

Oscularia cremnophila Van Jaarsv., P.Desmet & A.E.van Wyk, sp. nov., differt foliis luteoviridibus subglau-cis turgide trigonis ad subclavatis, cortice suberoso-alato, et inflorescentia laterali cymosa statim distinguitur.

TYPE.—Western Cape, 3218 (Clanwilliam): Steenboks-fontein, sandstone inselberg, sheer south-facing cliff, (–AB), Van Jaarsveld 18404 (PRE, holo.!).

Pendent, densely branched, glabrescent, succulent shrub 600–750(–1000) mm tall; old stems woody, up to 30 mm diam., bark of basal portion rough, very corky, and becoming distinctly winged with age, leafless for up to 250 mm, becoming distally thinner with leaves; young stems green at first, soon becoming brown and woody. *Leaves* crowded on short branches (almost touching) and rather dense on longer shoots, sessile, united at base, decussate, entire, ascending, spreading, with two or three pairs (with persistent withered older pair), thick, trigonous to turgidly trigonous (almost club-shaped) and broadest near the tip, 10–15(–25) × 6–10(–12) mm, 7–9(–15) mm diam., pale yellowish grey-green, surface minutely papillate (not due to bladder cells), waxy layer present, apex obtuse, mucronate, edges of keel and margin sometimes reddish and falcate along keel. *Inflorescences* in lax to dense, terminal and laterally spreading cymes (3-flowered and 10–17 mm diam.) forming panicles, 40–50 × 25–40 mm, with up to 23 flowers on bibracteate peduncles up to 20 mm long; centre flower (of each 3-flowered cyme) opening first; bracts leaf-like, club-shaped. *Flowers* diurnal, pleasantly scented, pedicellate; pedicels 3–5(–8) mm long. *Sepals* 5, unequal, with translucent margins, outer two triangular-club-shaped, 5–7 × 3.0–3.5 mm, inner three triangular-lorate, 3.5–4.0 × 3 mm. *Petals* pink, in one series,

spreading, linear-lanceolate, 6–7 × 1.4–2.0 mm, apices obtuse to subacute. *Stamens*: staminodes filamentous surrounding stamens in a central cone; filaments ± 3 mm long, upper third pink, lower two-thirds translucent, white, clasping ovary; anthers 0.6–0.7 mm long, yellow, not completely overtopping stigmas. *Gynoecium* 4 mm diam., with 5 raised obtuse sutures, minutely papillate, pale translucent green, elevated up to 1.2 mm; nectaries 5, narrow, 2 mm long, crenulate; placentation parietal; stigmas 5, arising from centre between sutures or lobes, subulate, erect, 2.5 × 0.6 mm, dark maroon, papillate and not completely concealed by stamens. *Capsule* 5-locular, hygrochastic, top-shaped, 5 mm diam., 6–7 mm deep, top rounded, open capsule up to 9 mm diam.; valves 3 × 2.5 mm, covering membranes complete, valve wings broad, rectangular. Closing body absent. *Seeds* pear-shaped, 0.8 × 0.6 mm, brownish, minutely tuberculate. *Flowering time* in early spring, August–September. Figures 3, 4.

The genus *Oscularia* consists of 23 species confined to the western part of Western Cape and the coastal regions of Northern Cape (Hartmann 2001). *Oscularia* species are distinguished by a combination of vegetative and floral features. Their leaves are characteristically trigonous (often falcate) and markedly keeled, bearing a distinctive grey-green wax layer of densely placed platelets, and a thick crystal sand layer in the outer epidermis (Hartmann 2001). *Oscularia* species are also characterized by their usual rich terminal and lateral cymes forming a dense inflorescence. In some species (including the new species) the inflorescence consists of an aggregate of 3-flowered cymes. The stamens and staminodes are collected into distinct cones. The five large nectaries are arranged in a ring. The capsules are not very firm as in the related *Lampranthus*.



FIGURE 3.—*Oscularia cremnophila*. A, branch showing lateral cymose infructescence, $\times 1$, Van Jaarsveld 18404; B, flowering branch, $\times 1$, Van Jaarsveld 19003. Artist: Lisa Strachan.

Oscularia cremnophila is readily distinguished from other members of *Oscularia* by its distinctive winged corkification of the older and lower branches. It appears to be closest to *O. vredenburghensis* (L.Bolus) H.E.K.Hartmann, a coastal species from about 80 km further south. From this and other *Oscularia* species it can be further separated by its yellowish, grey-green, very turgid, trigonous leaves (leaf diameter of 6–12 mm in *O. cremnophila*, 5–6 mm in *O. vredenburghensis*), abruptly narrowing to the base (almost club-shaped appearance). The leaf surface is minutely papillate (not due to bladder cells). The inflor-

escence consists of densely arranged 3-flowered cymes, the flowers open in succession, first the centre flower, then the others, resulting in a long, protracted flowering season (starting at the beginning of April in cultivation). The leaves, which are clearly the most succulent in the genus *Oscularia*, are densely arranged on branches and can be interpreted as an adaptation to its dry cliff face habitat.

Ripe capsules of *Oscularia cremnophila* are hygrochastic, their valves opening when wet, only to close again on



FIGURE 4.—Basal part of stem of *Oscularia cremnophila*. Note distinctive, winged, corky bark.

drying. Seed dispersal is facilitated by rain drops and germination occurs in crevices on the cliff face. Seeds sown at Kirstenbosch in the autumn of 2004 germinated within three weeks. Seeds of most mesembs are dispersed by raindrops, a mechanism known as ombrohydrochory. Kinetic energy of the falling raindrops is used to either eject the seeds sideways, following the impact of the drops on the covering membranes or simply to splash out the seeds, as described by Hartmann (1990) and Parolin (2001). Once the open capsule dries, in most mesembs its expanding keels contract and the whole structure closes, remaining closed until the next precipitation event. Unlike *O. cremnophila*, most other cliff-dwelling mesembs have capsules that, once opened, remain open and the seeds are then released and dispersed by wind (Van Jaarsveld & Van Wyk 2003).

Oscularia cremnophila occurs on a single quartzitic sandstone inselberg at an altitude of 122 m on the Steenboksfontein Farm (Figure 5). The farm, situated on the Atlantic seaboard and just south of Lambert's Bay, has two distinct inselbergs about 500 m apart. The vegetation consists of a mosaic of strandveld and succulent karoo. The northern inselberg (121 m asl) is slightly larger, but with a marked absence of *O. cremnophila*. Parts of the southern inselberg have been mined for its quartz gravel which was used to build the breakwater at Lambert's Bay harbour. *O. cremnophila* occurs on the sheer southern cliff faces of the southern inselberg in a small population of ± 24 plants. The drooping shrubs are up to 0.75 m tall, hanging like bunches of grapes from crevices in the solid white quartz rock face. They grow in

association with *Aloe mitriformis*, *Adromischus hemisphaericus*, species of *Matricaria*, *Crassula* and *Ornithogalum*, and *Conophytum albiflorum*. Rainfall of 200–300 mm per annum is experienced mainly in winter, but additional precipitation due to regular dew and fog from the Atlantic Ocean also occurs.

The new species should be regarded as threatened, as it is known only from this single population of which the habitat has been mined, with the possibility of further mining for dimension stone used in the construction industry in the future.

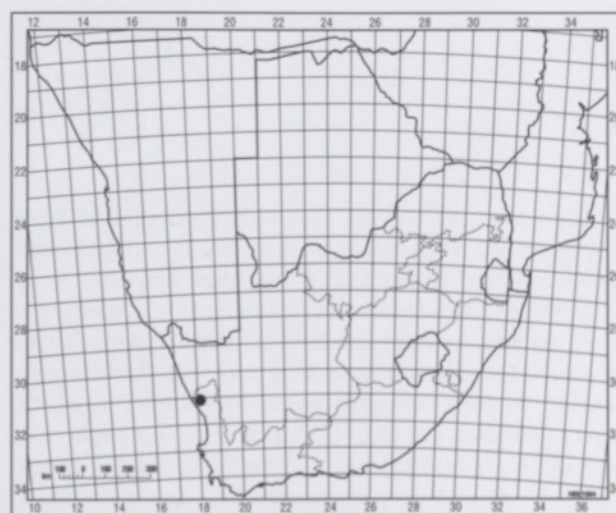


FIGURE 5.—Known geographical distribution of *Oscularia cremnophila*.

Oscularia cremnophila was first collected by the second author in 1995. Subsequent collections from the same locality were made in February 2004 by the first author and again in August 2004, with cuttings and seed collected for cultivation at Kirstenbosch National Botanical Garden.

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