

Cyphostemma hardyi Retief, sp. nov., *C. bainesii* (Hook. f.) Desc. affinis, a qua fructu glanduloso pubescente differt.

Planta succulenta, radici tuberosa, usque 0,5 m alta. *Caulis* cylindraceus, aliquando ramosus, ramulis junioribus tectis trichomatibus longis, albis, multicellulosis, eglandulosis; cortice brunneo. *Folia* spiraliter disposita, simplices vel 3(5) foliolata, sessilia vel petiolata, pubescentia; lamina obovata, 130–320 × 8–20 mm, margine dentata rubella, apice obtusato vel truncato; stipulis praesentibus. *Inflorescentia* cymosa foliis opposita; pedunculis cum pedicellis trichomatibus multis multicellulosis stipitatis glandulosisque. *Flores* tetrameri, bisexuals. *Calyx* cupulatus, integer. *Corolla* flavo-virens; petalis 2 mm longis, cucullatis, caducis. *Stamina* filamentis dorsifixis. *Ovarium* biloculare, disco et glandibus quattuor cingente, ommibus ovario adnatis. *Stylus* persistens, stigmatibus bilobato. *Fructus* bacca globulosa, 11–15 mm longus, pubescens glandulosus, ruber vividus. *Semina* cristata.

TYPE.—Transvaal, 2427 (Thabazimbi): wooded koppies on the farm Malmanieshoek, Waterberg District (—BA), *Hardy 1256* (PRE, holo.; K; MO).

Succulent up to 0,5 m in height with a tuberous rootstock. *Stem* cylindric, sometimes branched, younger covered with long, whitish multicellular, non-glandular trichomes and stalked, glandular trichomes; bark brown, peeling off in pale brown strips. *Leaves* spirally arranged, simple or 3(5)-foliolate, base of terminal leaflet symmetrical, bases of lateral leaflets asymmetrical, main leaf sessile or petiolate but leaflets sessile, petioles 60–90 mm long if present, greyish green, densely covered with white, multicellular trichomes lying more or less in the same direction, trichomes tubular or cells of the trichome twisted, all laminae obovate, 130–320 mm long and 8–20 mm broad, margin toothed, reddish, apex rounded or truncate; stipules lanceolate, ± 15–20 mm long, densely hairy, sometimes denticulate, teeth and apex sometimes gland-tipped. *Inflorescence* a leaf-opposed corymbose cyme; peduncles and pedicels with numerous, multicellular, stipitate glandular trichomes, 0,7–1 mm long. *Flowers* tetramorous, bisexual. *Calyx* 0,5–0,7 mm in height entire,

cupshaped. *Corolla* 4-partite, yellowish green tinged with maroon; petals ± 2 mm long, hooded at the apex, becoming reflexed, caducous. *Stamens* 4; filaments dorsifixed; anthers 0,5–0,7 mm long. *Ovary* bilocular, surrounded by a disk and four glands alternating with the petals and stamens, all adnate to the ovary. *Style* 0,8–1 mm, persistent, ter-



FIG. 29.—*Cyphostemma hardyi*. Hardy 1256, holotype in PRE.

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FIG. 30.—*Cyphostemma hardyi*. Painting of part of holotype plant by Cythna Letty.

minating in a slightly bilobed stigma. *Fruit* a globose to ovoid bright red berry, 11–15 mm long and 12,5–14 mm broad, glandular pubescent, glands 1–1,3 mm long, stalked, multicellular with globose heads. *Seed* 8–10 mm, crested, embedded in a firm bright yellow mass. Figs 29 & 30.

TRANSVAAL.—2427 (Thabazimbi): wooded koppies on the farm Malmanieshoek, Waterberg District (–BA); *Hardy* 1256 (K; MO; PRE); amongst boulders of Waterberg conglomerate, farm Malmaniesriver, Waterberg District (–BA), *Hardy*, *Retief* & *Herman* 5287 (PRE); south-western slopes of the Kransberg (–BC), *Dyer* & *Verdoorn* 4230 (PRE).

C. hardyi is endemic to the Transvaal, where it is known only from a restricted area in the western part of the Waterberg mountain range. It occurs on slopes amongst boulders of Waterberg-conglomerates in the shelter of trees such as *Albizia tanganyicensis* Bak. f. subsp. *tanganyicensis*, which also has a conspicuous papery bark. Other succulents like *Huernia quinta* (Phill.) White & Sloane, *Aloe chabaudii* Schoenl., *A. marlothii* Berger, *A. transvaalensis* Kuntze and *A. aculeata* Pole Evans are found growing in the same area.

The peculiar growth form of *Cyphostemma hardyi* distinguishes it from all the other known species of the genus in the Transvaal which are herbaceous or succulent, prostrate or erect creepers. The stems of *C. hardyi* are sometimes very short, because the plants are often subjected to veld fires causing them to die back. The leaves fall off during the winter resting period and leave prominent leaf scars.

C. hardyi has an extraordinary distribution. The species of the genus *Cyphostemma* that show the closest affinities with *C. hardyi* occur in South West Africa and in no other part of southern Africa. *C. hardyi*, *C. bainesii* (Hook. f.) Desc. and *C. uter* (Exell & Mendonça) Desc. are all stem-succulents having caudices more or less 0,3–0,8 m high whereas *C. jutiae* (Dinter & Gilg) Desc. and *C. currorii* (Hook. f.) Desc. [= *C. cramerianus* (Schinz) Desc.] are succulent trees 4–7 m in height. Although the leaves of *C. bainesii* resemble those of *C. hardyi*, the leaf margin is shallowly toothed in the case of *C. bainesii*, and the leaves of *C. hardyi* are much more densely covered with the long thin multicellular hairs, present on both species. *C. uter* has leaves with a conspicuous wavy margin and multicellular, glandular hairs similar to those on the fruits of *C. hardyi*, as well as multicellular non-glandular hairs with peculiar outgrowths.

The first record of *C. hardyi* in the National Herbarium was from a steep south-western slope of the Kransberg where Dr R. A. Dyer and Dr Inez Verdoorn collected material of the species during January 1942. The species has been named after Mr D. Hardy, who is a well known horticulturist on the staff of the Botanical Research Institute.

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