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THE GENUS DIMERANDRA

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For many years the genus *Epidendrum* was regarded as an enigmatic one, because of the excessively large numbers of heterogenous elements which have been indiscriminately assigned to it. It was not until the early years of the twentieth century that systematists gave a closer look at the various structures found within this great complex of some 1200 species. It was during such an examination in 1922 when Schlechter realized that the very old *Epidendrum stenopetalum* together with a few similar plants, indeed, do represent such a divergence in salient features from the type species of *Epidendrum* that they warrant their own recognition at the generic level. Thus, the genus *Dimerandra* was proposed in conjunction with a new species from Panama. *Dimerandra* initially had a very short span of life, because the American botanists quickly labeled Schlechter as a *bona fide* splitter. Perhaps, it is understandable that such an attitude should have developed. In a closely knit group of plants, even though the individuals may represent different species, to a casual onlooker they easily appear to be mere variants of one another. The basic principle of design of similarity in dissimilarity manifested in nature, however, does not depend upon whether one is being a splitter or lumper, but rather upon one's

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ability to recognize the very elements of diversity within a unified complex.

Schlechter must have been aware of the problem of this diversity within unity, but he fell short in giving the actual details as he perceived them to be present within the whole *Epidendrum* complex. Indeed, the general structure of the column, the peculiar, externally keeled, erect columnar ears or lobes which are the extension of the clinandrium, the totally hidden, persistent anther, are all characters not duplicated within the genus *Epidendrum*. Perhaps plants of *Oerstedella* can be considered to be somewhat analogous to *Dimerandra* in columnar structures in as much as both have a cryptic anther.

An examination of the constituent species of *Dimerandra* brought several interesting points to the foreground. *Epidendrum stenopetalum*, one of the original species assigned by Schlechter to the genus, is described from Jamaica, but the species is unknown in the West Indies. Unfortunately, the type specimen is no longer extant. Therefore, our information has to come from the published plate, t.3410, of the *Botanical Magazine*, which is part of the original protologue. This drawing, originally made from a living specimen grown in the Glasgow Botanic Garden, shows a perfectly rhombic lip; yet none of the collections which I have examined correspond to that configuration. Reichenbach, however, had seen the type before it disappeared and, as was his practice, he made a drawing of the flower. This drawing also shows a lip which I have not encountered among the numerous specimens examined. There is a remote possibility that my new *D. latipetala* from Nicaragua may represent the missing *D. stenopetala*, because vegetatively the plants are identical. The discrepancies, however, found in the morphology of the petals, lip and of the columnar ears, as far as the available informations are concerned, do not permit their union.

Dimerandra buenaventurae had a remarkable beginning. While Kraenzlin was monographing the genus *Telipogon*, in 1919, he found a single unattached flower in the Reichenbach Herbarium, which he, in spite of the unusual characters for a *Telipogon*, described as a new member of that genus. Garay in

1964 noted that it was an *Epidendrum* of the *E. stenopetalum* complex. This flower turned out to be not only distinct, but unique in the sense that the lip is completely free from the base of the column.

Perhaps one of the most intriguing puzzles comes from the pen of Reichenbach, when, in 1862, he listed *Isochilus elegans* Focke for the first time as a straight synonym of *Epidendrum stenopetalum*. Focke's material is kept at Utrecht, but all of their orchid specimens were on loan to Berlin during World War II, where they all succumbed during the fatal bombing when most of the Berlin herbarium was destroyed. *Isochilus elegans*, however, was not on loan because no one knew of its existence. Cogniaux did not cite it in his treatise on Brazilian orchids and Pulle did not in his Flora of Surinam, the country of origin of the species. The only person who must have seen the type beside Focke was Reichenbach. Incidentally, it should be mentioned here that Reichenbach had a very good rapport with Focke, having received from him either drawings or specimens or both of most of his species. *Isochilus elegans*, however, was not among them. Reichenbach's well-established practice of searching out types described by other botanists must have led him to Focke's collections in Utrecht. When I borrowed the holdings of the *Epidendrum stenopetalum* complex from Utrecht, there was only a single old sheet among them with the original old mounting due to the above-mentioned loss. This particular sheet has a label with *Epidendrum stenopetalum* written in Reichenbach's hand. This was attested by Dr. Garay, one of the few who can read Reichenbach's handwriting. An examination of this sheet, which fortunately still had a flower in perfect condition, has shown the characters completely matching and agreeing, including the measurements, with Focke's original description of *Isochilus elegans*! Therefore, it seems reasonable to consider it to be the long unrecognized holotype of *Isochilus elegans*. In as much as none of Focke's original material at Utrecht bears annotation labels in Focke's handwriting, this specimen, because of lack of an original annotation, did escape the fire at Berlin.

Due to the recent practices among botanists who fail to recognize the principle of diversity in similarity, every specimen in

the *Dimerandra* complex came to be called *Dimerandra emarginata*, since the oldest basionym, published in 1818, was *Oncidium emarginatum*.

As was stated above, the plants of *Dimerandra* look quite different from the genus *Epidendrum* from which they were segregated. Vegetatively they are similar in appearance to another small group of plants originally described by Lindley as a distinct genus under the name of *Gastropodium*. Both groups have the more or less thickened stems which, especially in dried condition, become prominently sulcate or furrowed longitudinally. The flower structure of these two groups is, however, quite different. Ames, Schweinfurth and Hubbard in their monographic study of the genus *Epidendrum* in Central America placed *Epidendrum stenopetalum* together with those species which now comprise the genus *Barkeria*. Such a choice obviously served some practical solution in preparing a key for identification rather than expressing actual relationships. Attention must be called to one of the remarkable aspects of *Dimerandra* flowers, the random lobation occurring in the petals and the lip. This must be emphasized because I have seen lips of individual flowers where lobation may occur so symmetrically that the actual blade appears to be three-lobed, yet such a character may not be present on the second flower of the same plant.

Members of the genus occupy a considerable area of the American tropics, ranging from Mexico through Central America to northern and western South America, including the Orinoco and Amazonian basins. They are conspicuously absent from the West Indian Islands. Two species, *D. elegans* and *D. emarginata*, have the widest distribution; their pattern of variability in both vegetative and floral structures appear to be directly proportional to the geographic area they inhabit. The remaining species are rather restricted either in area or in frequency or both. *Dimerandra emarginata*, although described originally from Guayana, is most common in Central America, from Mexico to Chiriqui, in Panama. One of the most interesting character separations in the shape of the petals occurs on both sides of the isthmus of Panama. Plants with lanceolate-elliptic petals

(*i.e.*, widest in the middle) occur in the Central American part of the range (formerly called *Epidendrum lamellatum* Lindl.), while those with obovate-oblong petals (*i.e.*, widest in the upper third) are known from the South American mainland. This same character separation in the shape of the petals is manifested also in *D. elegans*, albeit the Central American range does not seem to extend beyond the Chiriqui mountains. For these restricted Panamanian plants with obovate-oblong petals, the name *D. isthmii* Schltr. was once proposed. It is quite probable that we are dealing here with a group of plants which currently undergo incipient divergence or speciation on both sides of the isthmus of Panama. Unfortunately the information so far available does not afford a more decisive conclusion. Another species closely related to this complex is *D. buenaventurae* which appears to be limited in distribution almost entirely to the Cauca and Magdalena valleys. *Dimerandra Rimbachii* and *D. tenuicaulis* are both endemics in western Ecuador, especially along the coastal lowlands. *Dimerandra carnosiflora* here described is the southernmost in distribution, known only from Peru and the adjacent Brazilian border areas. *Dimerandra latipetala* is unique in floral characters and is essentially limited to Nicaragua and Panama west of the isthmus.

ACKNOWLEDGMENTS

I am ever so grateful for the cooperation shown by the curators of the many herbaria who have so very kindly loaned the materials necessary for this study. My thanks also to the many institutions whose directors have given freely of their considerable knowledge to assist me in this endeavor.

An especial note of appreciation is due to Dr. Leslie A. Garay, Curator of the Oakes Ames Orchid Herbarium, for his many hours of patient assistance and his generous sharing of the herbarium's specimens as well as giving free access to his own private files. Without his expertise and unfailingly excellent advice, this paper would not have been possible.

Dimerandra Schltr. in Fedde, Rep. Beih. 17: 43, 1922.

Sepals similar, spreading; lateral sepals oblique; all more or less linear-lanceolate, acuminate. Petals spreading, more or less rhombic to elliptic, often along one side the margin lobulate; lip either free to base or laterally adnate basally to column, then with a cuneate-flabellate blade; disc under column with a callus of imbricating lamellae in three rows; on each side there is an additional callose ridge. Column short, somewhat arcuate, with two prominent lobes to the clinandrium, both of which are externally keeled. Anther incumbent, small, completely hidden within the lobes of the clinandrium, longitudinally septate. Pollinia four, compressed, inappendiculate. Ovary slender, pedicellate.

Epiphytic plants; roots flexuous, glabrous; stems caespitose, erect, fleshy, leafy throughout, completely covered with thin, imbricating leafsheaths, dry or old canes striate-sulcate; leaves subcoriaceous, oblong-linear to ligulate, sessile, articulate with leaf-sheaths; inflorescence terminal, 1-3, very short, 1-, 2-flowered; flowers showy.

LECTOTYPE: **Epidendrum Rimbachii** Schltr., *in hoc loco!*

Eight species distributed in Central America, from Mexico to Panama, in northern and western tropical South America, from the Guayanas to Peru, and along the edges of the Amazonian Hyalea.

KEY TO SPECIES

1. Flowers fleshy; petals broadly elliptic; fleshy ridges flanking calli forked; column-ears ovate-lanceolate, acuminate
..... **D. carnosiflora**
- 1a. Flowers delicate in texture; petals rhombic to lanceolate; fleshy ridges flanking calli undivided; column-ears rectangular to transversely oblong 2
2. Lip from a broad base abruptly rhombic to obtuse-trapeziform in outline, widest at or below the base 3
- 2a. Lip from a narrowly cuneate-unguiculate base obverse in outline, widest above the middle 4

3. Petals obovate-oblongate; lip rhombic to obscurely 3-lobed, lateral lobes rounded, midlobe terminal, transversely quadrate-oblong, truncate in front **D. stenopetala**
- 3a. Petals broadly rhombic; lip obtrapeziform, sinuously bilobed in front with a small apicule **D. latipetala**
4. Lip free to base, bilobed to retuse; callus without a central row of lamellae; anther with three horn-like protuberances **D. buenaventurae**
- 4a. Lip laterally adnate to base of column; entire or subtruncate to somewhat retuse; callus with a central row of lamellae; anther without horns 5
5. Lateral rows of callus fleshy, entire, keel-like, terminating in a few imbricating lamellae 6
- 5a. Lateral rows of callus not keel-like, but composed of numerous imbricating lamellae almost to base 7
6. Leaves linear-oblong, grass-like, 3-4 mm. wide; flowers thin, diaphanous; floral segments more than 10 mm. long; lateral sepals with a prominent, horn-like mucro; anterior margin of lip serrate-denticulate **D. Rimbachii**
- 6a. Leaves linear-lanceolate, 6-7 mm. wide; flowers thin but firm in texture, not diaphanous; floral segments less than 10 mm. long; lateral sepals without a mucro; anterior margin of lip entire **D. tenuicaulis**
7. Three rows of callus united into transverse plates at apex in front of which there are a few, free-standing lamellae; columnar ears transversely oblong, acute to obtuse **D. elegans**
- 7a. Three rows of callus free from one another at apex, although they may be convergent at tip without accessory lamellae; columnar ears subquadrate to rounded, often with cellular margins **D. emarginata**

Dimerandra buenaventurae (Krzl.) Siegerist, *comb. nov.*

Basionym: *Telipogon buenaventurae* Krzl. in Ann. Naturhist. Hofmus. Wien 33: 35, 1919.

TYPE: Colombia. Dept. Valle, near Buenaventura. Klboch *s.n.* (W!)

Epiphytic, erect plants up to 40 cm. tall; roots fleshy, rather coarse, branching, flexuous, glabrous; stems from a bulbous base suberect to arcuate, somewhat flexuous, leafy; leaves alternate, linear-lanceolate, obtuse or somewhat unequally bilobate apex, up to 10 cm. long, 1.2 cm. wide, usually smaller; inflorescences fasciculate, produced in succession, short, few-flowered; bracts ovate-cucullate, acute, up to 4 mm. long; flowers large; dorsal sepal ovate-lanceolate, acuminate, up to 1.8 cm. long, 5 mm. wide; lateral sepals obliquely ovate-lanceolate, acuminate, up to 1.8 cm. long, 6 mm. wide; petals from a cuneate base, subrhombic, obovate-ob lanceolate in outline, acute to acuminate, up to 2 cm. long, 1.2 cm. wide; lip from a cuneate base, obovate, subtruncate to retuse at apex, rarely obcordate; callus 3-parted, lamellate, without a central row of lamellae, basally united into a fleshy ridge; whole lip up to 2 cm. long, 1.3 cm. wide; column short, 4 mm. long, with a pair of obliquely and transversely quadrate-oblong ears; pedicellate ovary cylindrical, up to 4 cm. long.

DISTRIBUTION: **Colombia.** DEPT. VALLE; Zarzal. Pennell, Killip & Hagen 8400 (AMES!, NY!, US!); Cuatrecasas 22094 (AMES!, F!). Cali. Lehmann 880 (G!); Lehmann *s.n.* (W!). La Paila. Holton *s.n.* (NY!) Las Juntas. Lehmann 129 (W!). Timbe. von Sneidern 1114 (F! NY!) Victoria. André *s.n.* (NY!) Pance. Navarette 12 (AMES!). — DEPT. TOLIMA; Dolores forests. Lehmann 7603 (AMES!, L!, NY!). — DEPT. NORTE DE SANTANDER; Ocaña. Bruchmueller *s.n.* (W!). — DEPT. MAGDELENA; Quebrada Sororia. Haught 3617 (AMES!). Santander. Gentry & Renteria 19991 (SEL!). — DEPT. SUR DE SANTANDER; Magdalena Valley, Sogamoso. Haught 1393 (AMES!). — DEPT. CESAR; Rincon Hondo. C, Allen 548 (MO!).

FIELD CHECK: Lip free from column; callus without a central row of imbricating lamellae.

Dimerandra carnosiflora Siegerist, *sp. nov.*

TYPE: Peru. Prov. Bagua; Dept. Amazonas. Hutchinson 1542 (AMES!) Holotype. (F!, UC!) Isotypes.

Plantae epiphyticae, erectae; caulibus suberectis, arcuatis, flexuosis; foliis linearibus, apice paululo inaequaliter rotundatis; inflorescentiis fasciculatis, ad 5, paucifloris; bracteis ovato-lanceolatis, acuminatis, cymbiformibus; floribus carnosis; sepalo postico lanceolato-elliptico, acuminato; sepalis lateralibus ovato-lanceolatis, subfalcatis, acuminatis; petalis late ellipticis, acutis; labello e cuneata basi subquadrato-spathulato, truncato, disco multilamellato in 3 lineas, utrinque callo bicruri donato; columnae alis ovato-lanceolatis, acuminatis.

Epiphytic, erect plants, up to 25 cm. tall; roots rather slender, glabrous; stems suberect, arcuate, flexuous, completely enclosed in tightfitting, imbricating sheaths; leaves linear, rounded at the somewhat unequally lobulate apex,

up to 8 cm. long, 6 mm. wide; inflorescences fasciculate, 3 to 5, short, up to 1.5 cm. long, few flowered; bracts ovate-lanceolate, cymbiform, acuminate, up to 3 mm. long; flowers fleshy with spreading segments; dorsal sepal narrowly elliptic-lanceolate, acuminate, 17 mm. long, 5 mm. wide; lateral sepals obliquely ovate-lanceolate, subfalcate, acuminate, up to 17 mm. long, 5 mm. wide; petals from a somewhat cuneate base broadly elliptic, acute, up to 18 mm. long, 10 mm. wide; lip from a cuneate base subquadrate-spathulate, truncate, occasionally lobulate; callus multilamellate in 3 rows, with an additional forked ridge on each side, up to 18 mm. long, 12 mm. wide; column 7 mm. high with ovate-lanceolate, acuminate lobes to the clinandrium; pedicellate ovary up to 4 cm. long.

DISTRIBUTION: **Peru.** See above. — **Brazil.** AMAZONAS; Boca do Acre, Rios Purus & Acre. Prance *et al.* 2581 (US!).

FIELD CHECK: Flowers fleshy; lateral sepals falcate; petals broadly elliptic; lateral ridges forked.

Dimerandra elegans (Focke) Siegerist, *comb. nov.*

Basionym: *Isochilus elegans* Focke in Tidjdschr. Naturk. Vetschr. 4: 68, 1851.

TYPE: Surinam. Paramaribo. Focke *s.n.* (U!) Teste Reichenbach.

Synonym: *Dimerandra isthmi* Schltr. in Fedde, Rep. Beih. 17: 44, 1922.

TYPE: Panama. Canal Zone. Hills near Panama City. Powell 17 (AMES!) Holotype. (MO!) Isotype.

Dimerandra major Schltr. in Fedde, Rep. Beih. 27: 136, 1924.

TYPE. Colombia. Dept. Cundinamarca. Río Pescado, Cordillera Oriental. A. Schultze 29 (+B).

Plants epiphytic, up to 40 cm. tall; roots fleshy, flexuous, glabrous; stems approximate, erect, flexuous, leafy; leaves subcoriaceous, alternate, linear-oblong to oblong-ligulate, obtusely bilobed at apex, articulate with leaf sheaths, up to 11 cm. long, 1 cm. wide, commonly smaller; inflorescences short, few-flowered; bracts ovate-cucullate, subacuminate, up to 3 mm. long; flowers showy, with spreading segments; dorsal sepal narrowly ovate-lanceolate to oblong-elliptic, acute to subacuminate, up to 19 mm. long, 6 mm. wide; lateral sepals obliquely ovate-lanceolate, acuminate, up to 19 mm. long, 6 mm. wide; petals from a cuneate base, obovate-oblancheolate to obliquely lanceolate-elliptic, acute to subacuminate, up to 20 mm. long, 8 mm. wide; lip from a cuneate base obovate-spathulate to suborbicular, subtruncate to retuse in front or rarely more or less bilobed with a mucro; disc callose with 3 rows of lamellae united into transverse plates at apex, and in front of it with a few free-standing,

transverse additional lamellae; whole lip up to 20 mm. long, 12 mm. wide; column short, up to 6 mm. long, with large, transversely oblong acute to obtuse ears; pedicellate ovary cylindrical, up to 4 cm. long.

DISTRIBUTION: **Panama.** BOCAS DEL TORO; Water Valley. von Wedel 765 (AMES!, MO!). — PROV. CHIRIQUI; near David. Maxon 4915 (AMES!, US!). — PROV. VERAGUAS; Liesner 840 (MO!); Gentry 3037 (MO!); Powell 3419 (AMES!). — CANAL ZONE; Near Summit. Standley 29694 (US!). — BARROW COLORADO ISLAND; Croat 8156 (MO!, NY!), 4682 (MO!, NY!), 7054 (MO!), 7369 (MO!), 8183 (MO!), 14970 (MO!); Standley 31498 (US!); Shattuck 221 (MO!, US!). Gamboa. Pittier 2605 (US!). Sabanas. N. of Panama City. Bro. Paul 554 (US!). Hills E. of city. Powell 3437 (AMES!). Las Cruces Trail between Ft. Clayton & Corozal. Standley 29101 (AMES!, US!); Duke 4783 (MO!). — PROV. PANAMA; Chepo. Pittier 4562 (US!). E. of Río Tecumen. Standley 26610 (US!). — PROV. DARIEN; Río Tuira. Duke 6521 (MO!), 6524 (MO!), 14588 (MO!). Near Santa Fe. Duke 8820 (MO!). Río Paya. Duke & Kirkbride 14072 (MO!)
Colombia. DEPT. MAGDALENA; Manaure. Foster & Smith 1595 (AMES!). — DEPT. ANTIOQUIA; Atrato & Truando 8 (NY!) — DEPT. META; Salta Angustora. Garcia-Barriga & Mejía 17014 (AMES!); Cabuyaro. Cuatrecasas 3607 (US!); Quebrada Canabrava. Killip 34465 (AMES!, US!). Los Llanos, Río Meta, La Perra. Cuatrecasas 4305 (US!). **Trinidad.** Agua Santa. Broadway 2347 (AMES!); St. Clair Experiment Station. Broadway *s.n.* (AMES!). **Venezuela.** PROV. YARACUAY; near Guama. Pittier 11172 (AMES!, US!). — PROV. MERIDA; La Azulita. Humbert 26663 (P!); Linden 184 (G!); 710 (K!, W!). — PROV. ZULIA; Perija. Bruijn 1243 (US!); Jangous 10200 (F!); Steyermark & Fernandez 99654 (AMES!); — DIST. FEDERAL; Caracas. Wagener 60 (W!). — EDO. BOLIVAR; 55 km. N.E. Ciudad Piar. Liesner & Gonzales 11235 (MO!). — DELTA AMACURO; Aristeguieta 4038 (NY!); Steyermark 87714 (NY!). **Brazil.** AMAZONAS; Kuhlmann *s.n.* (AMES!). — BAHIA; Blanchet 1735 (F!, G!). **Surinam.** Paramaribo. Samuels 83 (AMES!, UC!); Samuels *s.n.* (US!); Splitgerger 48 (W!), 372 (L!, W!); Wullschlaegel 569 (US!). 12 km. E. of Paramaribo. Lelydorp & Hekking 793 (NY!, US!). Lobinsavanna inter Zanderij I & Hannover. van Donselaar 242

(U!); Lanjouw & Lindemann 136 (U!). — DIST. MAROWIJNE; seashore. Tenuissen 1072 (U!). — DIST. BROKOPONDO; Sara Creek. van Donselaar 2132 (U!), 3249 (U!). Surinam River. van Donselaar 2877 (U!); Schulz 7240 (U!). Raleigh Falls; upper Coppename River. Mannega 356 (U!). **French Guiana.** Cayenne. Broadway 227 (AMES!, NY!); Richard *s.n.* (W!). **British Guiana.** POMEROON DIST.; Moruka River. de la Cruz 1154 (NY!, US!). Essequibo River. Gleason 892 (NY!).

FIELD CHECK: 3 rows of lamellae united into transverse plates at apex with a few free-standing plates in front of it. Columnar lobes are transversely oblong, acute to obtuse.

OBSERVATION: The following illustrations belong to this species: Venezuelan Orchids Illustrated 3: 116, 1965; Orchids of Venezuela, Field Guide, Pl. 167, 1979; Foldats in Lasser, Fl. Venez. 15(3): 403, 1970; Orquidea (Mex.) 8(2): 97, 1978.

Dimerandra emarginata (Meyer) Hoehne in Bolet. Agric. S. Paulo 34a: 618, 1933.

Basionym: *Oncidium emarginatum* Meyer in Prim. Fl. Essequ. 259, 1818.

TYPE: British Guiana. Along the River Essequibo. Meyer 2631 (GOET!).

Synonym: *Epidendrum lamellatum* Westc. ex Lindl. in Bot. Reg. 29: misc. 46, 1843.

Dimerandra lamellata (Westc. ex Lind.) Siegerist ex Hamer in Icon. Pl. Trop. pt. 13: t. 1213, 1985.

TYPE: Country of origin unknown, presumed to be Honduras. Barker *s.n.* (K-Lindl.!).

Epiphytic, caespitose plants up to 40 cm. tall; roots flexuous, branching, glabrous; Stems cylindrical from a bulbous base, suberect to arcuate, moderately fractiflex, loosely leafy, especially towards the apex; leaves alternate, articulate with leaf sheaths, linear-oblong, obtuse, obliquely retuse at apex, up to 11 cm. long, 1 cm. wide; inflorescences short, produced in succession, few-flowered; bracts ovate-cucullate, acute, much shorter than the subtending flowers, up to 5 mm. long; flowers conspicuous with spreading segments; dorsal sepal ovate-lanceolate to narrowly elliptic, acute to acuminate, up to 18 mm. long, 6 mm. wide; lateral sepals obliquely ovate-lanceolate, acuminate, up to 18 mm. long, 6 mm. wide; petals from a cuneate base, obovate-oblong to subrhombic-elliptic, acute, up to 18 mm. long, 10 mm. wide; lip basally adnate to column, from a cuneate base obovate-spathulate, apiculate in front; disc with 3 free rows of imbricating lamellae without accessory tubercles, central ridge half as long and entire, whole lip up to 20 mm. long, 15 mm. wide;

column cylindric, slightly arcuate, terminated by 2 subquadrate ears with rounded angles, often with prominent cellular margins, up to 6 mm. long; pedicellate ovary cylindric, up to 4 cm. long.

DISTRIBUTION: **Mexico.** PROV. OAXACA; Mogoñé. Nagel 5718 (AMES!). — PROV. VERA CRUZ; region of Minatitlan. Richards 3828 (AMES!); Sessé & Mociño *s.n.* (W!). **Guatemala.** PROV. PETEN; La Libertad. Lundell 2323 (AMES!). **Belize.** Spanish Creek. Lundell 3902 (AMES!). Punta Gorda. Catling & Brownell 19.2 (AMES!). — STANN CREEK DIST.; Stann Creek Valley. Gentle 2743 (AMES!). — EL CAYO DIST.; Vaca. Gentle 2541 (AMES!). — TOLEDO DIST.; near San Antonio. Gentle 5485 (AMES!, US!). **Honduras,** DEPT. ATLÁNTIDA; La Fragua. Ames *s.n.* (AMES!); Standley 55725 (AMES!). Tela. Standley 55246 (AMES!); Erskine *s.n.* (AMES!). **El Salvador.** Near Sihuapilapa. Avila 304 (SEL!). **Nicaragua.** DEPT. ZELAYA; near Río Prinzapolka, Stevens 8267 (AMES!, MO!). San José del Hormiguero. Stevens 7126 (SEL!), 18727 (SEL!). Cerro Waylawas. Pipoly 4500 (SEL!); Stevens 8768 (MO!). Road between Siuna & Matagalpa. Stevens 7473 (MO!). — DEPT. ULI ABAJO; Vincelli 352 (MO!). — DEPT. NUEVA SEGOVIA; El Jicaro. Moreno 6943 (MO!). — DEPT. CHONTALES; between Acoyapa & Río Oyate. Stevens 19119 (SEL!). Río Micca. Heller 7824A (specimen) (SEL!). — DEPT. DE RIVAS; Sandino 533 (MO!). — DEPT. JINOTEGA; Araquistain & Castro 1973 (MO!); Araquistain & Moreno 1567 MO!). — DEPT. DE BOACO; Stevens 5847 (SEL!). **Costa Rica.** Without locality. Pittier & Tonduz 18 (US!), Endres 633 (W!). **British Guiana.** See above. **Surinam.** Cottica River near Moengo. Lanjouw 479 (U!). **Trinidad.** Sta. Cruz. Broadway 2925 (AMES!). Without locality. Broadway *s.n.* (AMES!, G!, NY!, US!). **Venezuela.** DELTA AMACURE; Meyer 3558 (U!). Rio Torre, N. of El Palmar. Steyermark 87842 (NY!).

FIELD CHECK: 3 rows of lamellae are free from one another at the tips and without accessory tubercles in front. Columnar lobes often with cellular margins.

OBSERVATION: The following illustrations represent this species: Hamer, *Orch. El Salvador* 1: 263, 1974. Hamer in *Icon. Pl. Trop.* pt. 11: t.1013, 1984, only the dissected floral details. Hamer in *Icon. Pl. Trop.* pt. 3, t.1213, 1985.

Dimerandra latipetala Siegerist, *sp. nov.*

TYPE: Nicaragua. Prov. Chontales; Santo Tomas. Atwood & Neill 7030 (AMES!) Holotype. (SEL!, UC!) Isotypes.

Plantae epiphyticae, erectae; radicibus filiformibus, flexuosis, glabris; caulibus erectis, cylindraceis, fractiflexis, foliosis; foliis lanceolatis, rigidis, apice oblique bilobis; inflorescentiis succedaneis, abbreviatis, paucifloris; floribus speciosis, patentibus; sepalo postico ovato-lanceolato, acuto; sepalis laterali-bus ovato-lanceolatis, acutis vel acuminatis; petalis e cuneata basi late rhom-beis, acutis; labello e cuneata basi obtrapezoideo, antice bilobo, disco multilamellato, in lineis ternis valde approximatis producto; columna cylin-drica, apice bialata; ovario cylindrico, longe pedicellato.

Epiphytic, caespitose plants, up to 20 cm. tall; roots filiform, flexuous, glabrous; stems approximate, cylindrical, from a bulbous base erect, sinuously fractiflex, leafy; leaves articulate with the tightly appressed sheaths, lanceolate, rigid, conduplicate at base, obliquely bilobed at apex with rounded lobes, up to 8 cm. long, 1 cm. wide; inflorescences produced in succession, very short, few-flowered; bracts ovate-cucullate, concave, acute, up to 3 mm. long; flowers produced in succession, 1-3, showy with spreading segments, rose-magenta in color; dorsal sepal ovate-lanceolate, acute to acuminate, up to 13 mm. long, 5.2 mm. wide; lateral sepals obliquely ovate-lanceolate to elliptic-lanceolate, acute to subacuminate, up to 14 mm. long, 5 mm. wide; petals from a cuneate base broadly rhombic, acute with rounded angles on each side, up to 13 mm. long, 9 mm. wide; lip slightly adnate to base of column, from a cuneate base obtrape-zoid with rounded angles, distinctly bilobed in front provided with a short central apicule; disc before the callus prominently cochleate; callus consists of 3 rows of tightly approximate lamellae confluent in front, on each side with an additional tuberculate ridge; whole lip up to 13 mm. long, 13 mm. wide; column cylindric terminated by 2 erect, quadrate ears pointed in front, rounded dorsally, up to 6 mm. long; pedicellate ovary cylindric, up to 3.5 cm. long.

DISTRIBUTION: **Guatemala.** DEPT. IZABEL; Río Dulce. Hamer A305! Photograph. **Nicaragua.** PROV. CHONTALES; Río Micca. Heller 7824B (drawing) (SEL!). **Costa Rica.** PROV. SAN JOSÉ; Puriscal. Alfaro 221 (US!). — PROV. GUANACASTE; Tilarán. Standley & Valerio 44214 (AMES!). **Panama.** PROV. DE HER-RERA; Las Minas. Stern, Eyde & Ayensu 1791 (MO!, US!). Between Canal Zone & Colón. Standley 30302 (AMES!, US!). — PROV. PANAMA; E. of Río Tecumen. Standley 30448 (AMES!, US!). Chagres. Fendler 332 (AMES!, MO!). — CANAL ZONE; near Summit. Standley 29501 (US!). — PROV. VERAGUAS; near Bigis and San Juan. Dodge, Steyermark & Allen 16586 (AMES!). **Colombia,** DEPT. ANTIOQUIA. Escobar s.n.! Photo-graph.

FIELD CHECK: Lip obtrapeziform, *i.e.* wider near base than towards apex. Petals broadly rhombic.

OBSERVATION: Color illustration in American Orchid Society Bulletin 38: 67, 1969, published as *Epidendrum stenopetalum* Hook. belongs here. Hamer in Icon. Pl. Trop. pt. 13: t. 1013A, 1985.

Dimerandra Rimbachii (Schltr.) Schltr. in Fedde, Rep. Beih. 17: 44, 1922.

Basionym: *Epidendrum Rimbachii* Schltr. in Fedde, Rep. Beih. 8: 167, 1921.

TYPE: Ecuador. prov. Guayas; near Ventamas. Rimbach 2 (AMES!).

Epiphytic, slender plants up to 35 cm. tall; roots filiform, flexuous, glabrous; stems erect, slightly flexuous, leafy above; leaves alternate, oblong-linear, grass-like, obtuse at the obscurely bilobed or retuse at apex, basally articulate with leaf sheaths, up to 11–13 cm. long, 3–4 mm. wide; inflorescence terminal, very short, 1-, 2-flowered; bracts ovate-cucullate, acute, up to 2 mm. long; flowers small, thin, diaphanous, pale rose to lavender, with spreading segments; dorsal sepal narrowly elliptic, acute, up to 11 mm. long, 3.5 mm. wide; lateral sepals obliquely elliptic with a conduplicate, recurved apex, dorsally provided with a prominent, horn-like mucro, up to 11 mm. long, 4 mm. wide; petals oblanceolate-elliptic to subrhombic, acute, up to 13 mm. long, 5 mm. wide; lip from a cuneate base, obovate-flabellate, subserrate-denticulate in front, shallowly emarginate at the apiculate apex; callus at base consists of 3 rows of fleshy keel-like ridges free from one another, terminated by a few transverse lamellae; whole lip up to 13 mm. long, 11 mm. wide; column cylindrical, up to 3 mm. long, prominently winged in front, terminated by subrotund apiculate ears which are 1 mm. long, 1 mm. wide; pedicellate ovary cylindrical, up to 2 cm. long.

DISTRIBUTION: **Ecuador.** PROV. GUAYAS; 12 km. from Guayaquil. Gilmartin 686 (US!), 715 (US!). — PROV. LOS RÍOS; Montalvo. Holm-Neilsen *et al.* 2597 (AMES!). Nuevo Zapotal. MacBryde 418 (AMES!, MO!, SEL!).

FIELD CHECK: Leaves linear, grass-like. Flowers thin, diaphanous. Lateral sepals with a prominent, horn-like mucro. Lip serrate-denticulate along anterior margins.

Dimerandra stenopetala (Hook.) Schltr. in Fedde, Rep. Beih. 17: 44, 1922.

Basionym: *Epidendrum stenopetalum* Hook. in Bot. Mag 62: t.3410, 1835.

Synonym: *Caularthron umbellatum* Raf., Fl. Tellur. 2: 41, 1837.

TYPE: Cultivated in Glasgow Botanical Garden. No preserved specimen known to exist today.

Plants epiphytic, erect, up to 30 cm. tall; roots fleshy, flexuous, glabrous; stems approximate, from a bulbous base suberect, slightly flexuous, leafy above; leaves alternate, linear-oblong, obtuse at the obliquely bilobed apex, up to 7 cm. long, 1 cm. wide; inflorescences fasciculate, very short, few-flowered; bracts ovate-cucullate, very much shorter than the subtending pedicels; flowers rose-colored, showy with spreading segments; dorsal sepal ovate-lanceolate, acuminate, up to 14 mm. long, 4 mm. wide; lateral sepals obliquely ovate-lanceolate, acuminate, up to 15 mm. long, 5 mm. wide; lip from a cuneate base, trapeziform-elliptic in living condition, obtuse to rounded in front, widest near middle; in dry condition from a cuneate base, obtrapeziform, 3-lobed, lateral lobes rounded, terminal lobe transversely quadrate-oblong, subtruncate in front; disc at base with a few transverse lamellae, whole lip up to 15 mm. long, 10 mm. wide; column short, terminated by 2, rounded, apiculate ears, up to 4 mm. long; pedicellate ovary cylindrical, arcuate, up to 2.5 cm. long.

DISTRIBUTION: Native country unknown; originally reported from Jamaica, but the species is not known on any of the West Indian islands.

FIELD CHECK: Lip rhombic to obtrapeziform in outline, *i.e.*, wider near the base than near the apex. Petals obovate-ob lanceolate.

OBSERVATION: Since the type specimen cannot be located, the description is drawn from the original publication and plate in the Botanical Magazine as well as a drawing of the whole flower (reproduced here) in the Reichenbach Herbarium. This latter drawing had been prepared by Reichenbach from the type.

Dimerandra tenuicaulis Rchb.f.) Siegerist, *comb. nov. et stat. nov.*

Basionym: *Epidendrum stenopetalum* var. *tenuicaule* Rchb.f. in Otia Bot. Hamb. 1: 12, 1878.

TYPE: Ecuador. Prov. Guayas; Sabanella near Guayaquil. Lehmann 82 (W!).

Epiphytic, erect or ascending plants, up to 40 cm. tall; roots fleshy, somewhat flexuous, glabrous. Stems slightly flexuous, sulcate, the upper two-thirds laxly leaved; leaves distichous, linear-lanceolate, somewhat unequally rounded at bilobed apex, basally articulate with tightly appressed leaf-sheaths, up to 8-12 cm. long, 5-7 mm. wide; inflorescence terminal, 1-3, very short, rarely

more than one-flowered; bracts ovate-lanceolate, acute, rather concave, up to 3 mm. long; flowers small, similar to *D. Rimbachii*, but coarser in texture and not diaphanous, deep rose to kermesine in color; dorsal sepal narrowly elliptic, acute to subacuminate, up to 9 mm. long, 3.5 mm. wide; lateral sepals similar to dorsal sepal, but oblique, obscurely keeled, without a mucro; petals from a cuneate base obovate-ob lanceolate, acute to subacuminate, up to 9.5 mm. long, 4 mm. wide; lip from a cuneate base suborbicular-spathulate, rounded in front with entire margins; callus at base formed by 3 approximate fleshy ridges terminating in a few fleshy lamellae; whole lip up to 10 mm. long, 7-8 mm. wide; column cylindrical with subrotund ears to the clinandrium, up to 5 mm. long; pedicellate ovary up to 2 cm. long.

DISTRIBUTION: **Ecuador.** PROV. GUAYAS; Km. 28 on road Guayaquil-Quevedo, alt. 30 m. Dodson 52 (SEL!). Near Guayaquil. Strobel *s.n.* Introduced and cultivated in Montreal Botanic Garden 2822-54! — PROV. LOS RÍOS; Km. 20 on road Babahoyo-Guaranda. Dodson 55 (MO!, SEL!). Jauneche Forest, Canton Vinces. Dodson, Gentry & Valverde 8737 (MO!, SEL!). Santo Domingo. Dodson 5630 (SEL!) — PROV. ESMERALDAS; Santo Domingo-Esmeraldas. Dodson *et al.* 10421 (SEL!). 18 km SW. of Esmeralda on Muisne-Esmeralda Road. Sauleda *et al.* 3831 (SEL!).

FIELD CHECK: Leaves linear-lanceolate, not grass-like. Flowers not diaphanous. Lateral sepals without a mucronate tip. Lip with an entire margin in front.

PLATE 33

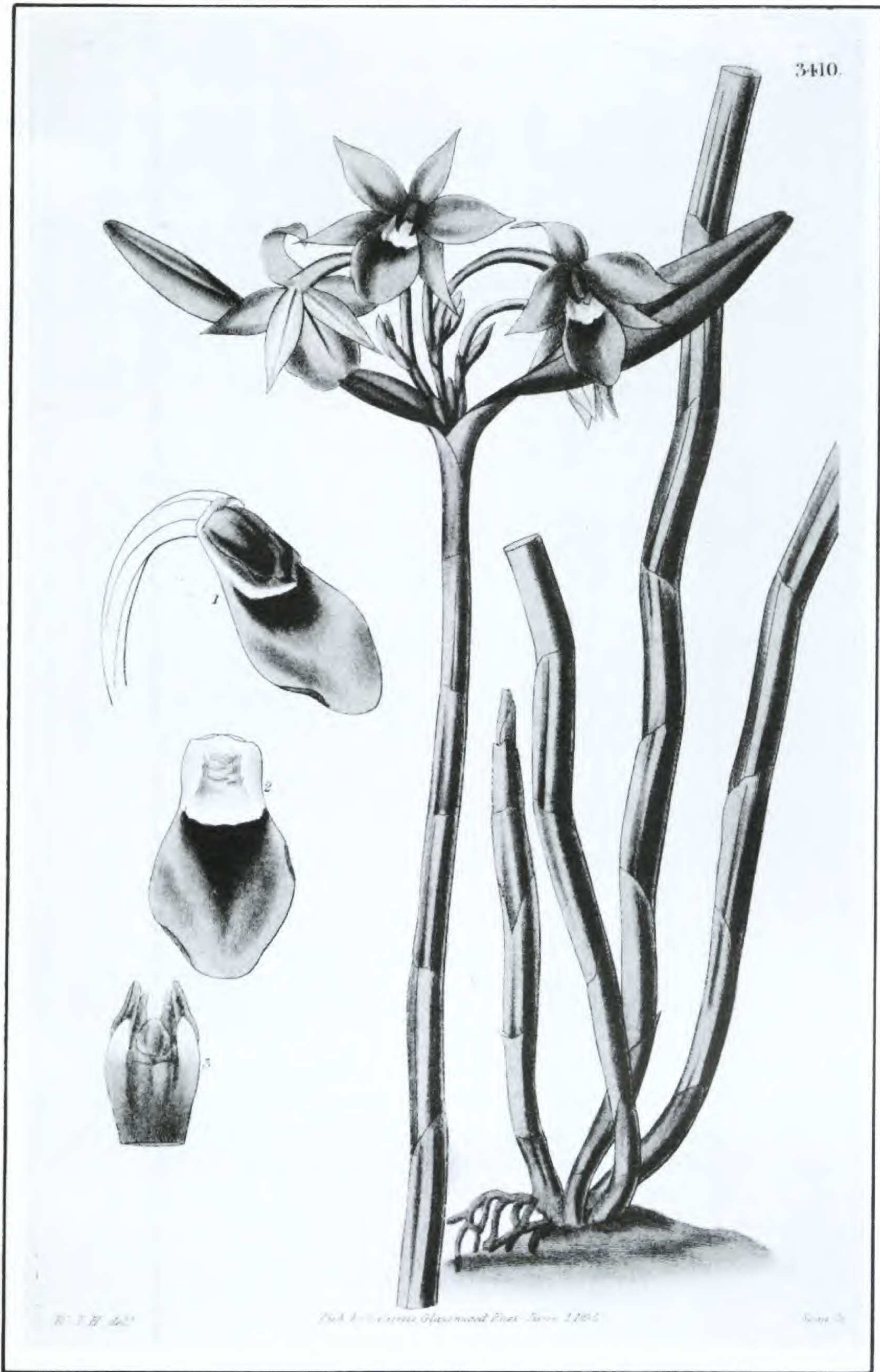


Plate 33. *Dimerandra stenopetala* (Hook.) Schltr.

PLATE 34

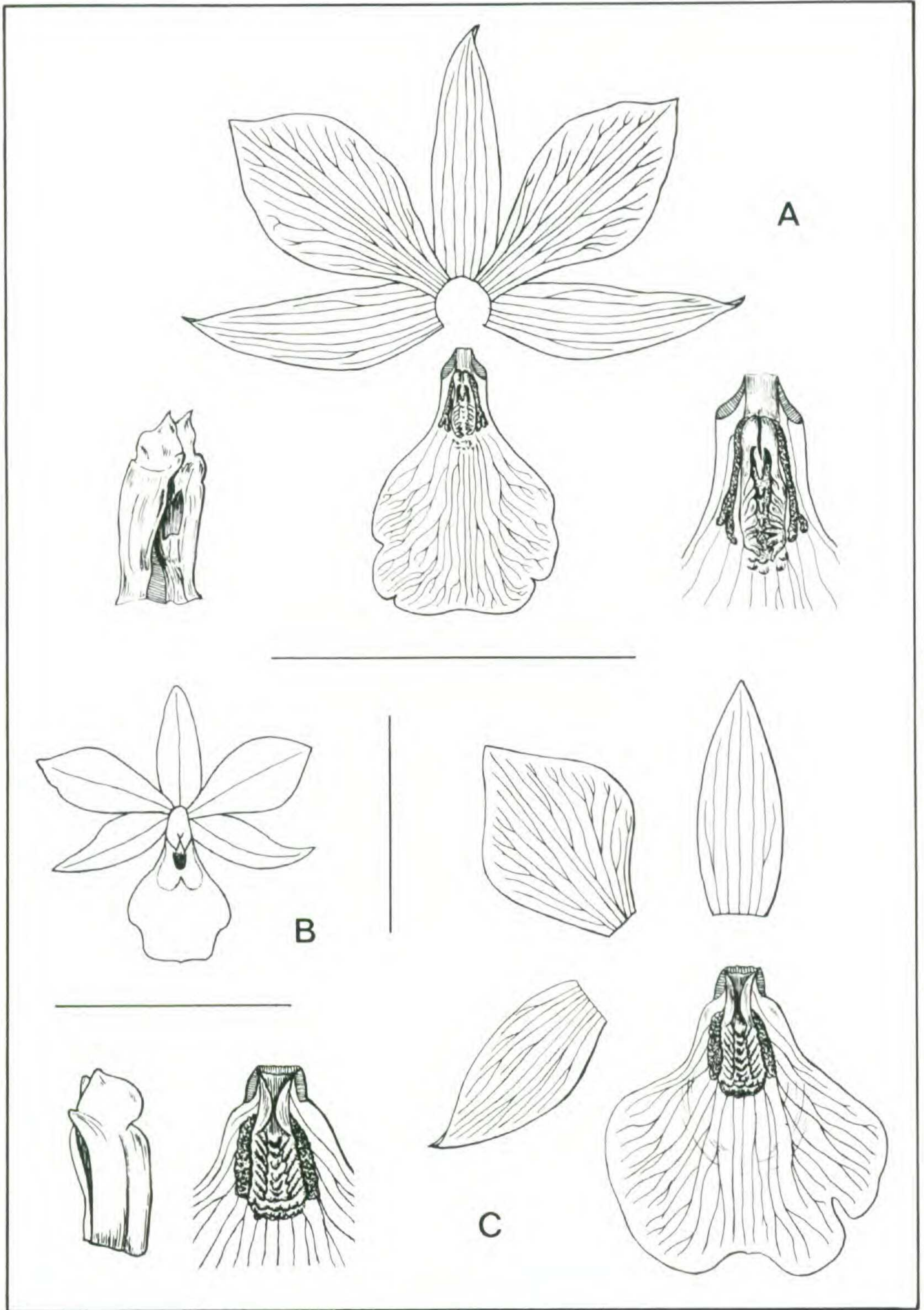


Plate 34. A. *Dimerandra carnosiflora* Siegerist. Type. B. *D. stenopetala* (Hook.) Schltr. Type, drawn by Reichenbach fil. C. *D. latipetala* Siegerist. Type.

PLATE 35

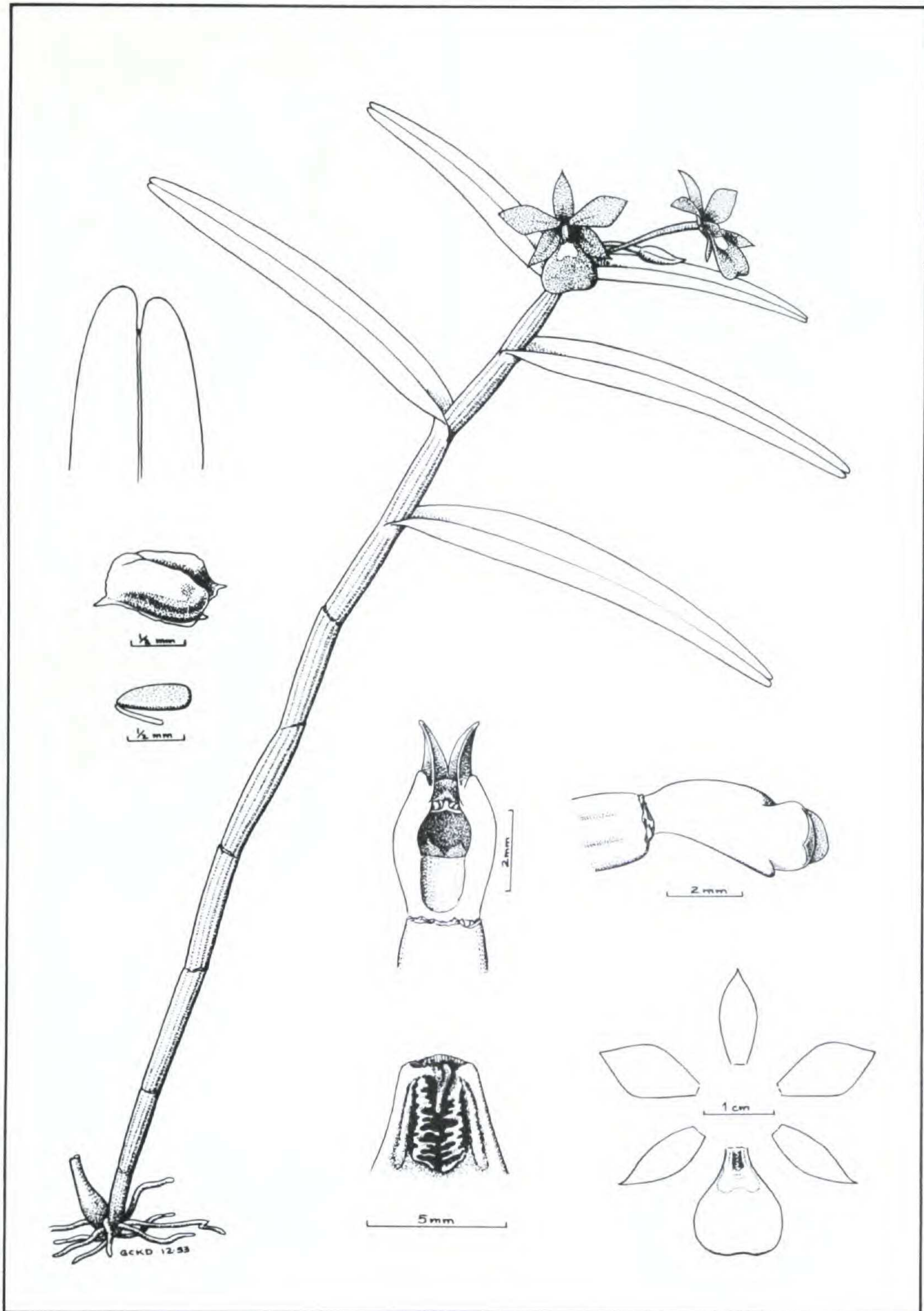


Plate 35. *Dimerandra buenaventurae* (Krzl.) Siegerist.

PLATE 36

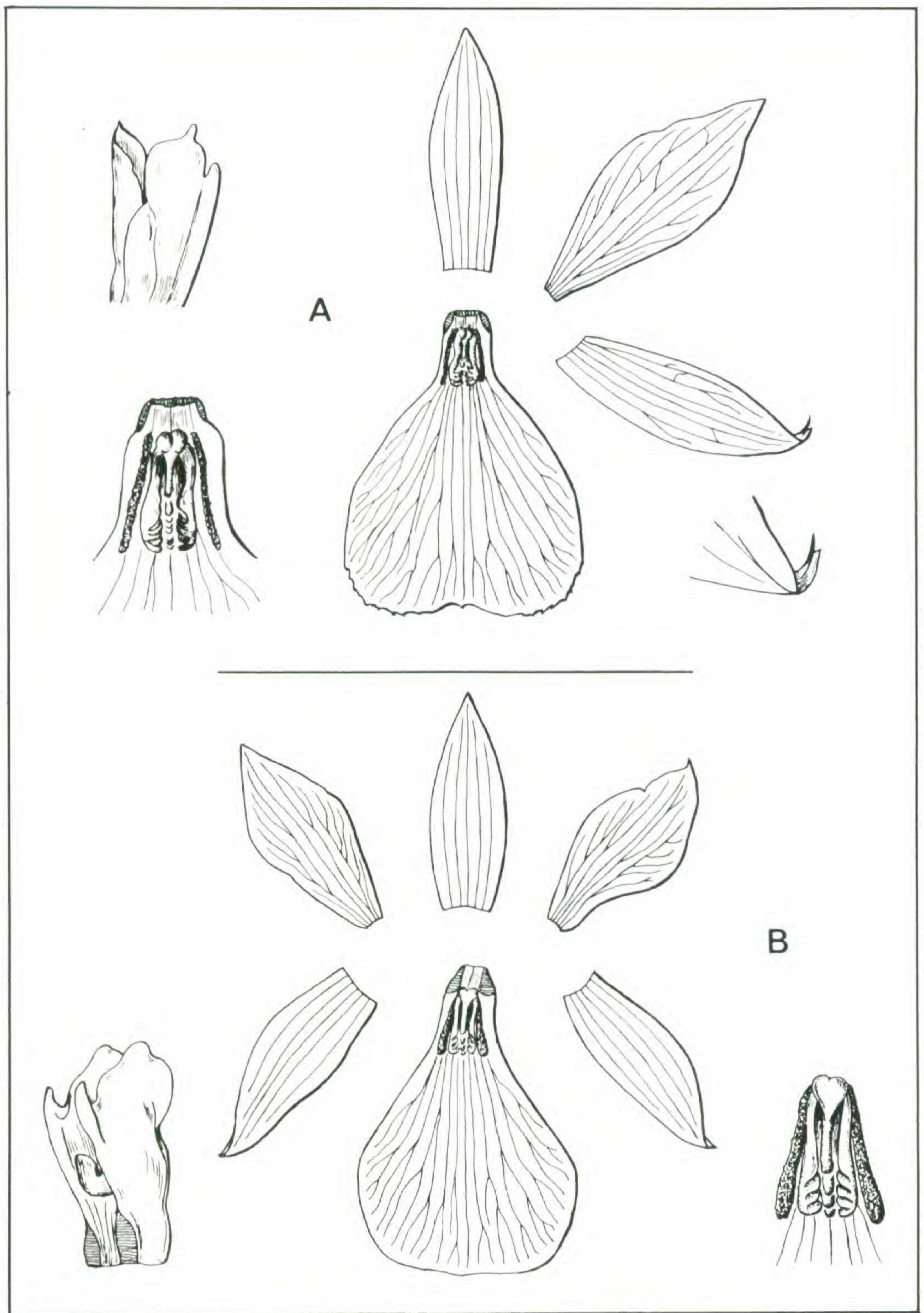


Plate 36. A. *Dimerandra Rimbachii* (Schltr.) Schltr. Type. B. *D. tenuicaulis* (Rchb. f.) Siegerist, drawings are based on Dodson 52.

PLATE 37

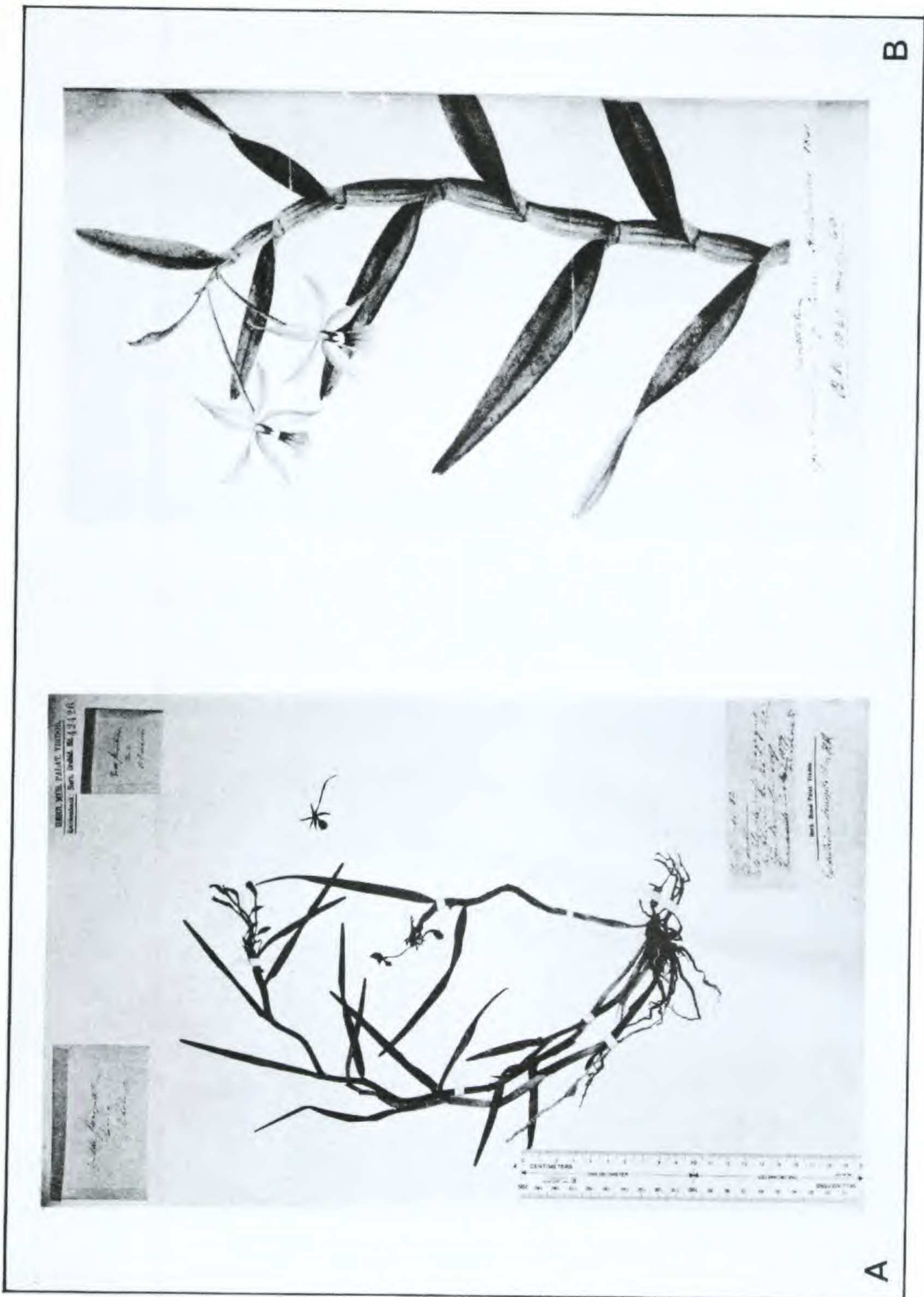


Plate 37. A. *Epidendrum stenopetalum* var. *tenuicaule* Rchb. f. Type. B. *E. lamellatum* Westc. ex Lindl. Type.

PLATE 38

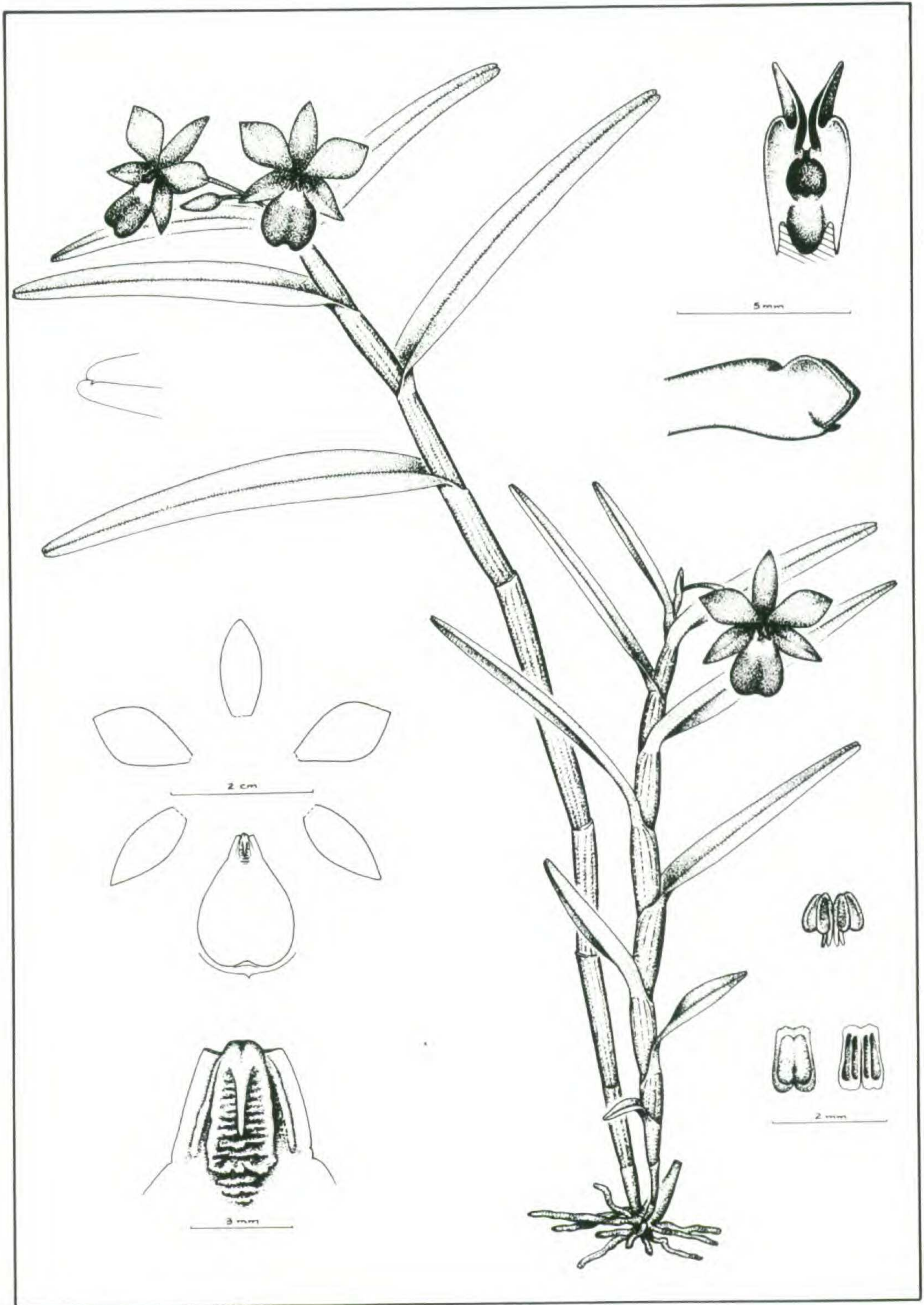


Plate 38. *Dimerandra elegans* (Focke) Siegerist.

PLATE 39

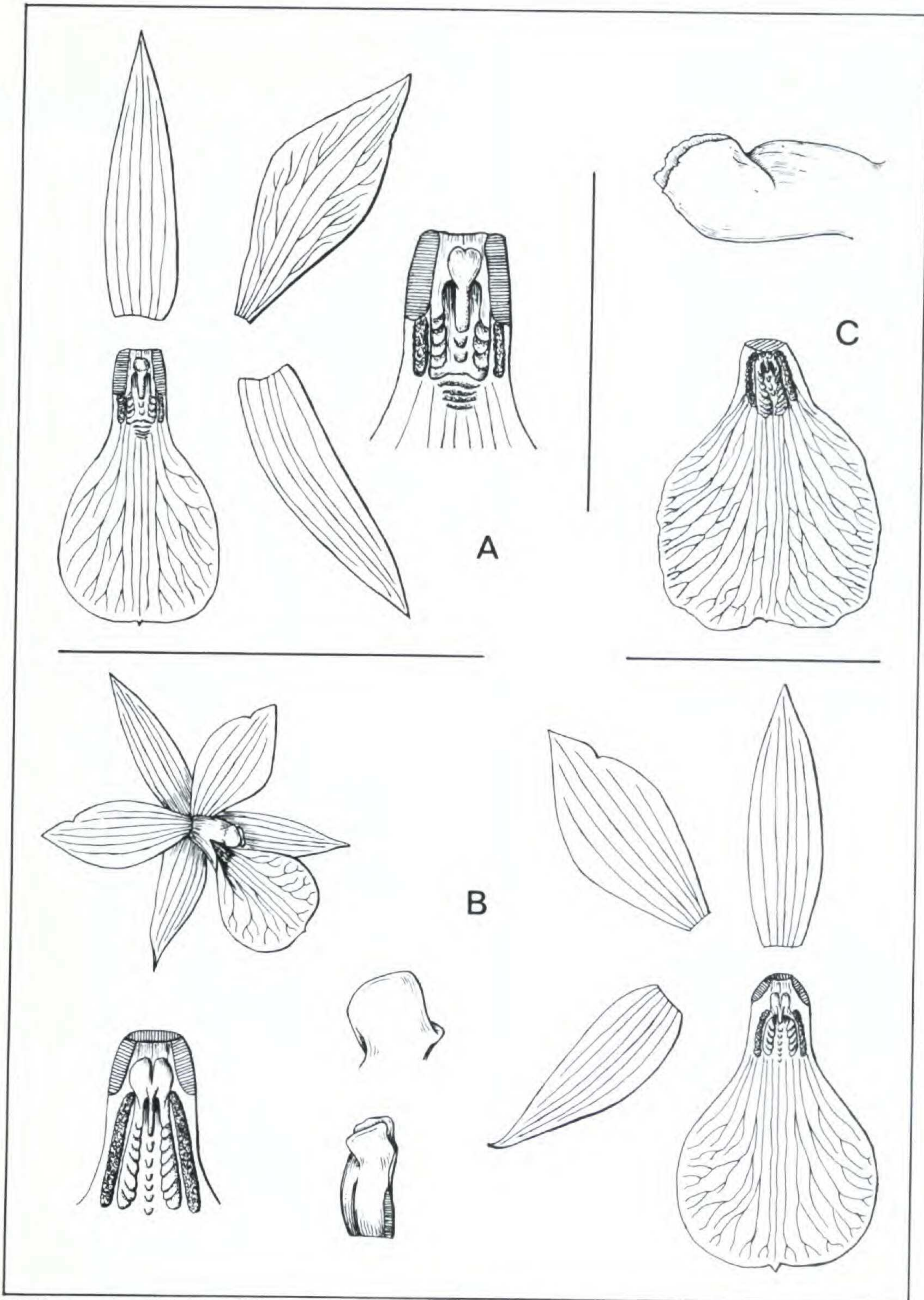


Plate 39. A. *Dimerandra elegans* (Focke) Siegerist. Type. B. *D. emarginata* (Meyer) Hoehne. Type. C. *D. emarginata* (Meyer) Hoehne. Type of *Epidendrum lamellatum* Westc. ex Lindl.

PLATE 40

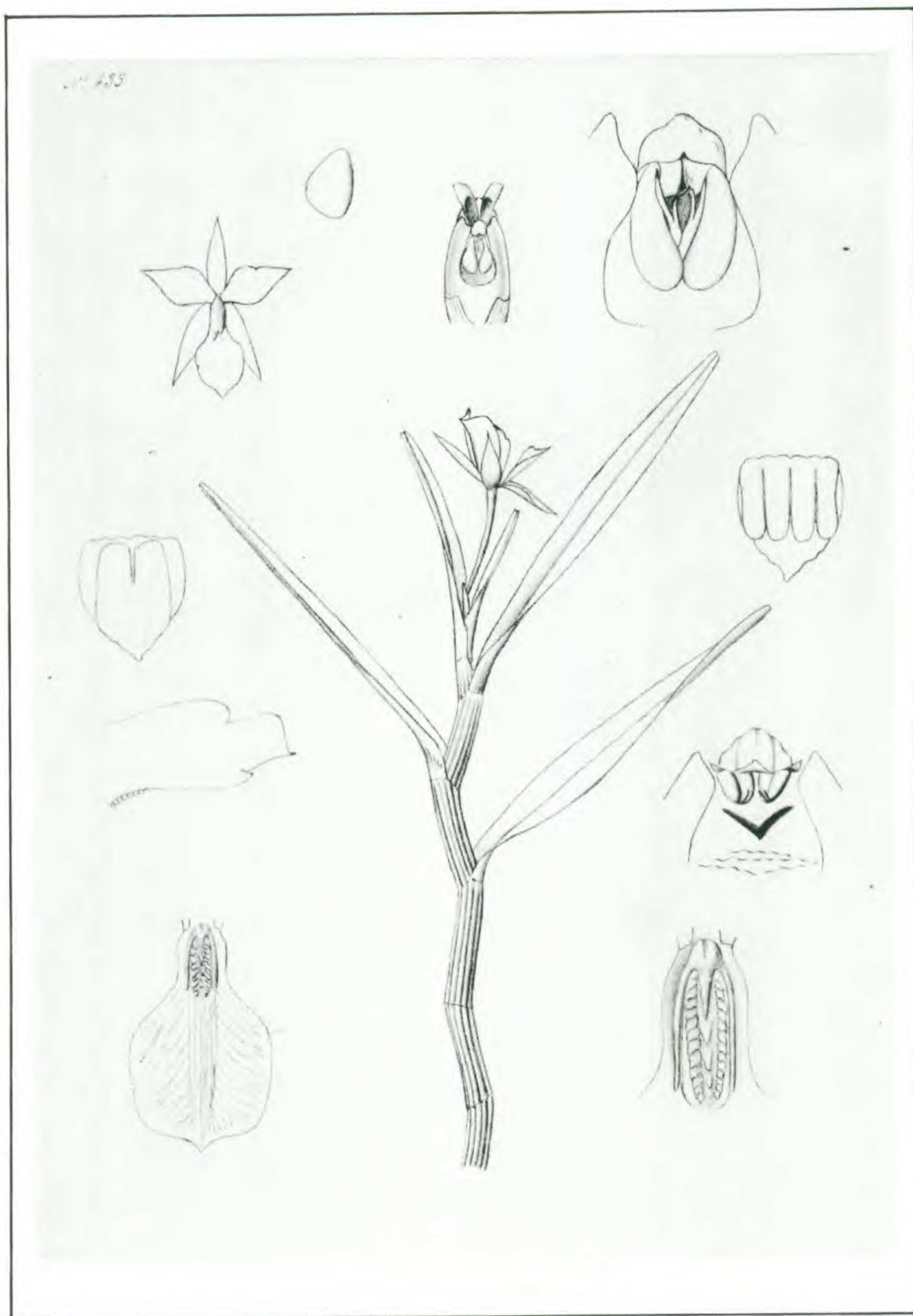


Plate 40. *Dimerandra emarginata* (Meyer) Hoehne. Drawing by Endres.