

# JOURNAL of the ADELAIDE BOTANIC GARDENS

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Board of the  
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## PLANT PORTRAITS

From time to time as suitable material becomes available for illustration, hitherto poorly figured, or poorly documented species will be featured to assist identification, or to provide records in cases where taxa may be threatened with extinction. The descriptions will be based on living material which should be a help where herbarium specimens have formed the basis for description of the type.

This series may also provide an opportunity for the skills of Australian and other botanical artists to be brought together for their own intrinsic value, and to allow comparison and a record of different styles of execution.

The editors will be glad to receive line drawings of appropriate quality and text arranged in the following format, particularly from workers specialising in groups for which there is a poor iconography or poor documentation. The formal description and illustration of new species and notable cultivars may also be submitted, as may comparative drawings and descriptions which assist with the identification of critical botanical and horticultural groups of vascular plants.

Plant Portraits 1-3 were drawn by L. Dutkiewicz, the botanical artist of the Adelaide Botanic Garden.

### 4. *Didymocarpus kinnearii* F. Muell. (Gesneriaceae)

*Didymocarpus kinnearii* F. Muell., *Vict. Nat.* 3 (11): 159 (1887 March); *Bot. Centralbl.* 30: 278 (1887).

Synonym: *Roettlera kinnearii* (F. Muell.) Fritsch in Engl. & Prantl (eds). *Die natürl. Pflanzenfam.* 4. (3b): 147 (1894).

Flowered Adelaide Botanic Garden on December 1, 1976, accession number 17-77, herbarium voucher AD Herb. Pl. Cult. 6985. Collected by T.R.N. Lothian from Rex Creek, Mossmann River, Mt. Lewis plateau alt. c. 1250m., Queensland on September 5, 1976.

Perennial herb, c. 10 cm tall; *rhizome* horizontal, brown, clad with transparent hairs and old leaf bases, c. 4 cm long, 1 cm thick; *roots* arising from along length of rhizome, initially white, c. 1 mm thick, soft, later fibrous; *leaves* c. 6.8 cm long, 4 cm wide at widest part, ovate, irregularly and sometimes doubly serrate, leaf base  $\pm$  cordate, adaxially softly pilose, hairs transparent, 6-8 celled, c. 2.5 mm long, lamina rugose, glossy, green, lateral veins c. 7, impressed, abaxially softly pilose especially on raised veins, hairs transparent, 6-8 celled, c. 2.5 mm long, lamina pale matt green; *petiole* c. 4.5 cm long, 2 mm thick, circular in cross section, flattened at base, 3.5 mm wide, stipular tufts of hair, vestiture adpressed, transparent, 5-8 celled; *flowers* on erect axillary *peduncle* c. 6.5 cm long, flushed purple below, fading to pale green, spreading pilose, hairs transparent; *pedicels* c. 5 mm long, cymose, glabrescent, pale green to white, bracteate; *bracts* c. 4 mm long, to 1 mm long toward apex of inflorescence, spatulate, pale green, transparent pilose; *sepals* 5, shortly fused at base, 1.5 mm long, white with greenish tip, spreading transparent pilose, hairs 4-5 celled; *petals* 5, fused at base, tube c. 2 mm long, free lobes ovate, tips rounded, c. 4 mm long, c. 3 mm wide, sinuses between lobes minutely puckered, imbricate in bud, pale lilac, when expanded white with faintest lilac flush, glabrous; *stamens* 2, inserted opposite each antero-lateral and anterior corolla lobe sinus, remaining 3 stamens vestigial, each less than 1 mm long, filiform; *filaments* of fertile stamens c. 2 mm long, white, sigmoid curved; *anther* 1 mm long with distal and proximal horns, yellow, connective swollen, white, initially adherent together; *ovary* 1 mm long at anthesis, bilocular, violet; *style* 4 mm long, white flushed violet, exerted 2 mm outside bud (when bud c. 3 mm long); *stigma* capitate, papillose, white; *ovules* pale brown, numerous; *fruit* fusiform, erect, straw coloured, 9 mm long, 1.5 mm wide, beak 4 mm long, valves 4, spirally twisted; *seeds* c. 0.7 mm long, brown, ovoid.

*Didymocarpus kinnearii* F. Muell. commemorates Robert Kinnear, "a strenuous promoter of horticulture at our metropolis", according to Mueller (1887) in an article published in March of that year, and made the more memorable by also containing the description of *Rhododendron lochae* F. Muell. However, Kinnear did not discover the *Didymocarpus*. It was collected by Messrs. Sayer and Davidson at, and near, the summit of Mount Bellenden Ker in Queensland, their type material being later housed at Melbourne.

Mueller stated that *D. kinnearii* "comes near to *Baea* (sic), and recedes from most of its congeners". When unnamed material flowered at Adelaide after being collected by Noel Lothian in the vicinity of Mount Lewis in September 1976, the plants were taken to be a *Boea*. Enquiries to Mr. B. L. Burttt at the Royal Botanic Garden, Edinburgh, provided the correct identity of the plant based on comparison with the type, which Burttt happened to have on loan from Melbourne at the time. It also seemed that the Lothian collection, about 70 miles north north west of the type locality, was the first since the taxon was described, because Brisbane held no material. However, Mr. B. Hyland kindly sent unidentified *Dockrill* 806 from North Mary Logging Area, 16° 30'S, 145° 15'E (QRS 007742) collected 20.i.1974, and *Flecker* 6394 from the east slope of Mount Bartle Frere (QRS 007741) collected 28.x.1939, and identified as *Boea hygroskopica* F. Muell. by C. T. White on 25.i.1940. Both specimens, from the Forestry and Timber Bureau at Atherton, Queensland, appear to be *D. kinnearii*, and are fruiting.

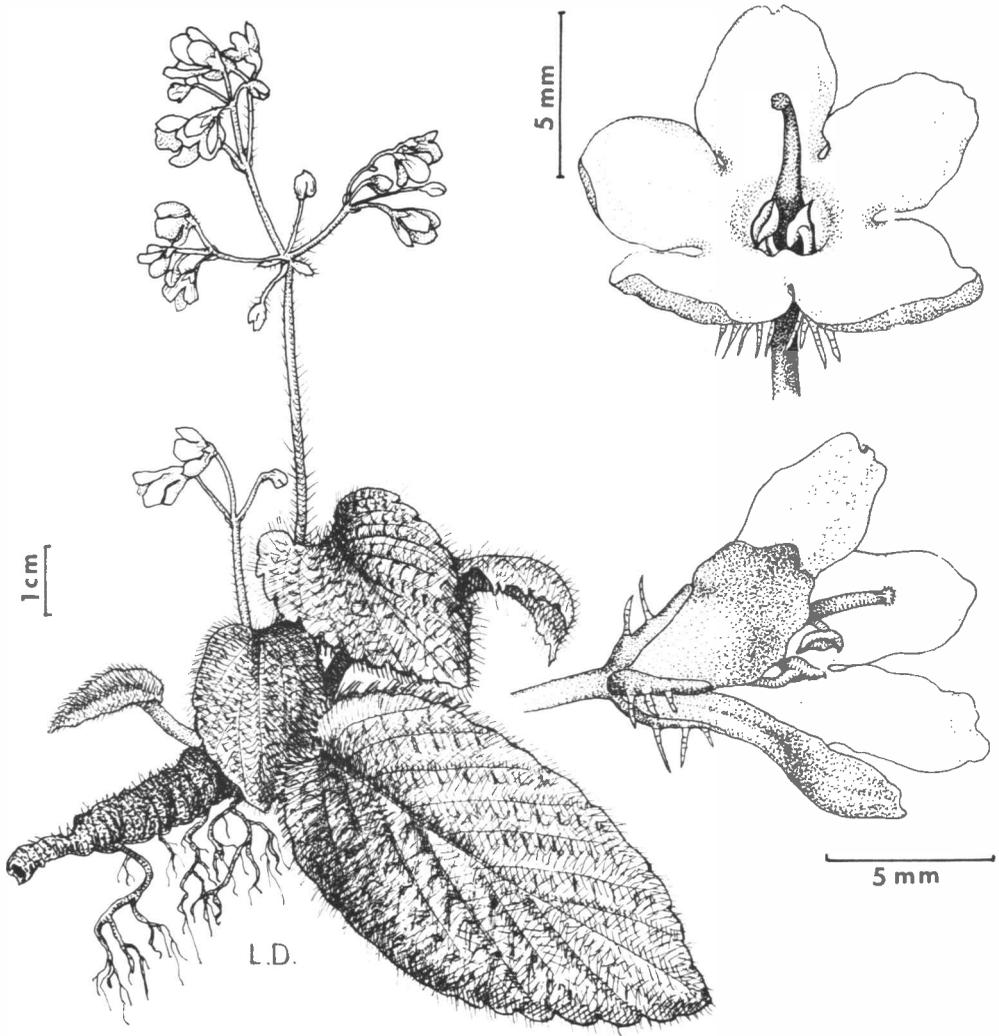
The question of the assignation of the species into an appropriate genus is still unresolved. Mr. Burttt observes (personal communication January 24, 1977), "Despite the fact that the fruit on the type does not really twist, I have a strong feeling that this very isolated '*Didymocarpus*' is really an anomalous species of *Boea*. There are no fully ripe (dehisced) fruits on the type . . . . .".

Field observations are required to confirm if the exerted stigma at bud stage of flowering signifies a protogynous breeding system, or whether it represents a condition created by cultivation. The leaves die down completely in our summer.

Mueller, F. v. (1887). Descriptions of new Australian plants. *Victorian Naturalist* 3(11); 159-60.

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flowering plant with two views of flower

### 5. *Dendrobium isochiloides* Kränzl. (Orchidaceae)

*Dendrobium isochiloides* Kränzl., *Österr. bot. Zeitschr.*, 334 (1894).

Flowered Adelaide Botanic Garden on April 29, 1976, accession number 202-73, herbarium voucher AD Herb. Pl. Cult. 6394. Collected from Kassam Pass, Morobe Province, Papua New Guinea, alt. c. 1000 m. by collector for the National Herbarium and Botanic Garden, Papua New Guinea.

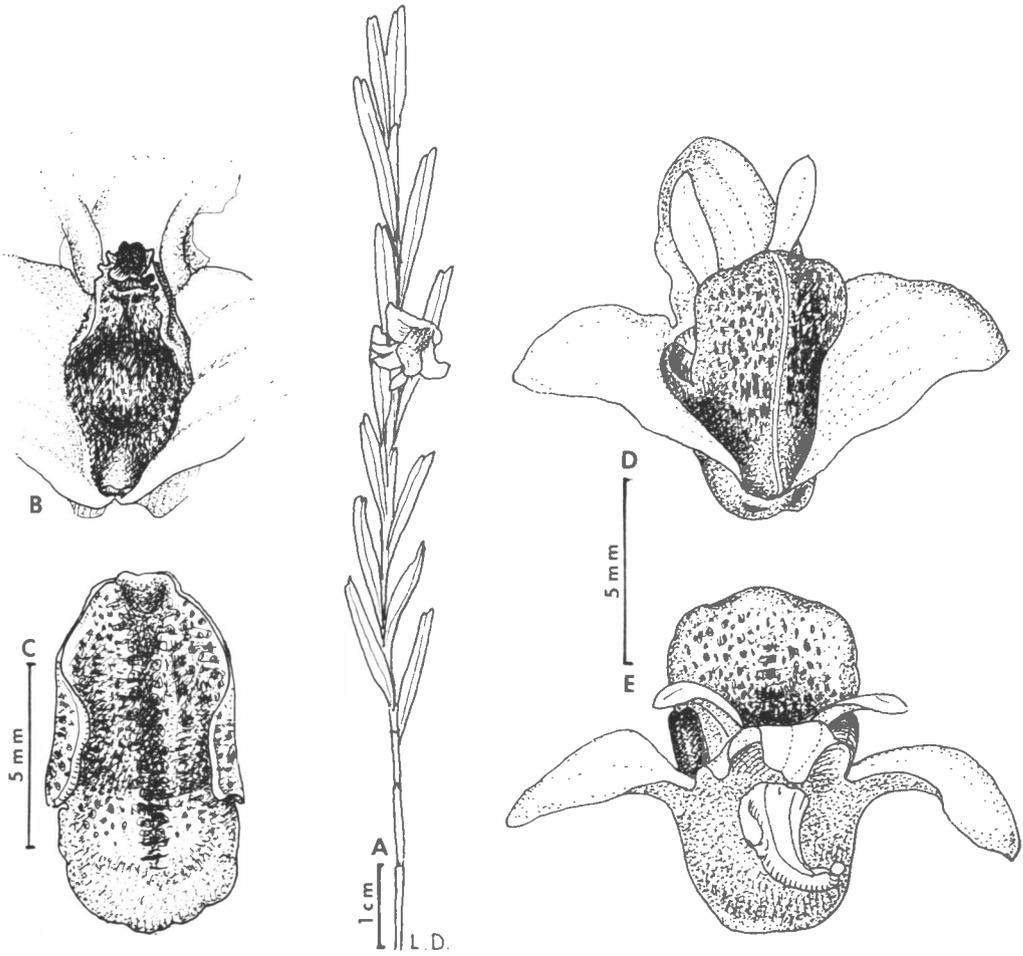
A perennial *herb* c. 16 cm tall, caespitose; *rhizome* short, roots c. 1.5 mm diameter, spreading; *stems* slender, compressed, c. 0.75 mm diameter, leafy to base; *leaves* linear-oblong, c. 2 cm long, 2 mm wide at widest point, twisted through 90° gradually throughout whole length, apex obliquely notched, c. 1 mm deep, midrib of two pale green grooves above, a single pale green vein on either side, interconnected with right-angled veins, reticulations rough but with sheen, veins similar underneath, more glossy, dark green, leaf sheaths c. 7 mm long, greenish-purple above, becoming chestnut near base of stem; *pedicels* axillary, 4.5 mm long (including ovary), pale green, subtending bract 1.5 mm long, pale green; *flowers* small but attractive, c. 9 mm long, *outer tepals* at first directed forward, later all reflexed, *laterals* c. 9 mm long including mentum, 5 mm wide at base, pale green, glossy, glabrous, *dorsal tepal* c. 5 mm long, 2 mm wide at base, colour and texture like laterals, *mentum* c. 5 mm long, 4 mm wide, obtuse at closed end, pale green, glossy, *inner lateral tepals* reflexed, c. 5 mm long, 0.5 mm wide at base, pale green, *lip* posterior in bud, later anterior by resupination, c. 7 mm long, mobile, somewhat convex, spatulate, tip fleshy, pale brown with minute purple papillae, limb glossy, narrowed at base, channelled, purple blotched, margins with two erect wings, c. 4 mm long, 1 mm high, wing tips acute; *column* curved, blotched purple on green ground; *rostellum* purple; *pollinia* four, yellow; *fruits* not seen.

I am grateful to Mr. J. Womersley for helping confirm the identity of this cultivated material in the absence of an up to date key. The taxon is allied to *D. obovatum* Schltr., *D. poneroides* Schltr. (synonym, *D. isochiloides* Kränzl. var. *pumilum* J. J. Sm.), and *D. macrum* Schltr., all illustrated in Schlechter, R., *Repert. Spec. Nov. Regni Veg. Beih.*, Bd. 21, Figuren-Atlas zu den Orchidaceen von Deutsch-Neu-Guinea, Tafel CCXI, Nrs. 795, 796 and 797 in that order. *D. poneroides* is also illustrated in *Nova Guinea* 8: t. 26 (1909), there being a flower with dissections.

Plants of *D. isochiloides* grow easily in a pot of pine bark in the Adelaide orchid house, and flower sporadically throughout the year.

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a. flowering plant, b. detail of column, c. lip from above, d. flower from below, e. flower from above.

### 6. *Mediocalcar abbreviatum* Schltr. (Orchidaceae)

*Mediocalcar abbreviatum* Schltr., *Repert. Spec. Nov. Regni Veg. Beih.*, Bd. 1, Heft 3, 229-30 (1911).

lc. *Repert. Spec. Nov. Regni Veg. Beih.*, Bd. 21, Figuren-Atlas zu den Orchidaceen von Deutsch-Neu-Guinea, Tafel LXXXV, Nr. 311 (1923-28), flower with dissection only.

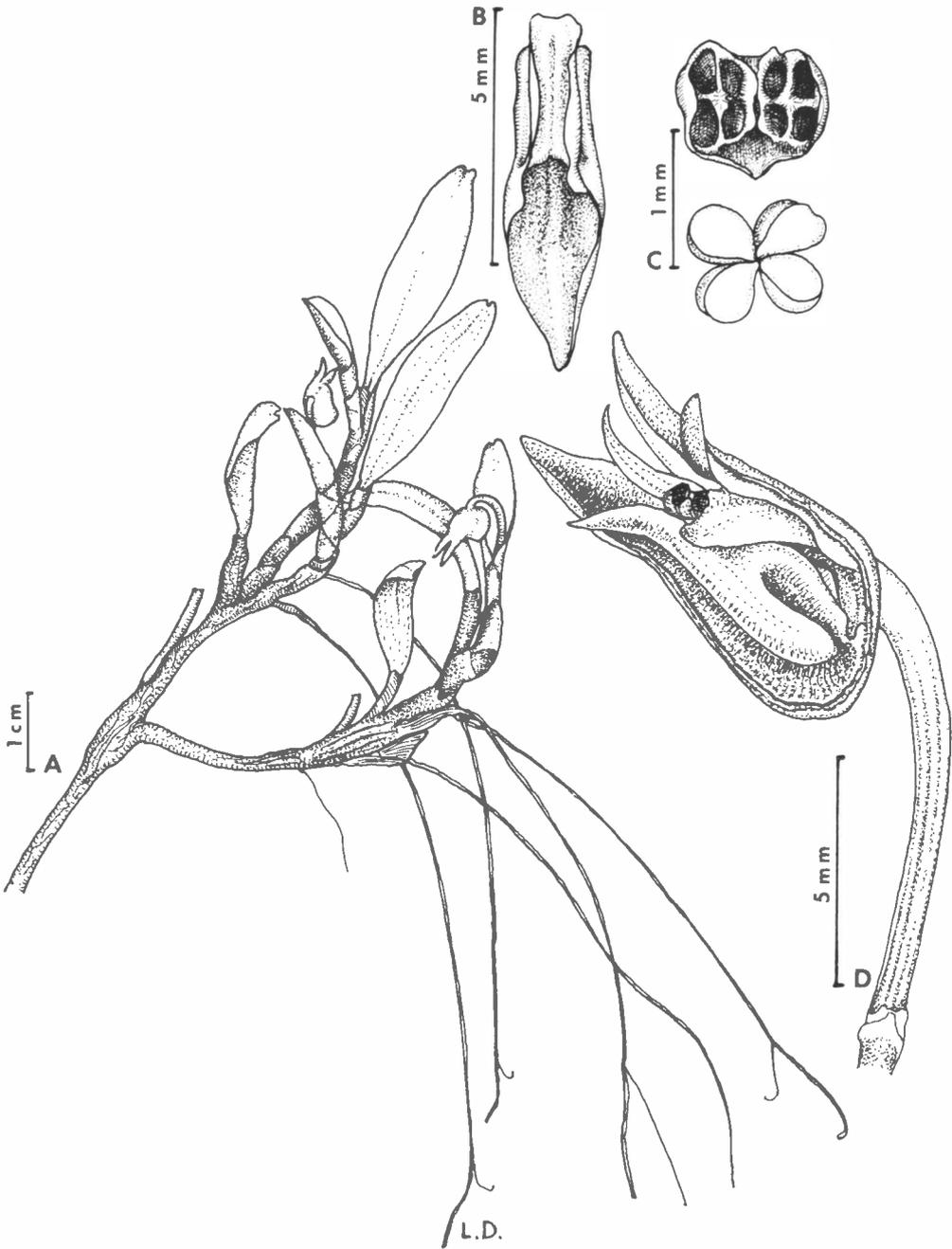
Flowered Adelaide Botanic Garden on May 20, 1976, accession number 229-74 (15), herbarium voucher AD Herb. Pl. Cult. 6357. Collected from Mount Kaindi, Morobe Province, Papua New Guinea, alt. c. 2000 m. by collector for National Herbarium and Botanic Garden, Papua New Guinea.

Perennial *herb* c. 14 cm tall, spreading; *rhizome* invested in white-veined brown sheaths when old, c. 2 mm diameter; *roots* aerial, protruding through sheaths, wiry, slender, sparsely branched, c. 9 cm long, c. 0.5 mm diameter, reddish at first, later brown, minutely puberulous; *pseudobulbs* single leaved, truncate when old, c. 2.5 cm long, c. 2.5 mm diameter, olive-green, terete, leaf sheaths four, green, flushed brown towards tip, spotted brown below, c. 8 mm long, obtusely pointed at tip; *leaf* erect, c. 5.5 cm long, 1.7 cm wide at widest point, ligulate-lanceolate, tip notched, c. 1 mm deep, base cuneate, glabrous, glossy, dull green above, midrib grooved, paler green underneath, matt, margins purple, venation obscure, fleshy, articulation with pseudobulb flushed purple; *flowers* terminal, c. 8 mm long, solitary, arising from unrolling leaves, *pedicel* c. 6 mm long, rose coloured, *outer tepals* free, directed forwards, c. 4 mm long, 1.5 mm wide, pale yellow, *mentum* obtusely urceolate, c. 5 mm long, 5 mm wide, rose coloured, *inner lateral tepals* c. 7 mm long, linear, yellow, directed forward, *lip* c. 7 mm long including spur (which c. 2 mm long), 2.5 mm wide, yellow, limb ligulate, tip concave, acute, with two lateral wings; *column* c. 5 mm long, white; *pollinia* eight, pale yellow; *ovary* ridged, c. 1 cm long, rose coloured; *fruits* not seen.

*Mediocalcar abbreviatum* is striking when in flower for the contrasting colours of the mentum and tepals. The habit is, however, rather straggling and unattractive in our specimens. The plants are pot grown in pine bark in an orchid house, and receive no special treatment.

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a. flowering plant, b. lip from above, c. pollinia, d. side view of part dissected flower.

### 7. *Craterostigma pumilum* Hochst. (Scrophulariaceae)

*Craterostigma pumilum* Hochst., *Flora*, 670 (1841).

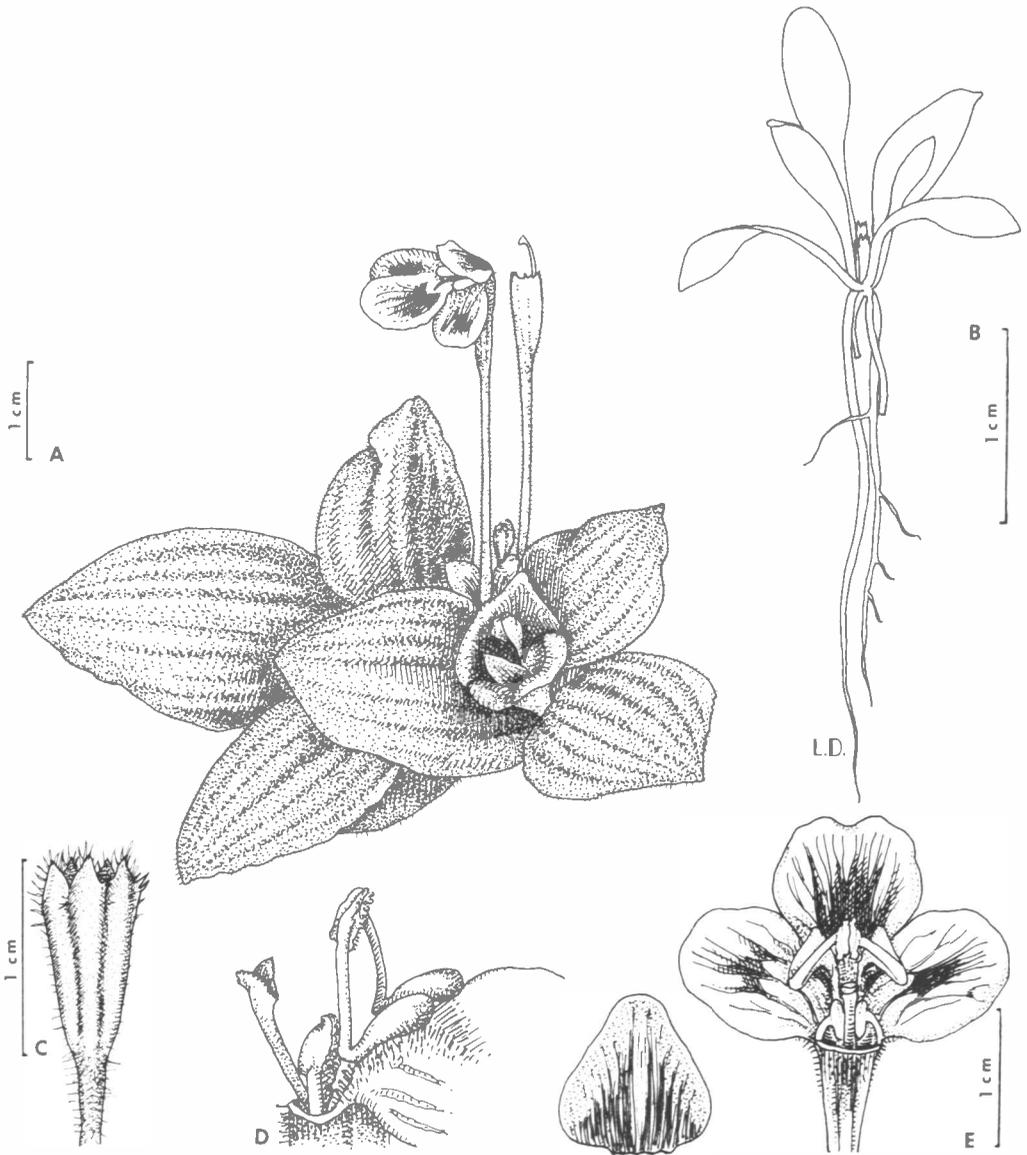
1c. *The Floral Magazine*, 10: t. 534, (1871), flowering plant in colour; *Trans. Linn. Soc. London Ser. II Bot.* 5: t. 34, 343-55 (1899), diagrammatic studies of all parts including their anatomy.

Synonymy: *Dunalia acaulis* R. Br. in Salt, *Abyss. Append.* 64 (1814), nom. nud.  
*Torenia pumila* (Hochst.) Benth. in DC., *Prod.* 10:411(1846)  
*Torenia auriculaefolia* Dombrain, *Flor. Mag.* 10: t.534 (1871)  
*Craterostigma auriculaefolium* (Dombrain) Benth. & Hook. f. ex Vatke, *Linnaea* 43: 308 (1882).

Flowered Adelaide Botanic Garden on February 2, 1976 accession number 231-73, herbarium voucher AD Herb. Pl. Cult. 6786. Collected from Surud Forest Reserve, northern Somalia by P.R.O. Bally and R. Melville on January 17, 1973, number 16007.

An acaulescent perennial herb, c. 4.5 cm tall, dying down in the hot season (personal communication, Melville); roots numerous, reddish, succulent, c. 5 cm long and arising from a short rhizome; leaves arranged in a rosette, rhombic-ovate, often somewhat oblique, c. 5 cm long, 3 cm wide at widest part, simple, margin crenate and ciliate, tip obtuse, base cuneate into a flattened petiole c. 8 mm wide, lamina dark lustrous green above, glabrous and punctate, veins sunken but obscure, silvery-green beneath, shortly pilose especially on prominent almost parallel longitudinal veins, veins c. 7, subsidiary reticulate venation obscure; flowers bisexual, solitary, arising from centre of rosette; scape pilose, pedicel c. 4 cm long, green flushed red, subtending bract triangular, c. 5 mm long, ciliate, green; calyx c. 9 mm long, five fused lobes each later channelled and connected by hyaline tissue, giving a five-ribbed appearance, green, pilose, free tips of lobes c. 1.5 mm long, ciliate; corolla gamopetalous, imbricate in bud, hypogynous, bilabiate, limb obliquely horizontal, upper lip oblong-deltoid, 8 mm long, 7 mm wide at base, externally violet with white suffused margins, lower lip three-lobed, c. 1.1 cm long, the middle lobe c. 7 mm long, 8 mm wide, internally blotched and veined violet towards mouth of corolla tube, mouth white papillose, the lateral lobes c. 6 mm long, 6 mm wide, internally veined violet in centre, tube 9 mm long, cream at base, flushed pale violet towards mouth; stamens four, connivent in two pairs, anterior pair each with 2 mm long basal yellow boss decorated with yellow papillae and emerging from mouth of corolla tube, the white filament bases then reflexed into mouth c. 3 mm, then abruptly redirected forward and upward under the internal surface of upper lip of corolla c. 5 mm, anther bilocular, opening by longitudinal slits, white, c. 2 mm long, held c. 7 mm beyond mouth of corolla tube, posterior pair held c. 2 mm beyond mouth of corolla tube, filaments c. 1 mm long; ovary superior, bilocular, septum in lateral plane, one loculus smaller than the other causing the ovary to appear oblique in insertion, style deflected upwards against internal surface of corolla, c. 1 cm long, glabrous, white, stigmas two, laminate, papillose, white, held c. 5 mm beyond mouth of corolla tube; ovules small and numerous, borne on axile placentation; fruit not seen, (fide Ward & Dale) cylindrical-ovoid, twice as long as calyx which it distends and splits, fruit splitting septically; seeds not seen, (fide Ward & Dale) brown, pitted, numerous with nearly straight embryo.

*Craterostigma pumilum* has been previously introduced to cultivation, for the Royal Horticultural Society in England awarded a first-class certificate of recommendation to a plant exhibited as *Torenia auriculaefolia* Dombrain by Messrs. Rollisson of Tooting, London on April 5, 1871, (Dombrain, 1871). This material was illustrated in colour in the same publication by Worthington G. Smith, and appears identical with the Adelaide plants. Furthermore, Ward and Dale (1899) published a line drawing of a plant also identical with the Adelaide material, these authors having obtained their plant live in May 1897 at Cambridge Botanic Garden, England from a donation by Mrs. Lort Phillips of material collected in Somaliland. Other Lort Phillips specimens in the herbarium at Kew, Ward and Dale describe as "multi-flowered", which differs from the Adelaide plants and those in the two nineteenth century illustrations.



a. flowering plant. b. rooted offset. c. calyx. d. detail of spatial arrangement of genitalia. e. flower from above with upper corolla lobe removed.

Hemsley and Skan (1906) referred to Lort Phillips material of *C. pumilum* collected from the Wagga Mountains of Somaliland, also noting that it occurs in Ethiopia, Kenya and what is now Tanzania, but it seems that all cultivated material has, or has had apparently solitary flowers. Close inspection of Adelaide material, however, shows that a bract subtends the conspicuous pedicel, and that there is a short peduncle hidden in the rosette of leaves.

Dr. Melville of Kew has kindly identified the collection and noted that it was collected on open ground below a small limestone hill in plateau country, at that time lacking flowers but being assigned to Scrophulariaceae. The wild plants measured about 5 cm tall and in his letter (March 5, 1976) Melville continues, "I didn't realise at the time (of collection) that it is a resurrection plant, that is to say, the rootstock aestivates after the leaves have died down, and all that I saw was the bare stem and the fruit capsules".

Seeds from the Bally and Melville collection are reported to have failed to germinate at Kew, but as seed had also been sent to Adelaide which supplied the plant illustrated here, as well as to the Pacific Botanic Garden in Hawaii, it has been possible to send a live plant to Kew. It is not known whether these are the only plants in cultivation.

The Adelaide material is pot grown in a shaded glasshouse and watered more frequently when leaves and flowers are being produced. Ward and Dale (1899) describe the production of offsets from the axils of the lowermost leaves, the daughter plants, see b, soon developing a rhizome, and the process affording a useful means of propagation in cultivation. The species has not been overwintered in Adelaide outdoors, but trials are to be made once stock is increased. Seed germination is epigeal, and root pigmentation develops soon after, a feature dealt with at length by Ward and Dale.

Dombroin, H.H. (1871). *Torenia auriculaefolia*. *The Floral Magazine* 10: t. 534.

Hemsley, W. B. & Skan, J. A. (1906). In Thiselton-Dyer, W. T. 'Flora of Tropical Africa' 4(2): 330.

Ward, H. M. & Dale, E. (1899). On *Craterostigma pumilum* Hochst., a rare plant from Somaliland. *Trans. Linn. Soc. Lond.*, Ser. II Bot., 5: 343-355, t. 34-5.

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