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Notes on the section Loligo in the Genus Ceropegia, with a description of a new variety of Ceropegia de-vecchii Chiov

by

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The section *Loligo* was established by E. CHIOVENDA (1932,**2**: 303) for a small group of *Ceropegia* which are characterized by a thickened annulus between the inflated base and the tube of the corolla and by the presence of spreading projections in the sinus between the corolla-lobes. Two species were included in this section: *Ceropegia variegata* (Forsk.) Decne. from Arabia and *C. de-vecchii* Chiov. from Somalia.

H. HUBER in his recent *Revision der Gattung Ceropegia* (1957: 141) does not recognize *C. de-vecchii* as a distinct species but considers it a variety of *C. variegata* on the strength of its similar corona and in spite of considerable differences in the proportions and appearance of the respective corollas of the two plants.

The presence of a similar corona in *Ceropegia* with diverse corollas has been a matter for speculation for some time; the subject is discussed by A.A. BULLOCK (1952: 405) and again by H. HUBER in the introduction to his revision of the genus. No entirely satisfactory explanation has yet been given.

It seems reasonable to treat as members of a single species such *Ceropegia* as, with an identical corona, intermediate forms lead unequivocally from one type of corolla to another.

When examining dried *Ceropegia*-specimens, however, the taxonomist finds himself severely handicapped: the usually fleshy flowers dry badly and loose their original shape. It is often impossible to know whether one deals with immature, mature, or faded flowers; proportions and size of the various parts are subject to considerable changes in the course of their development from bud to maturity. Other characters, such as marginal clavate hairs, are rarely preserved in dry specimens.

In these circumstances it is tempting to rely mainly on the coronal structure for classification, but to do so too onesidedly can lead to over simplification.

In the absence of intermediate forms between *C. variegata* and *C. de-vecchii* the present writer feels justified in maintaining their specific status. He bases this claim on the study of living plants of *C. de-vecchii* from British Somaliland and of a new variety of the latter which was discovered recently in Kenya and in Tanganyika.

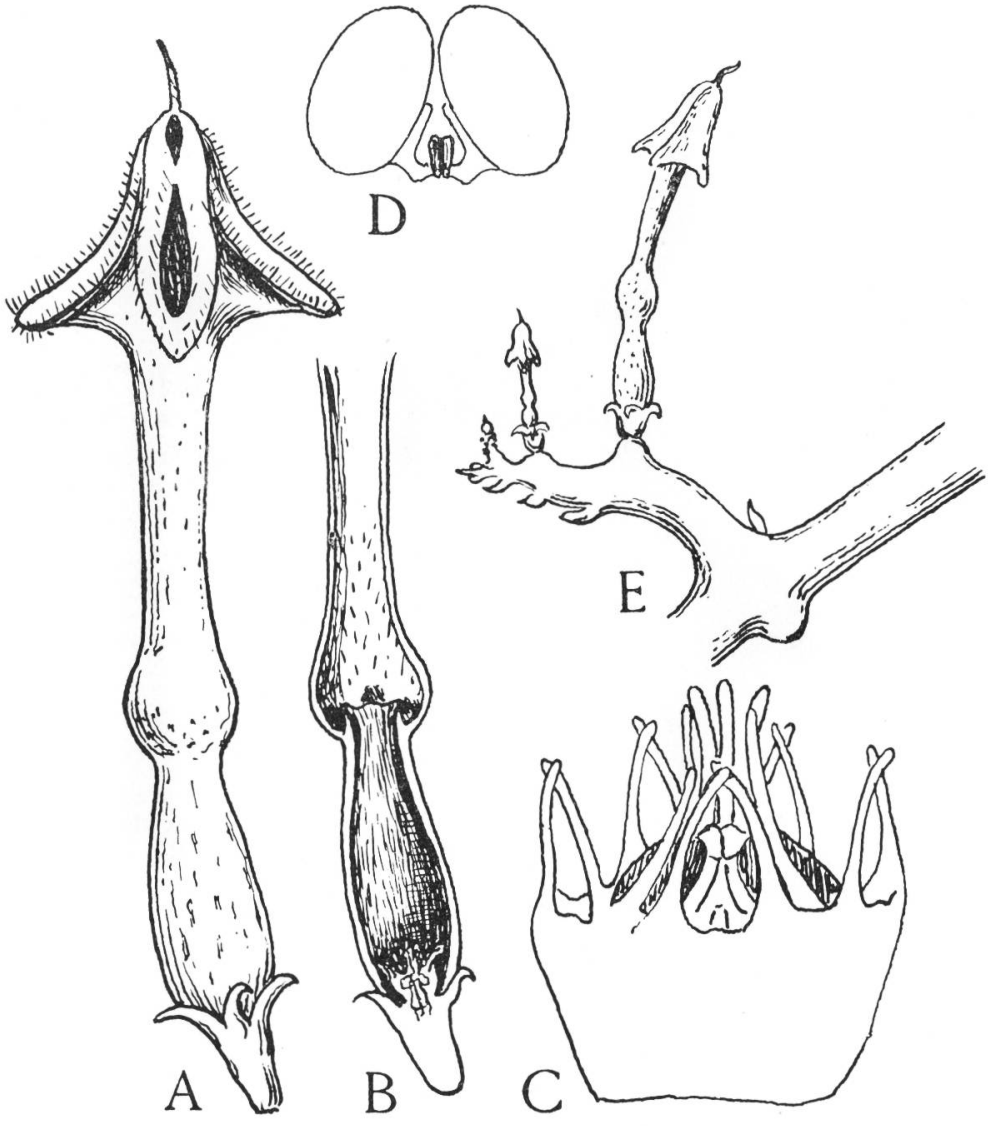

FIG. 7. — *Ceropegia variegata* Decne. (*C. tubulifera* Defl., type; after *Mem. Inst. Egypt.* 3, 2, t. 1. 1896). A: Flower (mature). B: Flower (section). C: Corona. D: Pollen masses. E: Peduncle with immature flowers.

The corollas of the two species under discussion differ as follows: in *C. de-vecchii* the inflated base is much shorter and wider in relation to the tube; the lower portion of the tube above the annulus is not, as in *C. variegata*, just slightly widened without other structural differentiation, but it is a distinct secondary inflation, differentiated from the tube proper by the lack of hairs on its inner surface and by thicker, slightly ribbed walls, dark red inside; in *C. de-vecchii* the projections in the sinuses between the lobes are 2-3 times longer than those of *C. variegata*, giving the flowers a curious octopus-like appearance which is expressed in the name which CHIOVENDA chose for the section.

Incidentally, both CHIOVENDA and HUBER, with dried material only at their disposal, described the sinus projections as hollow, cylindrical, entirely closed horns or sacs. E. WERDERMANN, in his *Revision der ostafrikanischen Arten der Gattung Ceropegia* (1939: 197), analyses critically CHIOVENDA's description of the entirely closed corolla of *C. de-vecchii* and points out its improbability for a species in a genus so thoroughly adapted for insect pollination. He reconstructed with considerable accuracy the aspect of the living flower from the type material. And indeed, in the living, fully developed, flowers the sinus projections prove to be open channels whose function is evidently to lead the pollinating insects towards the mouth of the tube. These channels remain open for a few hours only, after which they close tightly again and prevent any insects which may have entered the tube from emerging until the pollinating process has been accomplished and the corolla drops off.

The writer has not seen living plants of *C. variegata*, but relies on a beautifully executed colour plate made from DEFLERS' [1] gathering on Djebel Ures in Hadramaut which was cultivated in Cairo, where it flowered. It shows the plant in natural size; a cross-section of a fully developed flower is of particular value, for it shows the characteristic difference in the tube from that of *C. de-vecchii* (fig. 7).

A line-drawing of BOTTA's type, collected on Djebel Ras in Yemen, was published in *Ann. Sc. nat.*, ser. 2, **9**: 262, t. 9, 1838 and shows an immature flower and its parts (fig. 8).

The type of *Ceropegia de-vecchii* is illustrated in *Flora somala* **2**: 302 and shows a dried, mature, and probably slightly faded corolla and a flowering growth bearing two peduncles (fig. 9).

The writer made a drawing from a living plant of *C. de-vecchii*, collected by E. F. PECK near Hargeisa in British Somaliland (fig. 10). It differs from the type only in the very short subulate processes of the corolla lobes; these seem to vary greatly in length for, on a flower collected by G. POPOW at Baidoa, only 38 miles from the type-locality, the processes are only half as long as those of the type (*G. Popov 1059*, Nov. 4,1953, in E.A. Herb.).

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[1] *Ceropegia tubulifera* Defl., in *Les Asclépiadacées de l'Arabie tropicale*, t. I. 1896. The identity of *C. tubulifera* with *C. variegata* cannot be doubted.

A comparison of Figs. 7 and 9 shows more clearly than a lengthy description the characteristic differences between the corollas of *C. variegata* and *C. de-vecchii*.

Figs. 10 and 11 show that the differences between CHIOVENDA'S *C. de vecchii* and the plant from Kenya are of a different order. Here, the relationship is sufficiently close to justify the description of the latter as a variety of *C. de-vecchii* Chiov.

The name was chosen in honour of my wife, its discoverer, Mrs. Adelaide Bally. *Ceropegia de-vecchii* Chiov. var. *adelaidae* Bally (fig. 11), which is described below, differs from the type by its horizontally spreading, more broadly channelled, acute sinus processes, bearing longitudinal lines of short hairs on their inner, or upper, surface, the shorter corolla-lobes, the distinctly reflexed, blackish brown, horny, claw-like leaves.

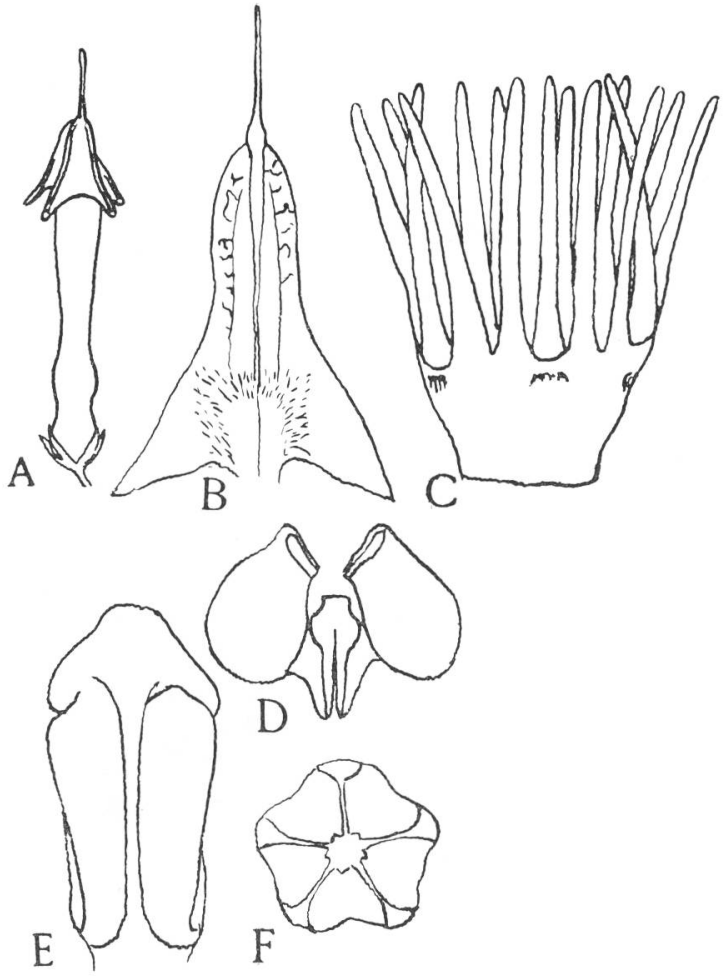

FIG. 8. — *Ceropegia variegata* Decne. (type; after *Ann. Sc. Nat.*, serie 2, 9: 262, t. 9. 1838). A: Flower (immature). B: Section through upper portion of the corolla. C: Corona. D: Pollen masses. E: Anther, side view. F: Staminal column viewed from above.

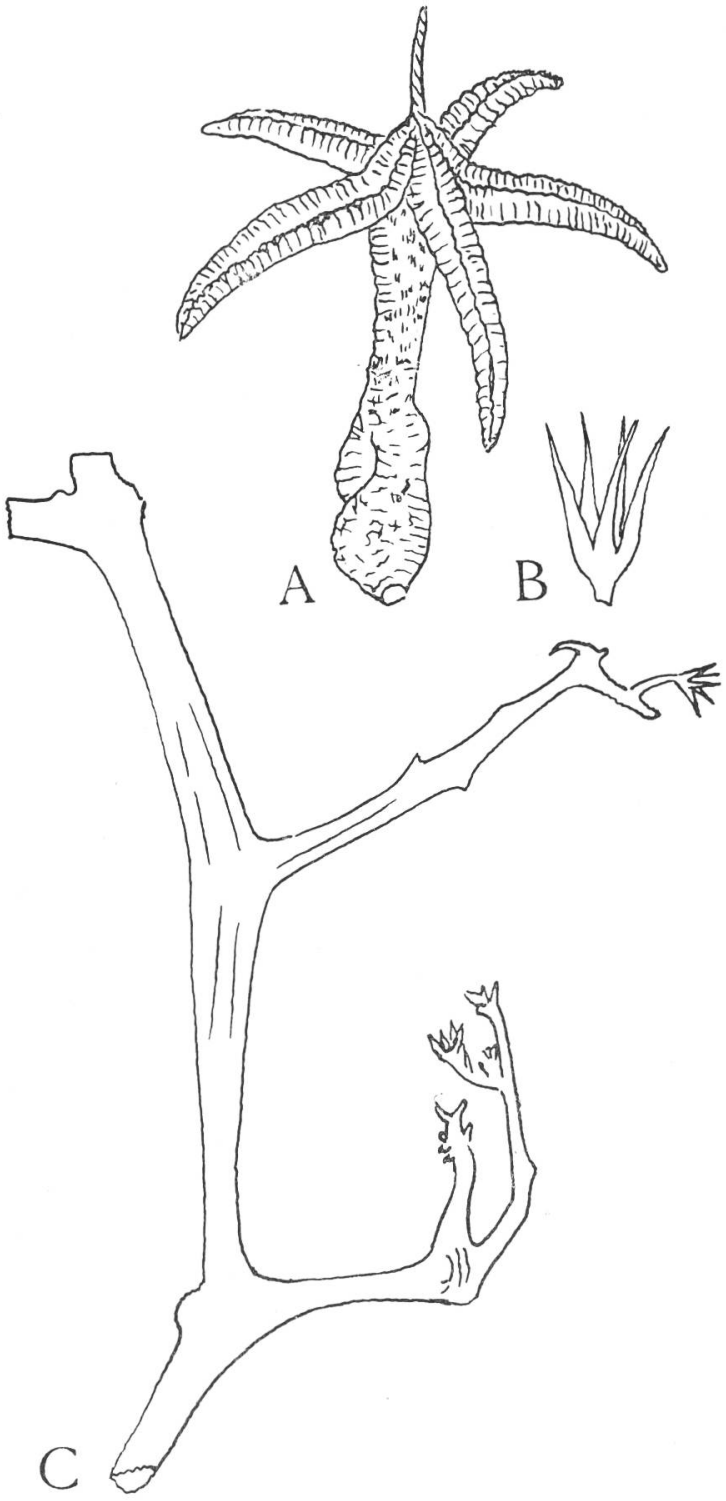

FIG. 9. — *Ceropegia de-vecchii* Chiov. (type; after E. Chiovenda: *Fl. somala* 2 · 302, fig. 176; drawing made from a dried specimen). A: Corolla. B: Calyx C: Growth with two peduncles.

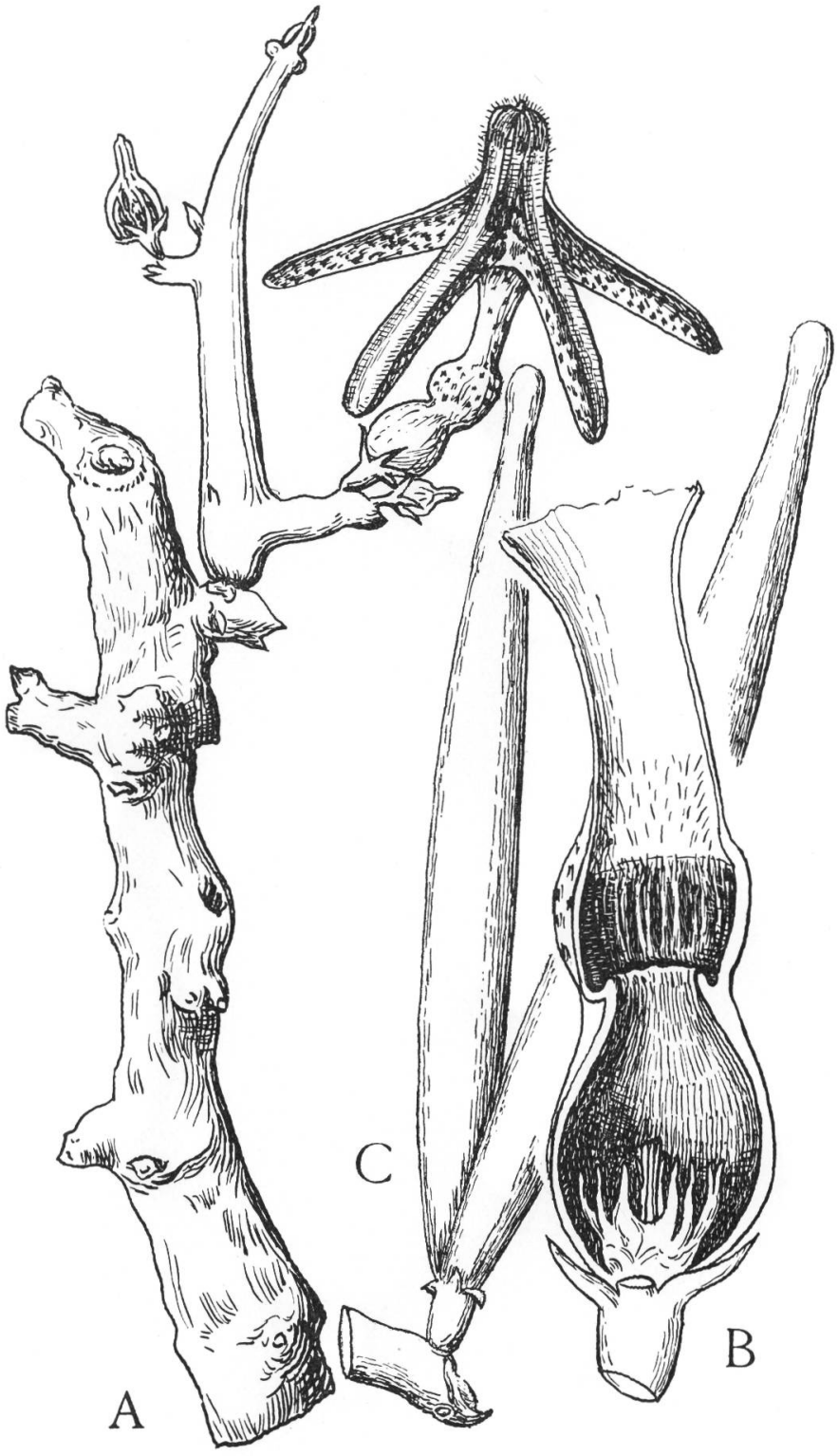

FIG. 10. — *Ceropegia de-vecchii* Chiov. (after a coloured drawing from a living plant by P. R. O. BALLY). Form with short terminal appendages. A: Flowering growth. B: Section through the corolla tube. C: Follicles.

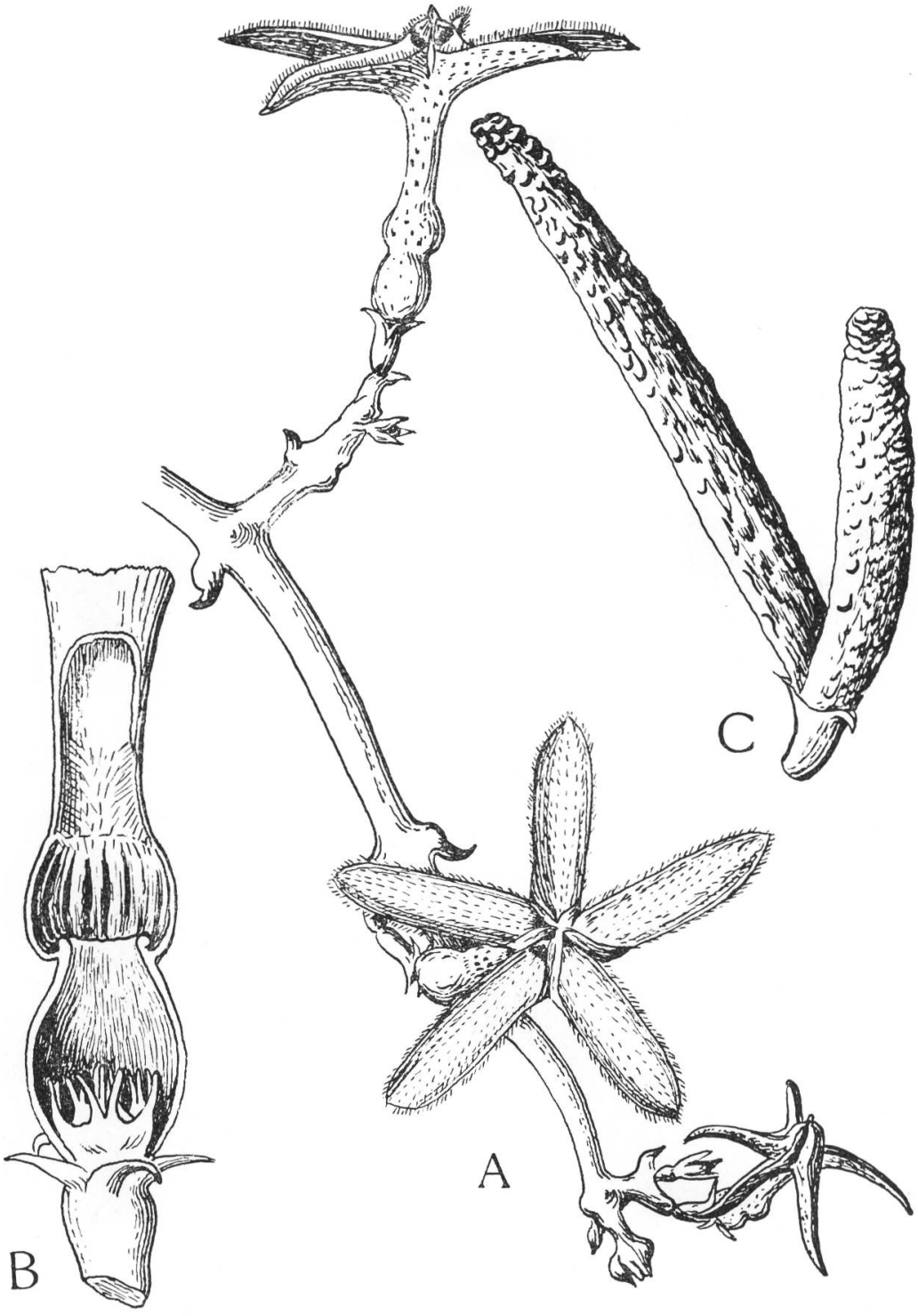

FIG. 11. — *Ceropegia de-vecchii* Chiov., var. *adelaidae* Bally (after a coloured drawing from a living plant by P. R. O. BALLY). A: Flowering growth with two mature flowers and one bud. B: Section through the corolla-tube. C: Fruit consisting of two follicles.

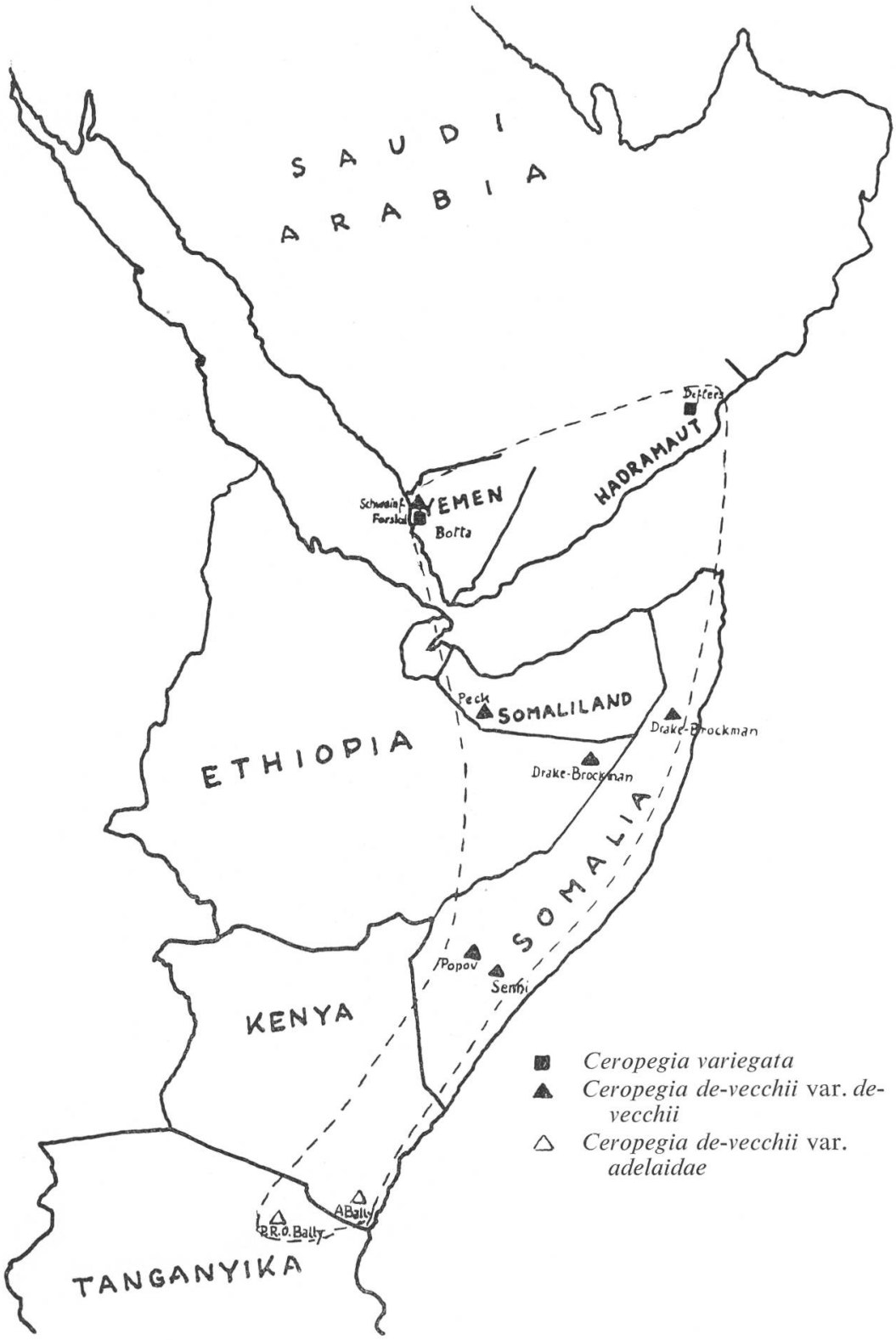

FIG. 12. — Distribution of the *Ceropegia* in the section *Loligo*.

The discovery of this plant in Kenya, and shortly afterwards in Tanganyika, extends the known distribution of the section *Loligo* by approximately 6½ degrees to the South and well below the equator, and by 6½ degrees to the West (fig. 12, distributional map).

Ceropegia de-vecchi Chiov. var. **adelaidae** Bally, var. nov.

A typo cornibus corollae latioribus, intus sparse setuligeris, lobis brevioribus, foliis reflexis unguiformibus distinguitur.

Herba volubilis, usque ad 120 cm. alta. *Radix* tenuiter fibrosa. *Caulis* scandens, haud aut sparse ramosus, glaber, teres, molliter crassus, ravoviridis, rubromaculatus, ad basim 2-2.3 cm. diam. *Folia* multo reducta, sessilia, unguiformia, nigra, in apice reflexa, spinosa, 3-4 mm. longa, ad basim 3 mm. lata. Cymae axillares, pedunculatae, 2-5 flores alius post alium producentes. Pedunculus axillaris, 2-2.5 cm. longus, 4-7 mm. diam., perennis.

Pedicelli teretes, crassi, 5-8 mm. longi. *Calycis* lobi deltoidei, acuti, 3.5 mm. longi. *Tubus corollae* elongatus, 31 mm. longus, supra basim inflatus, constrictus, intus annulatus, parte superiore 1/3 inflatus, 2/3 cylindricus, 4.5 mm. diam.; lobi erecti, late triangulati, apiculati, 4.5 mm. alti, 4.5 mm. lati, parte inferiore virides, superiore brunnei, parte media macula atropurpurea muniti, marginibus setulosi; in sinibus intra lobos rostra canaliculata, acuta, 2.7 cm. longa, 7 mm. lata, extra glabra, alboviridia, intus pallide viridia, lineis setulosis, purpureis munita, in margine setulosa. Tubus corollae extus glaber, alboviridis, rubropunctulatus; intus parte inferiore inflato, glaber, atropurpureus, parte cylindrica subtus setulosus, ruber, albostriatus. *Corona* glabra, pallide flava; lobi exteriores bifidi, divergentes, gynostegium excedentes, 2 mm. longi, interiores lineares, erecticonniventes, 2.3 mm. longi. *Folliculi* bini, subcylindrici, glabri, in apice obtusi, in parte superiore verrucosi, 8.5 cm. longi, 1 cm. diam., albovirides, atrorubromaculati.

TROPICAL EAST AFRICA: *Kenya*, Coast Prov., Kwale Distr., Maji ya Chumvi, 3°48′ S., 39°22′ E., 230 m. alt., on weathered basement complex, in dry scrub, May 8, 1956, *Mrs. A. Bally B 10540* (X); 3 miles south of Kinango (4°10′ S., 39°17′ E). 100 m. alt., E. Bayliss 11 Sept. 1959.

Tanganyika, Tanga Prov., Pare Distr., 3°54′ S., 37°37′ E., 1030 m. alt., on red, sandy soil w. quartzite, in dense shade of *Grewia-Acacia s*crub, July 30, 1957, *P.R.O. Bally, B 11625* (X).

RÉFÉRENCES

BULLOCK A.A. 1952: *Kew Bull.* 1952: 405. Notes on african Asclepiadaceae. I.

CHIOVENDA, E. 1932: *Flora somala* **2**: 301. Roma.

DECAISNE J. 1838: Études sur quelques genres et espèces de la famille des Asclépiadées. *Ann. Sc. nat.* ser. 2, **9**: 262, t. 9.

— 1844: Asclepiadeae in DC. *Prodr.* **8**: 642.

DEFLERS, A. 1889: *Voyage au Yemen*: 169. Paris.

— 1894: *Esquisses de Géographie botanique* (Extr. Rev. d'Egypte). Le Caire.

— 1896a: *Les Asclépiadées de l'Arabie tropicale*, t. I. Le Caire.

— 1896b: Descriptions de plantes nouvelles ou peu connues de l'Arabie méridionale. *Bull. Soc. bot. France* **43**: 111.

FORSKÅL, P. 1775: *Flora aegypt. arab.*: 51. Hauniae.

HUBER, H. 1957: Revision d. Gattung Ceropegia. *Mem. Soc. Brit.* **12**.

WERDERMANN E. 1939: Revision der ostafrikanischen Arten der Gattung *Ceropegia*. *Engler bot. Jahrb.* **70**: 197.