

EUPHORBIACEAE

A NEW SPECIES OF *EUPHORBIA*

Euphorbia celata R. A. Dyer, sp. nov. dioecia, habitu subterraneo valde distincta. Herba perennis dioecia tuberosa. *Tuber* plus minusve napiformis durus 3–5 cm diam. *Caules* subterranei 2—plures, erecti vel usque 15 cm rhizomatosi; rami epegaei, 1–2 cm longi, 3–5 mm crassi. *Folia* pauca alterna subsessilia obovata vel non-nunquam rotunda, 3–6 mm longa, 3–5 mm lata, apice recurva acuta. *Bractae* 2 (3), foliaceae. *Inflorescentia masculina* cymosa; cyathium primum sessile, lateralia 2 (3), breviter pedunculata, cyathium circiter 4 mm longum, infra glandulos 2,5 mm diam.; glanduli transverse late elliptici 1,5 mm lati concavi, margine leviter

crenulati; lobi oblongi circiter 0,75 mm longi, fimbriati. *Cyathium femineum* solitarium; involucrum mox deciduum. *Ovarium* sessile glabrum; styli 2,5 mm longi, fere ad medium lobati, apice bifidi. *Capsula* 5,5–6 mm diam., sessilis obtuse triangulata vel subglobosa; semina subpyriformia, 3 mm longa rugulosa.

TYPE: Cape Province, Vanrhynsdorp District, Moedverloer, 4 km N. of Hol River railway siding, E. slope of white quartzite hill in grey clay beneath quartz pebbles, 100 m alt., 12 May 1973, *H. Hall* 4272 (PRE, holo.).

Perennial dioecious, glabrous herb with a tuberous root-stock. *Tuber* more or less turnip-shaped, 3–5 cm diam., hard. *Stems* 2–several, subterranean, short or rhizomatous up to 15 cm long or longer, slender or becoming tuberous at random intervals in a tangled mass; branches above ground 1–2 cm long, 3–5 mm thick, succulent, with few leaves and older parts with an incrustation of latex exudate. *Leaves* few, obovate to subrotund, 3–6 mm long, 3–5 mm broad, alternate, subsessile, somewhat fleshy, dull grey-green, with acute, recurved apex. *Inflorescence*:—*Male*, 1–few at ends of branchlets, cymose; cymes subtended by 2(3) foliaceous bracts, with subsessile central cyathium and 2(3) shortly pedunculate, lateral cyathia; bracts usually somewhat narrower than leaves, about equal in height to the central involucre; peduncles about 4 mm long; cyathia about 4 mm long, 4 mm diam. across involucre-glands, 2,5 mm diam. below glands; involucre early deciduous, with 5 glands and 5 oblong, fimbriate lobes about 0,75 mm long; glands approximate, broadly transversely elliptic, 1 mm broad, concave with inner margin upturned and outer margin subcrenate. *Female* cyathia solitary, terminal; bracts similar to those of male; involucre subcylindric, 4 mm long, 1,5 mm diam., abscissile at base and soon falling (leaving developing capsule exposed); glands similar but smaller than in male and with

smooth outer margin; ovary sessile, obtusely 3-angled; style 2,5 mm long, divided to nearly half-way; stigmas bifid. *Capsule* 5,5–6 mm diam., 4–5 mm high, very obtusely 3-angled or subglobose; seeds somewhat pear-shaped, slightly angled, 3 mm long, with rugulose surface. FIG. 2.

Only a botanically-interested person with keen eyesight would have noticed the presence of this insignificant-looking species. Such a person is Mr Harry Hall. He first located it in 1970 and revisited the site in May 1973 when his record reads very much as follows: This morning I went to the locality, exactly 40 km north of Vredendal (Cape Province), with a blazing sun and sweltering north-east wind for company. The state of the veld is as bad as ever I have seen it, for there has been no rain for about a year. I knew the precise spot and found a few specimens making a stout effort to flower: without the preliminary knowledge of my first discovery it would have been worse than looking for the proverbial needle in a haystack. Even so, I was on my hands and knees—no fun on a quartzite gravel—for less than 2 cm of dull grey-green growth appears above ground. The plant has a fairly distinctive main tuber and the branches spread out below ground to emerge at random, sometimes quite far from the root-stock: great care is needed when excavating from the iron-hard clay for one never knows where the parent tuber is." The plant has no claim to beauty, is Harry Hall's final verdict.



FIG. 2.—*Euphorbia celata*
R. A. Dyer (H. Hall
4272, holotype, in PRE).

Botanically, however, it is of more than passing interest because of its combination of characters: it is dioecious, it has a hard, tuberous, storage rootstock and mostly subterranean stems, thus ensuring survival of the species in a most inhospitable environment. When Harry Hall made his first collection, complete tubers were not obtained, but both male and female branches were present. In the second collection there were three complete male plants and one female. Whether or not one might find a bisexual plant with further searching is a question for future observation.

At this stage Harry Hall recollected having seen a similar-looking plant in 1970 near Groenrivier, 39 km S.W. of Garies, that is not much more than 130 km north of Vanrhynsdorp, and decided to make another visit on 6/6/73 on my behalf. His actual travelling was 400 km from Vredendal and back. Again his account is of special interest: "I enjoyed myself, all alone, *mining* for the plants: remembering its peculiar habit of virtually living under rocks I went armed with a steel crowbar and was thus able to explore the full range of the complicated rootsystem. Now and then there was a tuber-like root, but mostly it was such an entanglement of roots and branches and secondary tuberous growths that one was never sure just how many individual plants were involved. In the broken-granite rock-clefts there was more aerial growth than in the open where only the merest fragments came above ground. Flowers were present but I saw no sign of young fruits." Harry Hall was also impressed

by the curious reticulated surface of the tuberous growth. This may have been accentuated by a shrivelling due to the very dry conditions.

I am satisfied that the two collections are of a single species which varies in its underground growth-form depending largely on the local geological formation. The characters of the cyathia from the two collecting sites correspond closely.

Genera in several other families have evolved different though equally interesting adaptations in order to survive in the same area, such as, for example, Crassulaceae, Mesembryanthemaceae, Asclepiadaceae and even Geraniaceae.

The specific epithet *celata*, meaning *hidden* or *concealed*, seems appropriate, firstly for a plant which has escaped earlier detection in a botanically well-trodden region and secondly it is well supported by the observations of the collector. In seeking an affinity for *E. celata* among the species recorded in the monograph on the Succulent Euphorbieae of Southern Africa by White, Dyer and Sloane, 1941, it finds a position somewhere between such different species as *E. gariepina* Boiss. and *E. juttiae* Dinter.

CAPE.—3117 (Garies): 39 km S.W. of Garies on N. bank of Groenrivier (—DD), *H. Hall* 4232. 3118 (Vanrhynsdorp): Moedverloer, 4 km N. of Hol River railway siding (—AD), *H. Hall* 3553; 4272.