

Some Observations on ECHEVERIA x GILVA Walther

by J. C. Van Keppel

Among the many doubtful *Echeverias* which have often been many years in cultivation, *Echeveria gilva* is one which has for a long time held my special interest. The observations which I have made in the past seem to me to be of importance to record in our Journal.

My notes are divided into two parts: observations on the vegetative and on the reproductive field.

Before going into the subject, I will introduce *E. gilva*.

Walther described it in 1935 in the American Cactus Journal on plants found in culture, of unknown origin. He considered it as a true species, although it was then, and as far as I know after that, never found wild. In further literature I found no exact data about *E. gilva*. H. M. Butterfield mentioned in l.c. 26:43, 1954 that 'Gilva' is said to be a hybrid of *E. simulans*. A. Graf in Exotica 2:990, 1959 stated that 'Gilva' is synonymous to *E. elegans* var. *simulans*, as distinguished from *E. gilva* (without author), fig. page 473. In Exotica 3:1601, 1602, 1963 he reports only *E. simulans* distinct from *E. gilva*, fig. page 673. Walther and von Poellnitz both said that *E. gilva* and *E. elegans* var. *simulans* are different. I have never seen authentic material of *E. elegans* var. *simulans* (*E. simulans* Rose), and I should be pleased if anyone can help me to obtain it.

The value of *E. gilva* as an ornamental plant depends principally on its splendid leaf colouring in winter, especially under dry and cool conditions. The finest colours appear when growing the plants close under the roof of the glasshouse. The inflorescence is of no importance—usually one flower-stalk, resembling the inflorescence of *E. elegans*.

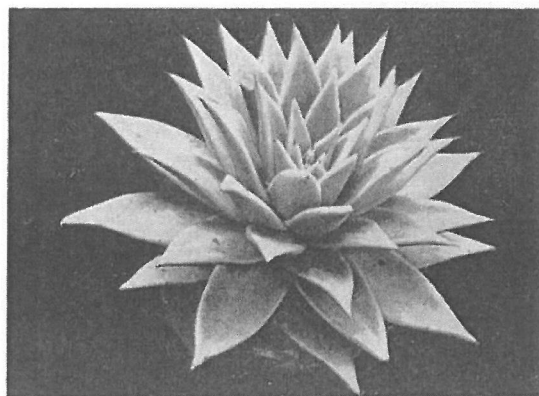
Vegetative observations

The clone of *E. gilva* which is very common in culture is very variable in leaf-form and colour. As *E. gilva* gets increased by commercial growers by leaf-cuttings it was possible to include in my investigation a great many plants. It attracted my attention that some forms, varying in leaf-shape, colour and size, had been increased by leaf-cuttings and kept their properties. I found a form with broader leaves than normally; another form has paler leaves, especially in winter.

Mr. Verhork, a Dutch commercial grower, drew to my attention that he had blue-leaved plants arise spontaneously from green leaf-cuttings. It was not difficult for me to select from his stock of thousands of leaf-cuttings, specimens which formed blue leaves, variegated and striped leaves. Also I found plants with leaves half blue, half green, but by further growth these plants became blue or green. Of most interest are the plants with fine striped and with nearly white, spotted leaves—both in fact variegated forms. In summer when the plants are in full growth these intermediate forms are nearly indistinguishable from the all-green and blue forms. Finally, I found leaf-cuttings producing blue and green offshoots from one leaf. Confronted with so many different descendants of chimaerical origin in one and the same plant, I could not believe that *E. gilva* is a true species. But the only way to know for sure if it is a hybrid was to reconstruct its possible origin.

Reproductive observations

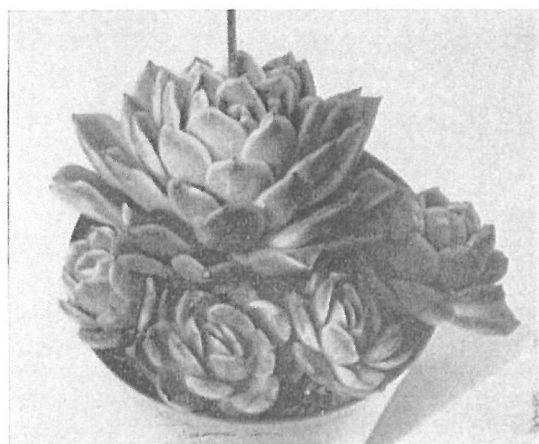
I have pointed out by practical experiments that many true *Echeveria* species are self-fertile and, by fertilization by their own pollen, originate viable seeds. In this way I got true descendants of many *Echeveria* species. I have tried several times to fertilize *E. gilva* with pollen



E. agavoides



E. E EGANS



E. GILVA cv. 'GILVA'

of other plants which, of course, all belong to the same clone. I had no success, no more so with pollen of *E. agavoides* or *E. elegans*. I suppose that the known clone of *E. gilva* is sterile, as are so many other *Echeveria* hybrids. When I got *E. gilva* in 1954 it was unnamed and it was said to be a hybrid of *E. agavoides*, possibly with *E. elegans*. Later on I identified this plant as *E. gilva* Walth. Because the green *gilva* resembles in leaf colour *E. agavoides* and the blue form *E. elegans*, I crossed these two species three years ago and following years, and the result was what I expected: plants of intermediate character between these species, resembling *E. gilva*. This year five of my oldest hybrids flowered, but although the plants scarcely differ from *E. gilva*, the inflorescences were threefold forked. I crossed my F1 hybrids together and I got a great many viable seeds. I sowed some of the seeds directly after ripening and got an F2 generation, varied in leaf form and colour. As far as I can see, plants of my F2 generation resemble *E. gilva* Walth. somewhat more than the F1 generation. It is noteworthy that *E. gilva* Walth.—just as many other *Echeveria* hybrids—seems to be sterile, whereas my F1 generation of *E. agavoides* x *E. elegans* is exceptionally fertile. Maybe *E. gilva* Walth. belongs to the F2 generation of this crossing. I will try to solve this matter by further observations and crossing experiments. In this way I have already made back-crossings between *E. gilva* and both its parents. Those with *E. elegans* as mother-plant were especially successful. In the future I hope to publish my experiences.

Conclusion

E. gilva Walth. belongs to the complex of hybrids of *E. agavoides* x *E. elegans*. I propose to name all hybrids of these two species and their somatic mutants *E. x gilva* Walth. with the plant of his description as leading cultivar.

Echeveria x *gilva* cv. 'Gilva'

Type: Calif. Ac. Science no. 223895. Description in Cact. and Succ. Journal of America 7:61, 1935; fig. p. 71.

Description: Acaulescent, dense rosettes 15-20 cm. diam., older plants with many offshoots; leaves numerous, thick and fleshy, obovate-oblong, obtuse, reddish, mucronate, 5-8 cm. long, 2-3 cm. broad at the widest point, concave on the upper side, scarcely keeled on the backside, colour yellowish-green, translucent on

the edges, often strong flushed reddish on both sides of the leaves; epidermis of crystalline structure. Inflorescence mostly a single cincinnus with ± 12 pinkish-red, yellow-tipped flowers which are yellow inside, 1 cm. long, urceolate; sepals unequal in length, reddish, appressed to corolla; bracts tiny, awl-shaped with spurred base, soon withering and falling off; flower-stalk reddish, 30 cm. long or more, upright, top nodding before flowering; pedicels 1-2 cm. long; flowers in April-May.

E. x gilva cv. 'Gilva' differs from *E. agavoides* in its more obovate leaves, flower colour and mostly single raceme; from *E. 'Corymbosa'* and *E. x haageana* in its urceolate, yellow-tipped flowers, longer flowerstalk and single raceme. Flowers and buds agree with *E. elegans*, but are less pentagonal.

Echeveria x *gilva* cv. 'Blue Surprise'

The blue cultivar which is derived as a somatic mutant of the cv. 'Gilva' I name 'Blue Surprise', because it was a great surprise to me when I ascertained its origin. It differs from 'Gilva' in its blue leaf colour and pinkish flushed leaves in winter. Flowers and growth are the same as the former. From *E. elegans* it differs in its thicker leaves, bigger size of rosette and less pentagonal flowers; from *E. x haageana* in its inflorescence. 'Blue Surprise' is not so common in culture as 'Gilva'. I found it in 1954 in a commercial nursery, growing side by side with 'Gilva'. In 1964 I ascertained its origin from Mr. J. Verhork at Voorschoten, Holland, whom I have to thank for his co-operation. This cultivar can be propagated by leaf-cuttings as easily as 'Gilva'. It is a good plant for commercial growers by its splendid colour in winter. I have not yet seen that leaf-cuttings revert to the green form, although there are variegated intermediate forms which are not important enough to describe. The populations of *E. x gilva* raised by me are still under study and will not be distributed other than for serious study. If it becomes evident that any clone has better qualities for the trade, it will be named later.

The author would be grateful for any suggestion leading to solve these problems in *Echeveria*.

Not least I thank Dr. B. K. Boom and Mr. W. Ruys of the Institute of Horticultural Plant Breeding at Wageningen, Holland for their much appreciated help by sowing my crossings in the equipment of the "Succulentarium".