020 as *E. quitensis* var. *cuencaensis* :

<https://www.crassulaceae.ch/de/artikel?akID=48&aaID=2&aiID=Q&aID=5682>

This part of your article has to be revised. **pp. 189 & 191**

(9) these "leaves" according to IHSP are **bracts**. **p. 191**

A question : Why "adria**ae**" and not "adria**a**" ?

Comment to *Echeveria mutisii*

(10) "beveled" is not a botanical term. **p. 193**

(11) The article lacks the illustration (photo or drawing) of a perfect inflorescence. From the poor inflorescences of figs 15 & 16 it is impossible to decide which type of inflorescence it is. You call it racemose and place it in series *Nudae*, however *E. cojitambensis* with which you compare it - according to Pino - belongs in series **Racemosae** !

<https://www.crassulaceae.ch/de/artikel?akID=48&aaID=2&aiID=C&aID=5684> **p. 195**

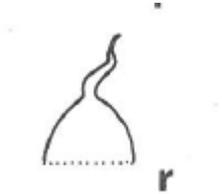
Moreover the comparison with *E. cojitambensis* is flawed in so far as the habitat of the two species differs considerably.

(9) According to IHSP "stem leaves" are bracts. **p. 195**

(12) The inflorescences are so poor that the length of the pedicels of 8 – 10 mm seems rather implausible. **p. 195**

(13) Pedicels "oblanceolate" ? ? ? ? **p. 195**

(14) This is "caudate" :



It is impossible to discern such a feature on your photos and I rather doubt that the sepals of this species are looking like this. However **If** they are indeed looking like this, this would be a truly characteristic feature which would have to be particularly noted. **p. 195**

Comment to *Echeveria boyacaensis*

(15) Two (or three ?) localities are mentioned – which one is the type locality ? i.e. at which locality had the type been collected ? **p.199**

(16) "crass" – what should this mean ? In any case it is not a botanical term. **p. 199**

(17) the "oblanceolate leaves" are bracts. **p. 199**

(18) 2x "mucronulate" in the same sentence **p. 199**

(19) "Androecium inset" – what does this mean ? This is the first time in this article that the androecium is mentioned – is there something special about it regarding *E. boyacaensis* ? It is absolutely unusual that the androecium is mentioned in the description of an *Echeveria*, I wonder what the point of this is. **p. 199**