

Geophytic euphorbias from Chile

Wolfgang Ewest

Postbox 580745
10415 Berlin
Germany

In the past I have often been asked by succulent collectors about the geophytic euphorbias of Chile. So I would like to give a short review of them here. Three *Euphorbia* species were described by R. A. Phillippi in the 19th century from the southern edge of the Atacama Desert: *E. copiapina* Phil., *E. thinophila* Phil. and *E. porphyrantha* Phil. The first two species are easily to find, the third presents some difficulty, but all these three species can only be found after good rains. For *E. copiapina* I would estimate from experience that the amount of precipitation should not be less than 10 mm. Evidently *E. copiapina* and *E. thinophila* are at any rate no “fog-zone plants”. During drought, the aerial, herbaceous branches dry off completely and are blown away by the wind. The plants then “disappear”, as the top of the caudex is buried 10 to 20 cm deep in the soil.

The area to be considered stretches from Vallenar and Huasco to Chañaral and lies at the northern edge

of the winter-rain area. Further south at La Serena, it rains regularly, but from there northwards rains decrease and are more erratic. The region around Copiapo, Caldera and Chañaral only receives sporadic rain. If it rains then rain usually is a single event of one or two days within a year. However, rains often stay away completely for some years. Adult plants of *E. copiapina* withstand droughts of several years in habitat without any problem.

Euphorbia copiapina PHIL.

E. copiapina is a plant of sandy gravel plains. The type locality is at Caldera, and it is very common in the broad flat areas around the town. After good rains you can see thousands of freshly sprouting plants with their crinkly leaves. The colour of the plants varies considerably in this area. There are green plants with yellow flowers (fig. 1) and violet plants with dark violet



Fig. 1: *E. copiapina* at Caldera



Fig. 2: *E. copiapina* at Caldera



Fig. 3: *E. copiapina* at Caldera



Fig. 4: *E. copiapina* south of Copiapo



Fig. 5: *E. copiapina* south of Copiapo



Fig. 6: *E. copiapina* south of Copiapo

flowers, and all possible intermediate colours (figs 2 and 3). Such colour variants can be growing side by side.

Besides the broad valley of the Rio Copiapo, there are further localities for *E. copiapina* in the dry “river plains” south of Copiapo along the RN5. Depending on the locality, further colour variants can be seen. Some plants are bluish-green (fig. 4) and in other places they are yellowish-green (fig. 5). The crinkling of the leaves also varies. Some are crinkled as at Caldera, others noticeably less so (fig. 6). We have not been able to verify the locality mentioned by Rauh (1989) even further south near Vallenar.

Going north from Caldera, there is another plant locality near Chañaral with plants of *E. aff. copiapina* (fig. 7) with leaves hardly crinkled.

Euphorbia thinophila PHIL.

Euphorbia thinophila is also a plant of the sandy gravel plains. The type locality is near Huasco. The species occurs on the coastal plains between Huasco and Carrizal Bajo and is quite common there. The leaves are usually lanceolate, but can vary considerably in width. The number and size of the herbaceous branches depend on the quantity of rain (figs 8 and 10). The colour also varies greatly. In the region of Huasco, dark bluish-green plants (fig. 9) and violet plants (figs 10 and 11) can be found growing alongside green plants and intermediate forms (fig. 12). The proportion of violet plants decreases towards the north, and near Carrizal Bajo we only found green plants (figs 13 and 14).

Further south from Huasco near Choros Bajos there are plants which resemble *E. thinophila* (figs 15 and 16). A correct identification needs further study as south of this locality in Chile there are other *Euphorbia* species with a similar growth form (*Euphorbia elquiensis* Phil.; *Euphorbia ovalleana* Phil.).



Fig. 8: *E. thinophila* at Huasco after light rain



Fig. 9: *E. thinophila* at Huasco



Fig. 10: *E. thinophila* at Huasco after heavier rain



Fig. 7: *E. aff. copiapina* at Chañaral



Fig. 11: *E. thinophila* at Huasco



Fig. 12: *E. thinophila* north of Huasco



Fig. 13: *E. thinophila* between Huasco and Carrizal Bajo



Fig. 14: *E. thinophila* south of Carrizal Bajo



Fig. 15: *E. aff.thinophila* at Choros Bajos



Fig. 16: *E. aff.thinophila* at Choros Bajos



Fig. 17: *E. porphyrantha* at Finca de Chañaral

Euphorbia porphyrantha PHIL.

In contrast to the two preceding species, *E. porphyrantha* prefers rough boulder areas in the mountains. After many years of searching, we succeeded in finding this species near the Finca de Chañaral, one of the two type localities (fig. 17). However, we could not verify the plant from the second locality mentioned by Philippi.

The leaves are lanceolate and, in the localities known to me, green. We did not observe colour variations. The flowers are reddish-brown. Due to their diminutive size, the plants are difficult to find between the large rocks and are not very common, either. The caudex is buried deep in rock fissures and is very delicate and fragile.

Besides the locality mentioned, we also found this

species in the mountains south of Copiapo (fig. 18). According to herbarium deposits (Werdermann 816) in the Botanical Museum in Berlin, there is another locality at Taltal. The distribution area should therefore be quite big. However, I suspect that the distribution of this species in this mountainous area is insular, occurring in small isolated populations. This feature combined with the irregular rainfall means that they are very difficult to find. ♦

References

- EWEST, W. (1998): Geophytische Euphorbien. *Avonia* 16 (1): 9-19
- KLAASSEN, P. (2006): Three Chilean succulent euphorbias. *Cactus World* 24 (3): 145-149
- PHILIPPI, R.A. (1857): *Plantarum novarum Chilensium*. *Linnaea* 29: 42
- PHILIPPI, R.A. (1860): *Reise durch die Wüste Atacama*. Halle, Eduard Anton
- PHILIPPI, R.A. (1873): Descripción de las plantas nuevas incorporadas ultimamente en el herbario Chileno. *Anales Univ. Chile* 43: 479-583
- PHILIPPI, R.A. (1895): *Plantas Nuevas Chilenas*. *Anales Univ. Chile* 91: 487-526
- RAUH, W. (1989): Succulent Euphorbias in Chile. *The Euphorbia Journal* 6: 106-112



Fig. 18: *E. porphyrantha* south of Copiapo