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**VOLUME 31, PART 2**

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**THE ACANTHACEAE OF**  
**COLOMBIA, II**

**By EMERY C. LEONARD**



**SMITHSONIAN INSTITUTION**  
**UNITED STATES NATIONAL MUSEUM**  
**WASHINGTON, D. C.**

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II

## PREFACE

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Part I of the Acanthaceae of Colombia, comprising the subfamilies Nelsonioideae, Mendoncioideae, and Thunbergioideae, and the five tribes of the first series, Contortae, of the subfamily Acanthoideae, was published as Part I of Volume 31, Contributions from the United States National Herbarium, pp. 1-117, June 8, 1951. Part II consists of a treatment of the first five tribes of the second series, Imbricatae, of the subfamily Acanthoideae. Nine genera, including 106 species, of which 73 are described as new, are discussed in the present treatment.

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*Head Curator, Department of Botany,  
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# THE ACANTHACEAE OF COLOMBIA, II

By EMERY C. LEONARD

## INTRODUCTION

TEN tribes are listed by Dalla Torre and Harms (Genera Siphonogamarum) in the series Imbricatae. Eight of these tribes are represented by one or more genera from Colombia. The following five tribes are discussed in the present treatment:

6. Aphelandreae
7. Rhombochlamydeae
8. Asystasiaeae
9. Graptophylleae
10. Pseuderanthemeae

The remaining three tribes, Odontonemeae, Isoglosseae, and Justiceae, will be reserved for treatment in Part III of the Acanthaceae of Colombia.

## SYSTEMATIC TREATMENT

### Subfamily 4. ACANTHOIDEAE (continued from Part 1)<sup>1</sup>

#### Series B. IMBRICATAE

Imbricatae Lindau, Bot. Jahrb. Engler 18: 46. 1893.

The following artificial key will serve to separate the Colombian genera represented in the five tribes listed above:

Anthers 1-celled.

Corolla lobes subequal, spreading.

Bracts pink or white; plants shrubby..... 15. *Neriacanthus*

Bracts usually green; plants herbaceous..... 16. *Stenandrium*

Corollas 2-lipped.

Calyx 3-parted..... 19. *Cyphacanthus*

Calyx 5-parted.

Pollen grains spherical, the surfaces divided into tetragons.

18. *Encephalosphaera*

Pollen grains elongated, cleft.

Spaltenpollen (ellipsoidal grains with 3 longitudinal clefts, often with a pore in each cleft)..... 17. *Aphelandra*

Daubenpollen (differing from the spaltenpollen in having the clefts much broader and flatter (i. e., stave-shaped) and each containing a pore)..... 20. *Rhombochlamys*

<sup>1</sup> E. C. Leonard, Contr. U. S. Nat. Herb., 31, pt. 1: 44. 1951.



Anthers 2-celled.

Stamens 4..... 21. *Asystasia*

Stamens 2.

Corolla large, 2-lipped; staminodes, if present, rudimentary; bracts large.

22. *Pachystachys*

Corolla usually small with a limb of 5 subequal spreading lobes; staminodes well developed; bracts small..... 23. *Pseuderanthemum*

#### Tribe 6. APHELANDREAE Nees

Aphelandreae Nees, DC. Prodr. 11: 279. 1847.

Herbs or shrubs; leaves various; flowers borne in bracted spikes; calyx 5-parted, the segments subequal, membranaceous-chartaceous, striate; corolla hypocrateriform or infundibular, the limb subregular, bilabiate, or ringent; stamens 4, subdidynamous; anthers 1-celled, often connected by their hirsute tips; capsules clavate, 4-seeded.

#### KEY TO THE GENERA

Corolla lobes subequal, spreading, the tube narrow.

Plants shrubby; bracts rather large, toothed, white or pink; staminodes slender.

15. *Neriacanthus*

Plants herbaceous, often subcaulescent; bracts small, usually lanceolate, entire (in Colombian species), green; staminodes none..

16. *Stenandrium*

Corollas 2-lipped, the tube usually infundibular, although narrowly so, but the mouth always appreciably broader than the base.

Calyx 3-parted..... 19. *Cyphacanthus*

Calyx 5-parted.

Pollen grains ellipsoidal bearing 3 longitudinal clefts, each of these often bearing a pore..... 17. *Aphelandra*

Pollen grains spherical, the markings forming 6 tetragons.

18. *Encephalosphaera*

#### 15. NERIACANTHUS Benth.

*Neriacanthus* Benth., in Benth. & Hook. Gen. Pl. 2: 1096. 1876. This is one of the many generic names in the family Acanthaceae formed by adding a prefix to *Acanthus*. Here the prefix *Neri*, from *νηρός*, means wet, in allusion, undoubtedly, to the high damp mountain slopes, the natural habitat of the species. Type species: *Neriacanthus purdieanus* Benth. Type locality: Jamaica.

*Aphanandrium* Lindau; Engl. & Prantl, Pflanzenfam. IV, 3b: 323. 1895. The name is derived from *αφανής*, invisible, and *ανδρός* male sex, in allusion, no doubt, to the deeply included stamens. Type species: *Aphanandrium lehmannianum*.

Plants shrubby; leaves opposite, the blades entire or undulate; flowers borne in terminal or axillary peduncled spikes; bracts imbricate, entire, usually colored, conspicuous; bractlets shorter than the calyx; calyx deeply 5-parted, the segments narrow, the posterior one slightly wider than the others, all striate-nerved, their margins subhyaline; corolla tube subcylindric, the lobes imbricate, the posterior

lobe borne innermost and slightly larger than the others, the anterior pair borne outermost; fertile stamens 4, included; staminode filiform; anthers narrow, 1-celled, terminated by a slender tip; capsules short-stipitate, glabrous, nitid, finely punctate, 4-seeded, the basal portion solid; seeds flattened, suborbicular, subtended by blunt-tipped retinacula.

Previous to the present paper only two species have been proposed in this genus, *N. lehmannianus*, from Colombia and Perú, and *N. purdieanus* Benth. from Jamaica. The genus is easily recognized by its white, whitish or pinkish bracts, slender-tubed corollas, and 1-celled anthers.

## KEY TO THE SPECIES

Corolla lilac, 4 cm. long----- 1. *N. grandiflorus*  
 Corolla white or yellow proximally, 2 cm. long----- 2. *N. lehmannianus*

1. *Neriacanthus grandiflorus* Leonard, sp. nov.

FIGURE 41

Suffrutex, caulibus quadrangularibus, glabris; lamina foliorum oblongo-elliptica, apice acuminata, apice ipso obtuso, basi angustata, in petiolum decurrens, glabra, vel in venis parce puberulenta et in marginibus parce et minute hirsuta; petioli glabri; pedunculi glabri; spicae terminales; bracteae albae vel subvirides, minute punctatae, glabrae, oblongo-ellipticae, subacutae, basi angustatae, in marginibus minute serratae; bracteolae anguste lanceolatae, striatae, glabrae; calycis segmenta anguste lanceolata, glabra, basi carinata et indurata; corolla lilacina, supra puberula, infra glabra, tubo angusto, lobis rotundatis vel leviter emarginatis; capsulae glabrae, minute punctatae.

Suffrutescent plants up to 1 meter high; stems subquadrangular, glabrous, the basal portion about 5 mm. thick; leaf blades oblong-elliptic, 3 to 10 cm. long, 1.5 to 4.5 cm. wide, short-acuminate at apex (the tip itself blunt), gradually narrowed from middle or slightly above middle to base and decurrent on the petiole, the upper surface drying brown, the lower surface greenish brown, glabrous except the minutely and sparingly hirsute margins and the sparingly puberulous costa and veins (8 or 9 pairs), these fairly prominent; petioles 1 to 1.5 cm. long, glabrous; spikes terminal, about 8 cm. long and 3 cm. broad; peduncles 3-4 cm. long, glabrous; bracts greenish white, or at maturity white, glabrous, minutely and distantly punctate, oblong-elliptic, about 23 mm. long and 9 mm. wide, acutish, narrowed to 3 mm. at base, 10- or 12-veined, the margins minutely serrate toward tip, the teeth about 0.25 mm. long and 1.5 mm. broad at base; bractlets narrowly lanceolate, unequal, the larger 8.5 mm. long and 1.25 mm. wide, the smaller one 8 mm. long and barely 1 mm. wide, both acute, parallel-nerved and glabrous, the costa prominent; calyx segments subequal, narrowly lanceolate, 1 cm. long, 1 to 1.5 mm. wide, acute, glabrous, finely parallel-nerved, the basal portion carinate and indurate; corolla lilac, 4 cm. long, glabrous without from base to middle of tube, thence minutely puberulous, gla-

brous within except the medial region, this minutely hirsute, the hairs about 0.25 mm. long, white, spreading, the tube narrowly cylindrical, 1.5 mm. broad except at the regions of the anthers, here enlarged to 2 mm., the limb 1.5 cm. broad, the lobes spreading, obovate, about 1 cm. long and 6 to 8 mm. wide, rounded or shallowly emarginate; stamens inserted about 2 cm. above the base of the corolla tube, the filaments 1 mm. long, pilosulous; anthers 3 mm. long, their tips adherent; capsules glabrous, clavate, 1.5 cm. long, 5 mm. broad, 2.5 mm. thick, minutely punctate; retinacula 2.5 mm. long, nearly straight, the tips cucullate; mature seed not seen.



FIGURE 41.—*Neriacanthus grandiflorus* Leonard (Cuatrecasas 15625): *a*, Tip of stem showing inflorescence and uppermost leaf blades; *b*, bract; *c*, bractlet; *d*, calyx opened to show lobes; *e*, valve of capsule showing retinacula. (*a*, Half natural size; *b-e*, natural size.)

Type in the U. S. National Herbarium, No. 1852711, collected in forest of La Laguna, on the left bank of Río Sanguinini, Department of El Valle, Colombia, 1,250 to 1,400 meters altitude, December 10 to 20, 1943, by J. Cuatrecasas (No. 15625).

*Neriacanthus grandiflorus* is a well-marked species definitely distinct from *N. lehmannianus* and easily separated from it by its large lilac flowers and by the nearly glabrous leaf blades. In *N. lehman-*

*nianus* the flowers are white and do not exceed 2 cm. in length and the leaf blades are generally puberulous. Likewise the bracts of this new species are much larger than those of *N. lehmannianus*. At least some of them are as much as 23 mm. long, instead of only 15 mm.

## 2. *Neriacanthus lehmannianus* (Lindau) Lindau

*Aphanandrium lehmannianum* Lindau; Engl. & Prantl, Pflanzenfam IV, 3b: 323. 1895. Named in honor of F. C. Lehmann, a collector of Costa Rican, Guatemalan, and Colombian plant specimens.

*Neriacanthus lehmannianus* Lindau, in Urb. Symb. Antill. 2: 209. 1900. Here, in an observation under *N. purdieanus* Benth., Lindau combines the genus *Aphanandrium* with *Neriacanthus*, and cites Lehmann's 7852 from Ecuador as type of the species.

Herbs, sometimes woody at base; stems usually simple, erect or ascending, terete or subquadrangular at tip, glabrous below, the upper portions more or less puberulous, the hairs minute, sordid, variously curved; leaf blades oblong-elliptic to oblanceolate, up to 13 cm. long and 4 cm. wide, acuminate or acute, narrowed at base, chartaceous, entire or undulate, the upper surface drying blackish, glabrous, minutely faveolate under lens, the costa and lateral veins (8 to 12 pairs) obscure, the lower surface drying olive, puberulous, the hairs sordid; petioles 1 to 1.5 cm. long, puberulous; flowers borne in peduncled spikes 3 to 6 cm. long and 1 to 1.5 cm. broad, the spikes terminal, solitary or in 2's or 3's, the peduncles 1 to 4 cm. long, these and the rachis quadrangular, glabrous or nearly so; bracts obovate, the larger and lowermost about 15 mm. long and 7 mm. wide, successively smaller toward tip of spike, all obtuse, more or less chartaceous, glabrous, irregularly and sparingly serrate, pink in living plants, drying reddish brown; bractlets narrowly lanceolate, 5 to 5.5 mm. long, about 0.75 mm. wide, gradually narrowed to a subulate tip, glabrous, carinate, striate-nerved, the costa prominent; calyx 6 to 6.5 mm. long, the segments linear-lanceolate, gradually narrowed to a subulate tip, the posterior segment 1 mm. wide, the lateral ones 0.5 mm. wide, and the anterior pair 0.75 mm. wide, all glabrous and striate-nerved; corolla white, or yellow proximally, glabrous, 1.5 to 2 cm. long, the tube 12 mm. long, 1 mm. broad at base, enlarged to 1.75 mm. at 3 mm. above base, thence gradually narrowed to 1 mm. at mouth, the upper portion subcylindric, the limb about 1 cm. broad, the lobes elliptic or obovate, emarginate, the posterior lobe 6 mm. long, 5 mm. wide, the lateral and anterior ones 6 mm. long, and 2.25 to 2.5 mm. wide; stamens inserted about the middle of the corolla tube, the filaments about 2 mm. long, these and the portion of the corolla tube in the vicinity of their insertion pubescent, the anthers 2 mm. long, 0.25 mm. broad, affixed midway between middle and base, their tips recurved; pistil about 1 cm. long, glabrous; capsules 12 mm. long, 4 mm. broad, pointed at apex, gla-

brous, nitid, minutely punctate, 4-seeded, the solid basal portion about 3 mm. long and 2 mm. broad, the seed brown, the retinacula 2 mm. long, rounded and cucullate at tip.

Damp woods or clearings on the higher mountain slopes or summits. The specimens cited were collected from 1,700 to 2,900 meters. Colombia to Peru.

CALDAS: La Línea, Quindío, *Dryander* 2140 (US).

CAUCA: Between Timbiqui and Micay, *Lehmann* B. T. 449 (NY).

EL VALLE: La Cumbre, *Hazen & Killip* 11152 (Ph, NY, US); *Pennell & Killip* 5789 (Ph, NY, US). San Antonio, *Dryander* 2288 (Valle); *Killip & García* 33678 (US), 33889 (US). Cali, *Lehmann* 2966 (US). Cuesta de Tocotá, on road from Buenaventura to Cali, *Pittier* 610 (US).

DEPARTMENT (?): Sommet de la Cordillera Occidental, *Langlassé* 44 (US).

### 16. STENANDRIUM Nees

*Stenandrium* Nees, in Lindl. *Intr. Bot.*, ed. 2, 444. 1836. The name comes from *στενός*, narrow, and *ανδρός*, male sex, and alludes to the narrow anthers, a character common to the tribe Aphelandreae. Type species: *Stenandrium mandiocanum* Nees.

Small perennial, caulescent or acaulescent herbs, the leaves often radical; flowers borne in spikes, these sessile, subsessile, pedunculate or borne on slender scapes, the peduncles or scapes simple or branched; bracts ovate to lanceolate, herbaceous, entire or occasionally toothed; calyx segments 5, narrow, subequal, usually striate-nerved; corollas pink, white or purple, the tube slender, cylindrical, more or less incurved and briefly ampliate at throat, the limb oblique, spreading, 5-lobed, the lobes obovate, rounded or retuse, imbricate; stamens 4, didynamous, affixed in the throat of the corolla tube, included, the filaments very short, the anthers oblong, 1-celled, conniving or subcohering in pairs, sometimes barbellate at tip, muticous at base; style subclavate at apex, briefly 2-lobed; ovules 2 in each cavity; capsules oblong to subfusiform, subterete; seeds 4 or fewer by abortion, plano-compressed, orbiculate, minutely hispid or muricate, subtended by rather long retinacula.

The species of this genus are widely distributed throughout the tropical and subtropical regions of America. The acaulescent ones are easy enough to recognize by virtue of their habit alone; the stemmed plants may confuse one at first sight by their very different appearance, but they always possess the characteristic flowers of the genus. More than 60 species are now recognized.

#### KEY TO THE SPECIES

Plants caulescent.

Stems glabrous; spikes borne in terminal trichotomous corymbs; leaf blades long-cuspidate----- 1. *S. corymbosum*

Stems pubescent; spikes borne on simple or forked peduncles; leaf blades acutish----- 2. *S. radicosum*

Plants acaulescent.

Peduncles shorter than or but slightly exceeding the leaves; leaf blades ovate to oblong-ovate or oblong-elliptic, obtuse at apex----- 3. *S. dulce*

Peduncles much exceeding the leaves; leaf blades oblong, acuminate.

4. *S. humboldtianum*

### 1. *Stenandrium corymbosum* Nees

*Stenandrium corymbosum* Nees, DC. Prodr. 11: 727. 1847. Type collected in Colombia by Lobb (No. 171) (Hooker Herbarium, Kew). *Corymbosum* alludes to the flat-topped inflorescence, this contrasting with the usually peduncled spikes of the genus.

Herbs; stem about 30 cm. high, simple, more or less succulent, glabrous; leaf blades oblong, 10 to 12 cm. long, 2 to 2.5 cm. wide, obtusish and long-cuspidate at apex, acute at base, entire; petioles up to 18 mm. long; flowers borne in short spikes, these in turn borne in a spreading, 3-parted corymb; bracts oval, much longer than the calyx, obtuse, membranaceous, sessile, spreading; bractlets shorter than the calyx; corolla about 13 mm. long.

Not seen. Description compiled from the original.

Endemic.

### 2. *Stenandrium radicosum* Nees

*Stenandrium radicosum* Nees, DC. Prodr. 11: 283. 1847. Type locality: "Prope S. Martha et Maracaybo in Colombia in silvis montanis humidis (h. Hooker), Moritz n. 1273 in h. gen. berol." A photograph of the type material from the Berlin Herbarium is in the U. S. National Herbarium (Field Mus. photograph No. 8686). *Radicosum* alludes to the numerous roots supposedly produced by the plant.

Stems rooting at base, leafy toward tip; leaf blades elliptic-oblong, up to 16 cm. long and 6 cm. wide, acutish at apex, narrowed at base and decurrent on the petiole; petioles slender, up to 4 cm. long; peduncles up to 8 cm. long, simple or forked; spikes lax, up to 5 cm. long, the bracts lanceolate, spreading, acuminate, bearing a pair of small marginal teeth near the apex, ciliate.

Specimen not seen. Description compiled from the original and the dimensions computed from the photograph.

The type locality as given by Nees is confusing. As Moritz is not known to have collected in Colombia his No. 1273 most likely came from the Venezuela side in the general vicinity of Maracaibo, Zulia. Since the species however may actually occur in the adjacent Santa Marta Mountains of Colombia, it has been included in the present treatment.

### 3. *Stenandrium dulce* (Cav.) Nees

FIGURE 42

*Ruellia dulcis* Cav. Icon. Pl. 6: 62. pl. 585, fig. 2. 1801. Type collected near Talcahuano, Chile, by Cavanilles. *Dulcis*, sweet, alludes, no doubt, to the esthetic appeal of the plant. This specific name was evidently suggested to Cavanilles by its vernacular name "canchelagua dulce."

*Stenandrium dulce* Nees, DC. Prodr. 11: 282. 1847. Based on *Ruellia dulcis* Cav.

*Gerardia*<sup>2</sup> *dulcis* Blake, Contr. Gray Herb. 52: 101. 1917. Based on *Ruellia dulcis* Cav.

Rootstocks 1 to several cm. long, 3 to 5 mm. in diameter; roots thick-fibrous; stem very short or lacking; leaf blades ovate to oblong-ovate or oblong-elliptic, up to 5 cm. long and 2.5 cm. wide, obtuse at apex, narrowed at base and decurrent on the petiole, rather firm, entire or slightly crenate, minutely punctate, more or less hirsute, the hairs spreading, up to 1 mm. long, confined mostly to costa and lateral veins (4 or 5 pairs); petioles up to 4 cm. long, both pilose and puberulous, or sometimes glabrous and sparingly ciliate, or, rarely, subtomentose;



FIGURE 42.—*Stenandrium dulce* (Cav.) Nees (a, Pérez-Arbeláez 3031; b, c, Conde Hugo de Tarragón, Araque-M. & Barkley 18Cu.100): a, Plant; b, bract and bractlets; c, calyx segment. (a, b, Natural size; c, twice natural size.)

flowers borne in sessile, subsessile or peduncled spikes, usually 2 to 3 cm. long or occasionally up to 6 cm. long, the peduncles, if present, both hirsute and puberulous; bracts oblong-lanceolate, 8 to 12 mm. long, 1.5 to 3.5 mm. wide, acute to acuminate, imbricate, inconspicuously 3-nerved, more or less punctate, ciliate, pilose, the hairs up to 2 mm. long, or sometimes both pilose and puberulous; bractlets narrowly lanceolate, about 5 mm. long and 0.5 mm. wide, 3-nerved, ciliate; calyx segments narrowly lanceolate, 6 to 7 mm. long, 1 mm. wide, striate-nerved, minutely ciliolate, the margins subhyaline; corolla purple, glabrous, up to 2 cm. long, the tube slender, about 1 mm. broad,

<sup>2</sup>The genus *Gerardia* L. commemorates John Gerard, a famous English herbalist (1545 to 1607). This genus, however, belongs to the family Scrophulariaceae, notwithstanding the fact that the first species treated by Linnaeus under *Gerardia* (Sp. Pl. 610. 1753) is of the family Acanthaceae. (Mon. Acad. Nat. Sci. Philadelphia 1: 419. 1935.)

slightly enlarged at base, the limb about 1.5 cm. broad, the lobes subequal, obovate, obtuse; capsules oblong, 2.5 mm. in diameter, glabrous or puberulous at tip; seeds flattened, ovate, 3 mm. long and 2.5 mm. broad, appressed-pilose.

A variable species inhabiting the grassy, upper slopes of the Andes. Colombia, Peru, Chile, Bolivia, Argentina.

CUNDINAMARCA: Páramo de Choachí, vicinity of Bogotá, *Gabriel* 6 (US). La Picotá, *Pérez-Arbeláez* 3031 (US). Southwest of Las Cruces, *Pennell* 2191 (NY, US). Sabana de Bogotá, *Dawe* 201 (US). San Cristóbal, Sabana de Bogotá, *Pring* 36 (Mo). Sabana de Bogotá, near Madrid, *Conde Hugo de Tarragón, Araque & Barkley* 18Cu.100 (US). Hacienda de Tequendama, *Triana* s. n. (Col).

#### 4. *Stenandrium humboldtianum* Nees

*Stenandrium humboldtianum* Nees, DC. Prodr. 11: 284. 1847. Type collected at Atures, Venezuela, by Humboldt and deposited in the Berlin Herbarium. Photograph in the U. S. National Herbarium (Field Mus. Photograph No. 8683). Named in honor of Alexander von Humboldt.

Acaulescent; leaf blades oblong, acuminate, gradually narrowed to a short petiole, hirsute, entire; peduncle 15 to 20 cm. long; spikes loose; bracts lanceolate, slightly longer than the calyx, decussate, spreading; bractlets lanceolate, 2.5 to 3 mm. long, 1 mm. wide, acuminate, ciliolate; calyx segments lanceolate, about 4 mm. long, 0.5 to 1.5 mm. wide, puberulous at tip, striate-nerved; corolla 1.5 cm. long, the tube subcylindric, about 1.5 mm. broad, the segments obcordate, emarginate.

Colombia, Venezuela.

DEPARTMENT (?): Without locality, *Claes* (US).

### 17. APHELANDRA R. Br.

*Aphelandra* R. Br. Prodr. Fl. Nov. Holl. 475. 1810. Here under *Justicia* Robert Brown proposed the generic name *Aphelandra* to include the following species: *Justicia pulcherrima* Jacq., *J. scabra* Vahl, and *J. cristata* Jacq. Type species: *Justicia pulcherrima* Jacq. *Aphelandra* is from the Greek ἀφελής, smooth, and ανδρός, anther.

*Hemisandra* Scheidw. Bull. Acad. Sci. Bruxelles. 9: 22. 1842. Type species: *H. aurantiaca* Scheidw. *Hemisandra* is derived from two Greek words, ἡμι, half, and ανδρός, anther.

*Lagochilium* Nees, in Mart. Fl. Bras. 9: 83. pl. 10. 1847. Six species are described here by Nees. The first of these, *L. maximilianum* Nees, by virtue of its being illustrated, can be chosen as the type species. When compared with *Aphelandra*, the genus *Lagochilium* is characterized, according to Nees, by its nearly regular (subbilabiate) corolla limb and generally by its herbaceous nature. It seems in a way to be intermediate between *Aphelandra* and *Stenandrium*. The epithet is derived from the Greek words, λαγῶς, hare, and χείλος, lip, evidently from a fancied resemblance of one of the corolla lobes to a hare's lip.

Shrubs or suffrutescent herbs; leaves opposite, petiolate, the blades usually large, oblong to elliptic, toothed, lobed, entire, or crenate;



flowers of various shades of red, yellow, orange or occasionally white or cream, borne in terminal usually large-bracted spikes; flower-bracts entire or toothed, those of certain species bearing dorsally on either side a group of ocelli, these few, oval, brownish, rather conspicuous or very numerous and minute appearing even under magnification as a more or less irregular alveolar area; bractlets various, in a few species rudimentary; calyx divided nearly to the base into 5 segments, these usually lanceolate or oblong-lanceolate, coriaceous or chartaceous, striate-veined, the posterior segment usually broader than the others and sometimes toothed at tip (in a few species the calyx is rudimentary); corolla tube straight or curved, the limb usually bilabiate, the upper lip erect, bilobed or entire, the lower lip reflexed-spreading, 3-lobed, the middle lobe often larger than the lateral ones, these sometimes very small and adnate to the base of the upper lip; stamens 4, usually slightly exserted, but rarely if ever exceeding the upper lip of the corolla; anthers narrow, one-celled, often pilose dorsally and adhering at tips by webby hairs; capsules usually ovoid or cylindric, 4-seeded.

*Aphelandra*, one of the larger genera of the family, is restricted to tropical America. The flowering spikes are often large and beautifully colored, even to the bracts, and in certain species variegated or colored leaves occur. In spite of its attractiveness, however, these plants are rarely met with in cultivation, possibly because of culture difficulties. This may be explained by the fact that many of the species are shade plants from damp forests. In contrast to most genera of the family, there are no cystoliths.

Important characters in the genus *Aphelandra*, linking large series of species, are the presence of spiny interpetiolar bracts, the presence or absence of teeth, spiny or otherwise, on the margins of the leaf blades or flower bracts, and the presence or absence of ocelli on the flower bracts. These ocelli may be represented by one to several rather large oval brownish or blackish glands plainly visible under a lens or even to the unaided eye, or again they may be very numerous and minute, visible only under a high magnification. Without aid of a lens, these minute ocelli appear as more or less irregular dark alveolar areas on the bracts.

In one large group of species, chiefly the *pulcherrima-tetragona* complex, the lower lip of the corolla is apparently entire and seems to consist of a single segment. A careful examination will, however, reveal small lateral lobes, adnate to the basal portion of the upper lip with only their tips free and appearing as small rounded or triangular projections.

## KEY TO THE SPECIES

## A. Stems armed by spiny interpetiolar bracts.

## Corollas glabrous.

Leaf blades glabrous beneath or essentially so.

Corollas red..... 1. *A. runcinata*Corollas stramineous..... 1a. *A. runcinata* var. *straminea*Leaf blades pilose beneath..... 1b. *A. runcinata* var. *pilosa*

Corollas pubescent, tomentose or hirtellous (unknown in No. 4).

Leaf blades 3 cm. wide or less.

Bracts spiny-margined; leaf blades densely pilose or subtomentose.

2. *A. mutisii*Bracts entire; leaf blades glabrous or essentially so..... 3. *A. euopla*

Leaf blades, at least some of them, 5 cm. wide or more.

Stems glabrous; calyx segments rounded and mucronate.

4. *A. porphyrocarpa*

Stems minutely strigose, hirsute, or subtomentose, at least above; calyx segments obtusish to acute or acuminate.

Corollas yellow.

Leaf blades deeply incised; bracts triangular-ovate, acuminate, sparingly serrate (usually about 3 pairs of teeth); corollas 3.4 to 4 cm. long..... 5. *A. acanthus*Leaf blades shallowly incised; bracts lanceolate to oblong-ovate, serrate (4 to 9 pairs of teeth); corollas 4 to 6 cm. long..... 6. *A. phobera*

Corollas red or orange red.

Leaf blades deeply incised, the lobes triangular to oblong, up to 7 cm. long, the margins prominently and rather closely spinose-serrate; middle lobe of the lower corolla lip flat..... 7. *A. huilensis*Leaf blades serrate-dentate or shallowly incised, the segments broadly triangular, about 1 cm. long (larger leaves), the margins sparingly and distantly spinose-toothed; middle lobe of the lower corolla lip strongly cucullate..... 8. *A. porphyrolepis*

## A. Stems unarmed, i. e., without spiny interpetiolar bracts.

## B. Leaf blades lyrate-pinnatifid or coarsely serrate.

Leaves and corollas glabrous..... 9. *A. quercifolia*

Leaves and corollas more or less pubescent.

Bracts toothed..... 10. *A. lyrata*Bracts entire..... 11. *A. crispata*

## B. Leaf blades entire or undulate, or rarely shallowly crenate.

## C. Bracts toothed.

## D. Corollas up to 2 cm. long (2.5 cm. in No. 16).

Bracts 2 mm. wide or less..... 12. *A. arnoldii*

Bracts 3.5 to 8 mm. wide.

Peduncles about 12 cm. long..... 13. *A. parviflora*

Peduncles 6 cm. long or less.

Leaf blades subcordate at base..... 14. *A. mollis*

Leaf blades narrowed at base.

Flowers borne in a terminal trifurcate panicle... 15. *A. botanodes*

Flowers borne in terminal or lateral spikes.

Corolla 2.5 cm. long; costal and lateral veins of leaf blades bordered by white or yellow..... 16. *A. silvicola*

Corolla 12 to 15 mm. long; leaf blades uniformly green.

Teeth of bracts about 0.5 mm. long..... 17. *A. adscendens*Teeth of bracts up to 3 mm. long..... 18. *A. ochrolaryna*

## D. Corollas 3 to 6 cm. long.

## E. Bracts without ocelli.

Bracts narrow, 6.5 mm. wide or less.

Marginal teeth of bracts subulate----- 19. *A. uribei*

Marginal teeth of the bracts low, minute---- 20. *A. lonchochlamys*

Bracts relatively wide (10 mm. or more).

Marginal teeth of the bracts subulate, up to 4 mm. long.

Lips of the corolla subequal and somewhat similar, the lateral lobes of the lower lip nearly as long as the middle one.

21. *A. puberula*

Lips of the corolla unequal and very dissimilar, the lower lip longer than the upper, the lateral lobes of the lower lip much smaller than the middle lobe----- 22. *A. aurantiaca*

Marginal teeth of the bracts minute, about 0.25-1.5 mm. long.

Bracts glabrous----- 23. *A. leiophylla*

Bracts puberulous.

Leaf blades relatively small (up to 7 cm. long and 23 mm. wide)----- 24. *A. nana*

Leaf blades large (up to 20 cm. long and 8 cm. wide or more).

Lips of the corolla subequal, about 15 mm. long.

25. *A. sneidernii*

Lips of the corolla unequal and dissimilar, about 2 cm. long.

22. *A. aurantiaca*

## E. Bracts bearing ocelli.

Ocelli borne in a depression.

Leaf blades oblong-elliptic, up to 6 cm. wide; bracts subrhombic, their tips spreading or recurved----- 26. *A. impressa*

Leaf blades narrowly lanceolate or oblanceolate and not exceeding 21 mm. in width; bracts flat, their tips not spreading or recurved----- 27. *A. lamprantha*

Ocelli borne on the flat surface of the bracts.

Lower surface of the leaf blades densely pilose, the hairs up to 1.5 mm. long----- 28. *A. lasia*

Lower surface of leaf blades hirtellous or tomentose, the hairs mostly up to 0.5 mm. long.

Ocelli numerous, minute, appearing without a lens, as an alveolar area----- 29. *A. taborensis*

Ocelli few, large and conspicuous.

Teeth bordering the bracts slender, up to 1.5 mm. long.

30. *A. deppeana*

Teeth bordering the bracts, if present, minute and inconspicuous.

52. *A. daemia*

## C. Bracts entire.

## F. Ocelli lacking.

Hairs on the bracts, at least in part, gland-tipped.

Bracts ovate, 2 cm. wide; corolla yellow with purple spots.

31. *A. anomala*

Bracts lanceolate, 1.2 cm. wide or less; corolla red or flame color.

Bractlets lance-subulate, 2 mm. wide; bracts 2 cm. long and up to 7 mm. wide----- 32. *A. glischrochlamys*

Bractlets lanceolate, 3.5 mm. wide; bracts up to 3 cm. long and 12 mm. wide----- 33. *A. phlogea*

Hairs on the bracts eglandular (or absent).

Corolla bright red.

Leaf blades variegated, the costa and veins with adjoining area bright silver----- 34. *A. fascinator*

Leaf blades solid green.

Bracts and corolla glabrous, or the corolla pruinose.

35. *A. alexandri*

Bracts or corolla pubescent.

Rachis silvery pubescent----- 36. *A. lasiophylla*

Rachis puberulous.

Leaf blades oblong-ovate, 4 to 5 cm. wide; bracts rhombic-ovate, eciliate or minutely ciliolate at apex.

37. *A. conformis*

Leaf blades narrowly oblong-elliptic, 1 to 3 cm. wide; bracts oblong-lanceolate, ciliate, the hairs 0.5 to 0.75 mm. long.

Spikes solitary; leaves glabrous----- 38. *A. lawranceae*

Spikes 2 or more, crowded; costa and lateral veins of the lower surface of the leaf blades minutely puberulous or hirtellous----- 39. *A. colombiensis*

Corolla white, cream, reddish, or purple, not bright red.

Calyx segments well developed, 1 cm. long or more.

Bracts up to 15 mm. long, their veins obscure-- 36. *A. lasiophylla*

Bracts, at least some of them, 2.5 to 3.5 cm. long, their veins prominent.

Bracts subglabrous, eciliate----- 40. *A. boyacensis*

Bracts puberulous, strongly ciliate----- 41. *A. arisema*

Calyx segments vestigial (0.5-2 mm. long).

Bracts obtuse or rounded, their margins hyaline to the width 0.5 mm., the veinlets ending evenly to form a well-defined margin.

Plants nearly glabrous; flowers reddish----- 42. *A. killipii*

Plants pubescent, the upper part of the stems retrorsely strigose----- 43. *A. cuatrecasasi*

Bracts acute or acuminate, their margins, if hyaline, not evenly so.

Corolla white or pale cream; spikes cylindric.

44. *A. dolichantha*

Corolla purplish; spikes ovate----- 45. *A. craura*

F. Ocelli present.

G. Ocelli represented by 1 or more well-defined elliptical, brown, more or less nitid areas.

H. Rachis more or less covered with a white, flocculose tomentum.

Hairs of the stems more or less spreading.

Lower surface of the leaf blades pilose, the hairs up to 1.5 mm. long; bracts 9 mm. long, inconspicuously puberulous or glabrate----- 46. *A. pilosa*

Lower surface of the leaf blades densely and softly gray-pubescent, the hairs up to 1 mm. long; bracts 6 to 7 mm. long, densely and finely puberulous----- 47. *A. pulcherrima*

Hairs of the stems appressed.

Leaves subtending the branches of the paniculate inflorescence large and conspicuous, up to 36 cm. long and 10 cm. wide, their lower surfaces densely and softly pilose.

48. *A. schiefferae*

Leaves subtending the branches of the inflorescence small, or else the spikes solitary or fascicled at the tips of the branches, the lower surfaces of the leaf blades sparingly and inconspicuously strigose.

Spikes slender-peduncled, forming small terminal panicles; spikes up to 8 mm. broad----- 49. *A. parvispica*

Spikes subsessile, solitary or fascicled; spikes 8 to 15 mm. broad. Leaf blades relatively small, up to 13 cm. long and 4 cm. wide; ocelli small and rather inconspicuous, up to 0.5 mm. long----- 50. *A. mildbraediana*

Leaf blades large, up to 35 cm. long and 12.5 cm. wide; ocelli large and conspicuous, 0.5 to 1 mm. in diameter. Bracts 7.5 mm. long, drying light brown; ocelli 6 or 7 in number, light brown, 0.5 to 0.75 mm. in diameter.

51. *A. barkleyi*

Bracts 5 mm. long, drying dark brown; ocelli solitary or occasionally several, very conspicuous, dark brown to almost black, up to 1 mm. in diameter. 52. *A. daemonia*

H. Rachis glabrous, puberulous or hirsute, or if flocculose, the hairs brownish.

Bracts 2 cm. long or more.

Bracts ovate, rounded, appressed-pubescent to glabrate.

53. *A. grandis*

Bracts oblong-lanceolate, acuminate, finely and velvety pubescent.

Leaf blades densely and softly pilose beneath--- 54. *A. aristei*

Leaf blades glabrous or sparingly hirtellous beneath.

55. *A. trianae*

Bracts 1.2 cm. long or less.

Bracts acute to subacute.

Rachis glabrous or sparingly pilose; bracts up to 0.7 cm. long.

56. *A. albert-smithii*

Rachis clothed with a brownish flocculose tomentum.

Inflorescence a large terminal panicle of rather small spikes; ocelli minute and inconspicuous, up to 0.5 mm. in diameter----- 57. *A. macrophylla*

Inflorescence consisting of a single spike or a fascicle of 3, these subsessile or short-pedunculate; ocelli conspicuous, up to 0.75 mm. in diameter.

Costa densely strigose on the upper surface of the leaf blades; bracts acute, 6 mm. long or less, 4 mm. wide, the ocelli up to 1.25 mm. long----- 58. *A. schultesii*

Costa glabrous or sparingly strigose on the upper surface of the leaf blades; bracts subacute, 7.5 mm. long and 6 mm. wide, the ocelli up to 0.75 mm. long.

51. *A. barkleyi*

Bracts rounded or obtuse, or only the lowermost acute.

Stems hirsute, the hairs up to 1.5 mm. long-- 59. *A. haughtii*

Stems puberulous, the hairs about 0.25 mm. long.

60. *A. incarnata*

G. Ocelli numerous, minute, forming a dull, alveolar spot, this sometimes deciduous.

I. Corollas yellow, straw-color, or rose.

Bracts relatively large, up to 20 mm. long and 8-12 mm. wide; spikes (without corollas) 2 to 3 cm. broad.

Corollas densely pubescent, the hairs upwardly appressed.

61. *A. sericantha*

Corollas glabrous or papillose.

Bracts broadly rhombic-ovate, obtuse or rounded at tip.

62. *A. hartwegiana*

Bracts ovate-lanceolate, acute..... 63. *A. xanthantha*

Bracts smaller, up to 13 mm. long and 10 mm. wide; spikes (without corollas) up to 12 mm. broad (2 cm. in *A. crenata*).

Rachis white-tomentose.

Leaf blades large, up to 30 cm. long and 11.5 cm. wide; spikes up to 28 cm. long..... 64. *A. straminea*

Leaf blades smaller, up to 14 cm. long and 5 cm. wide; spikes up to 10 cm. long.

Lower surface of leaf blades moderately strigose.

65. *A. scolnikae*

Lower surface of leaf blades silky-pilose. 66. *A. sericophylla*

Rachis glabrous or minutely pilose, the hairs, if present, 0.5 mm. long or less.

Corolla minutely hirsute; leaf blades entire or undulate.

67. *A. garciae*

Corolla papillose; leaf blades, at least the lower, strongly crenate..... 68. *A. crenata*

I. Corollas red or earmine.

J. Rachis flocculose-tomentose.

Stems densely to moderately strigose; leaf blades coriaceous.

Leaf blades densely silky-pilose beneath... 66. *A. sericophylla*

Leaf blades glabrous or minutely strigose beneath.

Glabrous margins of the bractlets about 1 mm. wide; leaf blades drying dull green..... 65. *A. scolnikae*

Glabrous margins of the bractlets barely 0.5 mm. wide; leaf blades drying a nitid brown..... 69. *A. glabrata*

Stems glabrous, or the tips minutely and sparingly strigose; leaf blades membranaceous.

Bractlets 12 mm. long and 3 mm. wide, each bearing a well-defined tooth near base; spikes up to 13 cm. long and 1.5 cm. broad..... 70. *A. hodgei*

Bractlets 8 mm. long and 2 mm. wide, entire; spikes up to 30 cm. long and 8 mm. broad..... 71. *A. longispica*

J. Rachis glabrous or hirtellous, not floccose-tomentose.

Corollas densely hirtellous..... 61. *A. sericantha*

Corollas glabrous or puberulous.

Calyx conspicuously longer than the bracts.

Bracts acute..... 72. *A. blandii*

Bracts obtuse or subobtuse.

Bractlets 1 cm. long, 4 mm. wide, subacute.

62. *A. hartwegiana*

Bractlets 1.5 cm. long, 3 mm. wide, acuminate.

73. *A. Ungua-bovis*

Calyx slightly shorter than bracts.

Bracts up to 2.5 cm. long..... 74. *A. fernandezii*

Bracts less than 1.2 cm. long.

Bracts glabrous..... 75. *A. chaponensis*

Bracts medially strigose.

Medial region of the bracts densely strigose.

76. *A. pharangophila*

Medial region of the bracts thinly strigose.

77. *A. arborescens*

### 1. *Aphelandra runcinata* Klotzsch

*Aphelandra runcinata* Klotzsch ex Nees, DC. Prodr. 11: 302. 1847. Nees bases his description on two cotypes, one collected on a river bank in a shady cinchona plantation at Mérida, Venezuela, December, by Moritz (Berlin Bot. Mus.), and the other in a *Chusquea* (bamboo) pasture, Quindío, Colombia, by Goudot (Hooker Herbarium). The name *runcinata* (i. e. saw-toothed or sharply incised) alludes to the sharply toothed leaf blades.

Shrubs up to 4 meters high; stems glabrous or nearly so, occasionally tomentulose toward tip, fleshy; leaf blades obovate to oblong-obovate or lanceolate, up to 30 cm. long and 10 cm. wide, acuminate, cuneate at base, chartaceous, the margins more or less narrowly recurved, dentate or incised-dentate, the excurrent nerves terminating in sharp spines 1 to 5 mm. long, the upper surface drying olive green, nitid, glabrous or sparingly floccose, the hairs confined chiefly to the costa and lateral veins (10 to 30 pairs), the lower surface drying dull green or brown, glabrous, or the costa and veins sparingly floccose, these more prominent beneath than above; petioles up to 2 cm. long, glabrous or sparingly floccose; interpetiolar bracts triangular, retrorse, up to 5 mm. long, 1- to 5-nerved, the nerves excurrent, ending in sharp, straight spines 1 to 4 mm. long; flowers usually numerous and crowded, borne in a simple terminal spike or in both terminal and lateral spikes, then forming a rather large pyramidal crowded or sometimes loose terminal paniculate inflorescence up to 20 cm. long and broad, the peduncles and rachises glabrous or floccose; bracts triangular, 7 mm. long, 5 mm. wide, glabrous, purplish red, ciliolate, obscurely nerved, the costa excurrent, ending in a small spine about 0.5 mm. long; bractlets lanceolate, 5 to 6 mm. long, 2.5 mm. wide, acuminate, purplish red, ciliolate; calyx segments oblong, about 9 mm. long, 2.5 to 3.5 mm. wide, obtuse to acute, mucronulate, glabrous, entire to erose or erose-dentate near tip, the upper portion more or less ciliate with glandular or eglandular hairs or both; corolla red, glabrous, 3.5 to 4 cm. long, the tube subcylindric, slightly curved, about 4 mm. broad near base, slightly constricted at about 5 mm. above the base, thence gradually enlarged to 5 mm. at mouth, the throat transversely undulate-rugose, the upper lip oblong-ovate, about 15 mm. long, 5 mm. wide, rounded, sometimes obscurely 3-lobed near the tip, ciliate, finely and sparingly pilose within, the lower lip definitely 3-lobed, the lobes ovate, 5 mm. long, 2.5 mm. wide, rounded; capsules oblong-clavate, 18 mm. long, about 3 mm. broad at base, 6 mm. broad at middle, obtuse, glabrous, minutely punctate; seed flat,

obliquely oblong, 5 mm. long, 3.5 mm. broad, 1.5 mm. thick, brown, minutely roughened.

Vernacular name: Cresta de gallo (*Pennell* 10940).

Flowering from April to February, but chiefly in December. Bro. Tomás (No. 770) states that the plants produce a white latex. The leaf blades vary greatly. Some are merely irregularly toothed, others range from moderately to rather deeply pinnatifid or incised. Likewise the venation varies from moderately to extremely prominent. On the other hand, little if any variation is to be found in the inflorescence. The corollas are, as Dawe (No. 766) expresses it, a striking red.

Wooded mountain slopes from 2,000 to 3,000 meters altitude. Colombia and Venezuela.

ANTIOQUIA: Boquerón, between Medellín and Palmitas, *Hodge* 6605 (GH, Med). Camino Real Antiguo to Boquerón de Medellín, *Barkley, Correa & Posada*, 101 (US). La Ceja, Bro. Daniel 2172 (US). La Sierra, near Medellín, *Archer* 1093 (US). Las Minitas, south of Caldas, *Pennell* 10940 (GH, NY). San Cristóbal to San Jerónimo, *Lehmann* 7846 (K).<sup>1</sup> Summit of Santa Elena, between Medellín and Rionegro, *Barkley, Araque & Gomez* 424 (US); *Gutiérrez* 1146 (Med, US); *Noval & Barkley* 18C.484 (US). San Pedro, Bro. Tomás 770 (US). Sonsón, *Lehmann* 7574 (K).

CALDAS: Caldas, *Dawe* 766 (NY, US). San Bernardino, *Pennell & Hazen* 10158 (GH). Manizales, *Triana* s. n. (NY, US).

CUNDINAMARCA: Dintel, between Facatativá and La Vega, *Pérez-Arbeláez & Cuatrecasas* 5320 (US).

SANTANDER: Western slopes of Mount Peña Blanca, near Charta, *Killip & Smith* 19262 (NY, US). Vicinity of Las Vegas, *Killip & Smith* 16138 (NY, US).

A photograph of *Lehmann's* 7574 deposited in the Berlin Herbarium is in the U. S. National Herbarium (Field Mus. photograph No. 8668). The Berlin sheet bears an unpublished name written by Lindau.

1a. *Aphelandra runcinata* var. *straminea* Leonard, var. nov.

A forma typica lamina foliorum subtus pilosa, pilis septatis, corollis stramineis recedit.

Leaf blades oblanceolate, shallowly incised, pilose beneath, the hairs conspicuously segmented; flowers straw-colored; otherwise resembling the typical form.

Type in the U. S. National Herbarium, No. 1950445, collected along the Subita-San Francisco road, Department of Cundinamarca, Colombia, 2,000 meters altitude, August 26, 1947, by Oscar Haught (No. 6108).

1b. *Aphelandra runcinata* var. *pilosa* Leonard, var. nov.

A forma typica lamina foliorum subtus dense pilosa, corollis puniceis recedit.

<sup>1</sup> K, Herbarium of the Royal Botanic Gardens, Kew.



Lower surface of the leaf blades more or less densely pilose, otherwise similar to the typical form.

Type in the U. S. National Herbarium, No. 1954130, collected in dense forest on road along stream between Medellín and Rionegro, Department of Antioquia, Colombia, 2,000 meters altitude, November 17, 1948, by E. P. Killip, Fred A. Barkley, and Bro. Daniel (No. 39837). Bro. Daniel's No. 4024, collected at Las Palmas, Antioquia, at 2,200 meters and Toro's No. 1260, collected at Salgar, in the vicinity of Medellín, Antioquia, July 20, 1928, are both of this variety.

2. *Aphelandra mutisii* Leonard, sp. nov.

FIGURE 43

*Frutex*, caulibus dense et molliter subtomentosis, pilis patulis vel retrorsis; lamina foliorum oblonga vel oblanceolata, subcoriacea, serrata, dentibus spinis acutis terminatis, supra nitida, pilosa, subtus dense et molliter pilosa vel subtomentosa, pilis fulvis, costa et venis prominentibus; petioli breves, subtomentosi; bracteae interpetiolares parvae, triangulares, spinis (1-5) acutis fulvis armatae; spicae terminales et laterales, densae, rhache dense pilosa, pilis fulvis; bracteae anguste oblongae, spinoso-dentatae, dense pilosae; bracteolae lanceolatae, parce spinoso-dentatae; calycis segmenta oblongo-lanceolata, spina parva terminata, apice puberula, basi glabra, ciliata, pilis aliquot glandulosis; corolla angusta, parce et minute pubescens, lobis ovalibus, rotundatis; capsulae glabrae, nitidae, minute punctatae.

Shrub; stems densely and softly pilose or subtomentose, the hairs yellowish, up to 1 mm. long, spreading or retrorse; leaf blades oblong to oblanceolate or narrowly obovate, up to 9 cm. long and 3 cm. wide, acute to acuminate, narrowed at base, subcoriaceous, serrate, the teeth rather closely set, 2 to 3 mm. long, each terminated by sharp, straight spines 2 to 3 mm. long, the upper surface nitid, rather sparingly pilose, the costa densely so, the hairs up to 1 mm. long, yellowish, the costa, lateral veins (about 20 pairs) and veinlets shallowly impressed, the veinlets reticulately anastomosing, the lower surface densely and softly tawny pilose or subtomentose, the costa and veins prominent, the reticulation obscured by the dense pubescence; petioles up to 5 mm. long, the pubescence similar to that of the stems; interpetiolar bracts small, triangular, up to 4 mm. long, sparingly pilose, the veins excurrent, ending in 1 to 5 straight sharp yellowish spines up to 6 mm. long, the middle one longer than the others; flowers borne in terminal or, with maturity, both terminal and lateral spikes, these dense, up to 5 cm. long and 2 cm. broad, the lowermost bracts integrading into stem leaves, the rachis densely tawny pilose, the bracts narrowly oblong, 1.5 to 2 cm. long, about 6 mm. wide, otherwise resembling the leaf blades; bractlets narrowly lanceolate, up to 8 mm. long and 3 mm. wide near the base, ending in a spine about 3 mm. long and bearing 1 or 2 shorter spines on the margins, rather densely pilosulous and ciliate except at the base, the hairs yellowish, the nerves prominent;

calyx segments oblong-lanceolate, about 1 cm. long, 2 to 3 mm. wide, tipped by a weak spine, puberulous toward tip, glabrous below, ciliate, some of the marginal hairs glandular; corolla about 3 cm. long, 7 mm. broad at mouth, red (?), sparingly and minutely pubescent, the upper lip erect, arched, about 7 mm. long and 4 mm. wide, 2-lobed, the lobes oval, about 2.5 mm. long and 1.5 mm. wide, rounded, the lower lip 3-lobed nearly to the base, the lobes subequal, about 5 mm. long, rounded; capsules 15 mm. long, 6 mm. broad, 4 or 5 mm. thick, blunt at tip, glabrous, nitid, minutely punctate.



FIGURE 43.—*Aphelandra mutisii* Leonard (*a*, Mutis 1943; *b-f*, Triana s. n.): *a*, Tip of plant, showing leaf blades and inflorescence; *b*, interpetiolar bract; *c*, bract; *d*, bractlet; *e*, calyx segment; *f*, upper half of corolla. (*a*, *c-f*, Natural size; *b*, twice natural size.)

Type in the U. S. National Herbarium, No. 1562333, collected in Colombia by J. C. Mutis (No. 1943). *Triana* s. n. (NY, US), collected near Pasto, Department of Nariño, Colombia, 2,500 meters altitude, 1851–1857, is also of this species.

*Aphelandra mutisii* can be easily distinguished from other Colombian tooth-leaved species of *Aphelandra* by the spiny bracts and the soft, tawny pubescence of the lower surface of the leaf blades and stems. Named for José Celestino Mutis, an early Spanish collector of Colombian plants.

3. *Aphelandra euopla* Leonard, sp. nov.

FIGURE 44

Suffrutex spinosus, caulibus sursum subtomentosis, deorsum glabris; lamina foliorum oblongo-elliptica, coriacea, glabra, in costa et venis prominentibus parce pubescens, marginibus serrato-dentatis, dentibus triangularibus, spina acuta patula terminatis; bracteae interpetiolares ovatae vel suborbiculares, serrato-dentatae, spinosae; spica terminalis vel subterminalis, rhache brunneo-puberula; bracteae lanceolatae, coriaceae, subcarinatae, costa prominente, spina terminata; calycis segmenta subaequalia, chartacea, lanceolata, apice abrupte acuta, plus minusve dentata, glabra, parce ciliolata, apice spina terminata; corolla apice lutea, basi aurantiaca, minute pubescens, tubo cylindrico, labio superiore erecto, bilobato, inferiore patulo trilobato, lobis ovalibus vel triangularibus; ovarium glabrum.

Shrubby, thorny plants up to 2 meters high; stems subtomentose toward tips, glabrate below; leaf blades oblong-elliptic, 6 to 7 cm. long, 2 to 3 cm. wide (the spines not included), coriaceous, glabrous or the costa and veins (10 or 12 pairs) bearing a few weak hairs, the margins serrate-dentate, the teeth triangular, 2 to 5 mm. high, ending in sharp spreading spines up to 5 mm. long, the upper surface bright green, drying light olive-green, the lower surface drying dark olive-green, the venation very prominent, especially on the lower surface, the veinlets coarsely reticulate toward margins; petioles up to 5 mm. long, rather sparingly pilose; interpetiolar bracts ovate or suborbicular, 3 to 5 mm. long and wide, serrate-dentate, the teeth terminating in spines, the terminal one as much as 7 mm. long; flowers borne in terminal and subterminal spikes 5 to 7 cm. long and about 2 cm. broad (the corollas excluded), the peduncles (about 8 mm. long) and rachis brown-puberulous; bracts lanceolate, about 20 mm. long including the terminal spine (2.5 mm. long), 4 mm. wide, acute, coriaceous, sparingly ciliate, otherwise glabrous, the costa prominent; bractlets narrowly lanceolate, 12 mm. long, including the terminal spine (2.5 to 2 mm. long), 2 mm. wide, acuminate, subcarinate, coriaceous, the costa prominent, terminating in a spine about 3 mm. long; calyx 1 cm. long, the segments subequal, chartaceous, lanceolate, 2.5 to 4 mm. wide, abruptly acute and at least some of them minutely dentate near tip (2 to 4 teeth), all terminating in a spine about 1 mm. long, glabrous or bearing a few minute hairs and sparingly ciliate; corollas 4.5 cm. long, yellow distally, orange proximally (*Cuatrecasas*), finely pubescent, the hairs segmented, up to 0.5 mm. long or a few of them slightly longer, the tube slightly curved, 3 mm. broad at base, narrowed at about 5 mm. above base to 2.5 mm., thence rather abruptly enlarged to 5.5 mm., the throat 6 mm. broad, the portion from about 1.5 cm. above base to mouth tubular, the upper lip obovate, erect, 1 cm. long, 3 mm. wide at base, 4 mm. wide near tip, emarginate, the lobes triangular, obtuse, sometimes bilobed at tip, the lower lip 3-lobed, more or less spreading,

the lobes oval, 5 mm. long, 2.5 mm. wide, obtuse or rounded, the sinuses rounded; stamens and pistil terminating at tip of upper corolla lip, the filaments glabrous except at juncture with connective, here dorsally pilose, the hairs up to 1 mm. long; anthers 5 mm. long, pilose at tip; style glabrous; ovary glabrous; mature capsule not seen.

Type in the U. S. National Herbarium, No. 1900471, collected at Cuchilla de Barragán, valley of Río Bugalagrande, Department of El Valle, Colombia, 3,300 to 3,320 meters altitude, March 20, 1946, by J. Cuatrecasas (No. 20236).

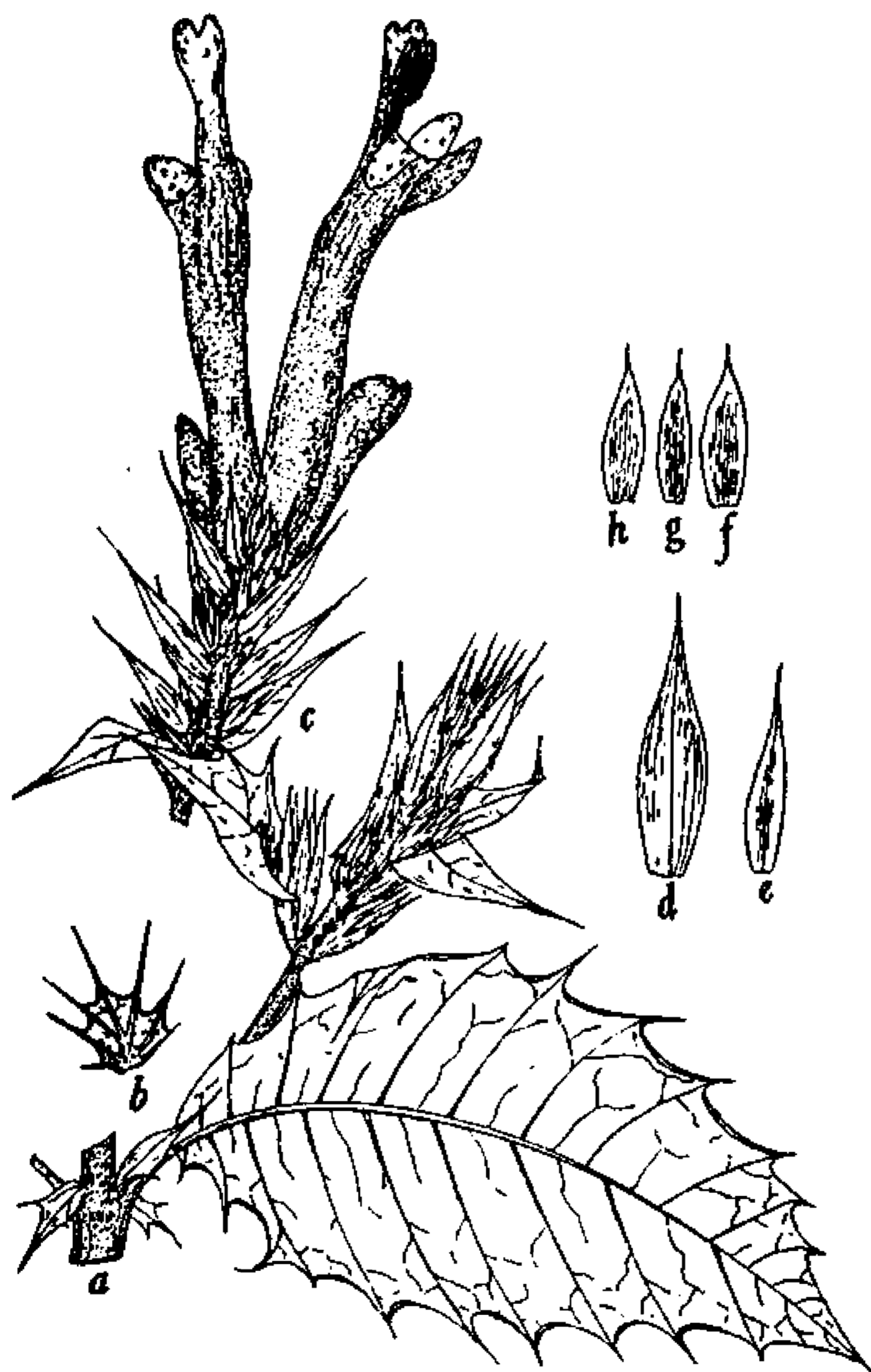


FIGURE 44.—*Aphelandra euopla* Leonard (Cuatrecasas 20236): *a*, Node with leaf, branch of inflorescence, and uppermost interpetiolar bracts; *b*, interpetiolar bract from lower node; *c*, tip of terminal spike; *d*, bract, *e*, bractlet; *f*, posterior calyx segment; *g*, lateral segment; *h*, anterior segment. (All natural size.)

Distantly related to *Aphelandra cirsioides* Lindau, of Ecuador and Peru, *A. euopla* can be separated readily from this by its relatively broader leaf blades and larger (20 cm. long) entire bracts. The leaf blades of *A. cirsioides* are rarely over 2 cm. wide and the bracts are only 15 mm. long and spiny-margined. The name *euopla* (εὐοπλος) means well-armed, in allusion to the spiny character of the plant.

4. *Aphelandra porphyrocarpa* Leonard, sp. nov.

FIGURE 45

**Frutex**, caulibus glabris; lamina foliorum oblongo-lanceolata, apice acuta, basi angustata, leviter incisa, lobis ascendentibus, serratis, dentibus spinis parvis, acutis, fulvis armatis, utrinque hirsuta, pilis plus minusve appressis, subtus pilis praecipue in costa et venis positis, venulis crasse reticulatis; petioli glabri vel subglabri; bracteae interpetiolares minutae, spinis acutis fulvo-hirsutis vel subglabratis armatae; spica terminalis plus minusve laxa, rhache strigosa; bracteae acuminatae, serratae, dentibus spinis parvis armatis, strigosae (intus solum apicem versus), venis prominentibus; bracteolae lanceolatae, apice acutae, extus dense hirsutae, ciliatae, obscure nervatae; calycis segmenta oblongo-ovata vel obovata, apice rotundata, mucronata, dentata, aliquando dense subappresso-pubescentia, ciliata; capsulae oblongae, subobtusae, glabrae, minute punctatae; retinacula apice late cucullata.

Shrubs; stems glabrous; leaf blades oblong-lanceolate, up to 22 cm. long and 5 cm. wide, acute, narrowed at base, shallowly incised, the lobes ascending, about 5 mm. long and 15 mm. broad, the veins excurrent, terminating in small, sharp, yellowish spines up to 2 mm. long, the upper surface sparingly hirsute, the hairs about 0.5 mm. long, appressed, hirsute beneath, the hairs confined chiefly to costa and veins (about 20 pairs), the venation moderately conspicuous, the veinlets coarsely reticulate beneath; petioles up to 3.5 cm. long, glabrous or nearly so; interpetiolar bracts minute, consisting mainly of 3 to 6 sharp, yellowish, hirsute or glabrous, radiating spines from 1 to 6 mm. long; flowers borne in simple terminal spikes up to 25 cm. long and about 3 cm. broad, these rather lax, especially below, the rachis upwardly strigose, the hairs about 0.25 mm. long; bracts triangular, up to 15 mm. long and 6 mm. wide, acuminate, rather distantly serrate (about 6 pairs of teeth), the veins excurrent, terminating in spines up to 0.5 mm. long, the upper half strigose on both surfaces, the hairs about 175  $\mu$  long, the lower half glabrous, the costa and 1 or 2 pairs of nerves prominent; bractlets lanceolate, up to 9 mm. long and 3 mm. wide at base, obscurely nerved, rather densely hirsute without, ciliate, the hairs up to 0.5 mm. long; calyx supported by thick calluses, the segments oblong-ovate or obovate, 12 mm. long, 5 to 6 mm. wide, rounded, mucronate and dentate at tip (usually 2 pairs of minute teeth), ciliate, the outer surface and upper part of the inner surface minutely and rather densely pubescent, the hairs up to 125  $\mu$  long, appressed; corollas not seen; capsules purple, oblong, obtusish at apex, 5 mm. broad at base, 7.5 mm. broad at middle, 3.5 mm. thick, glabrous, minutely punctate; immature seed glabrous; retinacula 3 mm. long, the tips broadly cucullate.

Type in the herbarium of the New York Botanical Garden, collected in forest, east of Neiva, Department of Huila, Colombia, 1,800 to 2,300

meters altitude, August 1-8, 1917, by H. H. Rusby and F. W. Pennell (No. 891). Isotype in the U. S. National Herbarium, No. 1041528.

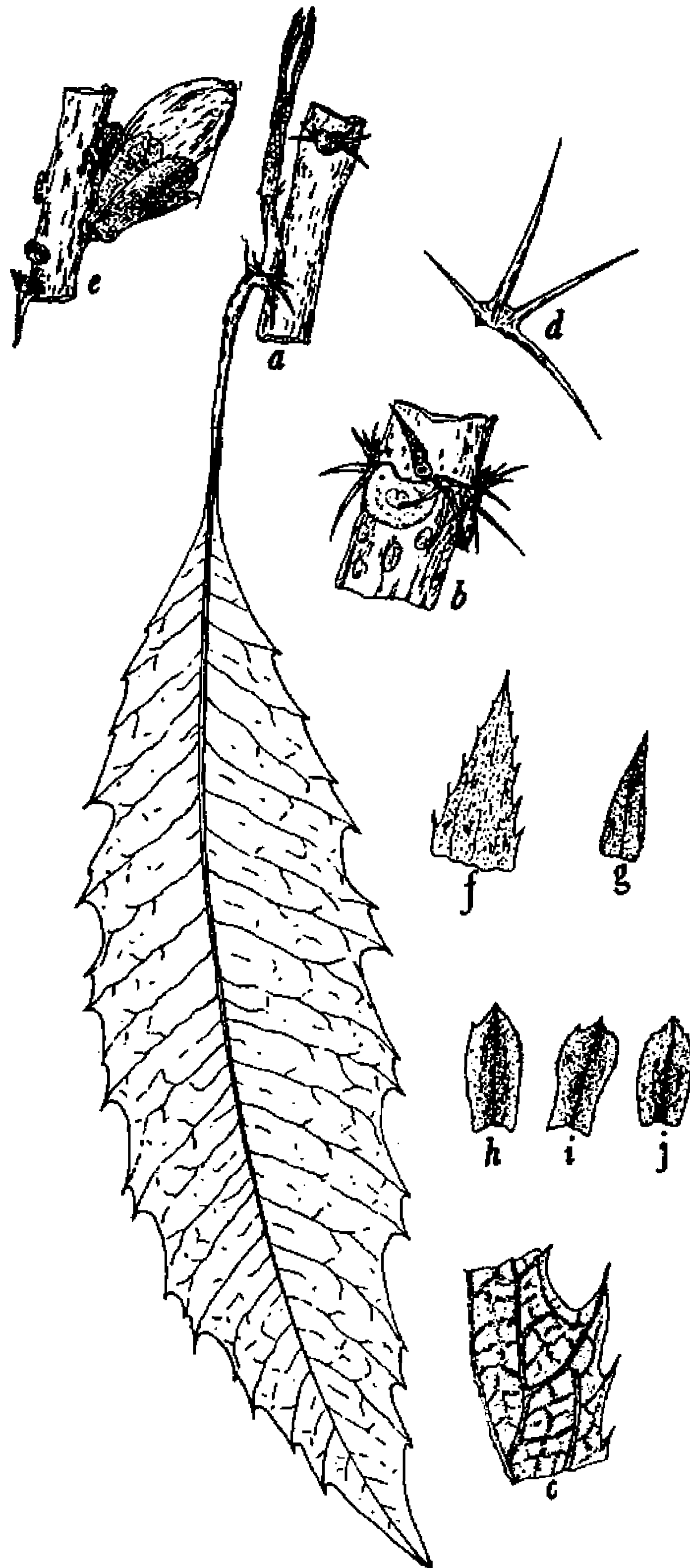


FIGURE 45.—*Aphelandra porphyrocarpa* Leonard (Rusby & Pennell 891): *a*, Node showing strongly reflexed leaf; *b*, node showing large leaf scars and interpetiolar bracts; *c*, portion of leaf blade (under side) to show venation and pubescence; *d*, interpetiolar bract; *e*, portion of spike to show calyx and fruit; *f*, bract; *g*, bractlet; *h*, posterior calyx segment; *i*, one of the lateral segments; *j*, one of the anterior segments. (*a*, *e*, Half natural size; *d*, twice natural size; *b*, *c*, *f*-*j*, natural size.)

*Aphelandra porphyrocarpa* is probably nearest *A. acanthus* but differs from it chiefly in the more spiny bracts (6 pairs of teeth instead of 4), the shallowly incised leaf blades, the glabrous stems, and the

relatively short, densely hirsute calyx segments, these with tips rounded, apiculate and erose-dentate. The specific epithet is from the Greek *πορφύρα*, purple, and *καρπός*, fruit.

##### 5. *Aphelandra acanthus* Nees

*Aphelandra acanthus* Nees, DC. Prodr. 11: 302. 1847. Type collected in Quindío, Tolima, Colombia, by Humboldt (No. 5836). Type material in the Willdenow and Berlin herbaria. Photograph of the Berlin specimen in the U. S. National Herbarium (Field Mus. photograph No. 8695). *Acanthus* (*ἄκανθα*, thorny) is a generic name given by Linnaeus to a group of plants confined originally to tropical and subtropical regions of the Old World and characterized by large spiny leaves and 1-lipped corollas.

Coarse suffrutescent herbs up to 3 meters high; stems fleshy (at least the upper portions), hirsute to subtomentose, the hairs yellowish, about 0.5 mm. long, upwardly appressed or some of them more or less spreading, the lower portions of the stems glabrate; leaf blades oblong, up to 25 cm. long and 8 cm. wide, acute to acuminate at tip, narrowed at base, thin, pinnatifid, the lobes triangular, 2 to 5.5 cm. from sinus to tip, ascending, the margins rather sparingly serrate-dentate, the teeth triangular, 3 or 4 mm. long, the excurrent veins terminating in sharp spines up to 5 mm. long, both surfaces hirsute, the hairs confined chiefly to costa and veins, appressed, 0.5 to 0.75 mm. long, the costa and lateral veins (about 20 pairs) rather prominent, the veinlets coarsely and reticulately anastomosing; petioles up to 4 cm. long, the pubescence similar to that of the stem; interpetiolar bracts small, ovate, up to 4 mm. long, the nerves thick, terminating in 3 to 6 sharp, straight, yellowish, spreading or retrorse spines 2 to 10 mm. long, these hirsute or glabrate, the hairs up to 0.5 mm. long; flowers numerous, borne in simple, compact, terminal spikes up to about 20 cm. long and 2.5 to 3 cm. broad (excluding corollas), the pubescence of the rachis like that of the stems; bracts triangular-ovate, 1.5 to 2 cm. long, 5 to 6 mm. wide at base, acuminate, rather sparingly hirsute, the hairs more numerous on the outer surface than on the inner, the margins bearing about 3 pairs of low teeth, these and the tip terminated by sharp, yellowish, ascending, sparingly hirsute spines up to 2.5 mm. long; bractlets lanceolate, about 8 mm. long and 2 mm. wide at base, gradually narrowed to a slender tip, the costa excurrent, terminating in a small spine (0.5 mm. long), sparingly and minutely pubescent without, glabrous within, the margins ciliolate; calyx segments oblong-ovate, about 1 cm. long and 4.5 to 5 mm. wide, abruptly narrowed to an acute tip, striate-nerved, except the thin margins, sparingly and minutely pubescent without, glabrous within, ciliate, each segment terminated by a slender spine up to 1.5 mm. long; corollas 3.4 to 4 cm. long (from base to tip of upper lip), yellow, sparingly to rather densely tomentose or subtomentose except the glabrous basal portion, the hairs whitish, up to 0.75 mm. long, the

tube oblique, curved, 5 to 7 mm. broad at base, narrowed at from 3 to 8 mm. above base to 4 mm. broad, thence enlarged to 10 mm. at mouth, the upper lip erect, 15 to 18 mm. long, about 7 mm. wide near base, the lobes obovate, about 8 mm. long and 4.5 to 6.5 mm. wide, rounded, often mucronate, the lower lip more or less spreading, the lobes oval, 7 to 10 mm. long, about 6 mm. wide, rounded or shallowly emarginate; anthers reaching or slightly exceeding the upper lip, the filaments sparingly pilose toward tip, the anthers 7 mm. long, 2.5 mm. broad, apiculate at base, glabrous; ovary glabrous.

Found at altitudes from 2,200 to 2,400 meters, growing in clearings or wooded gullies. There seems to be no special flowering season. The stinging property mentioned by Killip and Varela (No. 34685) is unique for the family. Cuatrecasas (No. 23321) gives the following notes: "Arbusto o arbolito 3 met. Hoja verde clara brillante haz, verde pálida envés. Cáliz verde. Corola amarilla." Endemic.

CALDAS: Banks of the Río Otún, above Peñas Blancas, *Cuatrecasas* 23321 (US).  
Alaska, above Salento, *Pennell* 9704 (GH, US).

TOLIMA: Mediación, Quindío, *André* 2047 (K). Along the Quindío Highway between Cajamarca and summit of Divide, *Killip & Varela* 34685 (US). El Libano to Murillo, Alto de Peñones, *García-Barriga* 12273 (US). La Palmilla, Quindío, *Triana* s. n. (NY).

♂. *Aphelandra phobera* Leonard, sp. nov.

FIGURE 46

Frutex vel arbor parva, caulibus spinosis, minute strigosis vel subtomentosis; lamina foliorum oblongo-lanceolata, acuta, basi angustata, marginibus leviter incis, lobis triangularibus, ascendentibus, serratis, dentibus triangularibus, spinis acutis fulvis armatis, utrinque hirsuta, pilis appressis vel ascendentibus, venulis reticulatis; petioli strigosi; bracteae interpetiolares ovatae, spinis (3-10) acutis, fulvis, radiatis, plus minusve strigosis armatae; spica terminalis, magna, densa vel deorsum laxa; bracteae lanceolatae vel oblongo-ovatae, extus parce hirsutae, intus glabrae, venosae, serratae, dentibus acutis armatae; bracteolae lanceolatae, acuminatae, hirsutae, apice spina parva terminatae; calycis segmenta oblongo-lanceolata, apice abrupte acuminata, extus dense hirsuta, ciliata; corolla magna, flava, extus dense hirsuta, pilis fulvis, tubo subcylindrico curvato, labio superiore erecto, lobis oblongo-obovatis, rotundatis, emarginatis, labio inferiore patulo, lobis obovatis, rotundatis, integris vel mucronatis; stamina glabra; ovarium glabrum.

Shrubs or small trees up to 3 meters high; stems spiny, minutely strigose to subtomentose, the hairs yellowish, up to 0.75 mm. long; leaf blades oblong-lanceolate, up to 50 cm. long and 15 cm. wide, acute, narrowed at base, shallowly incised, the lobes triangular, ascending, up to 3 cm. long from sinus to tip, the margins moderately serrate, the teeth triangular, up to 5 mm. long and 8 mm. broad, these and the



tip armed with sharp, yellowish spines up to 5 mm. long, both surfaces hirsute, the hairs yellowish, appressed or ascending, 0.75 mm. long, denser on the costa and veins (about 20 pairs), the venation rather prominent, the veinlets coarsely reticulate; petioles 1 to 6 cm. long, the pubescence that of the stems; interpetiolar bracts ovate, up to 5 mm. long and broad, armed with 3 to 10 sharp, yellowish, radiating, strigose or glabrous spines, these varying from 1 to 25 mm. in length; flowers numerous, borne in simple terminal spikes up to 30 cm. long and 3 to 4 cm. broad (exclusive of corollas), these dense, or lax toward base; bracts lanceolate to oblong-ovate, up to 30 mm. long and 15 mm. wide (the lowermost somewhat longer, and relatively narrowed, resembling small leaf blades), acute, ending in a sharp, yellowish, spine 2 mm. long, sparingly hirsute without, the hairs up to 0.5 mm. long, glabrous within, veiny, the margins serrate, the 4 to 9 pairs of teeth 0.5 mm. high and 1 mm. wide; bractlets lanceolate, up to 2 cm. long and 3.5 mm. wide, acuminate, hirsute except the glabrous lower portion of the inner surface, striate-nerved, tipped by a spine 1.5 mm. long; calyx segments oblong-lanceolate, 13 to 14 mm. long, 4.5 to 6 mm. wide, abruptly acuminate and tipped by spines 0.5 to 1 mm. long, ciliate, the outer surface densely hirsute, the hairs ascending, about 0.5 mm. long, the hairs toward base gland-tipped, the inner surface glabrous except toward tip, the costa and veins obscured by the pubescence; corolla yellow, up to 6 cm. long (from base to tip of upper lip), densely hirsute except glabrous basal portion, the hairs ascending, yellowish, 0.5 mm. long, the tube subcylindric, curved, 1 cm. broad at base, narrowed to 6 mm. at 1 cm. above base, thence gradually enlarged, the throat about 11 mm. broad, the upper lip erect, 2 cm. long, the lobes oblong-obovate, 15 mm. long, up to 8 mm. wide, rounded and emarginate, the lower lip spreading, the lobes obovate, 11 or 12 mm. long and broad, rounded, entire or minutely mucronate; stamens reaching the upper lip of the corolla, or slightly exceeding it, glabrous, the anthers 1 cm. long and 3 mm. broad, the basal lobe rounded; ovary glabrous; capsules not seen.

Type in the U. S. National Herbarium, No. 1853810, collected along the Río Cali, between Puente de los Cárpatos and La Margarita, Department of El Valle, Colombia, 2,000 meters altitude, November 2, 1944, by J. Cuatrecasas (No. 18484). An isotype is also in the U. S. National Herbarium, No. 1853811.

CAUCA: Canaan, Mount Puracé, *Killip* 6796 (US). San José, San Antonio, *Pennell & Killip* 7392 (US). Crest of Cordillera Occidental, west of Tambo, *Haught* 5174 (US).

PUTUMAYO: La Cabaña, *Cuatrecasas* 11631 (US).

DEPARTMENT (?): *Mutis* 1944.

Closely related to *Aphelandra acanthus*, *A. phobera* is characterized by its larger, shallowly incised leaf blades, its larger and more spiny

interpetiolar bracts, longer spikes, longer and more spiny bracts, longer and more densely pubescent calyx segments, and larger corollas. The filaments, moreover, are strictly glabrous instead of sparingly pilose, as in *A. acanthus*.

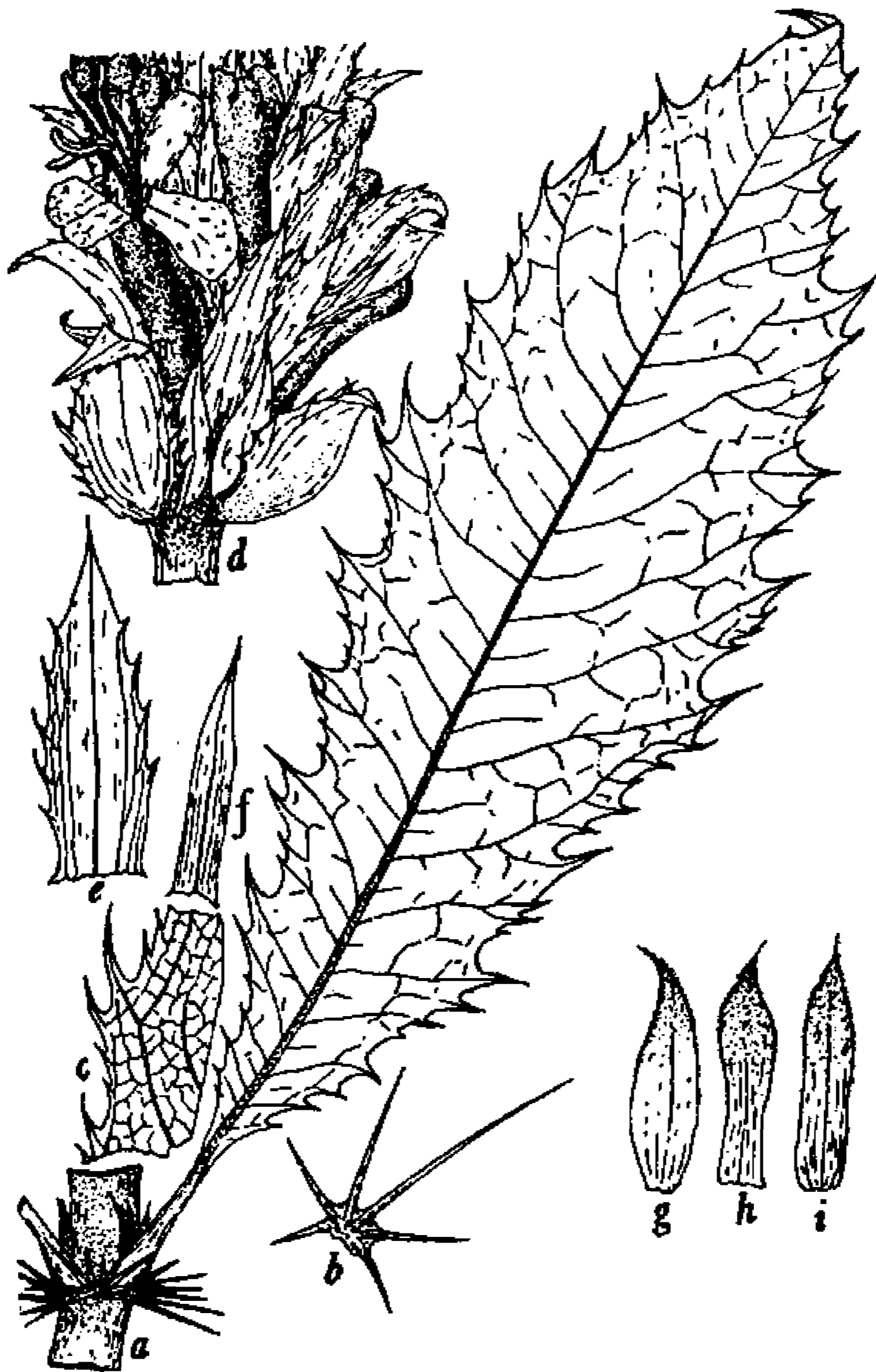


FIGURE 46.—*Aphelandra phobera* Leonard (*a-d*, Cuatrecasas 11631; *e-i*, Cuatrecasas 18484) *a*, Node showing leaf and interpetiolar bracts; *b*, interpetiolar bract; *c*, portion of underside of leaf blades to show venation; *d*, portion of spike; *e*, bract; *f*, bractlet; *g*, posterior calyx segment; *h*, one of the lateral segments; *i*, one of the anterior segments (*a*, *d*, Half natural size; *b*, *c*, *e-i*, natural size.)

*Aphelandra phobera* is a forest plant frequenting the upper mountain slopes and summits at altitudes ranging from 2,000 to 3,100 meters. The type is accompanied by the following notes: "Hierba robusta 1-3 m. Tallo verde espinoso. Ramas id. verdes o verde rosadas. Bracteas verde claro. Caliz amarillo verdoso violaceo claro. Corola vivo amarillo. Hoja verde grisacea en el haz." The specific name is derived from the Greek *φοβερός*, frightful, in allusion to the numerous sharp spines.

7. *Aphelandra huilensis* Leonard, sp. nov.

FIGURE 47

Suffrutex spinosus, caulibus sursum minute strigosis, deorsum glabratis; lamina foliorum oblongo-elliptica, incisa, dentibus et segmentis spinis acutis terminatis, parce strigosa; petioli parce strigosi; bracteae interpetiolares triangulares, parvae, spinis 2 acutis inaequalibus armatae; spicae terminales et laterales; bracteae ovatae, acuminatae, spinoso-dentatae, parce strigosae et ciliatae; bracteolae lanceolatae, acuminatae, integrae, parce strigosae, ciliatae, apice spina parva terminatae; calycis segmenta oblongo-lanceolata, puberula, ciliata, spina parva terminata; corolla rubra, plus minusve dense hirtella, tubo cylindrico, labio superiore erecto, bilobato, lobis rotundatis, emarginatis, labio inferiore patulo, trilobo, lobis rotundatis; ovarium glabrum.

Suffrutescent herbs up to 2 meters high or more; stems glabrate below, strigose toward tip, the hairs about 0.5 mm. long; leaf blades oblong-elliptic in outline, up to 25 cm. long and 12 cm. wide, acute to acuminate at apex and terminated by a yellowish spine 0.75 to 2 mm. long, narrowed at base, deeply incised, the lobes triangular to oblong, up to 7 cm. long, each lobe terminated by a small yellowish spine (1 to 2 mm. long), the entire margin serrate, the teeth 1 to 4 mm. high and broad, all spine-tipped, the upper surface sparingly strigose or the costa and veins (about 20 pairs) more densely so, the hairs about 0.75 mm. long, the lower surface more densely strigose, the hairs about 0.5 mm. long, those of the costa and veins appressed or ascending, the venation of the lower surface more prominent than that of the upper; interpetiolar bracts triangular, about 4 mm. long, bearing a pair of stout spines, one about 1 cm. long, the other 2 to 3 mm. long; spikes terminal and axillary, up to 10 cm. long and about 2 cm. broad, the rachis sparingly strigose; bracts about 2 cm. long and 8 mm. wide, acuminate, terminated by a spine about 1 mm. long, the inner surface glabrous, the outer surface rather sparingly strigose, the hairs 0.5 mm. long, the margins ciliate, bearing 1 to 4 pairs of spine-tipped teeth, the spines 1 to 2 mm. long; bractlets lanceolate, about 17 mm. long and 3 mm. wide near base, acuminate, terminated by a spine 1 mm. long, striate-nerved, the inner surface glabrous, the outer rather sparingly strigose, ciliate, the margins usually entire; calyx segments oblong-lanceolate, 23 to 25 mm. long, 3.5 to 5 mm. wide, minutely strigose, the inner surface only so toward tip, the hairs about 125  $\mu$  long, the margins thin, sparingly and minutely dentate; corolla 4 cm. long, red, rather densely hirsute except the glabrous basal portion, the hairs 0.25 to 0.5 mm. long, ascending, the tube 4 mm. broad near base, slightly contracted above the ovary, thence enlarged to 7 mm. and again contracted at mouth to 5 mm., the upper lip erect, 5 mm. long and 3 to 5 mm. wide, bilobed, the lobes 3 mm. long and

2.5 mm. wide, rounded, emarginate, the lower lip more or less spreading, about 4 mm. long, 3-lobed, the lobes ovate, 3.5 mm. long and broad, rounded, the middle lobe flat; stamens reaching the mouth of the corolla tube, the anthers 5 to 8 mm. long, 1.5 mm. broad, the filaments triangular in cross section, glabrous toward tip, strigose toward base; pistil glabrous.

Type in the Stockholm Herbarium, collected in virgin forests at La Plata, Department of Huila, Colombia, 2,600 meters altitude, March 20, 1939, by Kjell von Sneidern (No. 2649). A fragment of the type is in the U. S. National Herbarium, No. 1907334. Cuatre-

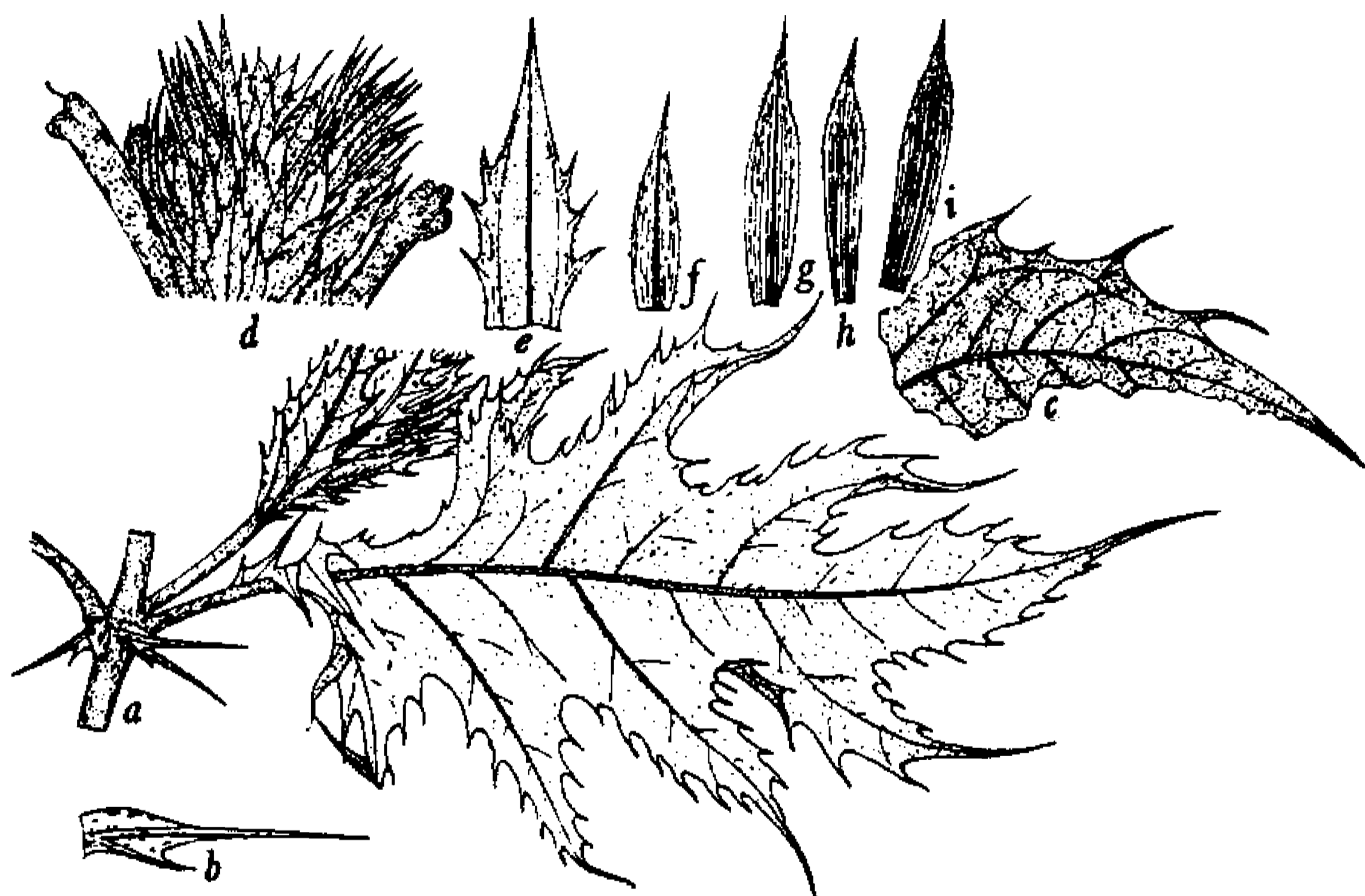


FIGURE 47.—*Aphelandra huilensis* Leonard (Cuatrecasas 23462): *a*, Node showing leaf, interpetiolar bracts and lower branch of panicle; *b*, interpetiolar bract; *c*, lobe of leaf blade (under side); *d*, tip of spike; *e*, bract; *f*, bractlet; *g*, posterior calyx segment; *h*, one of the lateral segments; *i*, one of the anterior segments. (*a*, *d*, Half natural size; *b*, twice natural size; *c*, *e*-*i*, natural size.)

casas' No. 23462, collected along the Río San José, at Aguabonita, in the region of Moscopán, Department of El Cauca, Colombia, 2,280 meters altitude, January 30, 1947, is of this species.

Related to *Aphelandra acanthus*, *A. huilensis* can be recognized readily when compared with that species by its red, hirsute corolla. In *A. acanthus*, the corollas are yellow and densely and softly pubescent or tomentose. The species is named for the Department of Huila.

On the label accompanying his specimen (No. 23462) Cuatrecasas gives the following description: "Sufrutex robusto, erguido, espinoso. Hoja verde glauco claro. Caliz rojizo. Corola roja. Anteras amarillas."

8. *Aphelandra porphyrolepis* Leonard, sp. nov.

FIGURE 48

Suffrutex erectus, robustus, caulibus tenuiter tomentosus; lamina foliorum oblanceolata, acuminata, basi angustata, in petiolum decurrens, subcrassa, pubescens, marginibus serrato-dentatis vel deorsum incisis, lobis late triangularibus, dentibus spina parva terminatis; petioli pubescentes, pilis appressis; bracteae interpetiolares orbiculares, 3-dentatae, dentibus spina acuta terminatis; panicula laxa, terminalis, rhache tenuiter tomentosa, pulverulenta, purpurea; bracteae triangulares, acuminatae, puberulae, ciliolatae, purpureae; bracteolae triangulares, apice acuminatae, purpureae; calycis segmenta acuta vel submucronulata, ciliolata, obscure puberula, punctata; corolla cylindrica, minute pubescens, rubra, labio superiore obovato, labio inferiore 3-lobato, lobo medio cucullato, lobis lateralibus rotundatis, emarginatis; antherarum connectivum acute carinatum; ovarium glabrum.

Shrubby, up to 3 meters high, erect, robust; stems thinly tomentose; leaf blades oblanceolate, 17 to 35 cm. long, 5.5 to 13 cm. wide, acuminate, gradually narrowed from above middle to the base and decurrent on the petiole, rather fleshy, flexible, the margins serrate-dentate or the lower leaves shallowly incised, the lobes broadly triangular, up to 1 cm. long, about 6 on each side, these again sparingly and distantly serrate-dentate, the vein at the tip of each tooth terminating in a spine about 1 mm. long, the upper surface green, drying dark olive, the lower surface drying light olive, both surfaces sparingly pubescent, the hairs weak and appressed, about 0.5 mm. long, more numerous on the margins of the costa of the upper surface than elsewhere, the costa and veins (about 18 pairs) prominent; petioles 1 to 1.5 cm. long, appressed-pubescent; interpetiolar bracts orbicular, about 3 mm. long and broad, 3 to 5-toothed, the teeth terminating in stout spines 0.5 to 1 mm. long; flowers borne in spikes, these forming loose terminal panicles about 22 cm. long and 10 cm. broad, the branches of the panicles (up to 3.5 cm. long) and the rachises thinly tomentose, bright powdery purple; bracts triangular, 1 cm. long, 5 mm. wide, acuminate, puberulous, ciliolate, purple; bractlets triangular, 7 mm. long, 3 mm. wide at base, carinate, acuminate, puberulous, purple; calyx 6 mm. long, the segments oblong-lanceolate, 2.5 to 3.5 mm. wide, acute to submucronate, ciliolate, dorsally punctate and obscurely puberulous, purple; corollas about 5 cm. long, minutely pubescent, red or orange-red (*Cuatrecasas*), 4 mm. broad at base, narrowed at 5 mm. above base to 2.5 mm., thence rather abruptly enlarged to 5 or 6 mm., the cylindrical portion of the tube usually curved, the upper lip obovate, 11 mm. long, barely 5 mm. wide near tip, obtuse, the lower lip 3-lobed, the middle lobe 5 mm. long and about 3 mm. wide, cucullate, the lateral lobes ovate, 5 mm. long, 4 mm. wide, rounded, emarginate; stamens

and pistil reaching tip of lower lip, glabrous, the anthers 6 mm. long, the connective sharply keeled, rounded at tip; ovary glabrous; mature capsule not seen.

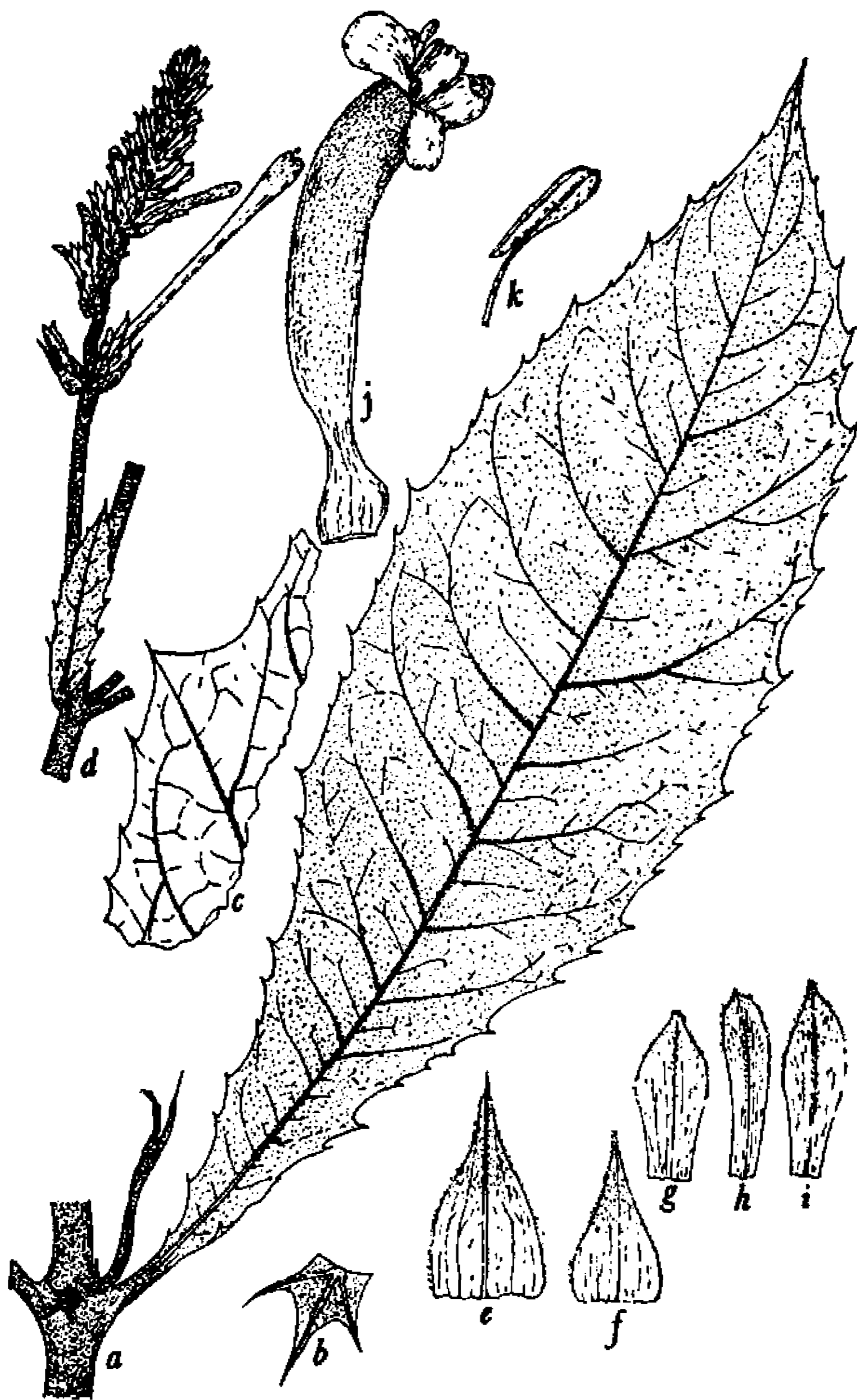


FIGURE 48.—*Aphelandra porphyrolepis* Leonard (Cuatrecasas 22283): *a*, Node showing leaf and interpetiolar bracts; *b*, interpetiolar bract; *c*, lobe of large leaf showing venation (lower surface); *d*, branch of panicle; *e*, bract; *f*, bractlet; *g*, posterior calyx segment; *h*, one of the lateral segments; *i*, one of the anterior segments; *j*, corolla; *k*, anther. (*a*, *d*, Half natural size; *b*, *e*, *f*, *k*, twice natural size; *c*, *j*, natural size; *g*–*i*, one and a half times natural size.)

Type in the U. S. National Herbarium, No. 1900486, collected on Mount Tabor, above Las Brisas, Department of El Valle, Colombia, 1,970 to 2,100 meters, October 19, 1946, by J. Cuatrecasas (No. 22283).

*Aphelandra porphyrolepis* is a well-marked species easily recognized by its purple, thinly tomentose inflorescence and the large dentate or shallowly incised leaves. The carinate connectives of the stamens and the strongly cucullate middle lobe of the lower lip of the corolla seem to be unique in the genus. The specific epithet is derived from the Greek words *πορφύρα*, purple, and *λεπίς*, scale or bract.

#### 9. *Aphelandra quercifolia* Nees

*Aphelandra quercifolia* Nees, DC. Prodr. 11: 302. 1847. Type collected at "Quindío la Palmita," Department of El Valle, Colombia, November, by Goudot. Type in the Hooker Herbarium, Kew.

Herbs; leaves oblong, acuminate, long-cuneate at base and decurrent on the petiole, remotely and coarsely sinuate-dentate, the teeth mucronate, both surfaces glabrous, the base of the petiole unarmed; flowers borne in spineless spikes; bracts lanceolate, reflexed, longer than the ovate calyx lobes; corolla smooth, the throat subinflated, the upper lip longer than the lower.

Not seen. Description compiled from the original. In his observations, Nees states that this species is closely related to *A. runcinata* but differs from that in having a shorter corolla with the upper part relatively broader and smooth instead of rugose, and in its unarmed stems.

#### 10. *Aphelandra lyrata* Nees

*Aphelandra lyrata* Nees, DC. Prodr. 11: 302. 1847. Three varieties are described by Nees:  $\alpha$  *latibractea*, collected in Peru by McLean (Hooker Herbarium);  $\beta$  *laxior*, Matthews No. 782 collected in Peru; and  $\gamma$  *arguta*, collected by Lobb in "Colombia."\* *Lyrata*, lyrate or pinnatifid, alludes to the pinnatifid leaf blades.

Stems erect, loosely pilose, often purple; leaf blades lyrate-pinnatifid, up to 30 cm. long, the sinuses rounded or obtuse, the segments ovate, angulate-dentate, the teeth mucronulate, unarmed, both surfaces laxly pilose; flowers borne in a terminal peduncled spike, the peduncle varying from long to short, laxly pilose; spikes 7 to 13 cm. long, more or less lax; bracts ovate to oblong, more or less dentate toward tip; bractlets linear-lanceolate, entire; corolla about 4 cm. long, glandular-pubescent, red, the lips about equal, 3-lobed, the lobes rounded; stamens glabrous.

No Colombian specimens seen. Description based partly on the original and partly on a specimen collected by the Wilkes Expedition at Obrajillo, Peru.

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\*This is probably one of the many specimens collected by Lobb in Peru and erroneously ascribed to Colombia (see Killip, "The botanical collections of William Lobb in Colombia," *Smiths. Misc. Coll.* 87, No. 11. 1932).

11. *Aphelandra crispata* Leonard, sp. nov.

FIGURE 49

Suffrutex, caulibus sursum parce hirsutis, deorsum glabris; lamina foliorum oblongo-elliptica, apice acuminata, basi angustata, oblique truncata vel subcordata, marginibus grosse serratis, dentibus acutis, supra parce strigosa, subtus aliquanto dense pilosa, pilis ascendentibus vel subappressis, costa et venis prominentibus; petioli breves glabri vel parce hirsuti; spica terminalis, solitaria, pedunculata, rhache glabra; bracteae oblongo-ovatae, apice subobtusae, apiculatae, purpureae, coriaceae, glabrae, crispatae vel contortae, marginibus subhyalinis; bracteolae oblongae, acutae, basi carinatae, obliquae, glabrae, marginibus subhyalinis; calycis segmenta oblongo-lanceolata, acuta, glabra, marginibus subhyalinis; corolla lutea, dense pubescens vel subtomentosa, labio superiore ovato, apice minute bilobato, lobis rotundis, labio inferiore 3-lobato, lobo medio cordato, obtuso, lobis lateralibus lanceolatis; ovarium glabrum.

Suffrutescent herbs; stems glabrous below, the upper portions sparingly hirsute, the hairs spreading, about 1 mm. long; leaf blades oblong-elliptic, up to 40 cm. long and 14 cm. wide, acuminate, narrowed from middle or slightly above middle to a very narrow, obliquely truncate or subcordate base 1 cm. wide, the veins terminating in broad teeth 1 to 3 mm. high and 2 to 2.5 cm. apart, the upper surface sparingly strigose, the hairs about 1.25 mm. long, the lower surface rather densely pilose, the hairs brownish, 0.75 to 1.25 mm. long, subappressed, those of the costa and veins (about 20 pairs) spreading horizontally, the venation prominent but more so beneath than above; petioles about 5 mm. long, glabrous or sparingly hirsute; spikes solitary, terminal, up to 11 cm. long and 5 cm. broad, moderately dense, the peduncle about 5 mm. long, hirsute, subtended by a pair of lanceolate, acuminate, leaflike bracts about 2.5 cm. long and 8 mm. wide, the rachis glabrous; bracts oblong-ovate, up to 4.5 cm. long and 17.5 mm. wide, obtusish at apex and minutely apiculate, livid purple, coriaceous, glabrous, noticeably crisped or twisted, closely veined, the margins subhyaline; bractlets oblong, 14 mm. long, 5.5 mm. wide at middle, acute, carinate and oblique at base, glabrous, the margins entire, subhyaline; calyx segments oblong-lanceolate, the posterior segment 16 mm. long and 4 mm. wide, the anterior pair 16 mm. long and 3.5 mm. wide, the lateral pair 13 mm. long and 3 mm. wide, all acute, glabrous, their margins subhyaline; corolla (immature) canary yellow, densely pubescent or subtomentose, the hairs 0.5 mm. long, the upper lip shorter than the middle lobe of the lower lip, ovate, minutely 2-lobed at tip, the lobes rounded, the lower lip 3-lobed, the middle lobe cordate, obtuse, the lateral lobes lanceolate, slightly shorter than the middle one; ovary glabrous; capsules not seen.



Type in the U. S. National Herbarium, No. 179548, collected in wet forest of Quebrada del Río Afán, near Mocoa, Comisaría de Putumayo, Colombia, 570 to 680 meters, December 27, 1940, by J. Cuatrecasas (No. 11352).

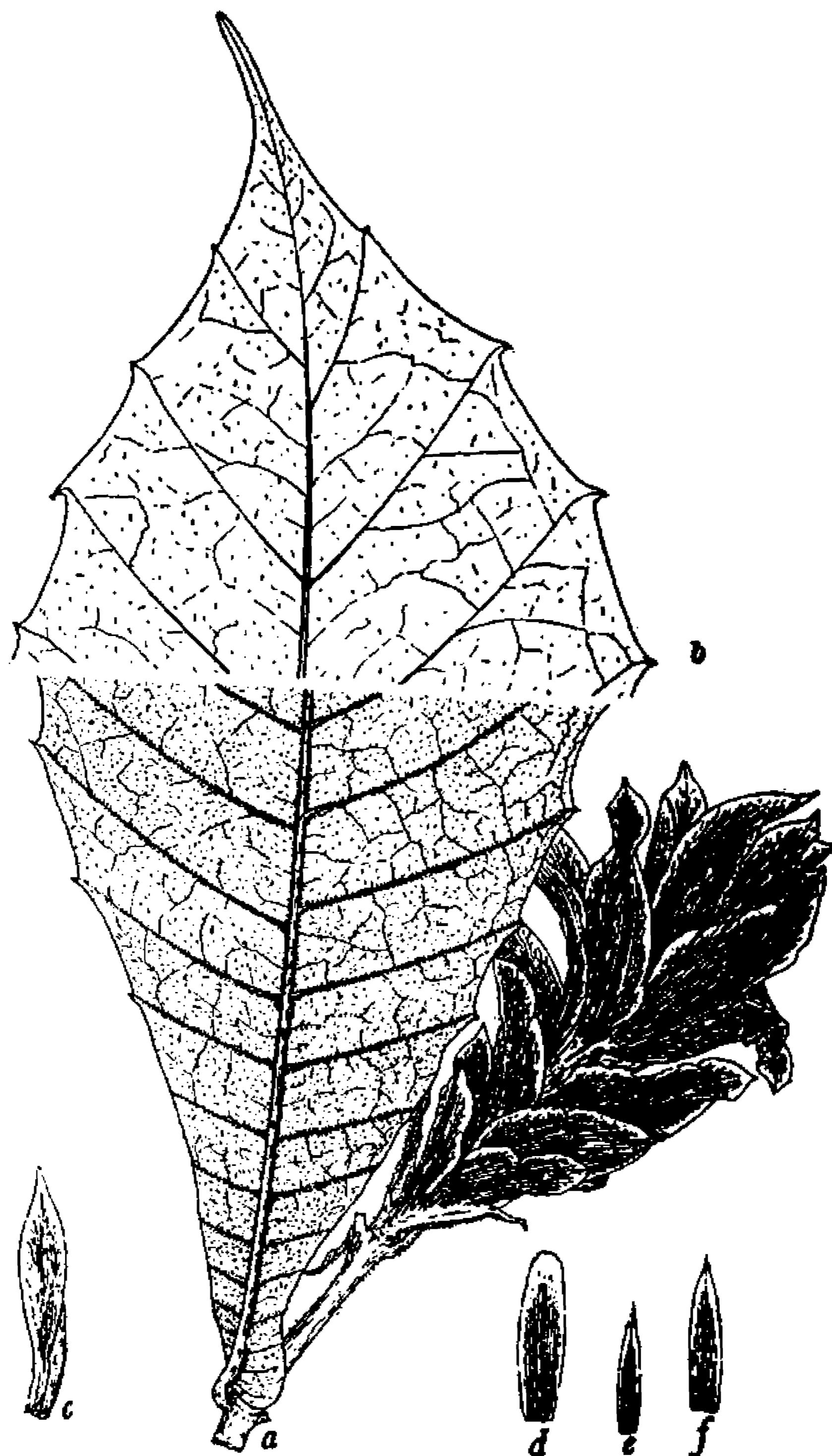


FIGURE 49.—*Aphelandra crispata* Leonard (Cuatrecasas 11352): *a*, Spike and lower portion of leaf (lower surface); *b*, upper portion of leaf blade (upper surface); *c*, bractlet; *d*, posterior calyx segment; *e*, one of the lateral segments; *f*, one of the anterior segments. (*a*, *b*, Half natural size; *c*-*f*, natural size.)

Apparently unrelated to any other Colombian species, *Aphelandra crispata* can be recognized readily by its large oblong-elliptic leaves with their coarsely serrate margins, bright yellow corollas, and large coriaceous, crisped, livid purple bracts. It is impossible to state

the dimensions of the mature corolla from the herbarium material examined. The name *crispata* alludes to the crisped, curled bracts.

12. *Aphelandra arnoldii* Mildbr.

*Aphelandra arnoldii* Mildbr. Notizbl. Bot. Gart. Berlin 11: 63. 1930. Type collected in damp humus on wooded mountain slope at San Lorenzo, Department of Magdalena, Colombia, 2,150 meters altitude, February 1927, by Dr. Arnold Schultze (No. 771) and deposited in the Berlin Herbarium. Photograph of the Berlin type in the U. S. National Herbarium, No. 8697.

Herbs; stem short; roots long and numerous, extending apparently a little above the ground; leaf blades subrosulate, crowded, the blades narrowly elliptic to oblanceolate, 15 to 30 cm. long, short-acuminate at apex (the tip itself obtuse), long and narrowly decurrent on the petiole, the upper surface short-appressed-pilose, the costa plane, the lateral veins (15 to 17 pairs) forming angles of about 70 degrees, arcuate, ascending; petioles 4 to 6 cm. long; flowers borne in spikes, the scape axillary, about 25 cm. long, appressed-puberulous, extending above the rosette of leaves, the spike itself 5 to 8 cm. long; bracts erect-spreading, scarcely imbricate, lanceolate, 6 to 8 mm. long, barely 2 mm. wide, acute but scarcely pungent, ciliate, the hairs erect-spreading, the margins rarely bearing a few minute teeth, the internodes about 5 mm. long; bractlets similar to the bracts but only 4 mm. long and slenderly subulate-acute; calyx segments thinly scarious, pale, lanceolate to linear-lanceolate, 4 to 5 mm. long, the interior ones a little shorter than the others and noticeably narrower; corolla bright rosy, the tube narrowly cylindrical, suberect, about 1 cm. long, the lobes of the lower lip broadly rounded, broadly cuneate toward base, the middle one 7 mm. long and 5 mm. wide, the lateral ones slightly smaller, the posterior pair much smaller (2.5 to 4 mm. long); stamens included, subequal, the filaments affixed a little above the middle of the corolla tube, the anthers oblong, obtuse, their tips cohering; ovary 1.5 mm. long.

Not seen. Description compiled from the original. Known only from type material.

13. *Aphelandra parviflora* Leonard

*Aphelandra parviflora* Leonard, Journ. Washington Acad. Sci. 25: 439. 1935. Type collected in the region of Mount Chapón, Department of Boyacá, Colombia, June 10, 1932, by A. E. Lawrance (No. 201) and deposited in the Kew Herbarium. Isotypes are in the herbaria of the Missouri (No. 1039195) and the New York Botanical Gardens, and in the U. S. National Herbarium, No. 1572318. Lawrance's No. 201, collected in the same general region and deposited in the Kew Herbarium, is also this species. Photographs of it and the type are in the U. S. National Herbarium.

Herbs; stems 10 cm. high, or more, ascending, rooting at the lower nodes, strigose; leaves usually several, the blades oblong, up to 25 cm. long and 18 cm. wide, elliptic, obtuse or obtusish at apex, cuneate at base and decurrent on the petioles, entire or undulate, purple beneath,

sparingly strigillose, except the costa and lateral nerves (15 to 18 pairs), these strigose; petioles slender, up to 6 cm. long, strigillose; spikes slender, up to 13 cm. long, about 1 cm. in diameter, the peduncles up to 12 cm. long, strigose, bearing a pair of bractlike leaves about 2 cm. below the base of the spike; bracts rather loosely imbricate, erect-spreading, elliptic, 1 cm. long, 3 to 4 mm. wide, acuminate, ending in an obtuse tip, firm, veiny, sparingly strigose, bearing on each side several erect-spreading teeth up to 1.5 mm. long; bractlets lance-subulate, 3.5 mm. long, 1 mm. wide at base, thin, subhyaline, nerved; calyx segments narrowly oblong, acuminate, subequal, 5 to 6 mm. long, the posterior one 2 mm. wide, the anterior pair 1.5 mm. wide, the lateral pair 1 mm. wide, all subhyaline, striate-nerved, minutely glandular-ciliolate; corolla pale yellow, 1 to 1.5 cm. long, obliquely funnel-form, minutely and sparingly pubescent, the tube 1 mm. broad at base, about 4 mm. broad at mouth; limb about 8 mm. broad, the lips equal, the upper one 2-lobed, 5.4 mm. wide, the lower 3-lobed, the lobes orbicular, 4.5 mm. in diameter; stamens included.

The type was collected in a low thick forest 100 miles northwest of Bogotá, at an altitude of 3,500 feet. The plants were from 10 to 14 inches high, and very attractive. The flowers were yellow and inodorous.

BOYACÁ: Vicinity of Mount Chapón. *Laurance* 201 (Kew, Mo, NY, US), 291 (Kew).

14. *Aphelandra mollis* (Nees) Leonard, nov. comb.

*Lagochilium molle* Nees, DC. Prodr. 11: 292. 1847. Type collected in Colombia by Goudot and deposited in the Hooker Herbarium, Kew.

Decumbent herb; stems about 3 mm. in diameter, at least the lower portions fistulose, the ascending portion about 25 cm. high, pilose, the hairs sordid, upwardly appressed, up to or slightly exceeding 0.5 mm. in length; leaf blades ovate, up to 11 cm. long and 6 cm. wide, the greatest width at about  $\frac{1}{4}$  the length of the blade from base, rather gradually narrowed thence to the obtuse tip, obtuse, rounded, or shallowly and obliquely cordate at base and narrowly decurrent on the petiole nearly to the stem, thin, entire or undulate, the upper surface glabrous or sparingly appressed-pilose, minutely faveolate under lens, the costa and lateral veins (8 to 10 pairs) inconspicuous, arcuate, the lower surface drying a lighter green than the upper, sparingly appressed-pilose; petioles up to 4.5 cm. long, the pubescence similar to that of the stems; flowers borne in 1 or 2 simple terminal spikes, the peduncles up to 6 cm. long, the rachis 4 to 6 cm. long, pilose, the hairs slender, sordid, appressed or ascending; bracts oblong-ovate, up to 14 mm. long and 5 mm. wide, acute to acutish, the tip itself obtuse, narrowed at base, thin, glabrous or sparingly pilosulous, delicately and inconspicuously veined, the margins minutely and distantly dentate

above middle, sparingly ciliolate, bractlets subulate, costate, subhyaline, ciliate; calyx 5 mm. long, the posterior segment broadly lanceolate, 1.25 mm. wide, obtuse and apiculate, the middle and anterior pairs lanceolate, 1 mm. wide, slenderly acuminate, all subhyaline, striate-nerved, glabrous, ciliolate; corolla 22 mm. long, glabrous or minutely and sparingly pubescent, a bright, soft yellow, the lower portion cylindrical, 1 mm. broad, the upper narrowly ampliate, about 5 mm. broad at mouth, the lobes subequal, 6 to 7 mm. long, the lower lobe about 6 mm. wide, the others about 3 mm. wide, all rounded, the margins undulate; stamens 10 to 15 mm. long, the anthers 2 mm. long, 0.25 mm. wide, contiguous at least at tip by a webby tomentum; capsules 1 cm. long, about 2 mm. broad, pointed at apex, glabrous, minutely punctate, potentially 4-seeded, the seeds brown, 3 mm. long, 2 mm. wide, about 1 mm. thick, sparingly hirtellous, the hairs brown, appressed or ascending.

SANTANDER: Camp Mesa, in the vicinity of Barranca Bermeja, Magdalena Valley, between Río Sogamoso and Río Colorado, 100 to 500 meters altitude. *Haught* 1497 (US).

Haught's specimen was taken on January 5, 1935, from a suffrutescent plant producing a running woody rhizome and growing along a stream in rich alluvial soil. The flowers were bright yellow and very showy.

15. *Aphelandra botanodes* Leonard, sp. nov.

FIGURE 50

Herba, caulibus glabris; lamina foliorum oblongo-elliptica, acuminata, basi angustata, membranacea, integra, glabra, costa et venis lateralibus aliquanto prominentibus; petioli glabri; inflorescentia terminalis, trifurcata, pedunculis puberulis, bracteis patulis vel ascendentibus, aliquanto distantibus, rhachis puberula; bracteae ovatae, acutae, membranaceae, glabrae, ciliatae, prope apicem par dentium parvorum ferentes, costa prominente; bracteolae oblique lanceolatae, acutae, subhyalinae, ciliatae, costa prominente; calycis segmenta parva, lanceolata, acuta, subhyalina, ciliolata; corolla parva (7 mm. longa), puberula, roseo-caerulea, tubo gracili, labio superiore ovato, obtuso, labio inferiore trilobato, lobis obovatis, obtusis, ciliatis; stamina inclusa, antheris apice acutis, pilosis, cohaerentibus, basi acutis, filamentis minimis et gracilibus; ovarium glabrum; styli graciles; stigma planum, lanceolatum, acutum.

Herbs; stems glabrous; leaf blades oblong-elliptic, up to 20 cm. long and 6 cm. wide, acuminate, narrowed at base, membranous, entire, glabrous, the costa and lateral veins (about 12 pairs) moderately prominent; petioles up to 2 cm. long, glabrous; flowers borne in a 3-parted inflorescence, the peduncle up to 4 cm. long, minutely strigose, the secondary peduncles 1 to 2 cm. long, slender, minutely strigose, the spikes 2 to 4 cm. long, dense, the bracts spreading or ascending, the

rachis puberulous, the internodes of the spikes up to 8 mm. long; bracts subtending the secondary peduncles lanceolate, 12 to 15 mm. long, 2 to 5 mm. wide, those subtending the flower clusters (these sessile or borne on puberulous peduncles up to 3 mm. long) ovate, 7 mm. long and 4 mm. wide, acute, thin, glabrous, sparingly punctate (the puncta appearing under microscope as small blunt projections), ciliate, the



FIGURE 50.—*Aphelandra botanodes* Leonard (*Triana* s. n., Novita): *a*, Node and lower leaf; *b*, tip of plant; *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, stamen; *i*, pistil. (*a*, *b*, Half natural size; *c*–*g*, twice natural size; *h*, six times natural size; *i*, about four times natural size.)

margins bearing towards tip a small pair of teeth, the costa prominent; bractlets obliquely lanceolate, carinate, 2 mm. long, 0.5 mm. wide, acute, subhyaline, ciliate, the costa prominent; calyx 3 mm. long, the segments lanceolate, acute, subhyaline, delicately nerved, the margins sparingly ciliolate, the posterior segment 1 mm. wide, the anterior and lateral segments slightly narrower; corolla puberulous, rose-blue (“roseo-cianeis”) about 7 mm. long, the tube slender, 1 mm. broad at

base and throat, slightly wider above middle, the lips 3.5 mm. long, the upper lip ovate, about 2 mm. broad, obtuse, the lower lip 3-parted, the lobes divided nearly to base, obovate, about 1.5 mm. wide, obtuse, ciliate; stamens reaching the mouth of the corolla tube, the anthers about 2 mm. long and 0.5 mm. broad, acute at both ends, pilose and cohering at tip, the filaments slender, about 0.5 mm. long; ovary glabrous; style slender, 3 mm. long, the stigma flat, lanceolate, acute, 0.5 mm. long and 0.25 mm. wide.

Type in the Herbario Nacional Colombiano, collected at Novita, Department of Chocó, Colombia, 170 meters altitude, March, 1853, by J. Triana, s. n.

Triana's specimen (s. n., Col) collected at San Pablo, 100 meters altitude, March 1853, may be of this species. It differs, however, from the Novita specimen in having glabrous peduncles and lax spikes with lanceolate undulate bracts.

*Aphelandra botanodes* belong to the *Lagochilium* group given generic status by Nees (DC. Prodr. 11: 290. 1847). These plants are usually small and herbaceous, standing midway between *Aphelandra* and *Stenandrium*. The name *botanodes* is the Greek word *βοταγώδης*, meaning herbaceous.

16. *Aphelandra silvicola* Leonard, sp. nov.

FIGURE 51

Herba, caulibus parce ramosis, nodis infimis radicanibus, strigosis, pilis sursum appressis; lamina foliorum oblongo-lanceolata, apice obtusa vel subobtusa, in petiolum decurrenti-angustata, tenuis, integra, utrinque parce strigosa, costa dense strigosa, juxta costam et venas alba vel fulva; spica terminalis, rhache et pedunculo appresso-pubescentibus; bracteae imbricatae, ovatae, apice acutae vel subobtusae, molliter appresso-pubescentes; bracteolae lanceolatae, acuminatae, hyalinae, glabrae, costa opaca pubescente excepta; calycis segmenta lanceolata, subhyalina, minute parallelo-venosa, glanduloso-ciliata; corolla parce pubescens, tubo angustato, lobis suborbicularibus; stamina inclusa.

Herbs; stems ascending, sparingly branched, about 25 cm. high, rooting at the lower nodes, upwardly strigose; petioles up to 4 cm. long, winged, strigose; leaf blades oblong-lanceolate, up to 12 cm. long and 4 cm. wide, obtuse to obtusish at apex, narrowed at base, thin, entire, both surfaces thinly strigose except the costa, this densely so, the hairs about 0.5 mm. long, the costa and veins (7 or 8 pairs) banded by a narrow area of white or yellow; flowers borne in terminal, peduncled spikes, these 2 cm. long and 1.5 cm. broad, the peduncle 3 cm. long, both peduncle and rachis appressed-pubescent; bracts imbricate, somewhat spreading, ovate, 1 cm. long, 4.5 mm. wide, acute or obtusish at apex, bearing toward the tip 2 or 3 small triangular ascending teeth, 7-nerved, softly appressed-pubescent; bractlets broadly lanceolate, 6.5 mm. long, 2.25 mm. wide, acuminate, hyaline and finely

parallel-nerved, glabrous except the opaque pubescent costa; calyx segments lanceolate, acuminate, glabrous, subhyaline, finely parallel-nerved, minutely ciliolate with gland-tipped hairs, the posterior segment 6 mm. long and 1.5 mm. wide, the anterior pair slightly shorter, 1 mm. wide, the lateral pair 5 mm. long and 0.5 mm. wide; corolla 2.5 cm. long, sparingly pubescent, the tube narrow, 2 mm. in diameter at base, 4 mm. at throat, the lobes suborbicular, subequal, about 3 or 4 mm. long; stamens included; capsule not seen.

Type in the herbarium of the Riksmuseet, Stockholm, collected in the primitive forest of El Tambo, La Costa, Department of Cauca,

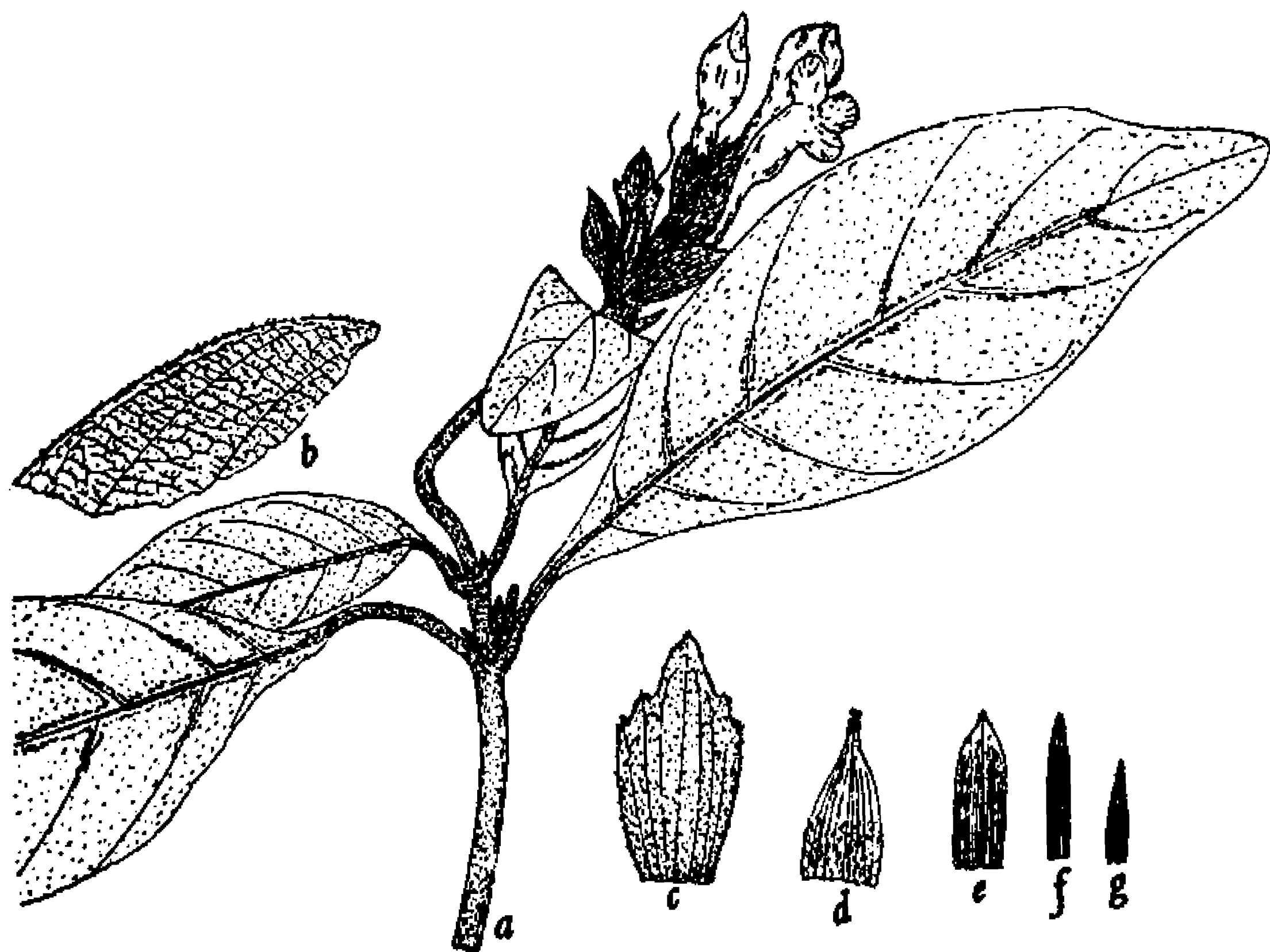


FIGURE 51.—*Aphelandra silvicola* Leonard (von Sneidern 923): *a*, Tip of stem showing leaves and inflorescence; *b*, section of leaf blade (upper surface) to show veinlets; *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments. (*a*, *b*, Natural size; *c*–*g*, twice natural size.)

Colombia, 800 meters altitude, July 31, 1936, by Kjell von Sneidern (No. 923). Fragment of type in the U. S. National Herbarium.

A remote relationship exists between *Aphelandra silvicola* and *A. mollis* (Nees) Leonard, as suggested by a similarity of size, growth and character of the inflorescence. The two species should not be confused, however, because of the ovate-cordate leaf blades of *A. mollis*. The color of the corolla of *A. silvicola* is not apparent in the dried herbarium material.

17. *Aphelandra adscendens* Leonard, sp. nov.

FIGURE 52

Herba, caulibus ascendentibus, parce strigosis, pilis sursum appressis, parce ramosis, nodis infimis radicans; lamina foliorum oblonga

vel obovata, apice rotundata vel abrupte breviter-acuminata, basi angustata, in petiolum decurrens, supra pilosa, pilis ascendentibus, subtus strigosa, pilis praecipue in costa et venis positis; petioli pubescentes; spicae terminales et laterales, rhache et pedunculo fulvo-strigosis; bracteae rhombeo-ovatae, breviter acuminatae, apice ipso obtuso, basi angustatae, extus dense pilosae, intus glabrae, marginibus parce serratae, venis 5, parallelis, gracilibus; bracteolae lanceolatae, carinatae, acutae, dorso pilosae, substriatae, marginibus subhyalinis, parce ciliatis; calycis segmenta lanceolata, acuta, striato-nervata, marginibus parce ciliatis; corolla parva, pallide incarnata, fauce flava, minute glanduloso-puberula, lobis 5, rotundatis, minute crenatis; antherae apice parce barbatae; filamenta gracilia, glabra; ovarium glabrum apice piloso excepto.

Herbs; stems ascending, rooting at the base, sparingly branched, about 4 mm. in diameter, rather sparsely strigose, the hairs upwardly appressed, 0.75 mm. long; leaf blades oblong to oblanceolate, up to 25 cm. long and 4.5 cm. wide, rounded or abruptly narrowed into a short obtusish tip about 2 mm. long, gradually narrowed from slightly above the middle to base and decurrent on the petiole, thin, entire. the upper surface drying brownish, pilose, the hairs ascending, up to 1.25 mm. long, the lower surface drying greenish, strigose, the hairs appressed, about 0.5 mm. long, confined chiefly to costa and lateral veins, these more prominent beneath than above; petioles up to 3 cm. long, the pubescence that of the blade; spikes terminal and lateral, up to 5 cm. long and 1 cm. broad, the peduncle slender, 2 to 3 cm. long, rather densely strigose, the hairs yellowish, up to 1 mm. long, the pubescence of the rachis the same as that of the peduncle; bracts rhombic-ovate, 10.5 mm. long, 5 mm. wide, short-acuminate (the tip itself blunt), narrowed at base, the outer surface densely pilose, the hairs 0.75 mm. long, subappressed, the margins just above the middle of the bract bearing 3 pairs of small, ascending teeth (0.5 mm. long), the inner surface glabrous, the five veins prominent but slender, parallel; bractlets lanceolate, carinate, substriate, 7.5 mm. wide at slightly below the middle, narrowly acute at tip, dorsally pilose, the hairs up to 1 mm. long, ascending, the marginal region thin, subhyaline, sparingly ciliate, the hairs minute, blunt; calyx segments lanceolate, the posterior segment 6.5 mm. long and 1.25 mm. wide near base, the anterior pair 6.25 mm. long and 1 mm. wide at base, the lateral pair 5 mm. long and 0.75 mm. wide, all striate-nerved, narrowed upwardly to a slender tip, the margins very sparingly ciliate, the hairs minute, papilliform; corolla about 12 mm. long, pale pink with yellow throat, minutely puberulous, the hairs gland-tipped, the tube 1.5 mm. broad from base to 4 mm. above base, thence enlarged to 3.25 mm. at throat, the lips equal, about 2 mm. long, the upper lip



about 4 mm. wide, bilobed at tip, the lobes about 1 mm. long, rounded, the three lobes of the lower lip about 3 mm. long, rounded and minutely crenate; stamens attached 4 mm. above the base of the corolla tube, 6 mm. long, the anthers 2 mm. long and slightly over 0.5 mm. wide, acute at base and sparingly bearded at tip, the filaments slender, glabrous; ovary pilose at tip, the hairs ascending; style 8 mm. long, slender, glabrous; capsule not seen.

Type in the Gray Herbarium, collected at side of brook in the high forest of El Umbo (130 miles north of Bogotá), Department of

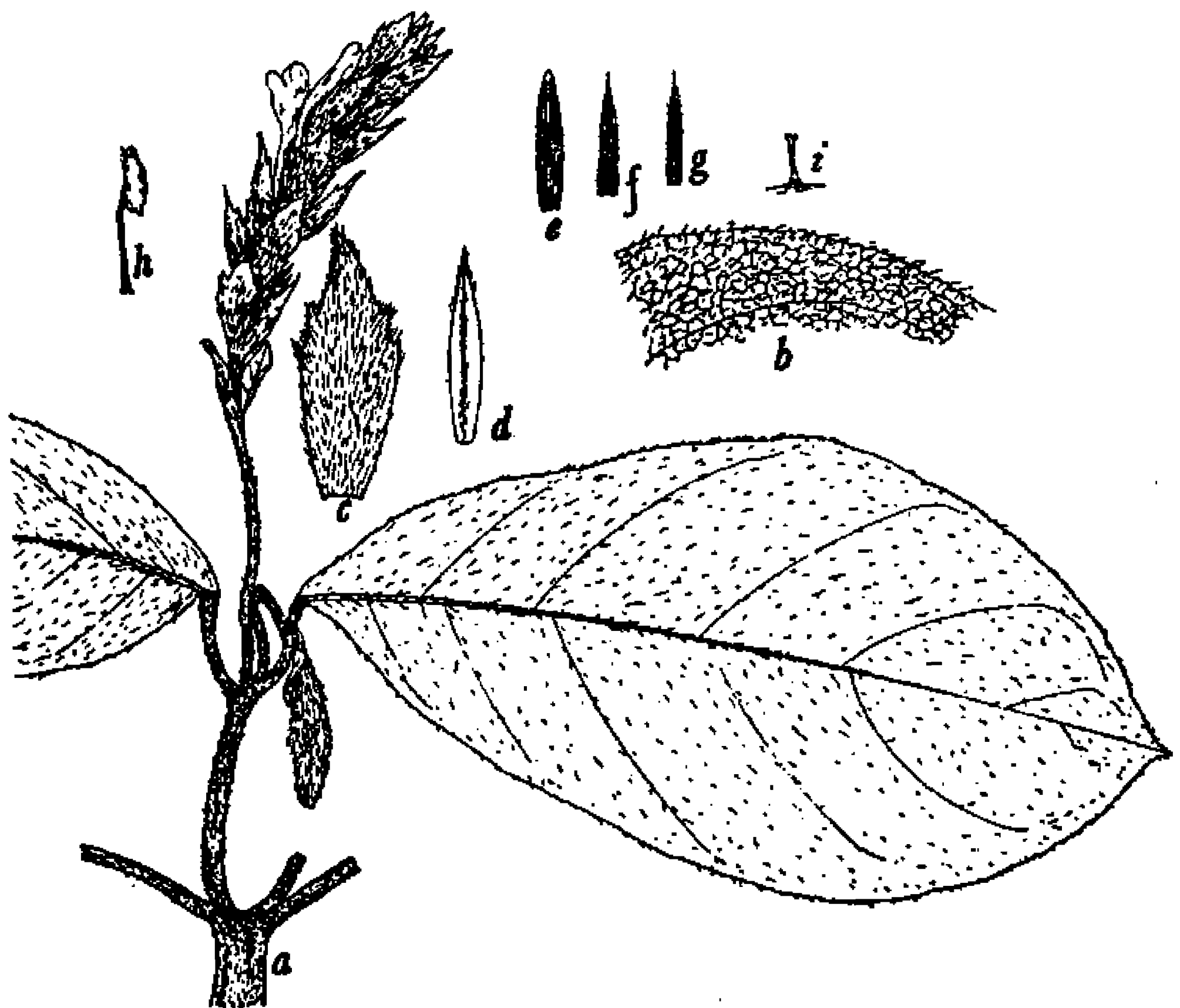


FIGURE 52.—*Aphelandra adscendens* Leonard (Lawrance 680): *a*, Tip of plant showing leaves and spike; *b*, portion of leaf blade to show veinlets; *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, stamen; *i*, type of marginal hairs on bractlets and calyx segments. (*a*, *b*, Natural size; *c*–*h*, twice natural size; *i*, about 64 times natural size.)

Boyacá, Colombia, about 1,000 meters altitude, March 17, 1933, by A. E. Lawrance (No. 680). Fragment of type in the U. S. National Herbarium, No. 1934972.

*Aphelandra adscendens* should be easily recognized by its ascending habit, small size, and by the rather densely pilose inflorescence. It has a superficial resemblance to Lindau's *Rhombochamys rosulata*, but that has a very short scape, rosulate leaves, glandular bracts and larger flowers (the tube 12 mm. long instead of 6 mm., as in *A. adscendens*).

18. *Aphelandra ochrolarynx* Leonard, sp. nov.

FIGURE 53

Herba, caulibus aliquanto hirtellis, pilis sursum appressis; folia ad apicem caulis subconferta, laminis oblongo-ovatis vel oblongo-ellip-

ticis, subacutis, basi angustatis, submembranaceis, integris vel undulatis, supra dense pilosis, pilis appressis, costa et venis lateralibus obscuris, subtus adpresso-pilosis, pilis praecipue in costa et venis positis; petioli aliquanto breves, dense pilosi, pilis ascendentibus; spicae plures, terminales et subterminales, rhachibus et pedunculis aliquanto dense pilosis, subflavis; bracteae erectae vel adscendentes (maturae patulae), oblongo-rhombicae, acuminatae, dentatae, dentibus aliquanto longis, subulatis, ascendentibus, pilosae, pilis appressis; bracteolae oblongo-lanceolatae, acuminatae, subcarinatae, pilosae, pilis appressis vel ascendentibus; calycis segmenta anguste lineari-lanceolata, acuminata, tenuiter striata, parce et obscure ciliolata, pilis ascendentibus, glandulosis; corolla alba, fauce flava, parce et minute pubescens, labiis subaequalibus, lobis ovatis, rotundatis vel emarginatis; stamina exserta, filamentis glabris; capsulae ignotae.

Herbs; stems ascending, up to 7 cm. high, moderately hirtellous, the hairs upwardly appressed or ascending, 0.5 mm. long; leaves usually about 10, somewhat crowded at the tip of the stem, the blades oblong-ovate or oblong-elliptic, up to 12 cm. long and 5.5 cm. wide, subacute, narrowed at base, submembranaceous, entire or undulate, the upper surface rather densely appressed-pilose, the hairs up to 1 mm. long, yellowish, the costa and lateral veins (8 to 10 pairs) obscure, the lower surface appressed-pilose, the hairs about 0.75 mm. long, more numerous on the costa and lateral nerves; petioles up to 2 cm. long, densely pilose, the hairs about 1 mm. long, ascending; spikes several, terminal and subterminal, up to 11 cm. long, lax at maturity, the peduncles (up to 5 cm. long) and rachises rather densely yellowish pilose, the hairs 0.75 to 1 mm. long, upwardly appressed or ascending; bracts erect or ascending, spreading at maturity, oblong-rhombic, up to 15 mm. long and 6 mm. wide, acuminate, appressed-pilose (the hairs about 1 mm. long), the margins bearing 3 pairs of slender ascending teeth up to 3 mm. long and 0.25 mm. wide at base; bractlets oblong-lanceolate, up to 1 cm. long and 2 mm. wide, acuminate, subcarinate, moderately pilose dorsally with appressed or ascending hairs, finely and obscurely parallel-nerved; calyx segments narrowly linear-lanceolate, acuminate, finely striate, obscurely and sparingly ciliate with ascending glandular hairs, the posterior segment 7 mm. long, 1 mm. wide, the anterior segments 6.5 mm. long and slightly over 0.75 mm. wide, the lateral segments 6 mm. long and 0.75 mm. wide; corollas about 15 mm. long, white with a yellow patch in front of the throat, finely and sparingly pubescent, the lips about 5 mm. long, the lobes ovate, rounded or shallowly emarginate; stamens exserted about 4 mm. beyond the mouth of the corolla throat, the filaments glabrous, the anthers 1.5 mm. long and 0.5 mm. wide, webby at tip; capsules not seen.

Type in the herbarium of the Royal Botanic Gardens at Kew, collected at San José, along the Río Putumayo, Colombia, August 3, 1899, by T. A. Sprague (No. 601).

The specific epithet is derived from the Greek, *ὄχρα*, yellow, and *λάρυγξ*, throat, in allusion to the yellow-throated corolla.



FIGURE 53.—*Aphelandra ochrolarynx* Leonard (Sprague 601): *a*, Plant; *b*, bract; *c*, bractlet; *d*, calyx; *e*, glandular marginal hairs of calyx segment. (*a*, Half natural size; *b-d*, twice natural size; *e*, about 50 times natural size.)

19. *Aphelandra uribei* Leonard, sp. nov.

FIGURE 54

Suffrutex, caulibus parce ramosis, ascendentibus, nodis infimis radicantibus, minute hirsutis, pilis appressis vel patulis; internodia brevia; lamina foliorum oblongo-elliptica, apice acuminata, apice ipso obtuso,

basi plus minusve abrupte angustata, in petiolum decurrens, minute alveolata, subbullata, integra vel undulata, utrinque glabra, venis prominentibus, costa et venis supra pilos raros minutos ferentibus, subtus pubescentibus, pilis valde curvatis; petioli breves, pubescentes, pilis curvatis; spica terminalis, pedunculo brevi, rhache alata, parce puberula; bracteae lanceolatae, tenuiter acuminatae, subtiliter puberulae, venis 3, prominentibus, venulis grosse reticulatis, marginibus serratis, dentibus subulatis; bracteolae subulatae, puberulae; calycis segmenta puberula, striata, segmentum posterius oblongo-lanceolatum, segmenta anteriora et media lanceolata, apice subulata; corolla rubra, papilliformi-puberula, tubo angusto, labio superiore erecto, subobtusio, apice ipso minute apiculato, labio inferiore patulo, lobo medio elliptico, apice rotundato, lobis lateralibus obovatis, apicis rotundatis; antherae apice cohaerentes; filamenta parce hirsuta; ovarium glabrum.

Suffrutescent herbs up to 30 cm. high; stems sparingly branched, ascending, rooting at the lower nodes, 3.5 mm. in diameter, minutely hirsute, the hairs less than 0.25 mm. long, spreading to appressed; internodes short, 1 to 2 cm. long; leaf blades oblong-elliptic, up to 17 cm. long and 6 cm. wide, acuminate at apex, the tip itself blunt, narrowed at base, sometimes abruptly so and briefly decurrent on the petiole, firm, subbullate, the margins entire or undulate, the upper surface glabrous or the costa and lateral veins (6 to 8 pairs) bearing a few minute hairs, the lower surface drying a lighter green than the upper, the costa and veins pubescent, the hairs spreading and strongly curved, the venation of both surfaces fairly prominent, the leaf surfaces minutely alveolate; petioles (unwinged portion) 1 to 1.5 cm. long, pubescent, the hairs curved; spikes terminal, 8 to 13 cm. long, 8 to 10 mm. broad, the rachis winged, sparingly puberulous; bracts lanceolate, 19 mm. long, 6 mm. wide exclusive of teeth, slenderly acuminate, forming an angle of 10 degrees with the rachis, the margins about 6 mm. above base and immediately below apex bearing 4 or 5 slender ascending teeth up to 2 mm. long, both surfaces finely puberulous, the three principal veins prominent, indurate at base, the veinlets coarsely reticulate toward tip of bracts; bractlets subulate, 3.5 mm. long, about 0.5 mm. wide at base, puberulous; calyx puberulous, striate, the posterior segment oblong-lanceolate, 6.5 mm. long, slightly over 2 mm. wide, tipped by 2 or 3 slender lobes 0.5 to 1 mm. long, the anterior and middle pair of calyx segments lanceolate, 6 to 7 mm. long, 1 mm. wide, ending in slender acuminate or subulate tips; corolla red, about 4.5 cm. long, minutely and sparingly pubescent without, glabrous within except a narrow longitudinal band extending from basal part of middle lobe to below mouth of corolla tube, the lobes ciliolate, the tube about 2 mm. broad at base, gradually enlarged to 5 mm. at mouth, the upper

lip erect, oval, about 7 mm. long and 5 mm. wide, obtusish and minutely apiculate at tip, the lower lip spreading, the middle lobe elliptic, 13 mm. long, 8 mm. wide, obtuse or rounded, the lateral lobes obovate, 6 mm. long, 4.5 mm. wide, rounded at their tips; stamens equaling or slightly exceeding the upper lip, the anthers barely 4 mm. long, lightly adhering at tip, the filaments sparingly hirsute; ovary glabrous; capsules not seen.

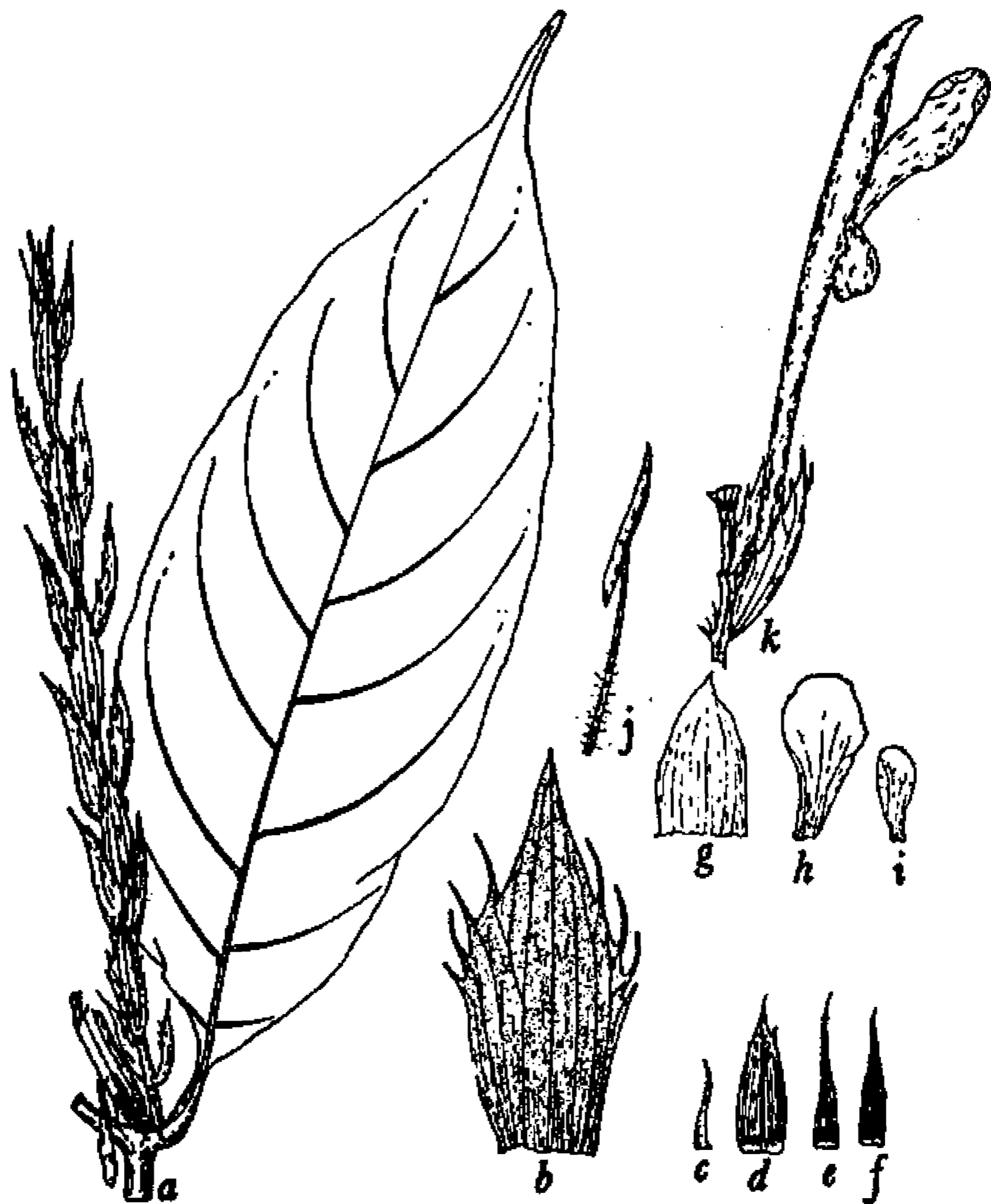


FIGURE 54.—*Aphelandra uribei* Leonard (Uribe 1437); *a*, Tip of plant; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, one of the lateral segments; *g*, posterior corolla lobe; *h*, middle lobe of lower lip; *i*, one of the lateral lobes; *j*, anther and upper portion of filament; *k*, portion of spike showing corolla. (*a*, Half natural size; *b-f*, twice natural size; *g-i*, *k*, natural size; *j*, about four times natural size.)

Type in the Uribe Herbarium, collected in the forests of Dabeiba, Department of Antioquia, Colombia, 400 meters altitude, January 11, 1947, by Lorenzo Uribe-Uribe (No. 1437). Fragment in the U. S. National Herbarium.

*Aphelandra uribei* can be recognized readily by its ascending stems with short internodes and by its narrow, slenderly acuminate, toothed bracts. There may be some relationship between this and *A. ourantiaca*.

20. *Aphelandra lonchochlamys* Leonard, sp. nov.

FIGURE 55

Herba vel suffrutex, caulibus puberulis, pilis brunneis, retrorse curvatis, internodiis summis brevibus; lamina foliorum lanceolata, acuminata (apice ipso subacuta), basi angustata, in petiolum breviter decurrens, integra, supra glabra vel in costa pilos subappressos ferens, subtus glabra, purpurea, costa et venis puberulis vel in costa pilis minutis curvatis et rectis intermixtis praeditis; petioli recurvati, dense puberuli, pilis brunneis, curvatis; spicae solitariae, terminales, rhache puberula, pilis rectis, patulis, albidis; bracteae lanceolatae, puberulae, pilis glandulosis et eglandulosis intermixtis, ciliatae, remote et minute dentatae, costa et venis lateralibus prominentibus, venulis marginalibus crasse reticulatis; bracteolae subulatae, carinatae, parce hirtellae, pilis glandulosis et eglandulosis intermixtis, costa prominente; calycis segmenta subaequalia, lanceolata, subhyalina, graciliter acuminata, minute striata, parce puberula, pilis glandulosis et eglandulosis intermixtis, segmentum posterius et aliquando anteriora apice graciliter dentata; corolla coccinea, parce et minute pubescens, labio superiore erecto, acuto, labio inferiore trilobato, lobis ellipticis, abrupte acutis; stamina vix exserta; ovarium pubescens; capsulae ignotae.

Herb or suffrutescent shrub; stems puberulous, the hairs brown, about 60  $\mu$  long, retrorsely curved, the 3 uppermost internodes 3 to 5 mm. long, the others much longer; leaf blades lanceolate, up to 16 cm. long and 24 mm. wide, acuminate (the tip itself subacute), narrowed at base and briefly decurrent on the petiole, entire, the upper surface glabrous or the costa bearing a few subappressed hairs about 0.5 mm. long, the lower surface purple (*Sprague*), glabrous except costa and veins, these puberulous or the costa bearing additional straight subappressed hairs up to 0.5 mm. long, the venation obscure but more prominent beneath than above; petioles recurved, up to 1 cm. long, densely brown puberulous, the hairs curved; spikes terminal, solitary, about 8 cm. long and 2 cm. broad, the rachis puberulous, the hairs whitish, straight, spreading, about 0.25 mm. long; bracts lanceolate, up to 32 mm. long and 6.5 mm. wide, acute, puberulous (the hairs about 175  $\mu$  long, some of them gland-tipped), ciliate, the hairs up to 625  $\mu$  long, the costa and several pairs of lateral nerves prominent, the marginal veinlets coarsely reticulate, the teeth (2 or 3 pairs) about 175  $\mu$  long; bractlets subulate, 1 cm. long, 0.75 mm. wide near base, carinate, rather sparingly hirtellous, the hairs ascending, up to 0.4 mm. long, some of the shorter ones glandular, the costa prominent; calyx segments subequal, lanceolate, subhyaline, slenderly acuminate, finely striate, sparingly puberulous, the hairs up to 150  $\mu$  long, some of them gland-tipped, the posterior segment 2 mm. wide, the tip often terminating in 3 slender teeth, the anterior segments 1.25 mm. wide,

the lateral segments 1 mm. wide, both lateral and anterior segments with simple or 2- or 3-parted slender tips; corollas up to 4.5 cm. long, scarlet, finely and sparingly pubescent, the lips about 2 cm. long, the posterior lip erect, about 6 mm. wide, acute at tip, the lower lip spreading, the middle segment elliptic, abruptly acute, about 7 mm. wide, the lateral segments similar but only about 4 mm. wide; stamens slightly exserted; ovary pubescent.

Type in the herbarium of the Royal Botanic Gardens, Kew, collected at Mocoa, Intendencia of Caquetá, Colombia, 1898 or 1899, by T. A. Sprague (No. 394).



FIGURE 55.—*Aphelandra lonchochlamys* Leonard (Sprague 394): *a*, Tip of plant; *b*, bract; *c*, bractlet; *d*, calyx, spread to show lobes and ovary; *e*, marginal hairs of calyx segments. (*a*, Half natural size; *b*, natural size; *c*, *d*, twice natural size; *e*, about 24 times natural size.)

The specific epithet is derived from the Greek  $\lambda\omicron\gamma\chi\eta$ , spear, and  $\chi\lambda\alpha\mu\acute{\upsilon}\varsigma$ , bract (military cloak), in allusion to the narrow lance-shaped bracts.

*Aphelandra lonchochlamys* is possibly related to *A. repanda* Nees (DC. Prodr. 11: 728. 1847), based on *Mathews* 1238 from Peru. That species, however, has much larger leaf blades with strongly repand margins. Both species are in turn related to *A. aurantiaca*.

21. *Aphelandra puberula* Leonard, sp. nov.

FIGURE 56

Suffrutex, caulibus glabris vel sursum puberulis; lamina foliorum ovata, apice acuminata, basi subcordata vel rotundata, in petiolum

decurrens, integra vel undulata, supra glabra vel in costa deorsum strigosa, subtus minute punctata, glabra, costa et venis puberulis; petioli strigosi; spica terminalis, rhache dense et subtiliter pubescente, pilis patulis; bracteae ascendentes, rhombicae, dentibus tenuibus, curvatis; bracteolae subulatae, striatae, puberulae; calycis segmenta subaequalia, striata, puberula, acuminata, apice dentata; corolla rubra, aliquanto dense pubescens, tubo angustato, labiis subaequalibus, labio superiore ovato, obtuso, labio inferiore trilobato, lobis subaequalibus, ovatis, obtusis; ovarium glabrum.

Suffrutescent; stems glabrous or puberulous toward tip; leaf blades ovate, 21 cm. long and 10 cm. wide, acuminate, subcordate to rounded at base and decurrent on the petiole, entire or undulate, bright green, the upper surface glabrous or the costa strigose toward base of blade, the lower surface minutely punctate, glabrous except the costa and lateral veins (11 or 12 pairs), these puberulous; petioles up to 3 cm. long, strigose; spike terminal, 15 cm. long, about 2 cm. broad, the rachis finely and densely pubescent, the hairs spreading; bracts imbricate, ascending, rhombic, up to 27 mm. long and 12 mm. wide, puberulous and veiny on both sides, the lower third and tip of bract entire, the upper portion bearing about 8 slender, more or less curved, subulate teeth up to 4 mm. long; bractlets subulate, 1 cm. long, striate, puberulous; calyx segments subequal, about 12 mm. long, striate, puberulous, slenderly acuminate, the posterior segment 4.25 mm. wide, 2- or 3-toothed at apex, the anterior segments 2.5 mm. wide, the lateral ones about 2 mm. wide, both anterior and lateral segments often bearing 1 or more minute teeth near tip; corolla 4 cm. long, red, rather densely pubescent, the tube narrow, 3 cm. long, about 3 mm. broad at base and 5 mm. broad at mouth, the lips subequal, the upper lip ovate, about 15 mm. long and 12 mm. wide, obtuse or rounded, the lower lip 3-lobed, the lobes subequal, ovate, about 12 mm. long and 7 mm. wide, obtuse; ovary glabrous; capsules not seen.

Type in the herbarium of the Riksmuseet, Stockholm, collected in primitive forest at La Costa, Department of El Cauca, Colombia, 900 meters altitude, July 27, 1936, by Kjell von Sneidern (No. 869). Fragment of type in the U. S. National Herbarium.

CAUCA: "Dense damp forests around El Peñol on the western slopes of the West Andes of Popayán, 1,800 to 2,000 meters altitude, May" [Lehmann's field notes], *Lehmann* 8632 (K). Lehmann states that the plant is a herbaceous shrub with slender, weakly ramified stems up to 1.3 meters in height and the leaves are dark green and the flowers of a luminous vermilion color.

*Aphelandra puberula* can be separated from *A. sneidernii* by its sharply toothed, conspicuously puberulous bracts. The bracts of *A. sneidernii* are so minutely puberulous as to appear, without a lens, to be glabrous and the teeth are barely 0.5 mm. long in contrast to the slender well-developed ones of *A. puberula*. *Aphelandra puberula*



can be distinguished from *A. impressa*, which has superficially similar bracts, by the shape of its leaf blades. These are subcordate or rounded at base instead of being gradually narrowed as in *A. impressa*. The specific name *puberula* alludes to the puberulous bracts.

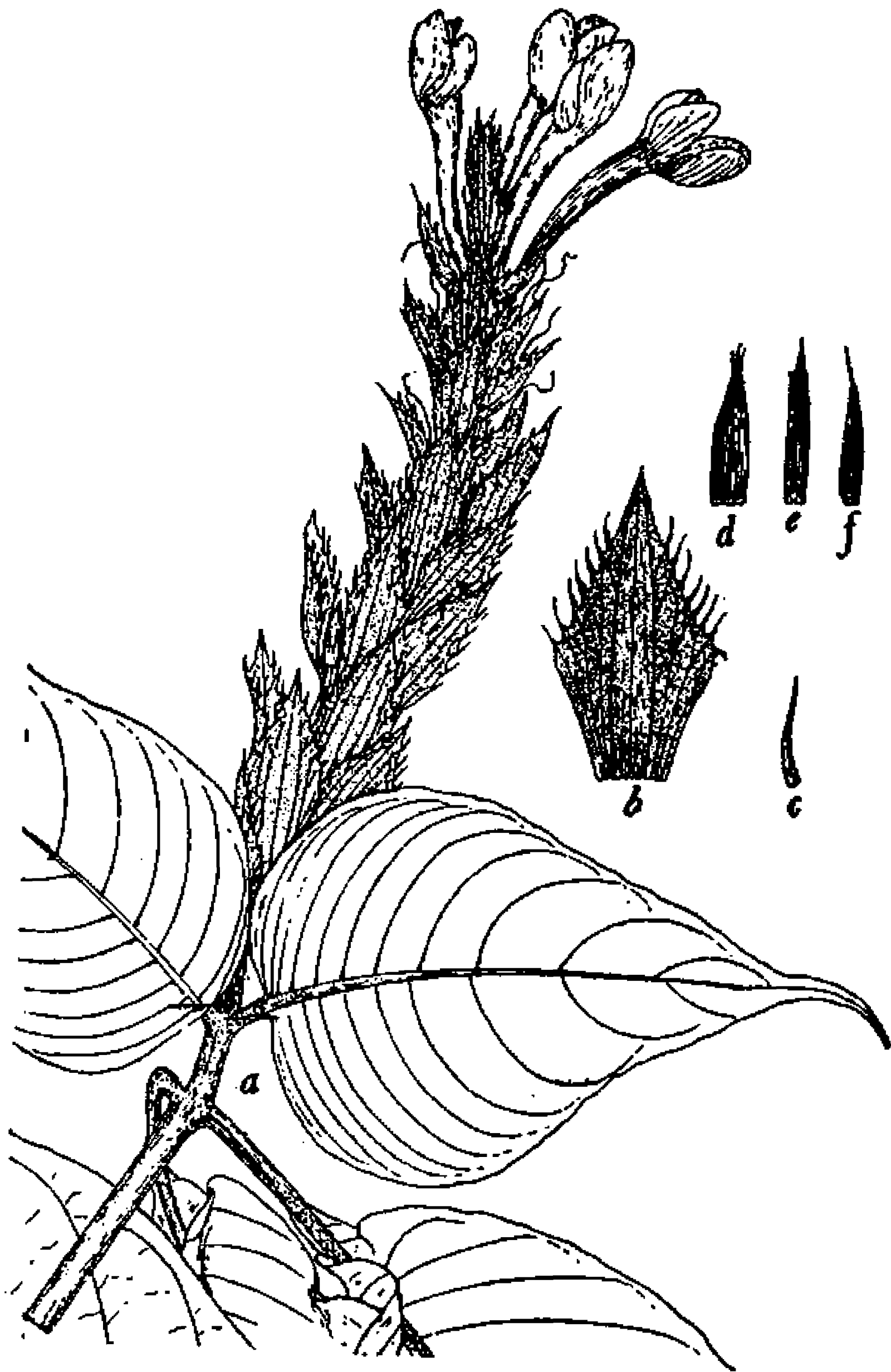


FIGURE 56.—*Aphelandra puberula* Leonard (von Sneidern 869): *a*, Tip of plant; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, one of the lateral segments. (*a*, Half natural size; *b*–*f*, natural size.)

22. *Aphelandra aurantiaca* (Schiedw.) Lindl.

*Hemisandra aurantiaca* Schiedw. Bull. Acad. Sci. Bruxelles 9: 22. 1842. Type grown in the Jardin Botanique de Bruxelles in the year 1839 from seeds procured from Mexico. (Aurantiaca: orange colored, alludes to the color of the corollas.)

*Aphelandra aurantiaca* Lindl. Bot. Reg. 31: pl. 12. 1845. Based on *Hemisandra aurantiaca*.

*Aphelandra acutifolia* Nees, DC. Prodr. 11: 299. 1847. A number of cotypes are cited. The first mentioned was collected at Vitoc, Peru, by Ruiz and deposited in the Berlin Herbarium. The remaining cotypes were collected by various botanists in Peru, Mexico, and Surinam.

Herbaceous to suffrutescent, erect, up to 1.5 meters high, glabrous or sparingly pilose, the internodes 2 to 9 cm. long; leaf blades oblong-ovate to elliptic, the majority of them 8 to 20 cm. long and 2.5 to 12 cm. wide, acute to acuminate, gradually to abruptly narrowed at base and more or less decurrent on the petiole, sometimes obliquely so, chartaceous, glabrous or essentially so, sometimes bearing a few minute white hairs on the veins, the margins entire or undulate, the costa and lateral veins (10 to 12 pairs) prominent, arcuate, the upper surface nitid, obscurely and rather coarsely reticulate, minutely alveolate, the lower surface somewhat whitish, the reticulations obscure; petioles up to 10 cm. long, glabrous; flowers borne in simple terminal spikes up to 15 cm. long and 3 cm. wide (excluding the corollas), the rachis puberulous, the nodes flattened and slightly excavate; bracts imbricate, oblong-lanceolate, up to 3 cm. long and 1 cm. wide, acuminate, veiny, softly and densely puberulous, the hairs ascending, the margins ciliate, serrate, the teeth up to 1.5 mm. long; bractlets narrowly lanceolate and slenderly acuminate; calyx about 1 cm. long, the posterior segment oblong, 3 mm. wide, acute, the lateral and anterior pairs linear-lanceolate, 1.5 mm. wide, the 5 segments and bractlets striate-nerved and puberulous, the nerves ending at the base of each segment in a callus about 1 mm. long; corollas 5 to 6 cm. long, red, orange or scarlet, sparingly puberulous, the upper lip oblong-ovate, about 2 cm. long and 1.2 cm. wide above the base, obtusish and entire at apex, the lower lip spreading, the lobes elliptic-ovate, the middle one up to 2.5 cm. long and 1.8 cm. wide, obtuse, the lateral ones similar but only about half as large; capsules 1.6 cm. long, sparingly puberulous; seeds hispidulous.

*Aphelandra aurantiaca* is a variable species and perhaps consists of a number of races or forms. The Mexican and Central American specimens in the U. S. National Herbarium have as a rule smaller and more slenderly toothed bracts than do the South American plants. The bracts of some of the North American plants are in fact practically pectinate. Red flowers seem to be more prevalent than yellow or orange ones.

Usually found in dense forests, from Mexico to Bolivia. Apparently rare in Colombia.

AMAZONAS: Loretoyacu River, Trapecio Amazónico, Schultes 6630 (Col).

DEPARTMENT (?): Mutis 1494 (US).

23. *Aphelandra leiophylla* Leonard, sp. nov.

FIGURE 57

Suffrutex, caulibus subquadrangularibus, glabris; lamina foliorum oblongo-elliptica, aliquanto abrupte acuminata, apice ipso obtuso, basi angustata, in petiolum decurrens, undulata, glabra, minute alveolata, costa et venis supra obscuris, subtus prominentibus; petioli breves, glabri; spica solitaria, terminalis, subsessilis, rhache glabra; brac-

teae aliquanto arcte appressae, ellipticae, venosae, tenues, glabrae, minute et parce serratae; bracteolae subulatae, carinatae, venosae, pilos raros minutos papilliformes ferentes; calycis segmenta lanceolata, glanduloso-ciliolata, apice angustata, gracilia; corolla glabra, sursum rubra, deorsum subfulva, tubo angustato, labio superiore erecto, ovato, labio inferiore trilobato, lobis subaequalibus, ellipticis, acutis; filamenta glabra; antherae apice cohaerentes, dorso pilosae.

Suffrutescent herbs up to 1 meter high; stems subquadrangular, glabrous; leaf blades oblong-elliptic, up to 24 cm. long and 8.5 cm. wide, rather abruptly acuminate, the tip itself blunt, gradually narrowed from about the middle to base and decurrent on the petiole, undulate, glabrous, minutely alveolate, the alveoli more apparent on the under surface, the costa and veins (12 to 14 pairs) obscure above, prominent beneath; petioles (unwinged portion) about 1 cm. long, glabrous; spikes solitary, terminal, up to 16 cm. long, and 1.5 cm. broad, the bracts rather closely appressed, the rachis glabrous; peduncles 0.5 cm. long, 4 mm. in diameter; bracts elliptic, up to 22 mm. long and 10 mm. wide, acute, thin, veiny, glabrous, the margins minutely and distantly toothed, the teeth up to 0.25 mm. long; bractlets subulate, 6.5 mm. long, 1 mm. wide near base, carinate, veiny, bearing scattered, minute, papilliform hairs 25  $\mu$  long; calyx 9 mm. long, the segments lanceolate, the posterior segment about 4 mm. wide, tipped by 3 subulate lobes 1 to 1.5 mm. long, the other segments 1.5 to 2 mm. wide, gradually narrowed to slender spinelike tips, glabrous, ciliate with minute gland-tipped hairs about 25  $\mu$  long, the nerves of each segment ending basally in a thick callus; corolla glabrous, red distally, yellowish proximally, 6 cm. long, the tube about 4 mm. broad at base, gradually enlarged to 7 mm. at mouth, the lips equal, 2 cm. long, the upper lip erect, ovate, about 14 mm. wide, obtusish at apex, the lower lip 3-lobed, the middle lobe about 1 cm. wide, the lateral lobes about 6 mm. wide, all acutish at apex; stamens 16 mm. long, the filaments dorsally pilose apically, the anthers 5 mm. long, cohering at their tips, the hairs about 0.75 mm. long; capsules not seen.

Type in the U. S. National Herbarium, No. 1852615, collected in woods at La Laguna on the left bank of the Río Sanguinini, Department of El Valle, Colombia, 1,250 to 1,400 meters altitude, December 10-20, 1943, by J. Cuatrecasas (No. 15436).

In relationship, *Aphelandra leiophylla* is closest to *A. aurantiaca*. In comparing the two species, however, one will notice the strictly glabrous bracts and the thicker, alveolate leaf blades of *A. leiophylla*. The corollas of the two species are also noticeably dissimilar. The corolla lips of *A. aurantiaca* are usually much larger than those of *A. leiophylla* and the lateral lobes of the lower lip are relatively much smaller than the middle one. In *A. leiophylla* the lobes of the lower

lip are similar in size. The name *leiophylla*, λείος, smooth, and φύλλον, leaf, alludes to the glabrous leaf blades.

Accompanying the type sheet is the following description by Cuatrecasas, drawn, evidently, from living material: "Hierba robusta de 60 cm. alt.; hoja verde obscura en el haz, claro en el envés; corolla roja, tubo amarillento."

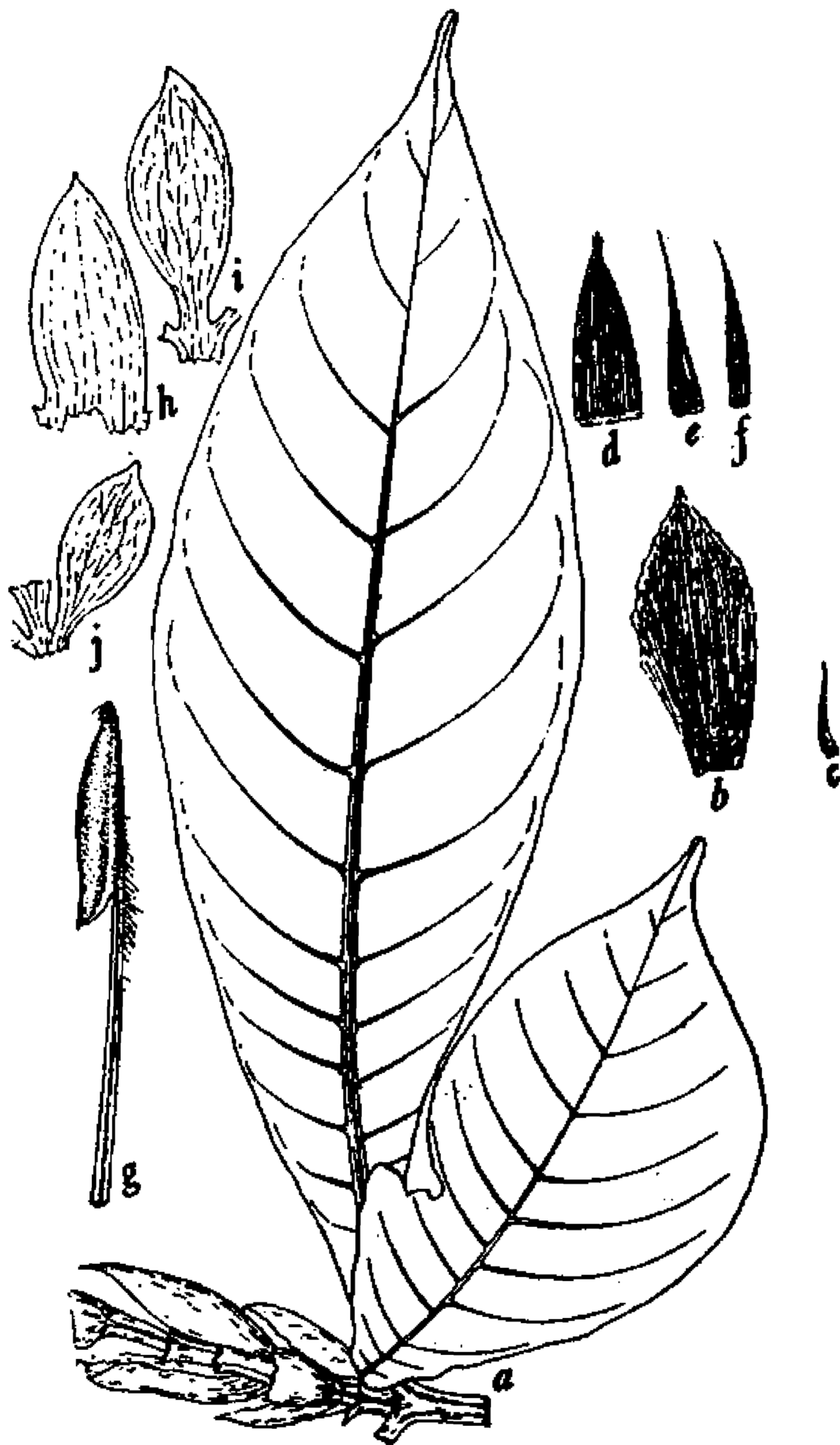


FIGURE 57.—*Aphelandra leiophylla* Leonard (Cuatrecasas 15436): *a*, Basal portion of inflorescence; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, one of the lateral segments; *g*, upper part of stamen; *h*, upper lip of corolla; *i*, middle lobe of lower lip; *j*, one of the lateral lobes of lower lip. (*a*, Half natural size; *b*, *c*, *h*–*j*, natural size; *d*–*f*, twice natural size; *g*, about three times natural size.)

24. *Aphelandra nana* Leonard, sp. nov.

FIGURE 58

Suffrutex parvus, caulibus ascendentibus, deorsum teretibus, sursum quadrangularibus, aliquanto puberulis, pilis minutis, curvatis; lamina foliorum ovata vel ovato-lanceolata, acuminata vel breviter acuminata (apice ipso obtuso), basi angusta, in petiolum breviter

decurrens, utrinque glabra, costa et venis lateralibus obscuris, plus minusve puberulis, pilis curvatis; petioli puberuli, pilis curvatis; spicae terminales, solitariae, subcapitatae, pedunculo brevi, puberulo, rhache puberula, pilis rectis, patulis, subbrunneis; bracteae rhombico-ovatae, acutae vel subacutae, minute brunneo-puberulae, marginibus serratis (dentibus 3 vel 4 paribus), costa et venis lateralibus prominentibus, venulis prope margines crasse reticulatis; bracteolae anguste lanceolatae, graciliter acuminatae, striatae, minute puberulae, pilis patulis; calycis segmenta subaequalia, lanceolata, striata, albida, subcoriacea, minute puberula, pilis patulis, segmentum posterius apice bidentatum, dentibus triangularibus, parvis, anteriora et lateralia graciliter acuminata; corolla coccinea, parce pubescens, tubo leviter curvato, labiis subaequalibus, labio superiore erecto, acuto, labio inferiore profunde lobato, lobis obovatis, obtusis; stamina vix exserta, filamentis deorsum minute et parce hirtellis; ovarium puberulum; capsulae maturae ignotae.

Suffrutescent, up to 30 cm. high; stems ascending, the upper portions quadrangular, moderately puberulous (the hairs up to 0.25 mm. long, curved), the lower portions terete, up to 3.5 mm. in diameter; leaf blades ovate to ovate-lanceolate, up to 7 cm. long and 23 mm. wide, acuminate to short-acuminate (the tip itself blunt), narrowed at base and briefly decurrent on the petiole, both surfaces glabrous except the costa and lateral veins (6 to 8 pairs), these more or less puberulous with curved hairs, the venation obscure but less so beneath than above; petioles up to 1.5 cm. long, moderately puberulous with curved hairs; spikes solitary, terminal, about 3 cm. long and 2.5 cm. broad, the peduncle 2 mm. long, puberulous with curved hairs, the rachis puberulous with minute brownish spreading hairs; bracts rhombic-ovate, 2.5 cm. long and 12-13 mm. wide, acute to subacute, minutely brown-puberulous, the margins above middle serrate with 3 or 4 pairs of sharp triangular teeth up to 1.5 mm. long, the costa and lateral veins rather prominent, the veinlets coarsely reticulate toward margins; bractlets narrowly lanceolate, 8.5 mm. long, 1.25 mm. wide near base, slenderly acuminate, striate, finely puberulous, the hairs spreading, up to 150 $\mu$  long; calyx segments subequal, lanceolate, about 1 cm. long, striate, whitish, subcoriaceous, minutely puberulous, the hairs spreading, up to 150 $\mu$  long, the posterior segment 3 mm. wide near base, bidentate at apex, the teeth triangular, 0.5 mm. long, the anterior segments 1.5 mm. wide near base, the lateral segments about 1.25 mm. wide, both anterior and lateral segments slenderly acuminate and tipped by several hairs up to 625 $\mu$  long; corollas bright red, up to 5 cm. long, finely and sparingly pubescent, the tube slightly curved, 4 mm. broad at base, 5 mm. broad at mouth, the lips subequal, about 15 mm. long, the upper lip erect, ovate, 8 mm. wide near base, acute, the lower lip deeply 3-parted, the lobes obovate, obtuse, the middle lobe 1 cm. wide, the lat-

eral lobes 7 mm. wide; stamens exerted beyond the mouth of the corolla tube but barely reaching the tip of the upper lip, the filaments glabrous toward tip, the lower portions sparingly and minutely hirtellous; ovary puberulous; capsules not seen.

Type in the herbarium of the Royal Botanic Gardens, Kew, collected at Tabaca, in the forest-covered Magdalena watershed in the vicinity of Ocaña, probably near the boundary line of the Departments of Magdalena and Norte de Santander, Colombia, "5000 pds." altitude, 1851, by L. Schlim (No. 780).

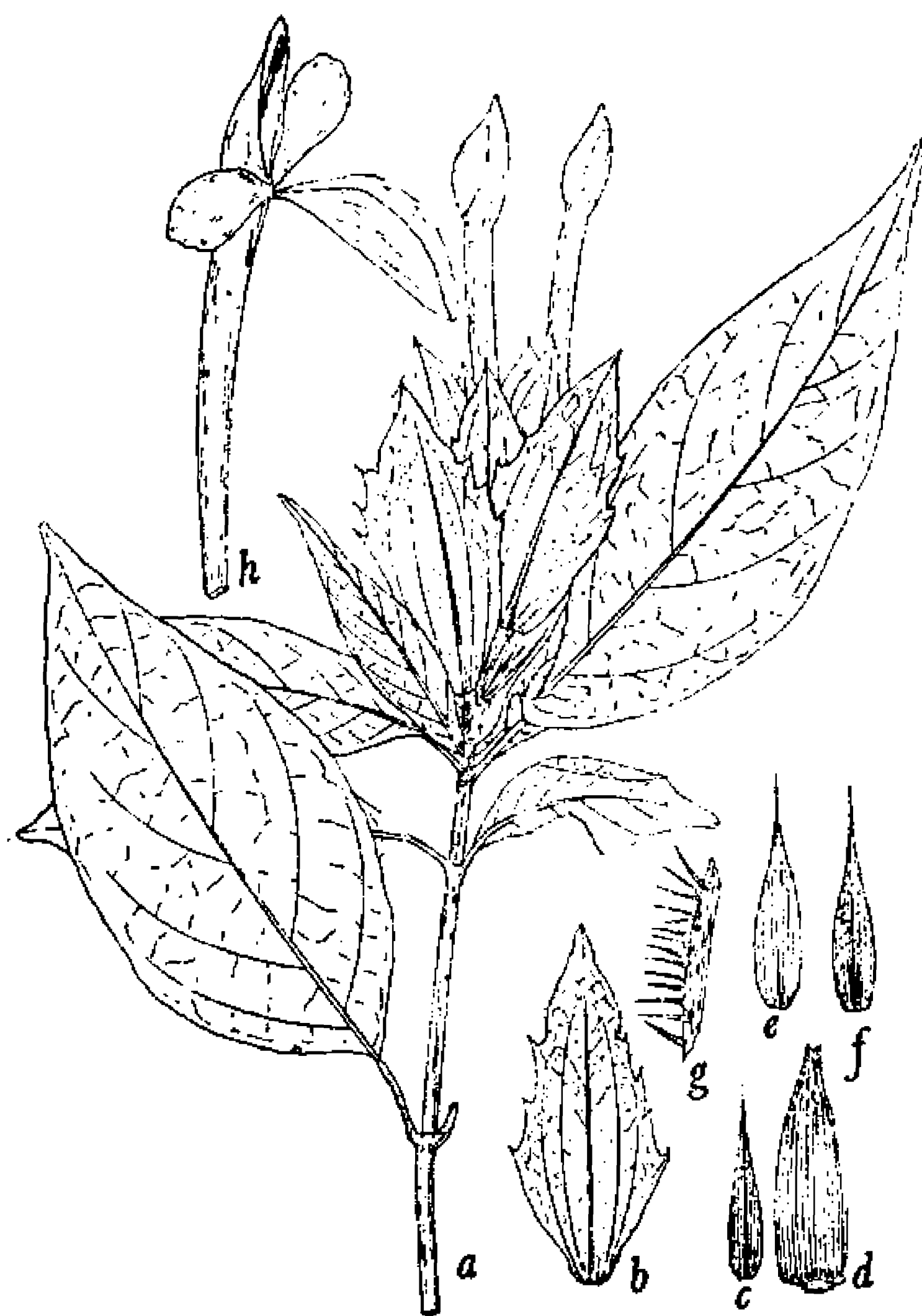


FIGURE 58.—*Aphelandra nana* Leonard (Kalbreyer 344): *a*, Tip of plant; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior calyx segments; *f*, one of the lateral calyx segments; *g*, marginal hairs of a calyx segment; *h*, corolla. (*a*, *b*, *h*, Natural size; *c*–*f*, twice natural size; *g*, about 40 times natural size.)

Kalbreyer's No. 344 (K), collected near Ocaña, "5500'" altitude, October 11, 1877, is also of this species.

*Aphelandra nana* is closely related to *A. aurantiaca* and differs from that species mainly in its small size. Schlim states that the flowers were fire red (rouge fouée). The following note accompanies Kalbreyer's specimen: "perenn. stem 6–12'' fl. bright red terminal; bush half shade." The specific epithet is from the Greek *ναῖος*, dwarf, alluding to the small stature of the plant.

25. *Aphelandra sneidernii* Leonard, sp. nov.

FIGURE 59

Suffrutex, caulibus glabris; lamina foliorum oblonga, apice acuminata, basi rotundata vel subacuta, obliqua, supra parce puberula, subtus glabra, costa et venis prominentibus, minute et obscure pubescentibus; petioli glabri, canalibus puberulis; spicae terminales, solitariae, sessiles, rhache puberula; bracteae arcte imbricatae, tenues,

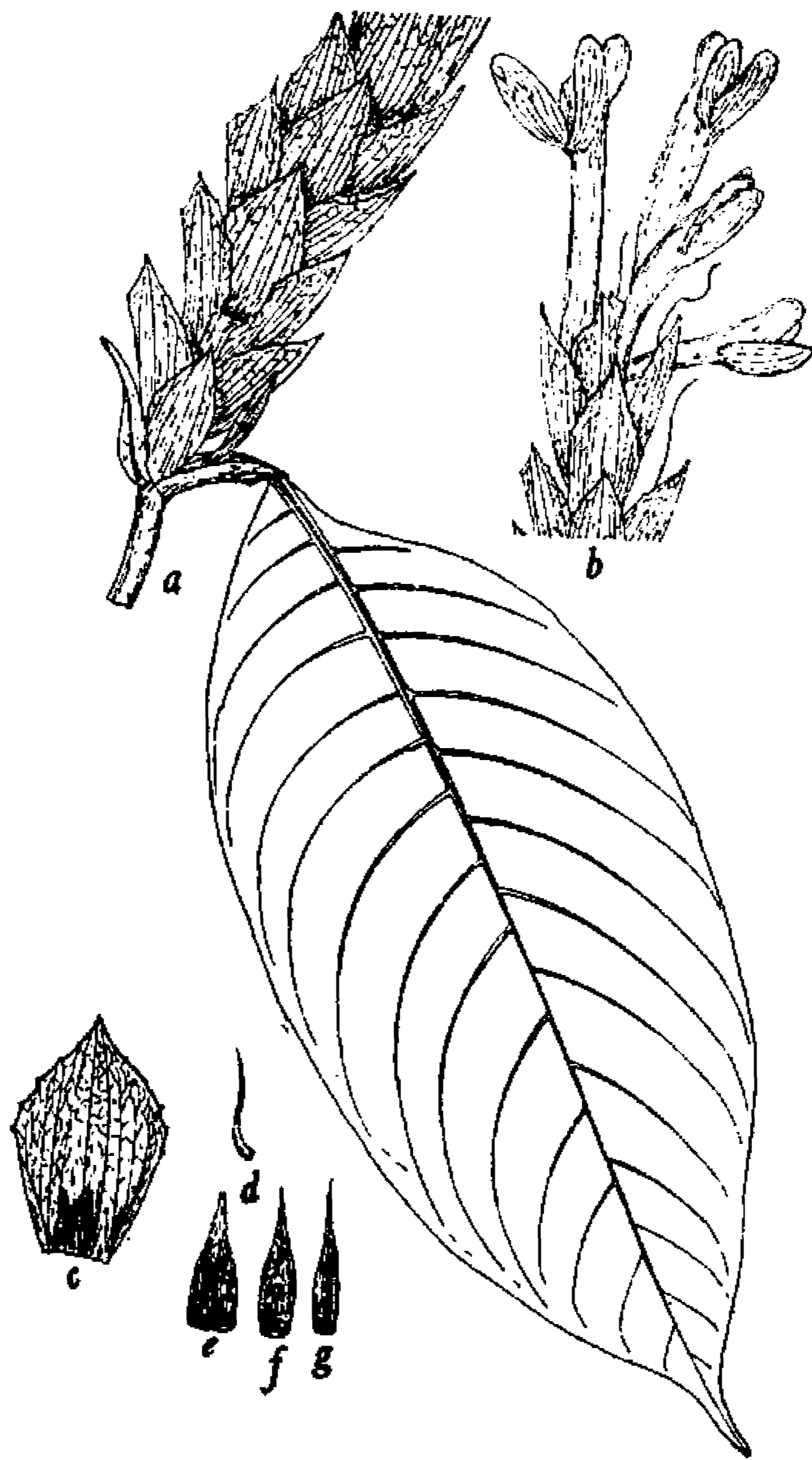


FIGURE 59.—*Aphelandra sneidernii* Leonard (von Sneidern 868): *a*, Basal portion of inflorescence; *b*, tip of spike; *c*, bract; *d*, bractlet; *e*, posterior calyx segment, *f*, one of the anterior segments; *g*, one of the lateral segments. (*a*, *b*, Three-fourths natural size; *c*-*g*, natural size.)

ovatae, serratae (dentibus utrinque 3 vel 4), venosae, minute brunneo-puberulae; bracteolae subulatae, puberulae; calycis segmenta lanceolata, acuminata, glabra vel apice puberula, segmentum posterius apice bidentatum; corolla lutea (?), minute pubescens, tubo cylindrico, labiis subaequalibus, labio superiore ovato, integro, labio inferiore trilobato, lobis ovatis, rotundatis; ovarium glabrum.

Suffrutescent; stems glabrous; leaf blades oblong, up to 18 cm. long and 8 cm. wide, acuminate at apex, rounded or subacute at base, sometimes obliquely so, bright green, the upper surface sparingly and inconspicuously puberulous, the lower surface glabrous except the costa and lateral veins (12 or 13 pairs), these prominent, minutely and inconspicuously pubescent; petioles up to 6 cm. long, glabrous or the channels puberulous; spike terminal, about 13 cm. long and 2 cm. broad, sessile, the rachis puberulous; bracts closely imbricate, ovate, thin, up to 23 mm. long and 12 mm. wide, acute, serrate (3 or 4 minute teeth on each side), both surfaces veiny and minutely brown-puberulous; bractlets subulate, about 7 mm. long and 1 mm. wide, carinate, puberulous; calyx segments lanceolate, about 12 mm. long, acuminate, striate, glabrous or puberulous at tips, the posterior segment 4 mm. wide, bidentate at apex, the anterior pair 2.5 mm. wide, the lateral pair 2 mm. wide, both pairs slenderly acuminate; corolla orange (?), minutely pubescent, 4 cm. long, the tube cylindrical, about 2.5 mm. broad at base and 6 mm. broad at mouth, the lips subequal or the upper slightly longer than the lower, erect or slightly spreading, ovate, about 16 mm. long and 9 mm. wide, rounded, the lower lip 3-lobed, the lobes subequal, 13 mm. long, rounded, the middle lobe about 8 mm. wide, the lateral ones about 4 mm. wide; ovary glabrous.

Type in the herbarium of the Riksmuseet, Stockholm, collected in primitive forest of La Costa, El Tambo, Department of Cauca, Colombia, 1,200 meters altitude, July 27, 1936, by Kjell von Sneidern (No. 868). Fragment in U. S. National Herbarium, No. 2059876.

*Aphelandra sneidernii* may be related to *A. puberula*, but it differs in its minutely toothed and inconspicuously puberulous bracts.

#### 26. *Aphelandra impressa* Lindau

*Aphelandra impressa* Lindau, Bull. Herb. Boiss. 5: 657. 1897. Type collected near San Cristóbal, Mérida, Venezuela, 950 meters altitude, by Funck & Schlim (No. 1244). The name *impressa* alludes to the pitlike impressions found on the dorsal surface of the bracts in which the glandular dots are imbedded.

Stems terete, the lower portions glabrous, the upper parts more or less puberulous, the hairs about 0.25 mm. long, straight or curved, upwardly appressed; leaf blades oblong-elliptic, 9 to 28 cm. long (including the winged petiole), 2.5 to 6 cm. wide, acuminate and more or less falcate at tip (the tip itself blunt), gradually narrowed from about the middle into a winged petiole, the margins entire or shallowly crenate, both surfaces sparingly and inconspicuously pubescent, the hairs about 0.25 mm. long, appressed, more numerous on the costa and veins (10 to 13 pairs), these rather prominent; petioles (unwinged portion) 5 to 15 mm. long, minutely and often densely strigose; spikes solitary or in 3's, terminal, 8 to 10 cm. long and 2 cm. broad (excluding



corollas and tips of bracts), the rachis densely brown puberulous; bracts closely imbricate, subrhombic, acuminate, often slenderly so and the tips spreading or recurved, both surfaces minutely brown puberulous, the teeth 8 to 10 on each side, these slender, ending in spines, 1.5 to 4.5 mm. long, the glandular area on either side of the midrib deeply impressed dorsally, the pit about 1.5 mm. long and 1 mm. broad; bractlets subulate, 8 mm. long and 1 mm. wide near the base, curved, carinate, minutely pubescent dorsally; calyx puberulous toward tip, 10 mm. long, the segments lanceolate, the posterior segment acuminate, 2.5 mm. wide, the others ending in a spinelike tip, 1.5 mm. wide near base; corolla purple or red, minutely pubescent, 5.5 to 6 cm. long, the tube 2.5 mm. broad at base, 5 to 7 mm. broad at mouth, the upper lip ovate, about 13 mm. long, 9 mm. wide, acuminate, entire, the lower lip 3-lobed nearly to base, the lobes oblong-elliptic, acuminate, the middle lobe 15 mm. long and 4.5 mm. wide, the lateral lobes 12 mm. long and 3.5 mm. wide; stamens exerted beyond the mouth of the corolla tube but not exceeding the upper lip, the filaments 3.3 to 4 cm. long, pubescent toward base, the anthers 5.5 mm. long and 0.5 mm. broad; style 4 to 5 mm. long; ovary glabrous; capsule not seen.

According to Cuatrecasas the plants of this species are shrubby, much branched, bear red (*rojo vivo*) corollas, have purple bracts and blossom chiefly in November and December. They occur usually between the altitudes of 240 and 1,240 meters. Found also in Venezuela and Brazil.

**META:** Between Villavicencio and Bogotá, *Sprague* s.n. (K). Guapayita, Cordillera La Macarena, *Idrobo & Schultes* 840 (US).

**NOBTE DE SANTANDER:** Río Margua valley, between Junín and Córdoba, *Cuatrecasas* 13374 (Ch, US).

**PUTUMAYO:** Quebrada de Sipenae, left side of the Río San Miguel. *Cuatrecasas* 11007 (Ch, US).

**VAUPÉS:** Along the Río Guaviare, at San José del Guaviare, *Cuatrecasas* 7456 (US).

27. *Aphelandra lamprantha* Leonard, sp. nov.

FIGURE 60

Herba, caulibus saepe simplicibus, ascendentibus, subquadrangularibus, minute hirtellis, pilis ascendentibus, sursum curvatis, internodiis brevibus; folia numerosa, erecta vel ascendentia, laminis anguste lanceolatis (apice ipso obtuso), basi angustatis, in petiolum decurrentibus, submembranaceis, undulatis, utrinque parce hirtellis, costa et venis lateralibus subtus aliquanto substrigosis; petioli graciles, hirtelli, pilis ascendentibus vel adpressis; spicae solitariae, terminales, subsessiles, rhache parce pubescente, pilis patulis, minutis; bractae imbricatae, ascendentes, lanceolatae, extus puberulae et hirtellae (pilis minutis patulis et pilis majoribus ascendentibus intermixtis), intus puberulae vel basi glabrae, utrinque venis prominentibus, venulis crasse reticulatis dentibus gracilibus, spiniformibus, ascendentibus,

puberulis terminatis; ocelli minuti, depressi; bracteolae lanceolatae, graciliter acuminatae, subhyalinae, striatae, parce hirtellae, pilis ascendentibus, calycis segmenta lanceolata, subhyalina, subtiliter striata, apice hirtella et ciliata, segmentum posterius apice obtusum, mucronatum, anteriora et lateralia apice graciliter acuminata; corolla coccinea, apice parce et minute pilosula, tubo leviter curvato, labiis subaequalibus, labio superiore ovato, erecto, acuto, labio inferiore trilobato, lobis oblanceolatis, subacutis; stamina vix exserta; ovarium glabrum; capsulae ignotae.

Herbs up to 40 cm. high; stems mostly simple, ascending, subquad-rangular, minutely hirtellous, the hairs ascending, upwardly curved, up to 0.5 mm. long, the internodes up to 2 cm. long; leaves numerous, erect or ascending, the blades narrowly lanceolate, up to 12 cm. long and 21 mm. wide (the tip itself blunt), narrowed and decurrent on the petiole, submembranaceous, undulate, both surfaces sparingly hirtellous or the costa and lateral veins of the lower surface rather densely so, the hairs subappressed, up to 0.5 mm. long, the venation moderately prominent; petioles slender, up to 3 cm. long, hirtellous, the hairs ascending or appressed, about 0.5 mm. long; spikes solitary, terminal, subsessile, about 6 cm. long and 1.5 cm. broad, the rachis sparingly pubescent, the hairs spreading, about 0.5 mm. long; bracts imbricate, ascending, lanceolate, 13 mm. long, 7 mm. wide above the middle, the pubescence of the outer surface a mixture of minute spreading hairs 250 to 370  $\mu$  long and larger ascending ones averaging 625  $\mu$  in length, the inner surface merely puberulous and glabrous toward base, the venation of both surfaces prominent, the veinlets coarsely reticulate towards margins, ending in slender spinose teeth (usually 8 pairs), these ascending, up to 3 mm. long, sparingly puberulous; ocelli minute, elliptic, about 125  $\mu$  long, aggregated in a veinless depressed area about 0.75 mm. in diameter, irregularly margined and located near the base of the third tooth from the tip on either side of the bract; bractlets lanceolate, 9 mm. long and 1.5 mm. wide near base, slenderly acuminate, subhyaline, finely striate, the dorsal region sparingly hirtellous, the hairs ascending, about 0.5 mm. long, the costa ending at base in a swollen callus; calyx segments lanceolate, subhyaline and finely striate but thickened and smooth at base, hirtellous and ciliate at tip, the hairs ascending, up to 625  $\mu$  long, the posterior segment 11 mm. long, 2.25 mm. wide at 3 mm. above the base, obtuse at apex, ending in a mucro 1.5 mm. long, the anterior segments 13 mm. long and 1.5 mm. wide near base, slenderly acuminate, the lateral segments 12 mm. long, 1.25 mm. wide near base, slenderly acuminate; corolla 5 cm. long, a vivid scarlet (*André*), sparingly and finely pilosulous toward tip, the hairs about 0.6 mm. long, spreading, the tube slightly curved, 2 mm. broad at base, 1.5 mm. broad at 5 mm. above base, 6 mm. broad at mouth, the upper lip ovate, about 17 mm. long and 12 mm.

wide, acute, the lower lip 3-lobed, the lobes oblanceolate, the middle lobe 12 mm. long, 5.5 mm. wide, subacute, the lateral lobes similar but slightly smaller; stamens slightly exerted beyond mouth of corolla tube, the anthers lying in the concavity of the upper lip; ovary glabrous; mature capsules not seen.

Type in the herbarium of the Royal Botanic Gardens, Kew, collected on the "Llanos" in the vicinity of Salitre, Department of Boyacá, Colombia, 408 meters altitude, January 10, 1876, by E. F. André (No. 1055).

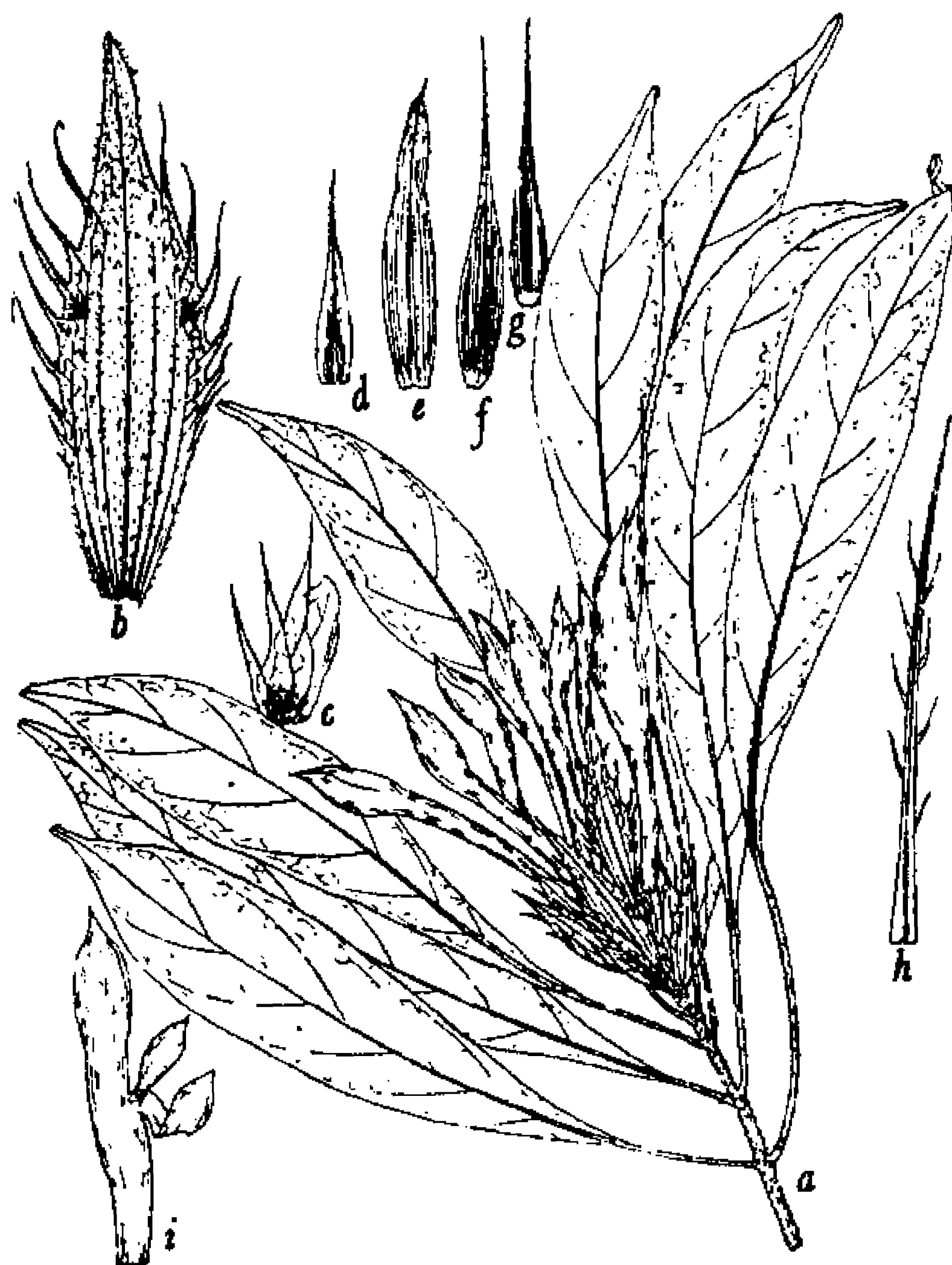


FIGURE 60.—*Aphelandra lamprantha* Leonard (André 1055): *a*, Tip of plant; *b*, bract; *c*, ocelli; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, tip of one of the anterior segments; *i*, tip of corolla. (*a*, *i*, Half natural size; *b*, *d*-*g*, twice natural size; *c*, 4 times natural size; *h*, about 26 times natural size.)

Idrobo & Schultes' No. 1207, collected on the Sabanas de San Juan de Arama, Intendencia of Meta, 500 meters altitude, January 22, 1951, is also of this species.

*Aphelandra lamprantha* is closely related to *A. impressa*, agreeing in the acuminate pectinate bracts, these bearing an impressed area covered by numerous minute ocelli. If the two species are compared, however, differences are readily apparent. *Aphelandra lamprantha* is much smaller and herbaceous with leaf blades not exceeding 21 mm.

in width, the stems are hirtellous with ascending hairs, and the bracts lanceolate, ascending and straight rather than rhombic and recurved. *Aphelandra impressa* is shrubby, probably reaching a meter in height, the stems are puberulous at tips with upwardly appressed hairs and the leaf blades oblong-elliptic, reaching as much as 6 cm. in width. The specific epithet is from the Greek λαμπρός, bright or radiant, and άνθος, flower, in allusion to the brilliant scarlet blossoms.

28. *Aphelandra lasia* Leonard, sp. nov.

FIGURE 61

Frutex, caulibus subquadrangularibus, dense pilosis, pilis albidis, patulis vel plus minusve retrorsis; lamina foliorum oblongo-elliptica, acuminata, basi angustata, in petiolum decurrens, integra vel undulata, supra parce pilosa, subtus dense pilosa, pilis albidis, patulis vel ascendentes; petioli dense pilosi; spicae 5 vel plures, terminales et subterminales, rhache dense pilosa; bracteae imbricatae, fulvescentes, rhombicae, acutae, dense pilosae, integrae vel dentes 1-4, minutos, ascendentes ferentes, ocellis 5-10, ellipticis, approximatis, fuscis, conspicuis; bracteolae anguste lanceolatae, carinatae, extus dense pilosae, pilis, ascendentes; calycis segmenta lanceolata, indurata, deorsum glabra vel subglabra, sursum dense pilosa; corolla punicea, parce puberula, labiis erectis, subaequalibus, labio superiore ovato, profunde bilobato, lobis lanceolatis, acuminatis, patulis, labio inferiore trilobato, lobo medio oblongo-lanceolato, lobis lateralibus triangularibus, acutis, in labio superiore basi adnatis; filamenta glabra antherae apice cohaerentes, dorso pubescentes; ovarium glabrum.

Shrubs up to 2 meters high; stems subquadrangular, at least the upper portions densely pilose, the hairs whitish, spreading or somewhat retrorse, up to 2 mm. long; leaf blades oblong-elliptic, up to 29 cm. long and 8 cm. wide, subacuminate, narrowed from about the middle to a winged petiole, entire or undulate, rather thin, the upper surface sparingly pilose, the hairs up to 1.5 mm. long, densely pilose beneath especially on the costa and lateral veins (about 22 pairs), the hairs whitish, spreading or ascending; petioles (unwinged portion) 5 to 10 mm. long, the winged portion 6 to 7 cm. long, both densely pilose; spikes up to 5 or more in number, terminal and subterminal, 5 to 10 cm. long, 2 cm. broad, the rachis densely pilose; bracts ascending, light brown, rhombic, about 18 mm. long and 9 mm. wide, densely pilose, entire or bearing 1 or 2 pairs of minute ascending teeth, the glandular area consisting usually of 5 to 20 elliptical ocelli 0.75 mm. long and barely 0.5 mm. wide, these dark brown, conspicuous against the light brown of the bract; bractlets narrowly lanceolate, carinate, 16 mm. long, 3 mm. wide near base, densely pilose without, the hairs ascending; calyx 19 mm. long, the segments lanceolate, the posterior one 5.5 mm. wide at about the middle, the anterior pair 3.5 mm. wide, the lateral pair 3 mm. wide, all indurate and glabrous or nearly so

to about 5 mm. from base, upper portions densely pilose; corollas bright red, rather sparingly puberulous, 6 cm. long, the tube 3 cm. long, 6 mm. broad at base, contracted at tip of ovary to 3 mm., thence gradually expanded to 7 mm. at mouth, the lips erect, about equal, 3 cm. long, the posterior lip about 8 mm. wide at basal part of the 2 lobes, these lanceolate, 17 mm. long, 5 mm. wide at middle, slenderly acuminate, spreading, the lower lip 3-lobed, the middle lobe free to base, oblong-lanceolate, 33 mm. long, 7 mm. wide at about the middle, the

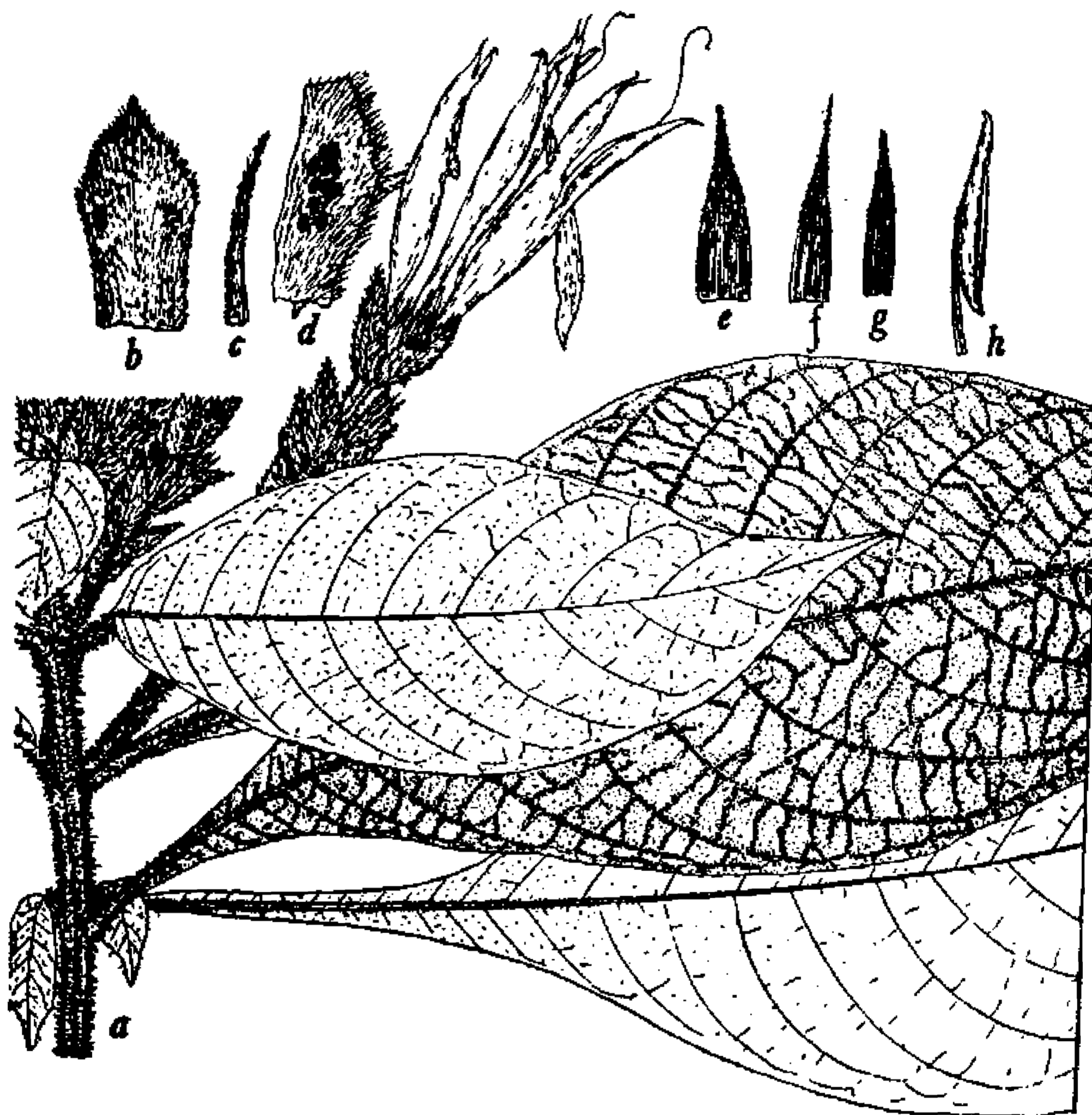


FIGURE 61.—*Aphelandra lasia* Leonard (Haught 3945): *a*, tip of stem showing part of inflorescence; *b*, bract; *c*, bractlet; *d*, portion of bract to show ocelli; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, tip of stamen. (*a*, Half natural size; *b*, *c*, *e*-*g*, natural size; *d*, about twice natural size; *h*, about three times natural size.)

lateral lobes triangular, 8 mm. long, 2.5 mm. wide near the base, acute, their upper margins adhering in part to the upper lip; stamens 5 cm. long, the filaments glabrous, the anthers 6.5 mm. long, adhering at tip, dorsally pubescent; style about 5.5 cm. long, glabrous; capsules not seen.

Type in the U. S. National Herbarium, No. 1708677, collected near a stream in forest above Manaure, Department of Magdalena, Colombia, 800 meters altitude, January 16, 1944, by Oscar Haught (No. 3945).

CUNDINAMARCA: Guaduas, *Triana* (Col, NY). Road between Guaduas and Alto de Aguaclara, at the Hacienda Paramillo, *García-Barriga* 12323 (US).

SANTANDER: Santa Bárbara, *Kalbreyer* 794 (K).

TOLIMA: Between El Líbano and Murillo, Alto de Peñones, *García-Barriga* 12268 (US).

*Aphelandra lasia* is related to *A. deppeana* but can be separated easily from that by its light brown (in herbarium material), densely pilose bracts with their few (if any) minute teeth (up to 1 mm. high). The bracts of *A. deppeana* are much smaller (8 to 15 mm. long instead of 18 mm.) and their teeth more numerous and conspicuous (up to 1.5 mm. long). The type differs slightly from the other specimens cited above in having fewer ocelli (5-10), less well developed bract teeth (some of the bracts actually entire), and in the somewhat smaller leaf blades, but agrees in general appearance. The name *lasia*, *λάσιος*, shaggy, alludes to the heavy pilosity of the leaves and spikes.

Kalbreyer's label bears the following data: "Aphelandra sp. shrub 15' with long straggling branches; leaf herb., rough woolly; fl. bright red; forest border, moist slopes, banks, 5500', S. Bárbara 6/11/78."

29. *Aphelandra taborensis* Leonard, sp. nov.

FIGURE 62

Arbor parva ramosa, caulibus sursum dense strigosis, deorsum glaberratis; lamina foliorum oblanceolata, breviter acuminata, apice ipso obtuso, basi angustata, supra glabra vel subglabra, subtus dense et molliter pubescens, pilis ascendentibus, curvatis, fulvis, costa et venis prominentibus; petioli aliquando breves, appresso-pubescentes; spicae pleurumque 3, terminales et subterminales, pedunculo et rhache dense fulvo-pubescentibus; bracteae ovatae, obtusae et minute apiculatae, roseo-purpureae, coriaceae, extus dense et molliter pubescentes, integrae vel apice bidentatae, dentibus minutis, ocellis cohaerentibus areolam parvam lacunosam formantibus; bracteolae lanceolatae, acuminatae, obliquo-carinatae, extus dense pubescentes, striato-nervatae; calycis segmenta lanceolata, acuta, extus puberula, striato-nervata; corolla punicea, tubo anguste hypocrateriformi, labio superiore erecto, elliptico, apice bilobato, lobis triangularibus, acutis, labio inferiore 3-lobato, lobo medio lanceolato, patulo, subobtusum et minute apiculato, lobis lateralibus triangulo-ovatis, subacutis, in labio superiore basi adnatis, stamina glabra, lobis basi apiculatis; ovarium glabrum.

Small branching tree; tips of the stems densely upwardly strigose, the lower portions glabrate; leaf blades oblanceolate, 12 to 13.5 cm. long, 3 to 4.5 cm. wide or those subtending the spikes smaller, acuminate, the tip itself blunt, gradually narrowed from above middle to the base, gray-green (*Cuatrecasas*), the upper surface drying olive, glabrous or nearly so or the younger leaves rather densely appressed-pubescent, the hairs about 0.5 mm. long, the lower surface drying grayish olive, densely and softly pubescent, the hairs on the costa and veins appressed, the others ascending, light brown, 0.5 mm. long,

the costa and lateral veins (11 or 12 pairs) prominent, especially on the lower surface; petioles about 1 cm. long, appressed-pubescent; spikes usually 3, terminal and subterminal, the peduncles 1 to 2 cm. long, densely brown-pubescent, the spikes 4 to 7 cm. long and 1.5 cm. broad, the rachis densely brown-pubescent; bracts ovate, 9 to 10 mm. long, 7.5 mm. wide, obtuse and minutely apiculate, rose-violet (*Cuatrecasas*), coriaceous, entire or tipped by a pair of minute teeth, densely

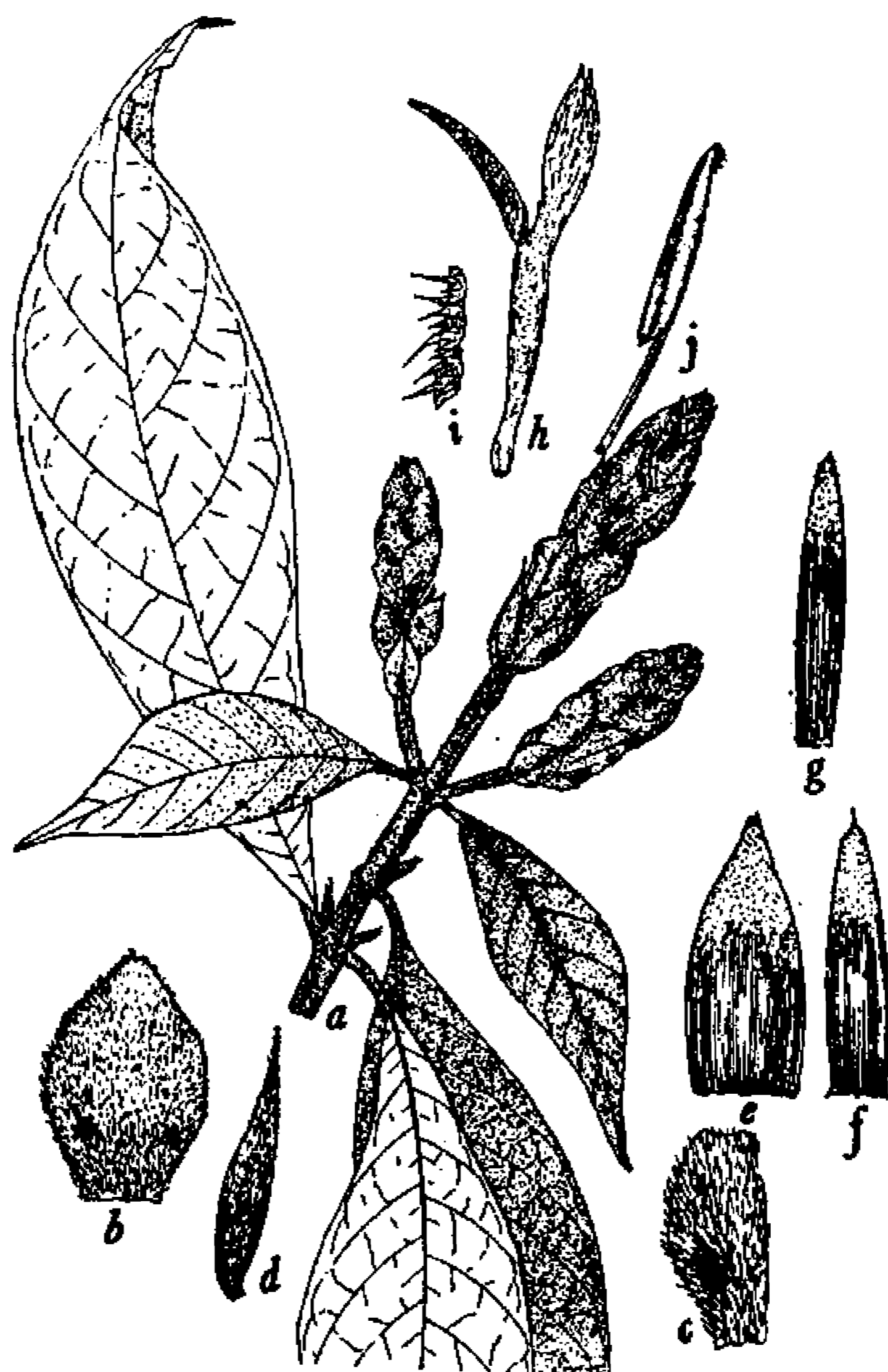


FIGURE 62.—*Aphelandra laborensis* Leonard (*Cuatrecasas* 22284): *a*, Tip of stem; *b*, bract; *c*, portion of bract to show glandular area; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, corolla; *i*, pubescence of corolla; *j*, anther. (*a*, *h*, Half natural size; *b*, *d*, *e*-*g*, natural size; *c*, twice natural size; *i*, about 24 times natural size; *j*, about three times natural size.)

and softly pubescent dorsally, the hairs barely 0.5 mm. long, the glandular area on either side poorly defined, the individual ocelli joined to form a small pitted area; bractlets lanceolate, 11 mm. long, 2.5 mm. wide, acuminate, obliquely carinate, densely pubescent dorsally, striate-nerved; calyx 14 mm. long, the segments lanceolate, the posterior segment 5 mm. wide, the anterior pair 3 mm. wide, the lateral pair 2.5 mm. wide, all acute, puberulous dorsally, striate-nerved; corollas up to 5.8 cm. long, bright red (*Cuatrecasas*), puberu-

lous, except the basal portion, the tube 2 mm. broad at base, enlarged to 3 mm., thence narrowed to 2 mm. at 7 mm. above base, then gradually enlarged to 5 mm. at throat, the upper lip erect, elliptic, 17 mm. long, about 8 mm. wide at middle, 2-lobed at apex, the lobes triangular, 2.5 mm. long, 1.5 mm. wide, acute, the lower lip 3-lobed, the middle lobe spreading, lanceolate, 24 mm. long, about 8 mm. wide below middle, obtusish and minutely apiculate at tip, the lateral lobes 9 mm. long, 1.5 mm. wide, subacute, their upper margins partly attached to the upper lip, their free portion triangular; stamens reaching the sinus of the upper lip, the filaments glabrous, the anthers 6 mm. long, their lobes minutely apiculate at base; pistil slightly exceeding the stamens; ovary glabrous; mature capsule not seen.

Type in the U. S. National Herbarium, No. 1900488, collected on Monte El Tabor, on the ridge of the Cordillera Occidental, above Las Brisas, Department of El Valle, Colombia, 1,970 to 2,100 meters altitude, October 19, 1946, by J. Cuatrecasas (No. 22284).

The pair of minute teeth found on some of the bracts together with an agreement in the general aspect suggests a relationship of *A. taborensis* with *A. deppeana* Schlecht. & Cham.

### 30. *Aphelandra deppeana* Schlecht. & Cham.

*Aphelandra pulcherrima* sensu H. B. K. Nov. Gen. & Sp. 2: 236. 1817, p. p.

Two syntypes are cited, one collected in a cool, shady place near Turbaco, Colombia, and the other at the mouth of the Río Sinú, Colombia. The first cited is the true *A. pulcherrima* (Jacq.) H. B. K. characterized by entire bracts and softly pubescent (under surface) leaf blades. The second cited is marked by pectinate bracts and was later described by Nees as *A. pectinata*.

*Aphelandra deppeana* Schlecht. & Cham. Linnaea 5: 96. 1830. Type collected at Hacienda de la Laguna, Mexico, by Deppe and Scheide. Schlechtendal named the species in honor of Ferdinand Deppe.

*Aphelandra pectinata* Willd. ex Nees, DC. Prodr. 11: 297. 1847. Here is cited first in a series of syntypes the Río Sinú specimen mentioned above under *A. pulcherrima*. The specimen examined by Nees is in the Willdenow Herbarium, No. 11623. A photograph of this is in the U. S. National Herbarium (Field Mus. photograph No. 9511). The other syntypes cited by Nees under *A. pectinata* were procured by various collectors from Mexico, Central America, the Guianas, Colombia, and the West Indies. The name *pectinata* alludes to the pectinately toothed bracts.

*Aphelandra haenkeana* Nees, DC. Prodr. 11: 298, 1847. The first specimen cited by Nees among a number of syntypes is that collected at Acapulco, Guerrero, Mexico, by Haenke. The other syntypes were procured by different collectors from various stations in Mexico and Central America. Nees named the species in honor of Thaddaeus Haenke, a Bohemian botanist, who, in company with a French botanist, Luis Née, collected in various regions from Chile to Mexico during the later part of the eighteenth century.

Shrubs up to 4 meters high; stems stout, pubescent to subtomentose, the hairs sordid, variously curved, the internodes 5 to 7 cm. long, the lenticels oval to linear, 1 mm. long or less; leaf blades ovate-elliptic to lanceolate, 5 to 20 cm. long, 2 to 10 cm. wide, acuminate at the apex,



gradually to rather abruptly narrowed and decurrent on the petiole at base, entire, undulate, the upper surface more or less scabridulous, subnitid, glabrous to sparingly puberulous or pilose, the hairs up to 0.5 mm. long, the costa impressed, this and the lateral veins (12 to 16 pairs) often strigose, the lower surface sparingly to densely and softly pubescent or tomentose beneath, the hairs sordid; petioles (the unwinged portion) 1 cm. long or less, the pubescence that of the stems; flowers borne in spikes up to 20 cm. long and about 1 cm. broad, these terminal or both terminal and lateral, then forming a narrow terminal spicate thyrses; bracts ovate-elliptic, 8 to 15 mm. long, 4 to 6 mm. wide, acuminate, sparingly pilosulous without, glabrous within, rather strongly 5-nerved, bearing above the middle 1 to several slender marginal teeth up to 1.5 mm. long and, near the middle of the dorsal surface, 2 small submarginal glands about 0.5 mm. in diameter; bractlets lanceolate, 6 to 7 mm. long, 1.75 mm. wide, slenderly acuminate, dorsally pilosulous, the margins subhyaline; calyx lobes subequal, ovate to lanceolate, the posterior one about 3 mm. wide, the lateral pair 1.5 mm. wide, the anterior pair barely 2 mm. wide, all finely striate-nerved, subhyaline, sparingly pilosulous dorsally; corolla pale to bright red, orange, or crimson, pubescent distally, glabrous proximally, about 4 cm. long, the tube subcylindric, about 3 mm. broad at base, constricted to 2 mm. at 5 mm. above base, about 5 mm. broad at throat, the lips oblong-ovate, 4.5 to 5 mm. wide, subequal, the upper one erect, 2-lobed, narrowly triangular, the lobes 3.5 mm. long, 1.5 mm. wide at the base, acuminate, outwardly curved, the lower lip spreading, entire, acuminate, the tip curved, or if 3-lobed, the lateral lobes vestigial, appearing as mere notches near the base of the upper lip; stamens exserted; capsules oblong, 15 to 20 mm. long, about 8 mm. broad and 3 mm. thick, obtuse at the apex, glabrous, minutely and inconspicuously punctate; seed dull brown, orbicular, 4 mm. in diameter, 2 mm. thick, minutely roughened.

Flowering usually from October to February. The tips of the stems and the uppermost leaves of García-Barriga's No. 11727 were yellow when collected.

Partial to wooded or open river banks or adjacent slopes, usually at elevations from 130 to 380 meters (1,040 to 1,320 meters, *García-Barriga* 11727). Southern Mexico to northern South America; West Indies.

**BOLÍVIA:** Vicinity of Cartagena, *Bro. Heriberto* 357 (US). San Martín de Loba, Lands of Loba, *Curran* 99 (US); 111 (GH, US). Sincelejo, *Pennell* 4057 (NY, US).

**BOYACÁ:** On the Río Cusiana, at San Antonio, *Haught* 2613 (US).

**CUNDINAMARCA:** Hacienda Paramillo, between Guaduas and Alto de Aguaclara, *García-Barriga* 11727 (US).

**MAGDALENA:** Aguachica, *Schlim* 278 (K).

**META:** Río Casanare, at Esmeralda, *Cuatrecasas* 3816 (US). Río Meta, at La Venturosa, *Cuatrecasas* 4195 (US). Río Orinoco, at Puerto Carreño, *Cuatrecasas* 4046 (US). Sabanas de San Juan de Arama, *Idrobo & Schultes* 1223 (US). Vicinity of Villavicencio, *Haught* 2501 (US).

**VAUPÉS:** Cerro de Mitú, *Cuatrecasas* 6878 (US).

**VICHADA:** Along the Río Vichada, 7 km. northeast of San José de Ocuné, *Hermann* 10973 (US).

**DEPARTMENT (?) :** *Mutis* 1489 (US).

31. *Aphelandra anomala* Leonard, sp. nov.

FIGURE 63

Suffrutex, caulibus teretibus, in nodis minute pubescentibus vel pilosis; lamina foliorum oblonga, apice acuminata, basi angustata, in petiolum decurrens, utrinque molliter puberula, supra in costa et venis pilosa; petioli minute strigosi; spica terminalis, solitaria, bracteis imbricatis, erecto-patulis vel deorsum reflexis, rhache molliter glanduloso-pilosula; bracteae grandes, ovatae, tenues, acutae, glanduloso-pubescentes; bracteolae lineari-lanceolatae, striato-nervatae, molliter glanduloso-pubescentes; calycis segmenta lanceolata, subaequalia, tenuiter acuminata, striata, glanduloso-pubescentia; corolla flavida, purpureo-maculosa, glanduloso-pubescent, tubo angusto, labio superiore erecto, oblongo, apice bilobato, labio inferiore patulo, trilobato, lobo medio ovali, subobtusio, labiis lateralibus anguste ellipticis, parvis, obtusis.

Shrubby; stem terete, minutely pubescent or pilosulous at the nodes; leaves drooping; leaf blades oblong, up to 17 cm. long and 5.5 cm. wide (flowering stems), acuminate at apex, cuneate and decurrent on the petiole at base, both surfaces softly puberulous except the costa and veins of the upper surface, these pilose; petioles 1 to 2 cm. long; spike terminal, solitary, up to 16 cm. long, 3 to 4 cm. broad, the bracts closely imbricate, erect-spreading or the lowermost drooping, the rachis softly glandular-pilosulous; bracts ovate, about 3 cm. long, 2 cm. broad or the lowermost somewhat smaller, acute, thin, glandular-pubescent, colored(?), drying to light reddish; bractlets linear-lanceolate, 18 mm. long, 2 mm. wide at base, striate-nerved, soft glandular-pubescent; calyx segments subequal, lanceolate, the posterior one 4.5 mm wide, the two anterior each 3.5 mm. wide, the lateral ones each 2.5 mm. wide, all slenderly acuminate, striate, glandular-pubescent; corolla about 5 cm. long, dull yellow, marked by small purple spots, glandular-pubescent, the hairs minute except on the lips, here intermixed with longer hairs reaching 2 mm. in length, the tube 4 mm. in diameter at base, 5 mm. at throat, the upper lip erect, oblong, 15 to 20 mm. long and 6 mm. wide, 2-toothed at apex, the teeth 2 mm. long, very acute, the lower lip 3-lobed, spreading, the middle lobe oval, about 25 mm. long and 11 mm. wide, obtusish, the lateral lobes narrowly elliptic, about 7 mm. long and 2 mm. wide, obtuse or rounded; ovary and capsules not seen.

Type in the U. S. National Herbarium, No. 1041351, collected along a quebrada thicket east of Neiva, Department of Huila, Colombia, 700 to 1,500 meters altitude, July 31, 1917, by H. H. Rusby and Francis W. Pennell (No. 470). An isotype is in the herbarium of the New York Botanical Garden. Holton's collection (K, NY) from Jicaramata near the Río Tuluá, Department of El Valle, is also of this species.

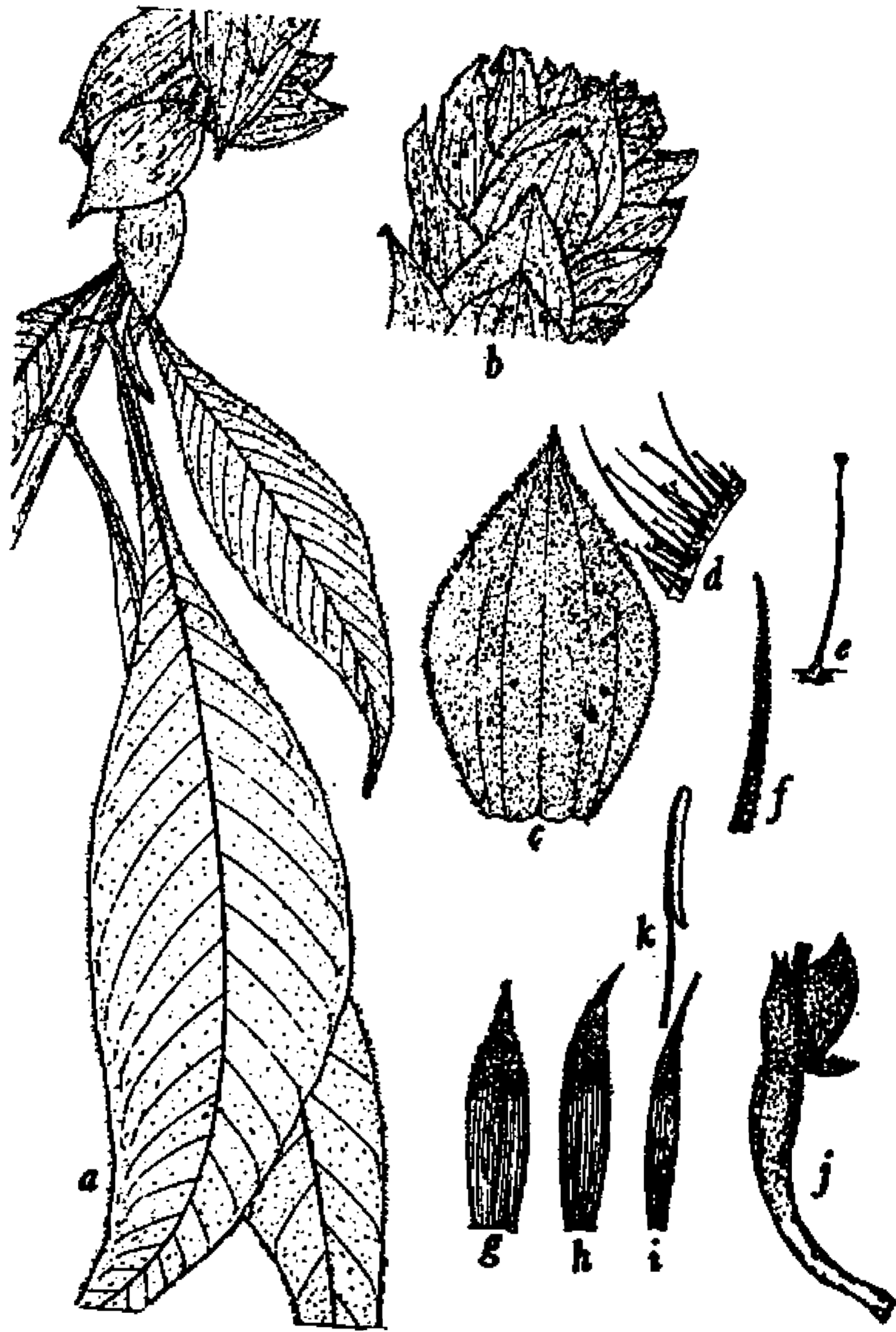


FIGURE 63.—*Aphelandra anomala* Leonard (Rusby & Pennell 470): *a*, Tip of stem showing basal portion of spike; *b*, tip of spike; *c*, bract; *d*, pubescence of bract; *e*, one of the glandular hairs from the bract; *f*, bractlet; *g*, posterior calyx segment; *h*, one of the anterior segments; *i*, one of the lateral segments; *j*, corolla; *k*, anther. (*a*, *b*, *j*, Half natural size; *c*, *f*, *g*-*i*, natural size; *d*, about 8 times natural size; *e*, about 17 times natural size; *k*, about 3 times natural size.)

*Aphelandra anomala* is a unique species easily recognized by its rather large, thin, glandular-pubescent bracts and thickly purple-dotted, yellowish corollas.

82. *Aphelandra glischrochlamys* Leonard, sp. nov.

FIGURE 64

Suffrutex vel frutex, caulibus glabris, subquadrangularibus; lamina foliorum oblongo-elliptica, acuminata, basi angustata, in petiolum

decurrens, submembranacea, integra vel leviter crenata, utrinque glabra vel subtus in costa et venis lateralibus parce et minute hirtella; petioli breves, crassi, glabri vel parce hirtelli; spicae terminales, solitariae, subsessiles, rhache dense glanduloso-pilosa, pilis patulis; bracteae oblongo-ellipticae, puberulae et glanduloso-pilosae, ciliatae; bracteae acuminatae, pilosae et ciliatae; calycis segmenta subaequalia, subcoriacea, striata, marginibus subhyalinis, pilosula, pilis glandulosis, patulis, apice bractearum longissimis, segmentum posterius lanceolatum, apice tridentatum, dentibus anguste triangularibus, segmenta anteriora et lateralia anguste lanceolata, apice graciliter acuminata; corolla coccinea(?), parce hirtella, pilis glandulosis vel eglandulosis, bilabiata, labio superiore erecto, ovato, acuto, labio inferiore trilobato, lobis obtusis, basi angustatis, lobo medio suborbiculari vel ovali, lobis lateralibus ellipticis, minoribus; stamina exserta, antheris utrinque acutis, apice flocculosis, filamentis unifariam pilosis; ovarium apice pilosum; capsulae ignotae.

Suffrutescent herbs or shrubs up to 1 meter high or more; stems glabrous, subquadrangular; leaf blades oblong-elliptic, up to 21 cm. long and 8 cm. wide, acuminate, narrowed at base and decurrent on the petiole, submembranaceous, entire or shallowly crenate, both surfaces glabrous except the costa and lateral veins of the lower surface, these sparingly and minutely hirtellous; petioles about 5 mm. long, thick, glabrous or sparingly hirtellous; spikes terminal, solitary, subsessile, up to 12 cm. long and 25 mm. wide (excluding corollas), the rachis densely glandular-pilose, the hairs spreading, up to 1 mm. long; bracts oblong-elliptic, 21 mm. long, 7 mm. wide, puberulous and glandular-pilose, the minute eglandular hairs intermixed with slender glandular ones up to 0.25 mm. long, the marginal hairs up to 1 mm. long; bractlets slenderly acuminate, pilose and ciliate, the hairs gland-tipped and about 0.5 mm. long, spreading; calyx segments subequal, 18 to 19 mm. long, subcoriaceous, striate with subhyaline margins, pilosulous, the hairs spreading, glandular, 0.25 to 0.3 mm. long or those near the tip up to 1.5 mm. long, the posterior segment lanceolate, 3.25 mm. wide near base, tridentate at tip, the teeth triangular-subulate, 1.25 to 4 mm. long, the lateral teeth shorter or longer than the middle one, all about 0.5 mm. wide at base, the posterior and anterior calyx segments narrowly lanceolate, the anterior pair 2 mm. wide near base, the lateral ones 1.5 mm. wide; corollas 4 to 7 cm. long, red (?), sparingly hirtellous, the hairs 0.25 to 0.3 mm. long, some of them gland-tipped, the tube 3.5 to 4 cm. long, 4.5 mm. broad at base, slightly narrowed above base, 6 mm. broad at mouth, the upper lip erect, ovate, 1.5 cm. long and 16 mm. wide, acute, the lower lip spreading, 3-parted, the lobes obtuse or rounded, narrowed at base, the middle lobe suborbicular to oval, up to 25 mm. long and 20 mm. wide, the lateral lobes elliptical, about 12 mm. long and 8 mm. wide; stamens exserted, equaling

or slightly exceeding the upper lip, the anthers 6 mm. long, 1 mm. wide, acute at both ends, webby at tip, curved dorsally, the filaments bearing a line of spreading white hairs about 0.75 mm. long, otherwise glabrous; ovary pilose at tip; capsules not seen.

Type in the herbarium of the Royal Botanic Gardens, Kew, collected along the road to Sonsón, Department of Antioquia, Colombia, by J. Triana. An isotype is also in that herbarium.

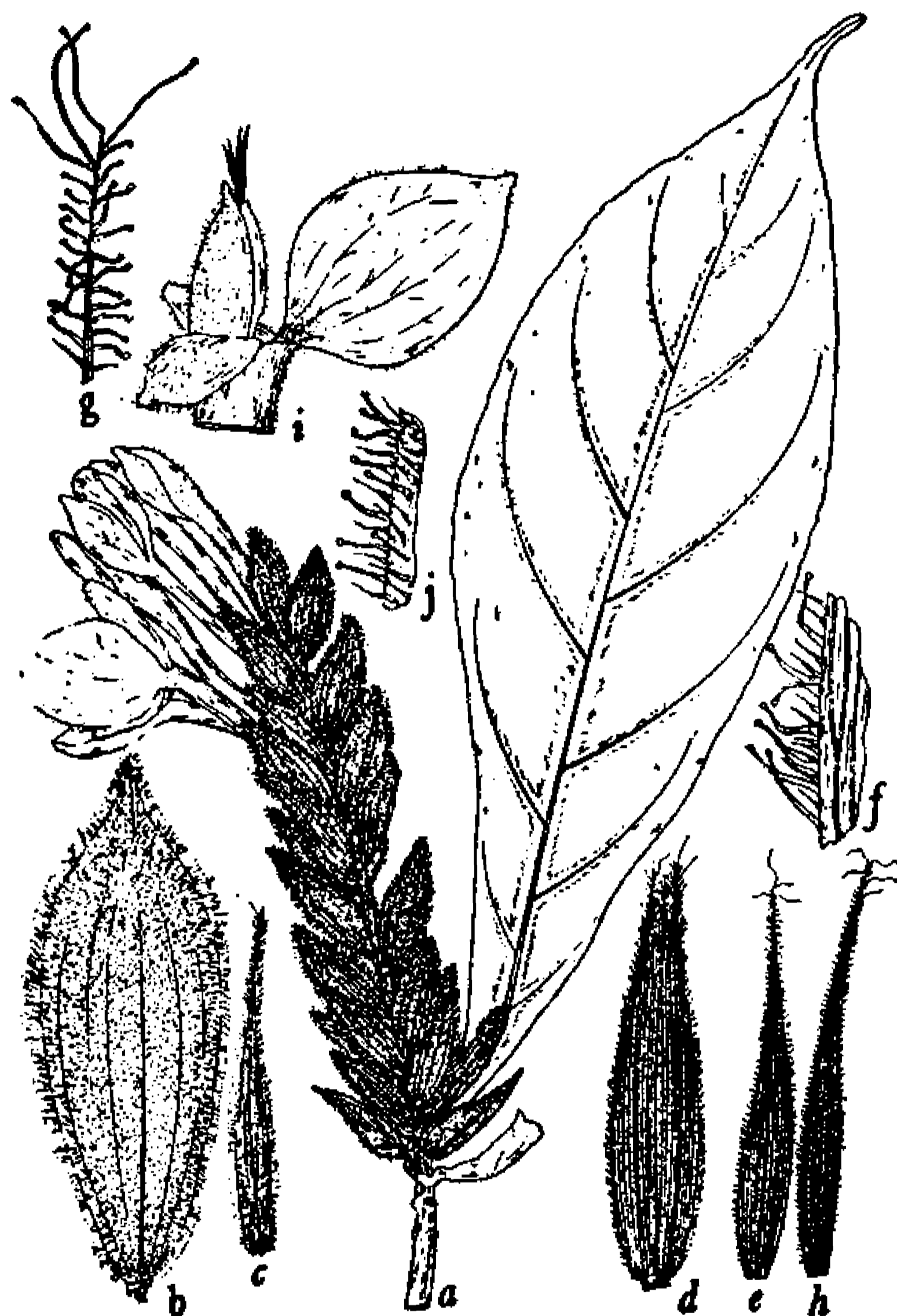


FIGURE 6A.—*Aphelandra glischrochlamys* Leonard (*a-h*, Triana s.n.; *i, j*, Patin s. n.): *a*, Tip of plant (the shading on the leaf blade portrays the light area bordering costa and veins); *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, marginal hairs of same; *g*, tip of same; *h*, one of the lateral calyx segments; *i*, tip of corolla; *j*, pubescence of corolla. (*a*, Half natural size; *b-e, h*, twice natural size; *f*, 18 times natural size; *g*, about 7 times natural size; *i*, natural size; *j*, 20 times natural size.)

A specimen collected in the Department of Antioquia, May, 1873, by Commander C. Patin (K), is also of this species.

The upper surface of the leaf blades of the type material has dried to a dull blackish olive with a lighter area bordering costa and lateral veins, suggesting that the upper surfaces of the fresh leaves may have been purple with costa and veins banded possibly with light green or

yellowish green. The specific epithet is derived from the Greek words *γλισχρος*, sticky or clammy, and *χλαμύς*, military cloak (i. e., bract).

33. *Aphelandra phlogea* Leonard, sp. nov.

FIGURE 65

**Frutex**, caulibus teretibus, glabris vel sursum parce puberulis; lamina foliorum oblongo-elliptica, acuminata, basi angustata, in petiolum decurrens, integra, supra subglabra, costa et venis parce hirsutis, subtus puberulis; petioli minute puberuli; spicae 1 vel plures, spica terminalis subsessilis, spicae laterales pedunculatae, bracteis imbricatis, ascendentibus vel appressis, rhache tenuiter et dense albo-pilosa, pilis nonnullis glandulosis; bracteae lanceolatae, apice acutae vel acuminatae, dense glanduloso-pilosae, pilis albis, rectis, patulis; bracteolae lanceolatae, acuminatae, glanduloso-pilosae; calycis segmenta lanceolata, acuminata, striato-nervata, glanduloso-puberula; corolla flammata, tenuiter pubescens, tubo angusto, leviter curvato, labio superiore erecto, elliptico, apice emarginato, labio inferiore patulo, trilobato, labio medio ovali, apice rotundato, lobis lateralibus aliquanto parvis, apice rotundatis; antherae apice cohaerentes, tomentoso-pilosae; ovarium glabrum.

Shrub up to 2 meters high; stems subterete, glabrous, or the uppermost portions sparingly puberulous; leaf blades oblong-elliptic, 9 to 16 cm. long, 2.5 to 5 cm. wide, rather slenderly acuminate, narrowed at base and decurrent on the petiole, entire, the upper surface subglabrous bearing a few scattered stout-based hairs, except on the costa and lateral veins (8 to 10 pairs), these sparingly hirsute, the hairs up to 0.5 mm. long, straight and spreading, the lower surface drying a lighter olive than the upper, puberulous, the hairs borne on the costa and veins barely 0.5 mm. long, the others much smaller; petioles (unwinged portion) 1 to 2 cm. long, including the winged portion up to 6 cm. long, finely puberulous; spikes 1 to several, terminal and subterminal, including flowers up to about 12 cm. long and 2.5 cm. broad, bracts ascending to appressed, the rachis finely and densely white-pilose, some of the hairs gland-tipped; terminal spike subsessile, the peduncles of the lateral ones up to 2 cm. long, densely puberulous; bracts lanceolate, 15 mm. long and 10 mm. wide or the lowermost as much as 3 cm. long and 12 mm. wide, acute to acuminate, densely white-glandular-pilose, the hairs 0.5 to 2 mm. long, straight and spreading; bractlets lanceolate, 18 mm. long, 3.5 mm. wide, acuminate, glandular-pilose; calyx about 17 mm. long, indurated at base, the posterior segment 4 mm. wide, the anterior pair 2 mm. wide, and the middle pair barely 3 mm. wide, all striate-nerved, glandular-puberulous, the hairs about 0.75 mm. long; corolla 5 cm. long, bright flame-color, finely and moderately pubescent, the hairs about 0.25 mm. long, the tube 3 cm. long, slightly curved, 4 mm. broad near the base, slightly constricted at tip of ovary, thence gradually enlarged to 6 mm. at mouth, the upper

lip erect, elliptic, 17 mm. long, 10 mm. wide, emarginate, the notch about 1 mm. deep, the lower lip spreading, the middle lobe oval, about 2 cm. long and 13 mm. wide, the lateral ones oblong, 1 cm. long and 4 mm. wide, all rounded; stamens slightly exserted beyond the upper lip; anthers 5.5 mm. long, slightly webby-pilose and adhering at their tips, the filaments pubescent or the upper portions of the two longer ones glabrous; ovary glabrous; capsules not seen.

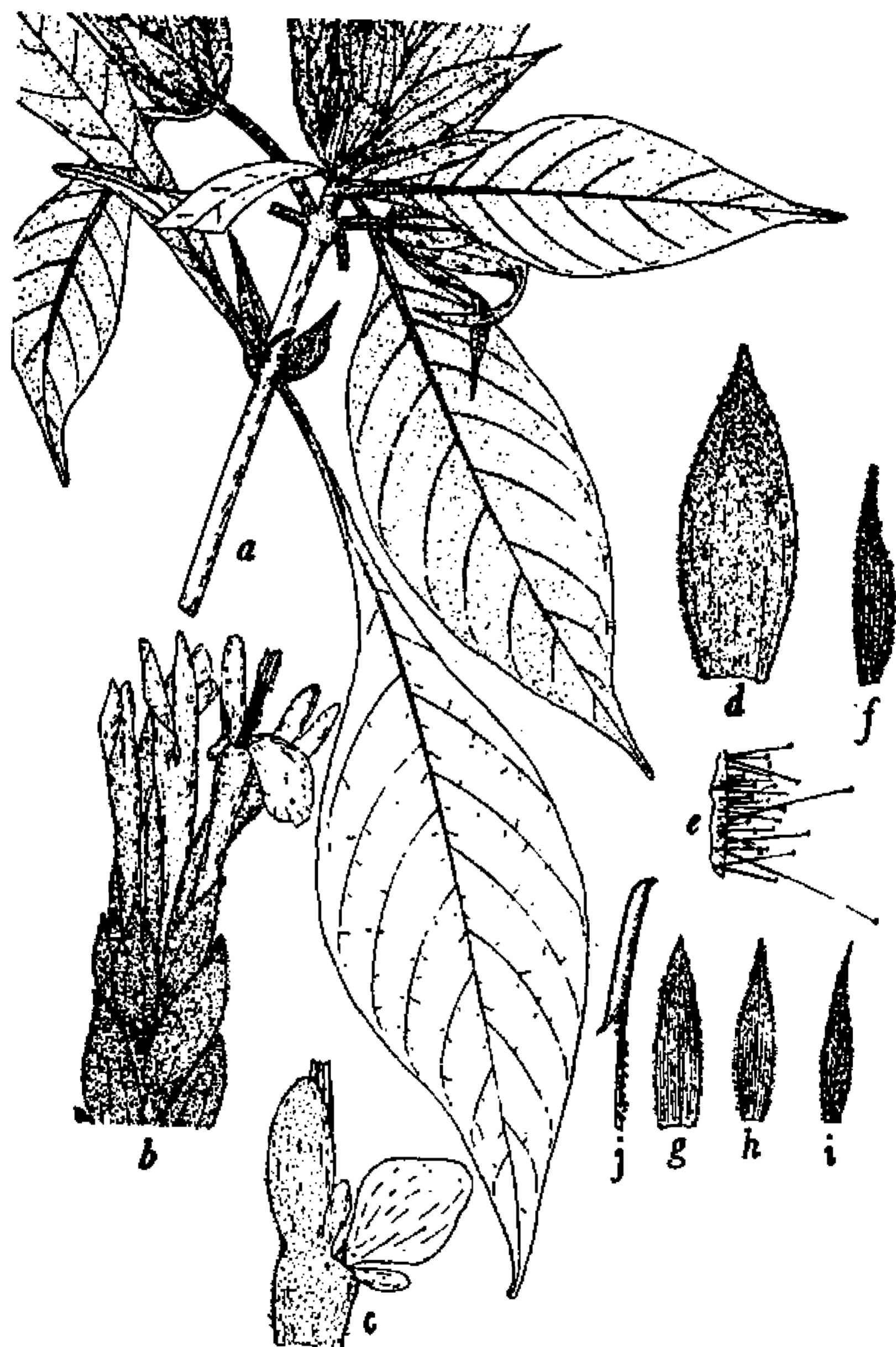


FIGURE 65.—*Aphelandra phlogea* Leonard (Haught 3944): *a*, Tip of stem showing base of inflorescence; *b*, tip of spike; *c*, tip of corolla to show lobes; *d*, bract; *e*, pubescence of bract; *f*, bractlet; *g*, posterior calyx segment; *h*, one of the anterior segments; *i*, one of the lateral segments; *j*, tip of stamen. (*a*, *b*, *c*, Half natural size; *d*, *f*-*i*, natural size; *e*, about 12 times natural size; *j*, 3 times natural size.)

Type in the U. S. National Herbarium, No. 1708676, collected in forest near stream above Manaure, Department of Magdalena, Colombia, 800 meters altitude, January 16, 1944, by Oscar Haught (No. 3944).

*Aphelandra phlogea* is probably related to *A. anomala* although the two species bear little resemblance to each other. *A. phlogea* is characterized by its bright, flame-colored corollas and by its rather large,

lanceolate, glandular-pilose bracts. Haught states in a note accompanying the type specimen that the flowers are very showy. The name *phlogea* (φλόγεος), flame-color, alludes to these brightly colored corollas.

34. *Aphelandra fascinator* Linden & André

*Aphelandra fascinator* Linden & André, Ill. Hort. 21: 42, pl. 164. 1874. Type locality: Colombia.

Suffrutescent, glabrous, the branches erect, terete, the young tips slightly puberulous; leaf blades large, 15 cm. long or more, 9 cm. wide, ovate, acute at apex, narrowed at base and decurrent on petiole, entire, the upper surface olive-green, the region bordering costa and lateral veins bright silver, the under surface reddish-violet with costa and veins dark violet; flowers borne in simple terminal spikes; bracts ovate, acuminate, ciliate, decussate, greenish purple, dorsally lineate; calyx segments acute, equaling one half the length of the corolla tube; corolla bright scarlet or cinnabar, the tube 7 to 8 cm. long, the limb 5 to 6 cm. broad, the upper lip erect, carinate, the lower 3-parted, the middle lobe ovate-spatulate, the lateral lobes ovate-unguiculate, spreading; stamens included.

I have seen no material of *Aphelandra fascinator* but the plate accompanying the original description suggests a relationship with *A. aurantiaca*. The name *fascinator* is a Latin word meaning enchanter.

35. *Aphelandra alexandri* Leonard

*Aphelandra alexandri* Leonard, Journ. Washington Acad. Sci. 25: 438. 1935. Type collected in high forest fringes at El Humbo, on Mount Chapón, 130 miles north of Bogotá, Department of Boyacá, Colombia, February 4, 1933, by A. E. Lawrance, No. 601. Type in the herbarium of the Riksmuseet, Stockholm. Fragment of type in the U. S. National Herbarium. Isotypes in the herbaria of the Kew, Missouri, and New York Botanical Gardens.

Suffrutescent, glabrous, up to 1 meter high; leaf blades elliptic, up to 15 cm. long and 5 cm. wide, acuminate, ending in a blunt point, narrowed at base and decurrent on the petiole, entire or undulate, green, the costa and lateral veins (9 to 10 pairs) rather prominent; petioles up to 3 cm. long, winged; flowers borne in terminal sessile spikes up to 10 cm. long and 2 cm. broad; bracts rather closely imbricate, erect or erect-spreading, brilliant red outside and yellow inside, oblong-elliptic, up to 18 mm. long and 3 mm. wide at base, and 1 cm. wide at middle, acute at apex, glabrous, subchartaceous, veiny; bractlets linear-subulate, 1 mm. wide at base, striate; calyx segments lanceolate, subequal, 8 or 9 mm. long, bearing triangular calluses at base (these conspicuous on the outside), the posterior segment oblong, 2.5 mm. wide, 2- or 3-toothed at tip, the anterior pair (1.5 mm. wide) and the lateral pair (1 mm. wide) narrowly lance-attenuate; corolla about 6 cm. long, red (?), glabrous except the lips, these minutely pruinose



within, the tube gradually enlarged from 4 mm. at base to 6 mm. at mouth, the upper lip erect, about 2 cm. long and 8 mm. wide, acute, the lower lip spreading, 3-lobed, the lobes subequal, oblong-obovate, about 2 cm. long, 7 to 8.5 mm. wide near the middle, acute or acutish at apex; stamens slightly exserted, the filaments sparingly, minutely, and inconspicuously pilose, the anthers 5.5 mm. long; capsules not seen.

A close relationship exists between *Aphelandra alexandri* and *A. lawranceae*. However, the bracts and corollas of *A. alexandri* are glabrous instead of pubescent as in *A. lawranceae*. The lower bracts of *A. alexandri* occasionally bear toward tip several definite but minute teeth.

The following note written by A. E. Lawrance accompanies the type specimen: "The two colors (brilliant red on the outside and yellow on the inside of the sepals) make the red appear orange. Outstanding plant worth propagating. Said to be used as a remedy for worms in children by boiling flowers in hot water and drinking same." The species is named for Alexander E. Lawrance.

36. *Aphelandra lasiophylla* Leonard, sp. nov.

FIGURE 66

Frutex, caulibus teretibus, dense strigosis, pilis brunnescentibus, arcte appressis; lamina foliorum oblongo-elliptica, breviter acuminata, basi angustata, in petiolum decurrens, coriacea, integra vel undulata, supra glabra vel parce strigosa, subtus dense pilosa vel subtomentosa; petioli breves, crassi, dense pilosi vel subtomentosi, pilis brunnescentibus; spicae terminales, solitariae, subsessiles, bracteis laxe imbricatis, rhache argenteo-pubescente; bracteae anguste ovatae, coriaceae, glabrae, acutae, parce ciliolatae, costa et nervis lateralibus obscuris; bracteolae lanceolatae, attenuatae, acutae, carinatae, dorso albo-tomentosae, areis marginalibus angustis, glabris, striatis; calycis segmenta acuta, coriacea, obscure striata, molliter pubescentia, segmentum posterius oblongo-lanceolatum, anteriora lanceolata, lateralia anguste lanceolata; corolla (immatura) tenuiter pubescens; ovarium glabrum.

Shrubs; stems terete, densely strigose, the hairs light brown, 0.5 mm. long, closely appressed; leaf blades oblong-elliptic, up to 28 cm. long and 10 cm. wide, short-acuminate at apex, narrowed at base and decurrent on the petiole, coriaceous, entire or undulate, the upper surface glabrous or sparingly strigose, the lower surface densely brown pilose or subtomentose, the hairs ascending, up to 1 mm. long, the costa and lateral veins (about 15 pairs) prominent below, less so above; petioles up to 1.5 cm. long and 3 mm. in diameter, densely brown pilose or subtomentose; spikes terminal, solitary, subsessile, about 13 cm. long and 1.5 cm. broad, loosely imbricate, the rachis silvery and finely pubescent; bracts narrowly ovate, 1.5 cm. long, 7 mm. wide near base, acute, coriaceous, glabrous, sparingly ciliate, the costa and lateral

nerves obscure; glandular area not apparent; bractlets lanceolate, 2.5 mm. wide near base, attenuate, acute, carinate, dorsally white-tomentose except a narrow marginal area, this glabrous, subhyaline and striate; calyx 14 mm. long, the segments coriaceous, obscurely striate, acute, finely pubescent, the posterior segment oblong-lanceolate, 5 mm. wide near base, the anterior pair lanceolate, 3 mm. wide near base, the lateral pair narrowly lanceolate, 2.5 mm. wide at base; corolla (very immature) finely pubescent; ovary glabrous.

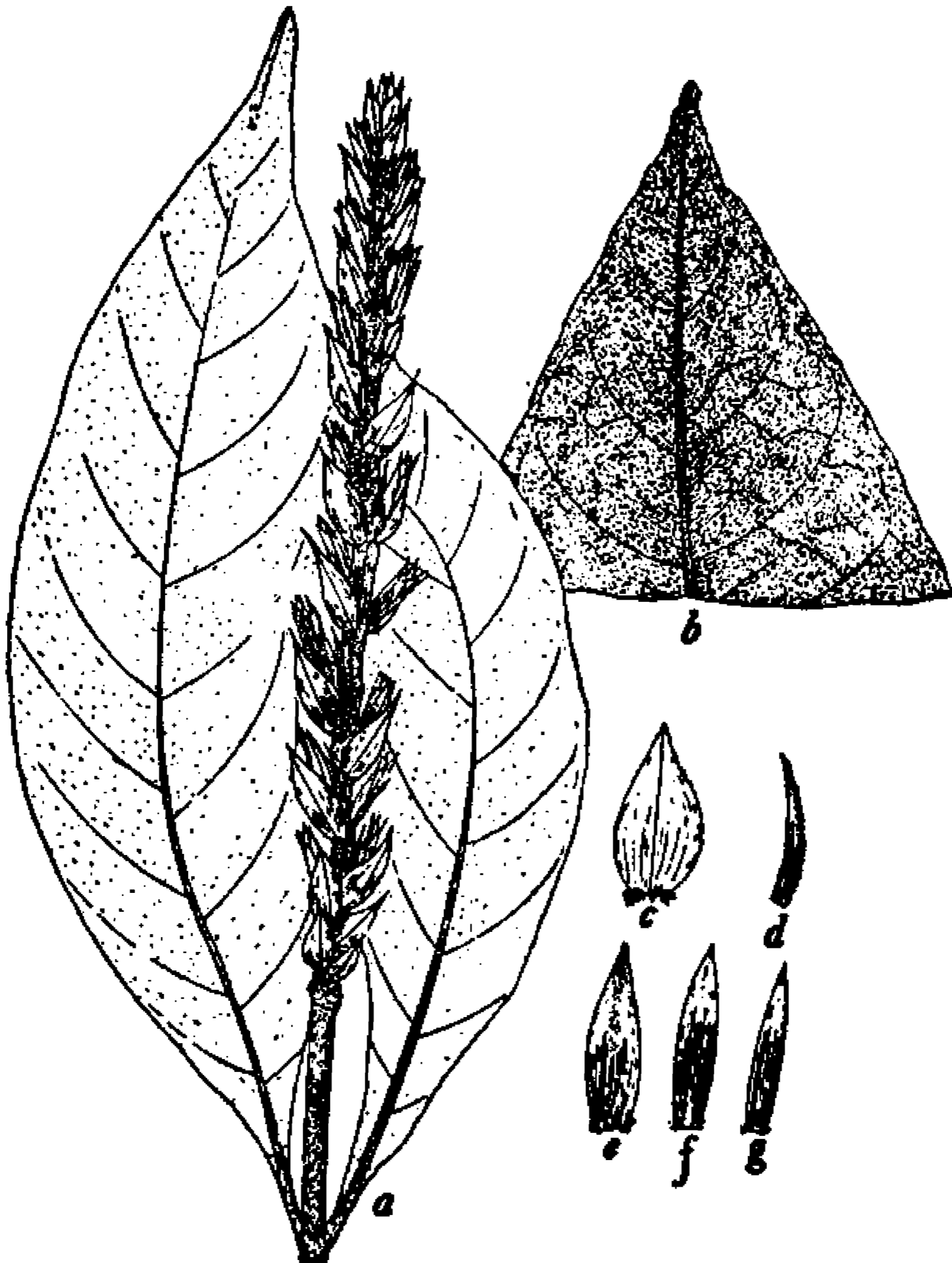


FIGURE 66.—*Aphelandra lasiophylla* Leonard (Triana s. n. Antioquia, Colombia): *a*, Tip of stem; *b*, tip of lower leaf blade (lower surface); *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments. (*a*, *b*, Half natural size; *c*-*g*, natural size.)

Type in Herbario Nacional Colombiano, collected in the Department of Antioquia, Colombia, 1,300 meters altitude, May, 1852, by J. Triana (s. n.).

*Aphelandra lasiophylla* has apparently no close affinity to other Colombian species. Its distinguishing characters lie in the brown, densely pilose or subtomentose undersurfaces of the leaf blades and the solitary terminal spikes with a finely silvery pubescent rachis. The name *lasiophylla* is derived from *λαίσιος*, shaggy, and *φύλλον*, leaf.

37. *Aphelandra conformis* Leonard, sp. nov.

FIGURE 67

Herba, caulibus ascendentibus, subquadrangularibus, glabris vel parce hirtellis, pilis recurvatis; lamina foliorum oblongo-ovata, acuminata (apice ipso obtuso), basi angustata et breviter in petiolum decurrens, submembranacea, integra vel leviter crenata, utrinque glabra vel subtus in costa et venis lateralibus plus minusve strigosa; petioli breves, parce strigosi; spicae terminales, solitariae, subsessiles, rhache angulata, minute et parce puberula; bracteae rhombico-ovatae, subacutae, submembranaceae, extus minute puberulae, intus subglabrae, eciliatae vel apice minute ciliolatae, venis prominentibus, venulis crasse reticulatis; bracteolae anguste lanceolatae, graciliter acuminatae, subcarinatae, striatae, subcoriaceae, apice striatae, minute puberulae; calycis segmenta subaequalia, subcoriacea, minute et obscure puberula, segmentum posterius lanceolatum, acuminatum, apice aliquando dentem minutum ferens, anteriora anguste, lanceolata, graciliter acuminata, lateralia lineari-lanceolata, graciliter acuminata; corolla aurantiaca, parce et subtiliter pubescens, bilabiata, labio superiore erecto, ovato, obtuso vel rotundato, inferiore trilobato, lobis obovatis, rotundatis, medio majore; ovarium parce puberulum; capsulae ignotae.

Herbs up to 40 cm. high; stems ascending, subquadrangular, glabrous or sparingly hirtellous, the hairs recurved, up to 0.25 mm. long; leaf blades oblong-ovate, up to 10 cm. long and 4 cm. wide, acuminate (the tip itself blunt), narrowed at base and briefly decurrent on the petiole, submembranaceous, entire or shallowly crenate, both surfaces glabrous or the costa and lateral veins (9 or 10 pairs) of the lower surface strigose, the hairs about 0.75 mm. long; petioles up to 1.5 cm. long, sparingly strigose, the hairs similar to those of costa and veins; spikes terminal, solitary, subsessile, 3 to 8 cm. long, about 2 cm. broad (without corollas), the rhachis angled, minutely and sparingly puberulous; bracts rhombic-ovate, 2 cm. long, 9 mm. wide, subacute, submembranaceous, rather prominently nerved, the veinlets coarsely reticulate, the outer surface minutely puberulous, the inner glabrous or nearly so, the margins eciliate or toward tip very minutely ciliate; bractlets lance-subulate, 7 mm. long, 0.75 mm. wide at base, subcarinate, striate, subcoriaceous, minutely puberulous toward tip; calyx segments subequal, 8.5 to 9 mm. long, subcoriaceous, striate (the nerves swollen at base), minutely and inconspicuously puberulous, the posterior segment lanceolate, 2 mm. wide, acuminate, sometimes with a minute tooth near tip, the anterior segments narrowly lanceolate and slenderly acuminate, 1.5 mm. wide near base, the lateral segments linear-lanceolate, 0.75 mm. wide near the base, slenderly acuminate; corolla orange-scarlet, 5 cm. long, sparingly and finely pubescent, the hairs about 0.25 mm. long, the tube about 3 mm. broad at base, the mouth 7 mm. broad, the upper

lip erect, ovate, 13 mm. long and 12 mm. wide, obtuse or rounded, the lower lip 3-parted, the lobes obovate, rounded, the middle one 15 mm. long and 9 mm. wide, the lateral ones 13 mm. long and 7 mm. wide; stamens slightly exerted but shorter than the upper lip; ovary sparingly puberulous; capsules not seen.

Type in the herbarium of the Royal Botanic Gardens, Kew, collected in damp primeval woods near Viotá, Department of Cundinamarca, Colombia, 1,800 meters altitude, February 18, 1876, by Edouard François André (No. 1658). An isotype is also in the Kew herbarium.



FIGURE 67.—*Aphelandra conformis* Leonard (a-g, André 1658; h, Triana): a, Tip of plant; b, bract; c, bractlet; d, posterior segment of calyx; e, one of the anterior segments; f, tip of same; g, one of the lateral segments; h, tip of corolla. (a, Half natural size; b, h, natural size; c-e, g, twice natural size; f, 15 times natural size.)

A Triana specimen (K) collected at Pandi, Department of Cundinamarca, 1,700 meters altitude, is also of this species.

The specific epithet alludes to its close relationship to the following species, *A. lawranceae*.

### 38. *Aphelandra lawranceae* Leonard

*Aphelandra lawranceae* Leonard, Journ. Washington Acad. Sci. 25: 437. 1935.

Type in the U. S. National Herbarium, No. 1482539, collected in forest region at Agua Perro on Mount Chapón, Department of Boyacá, Colombia, 1,650 meters altitude, June 17, 1932, by A. E. Lawrance (No. 244). Named for Mrs. A. E. Lawrance.

Suffrutescent, up to 1.2 meters high; stems terete, glabrous, more or less verrucose, the internodes 1.5 to 4 cm. long; leaf blades narrowly oblong-elliptic, up to 17 cm. long and 3 cm. wide, acuminate at apex (the tip itself blunt), gradually narrowed from about the middle to base and decurrent on the petiole, entire or undulate, both surfaces glabrous, the lower surface often dark mauve; petioles up to 2 cm. long; spike terminal (sometimes subtended by a whorl of 4 or 5 pairs of leaves), sessile, up to 7 cm. long and 2 cm. broad, the rachis puberulous; bracts rather closely imbricate, erect-spreading, oblong-lanceolate, up to 2.5 cm. long and 9 mm. wide (narrowed to 5 mm. at base), abruptly acuminate to acute at apex, entire, puberulous, ciliate; bractlets narrowly lanceolate, up to 9 mm. long and 1.5 mm. wide, 1-nerved, striate, puberulous, some of the hairs glandular; calyx segments subequal, about 9 mm. long, narrowly lanceolate, acuminate, the posterior one 3 mm. wide, minutely bidentate at apex, the anterior pair 1.7 mm. wide, the lateral pair 1.5 mm. wide, all striate and puberulous toward tip (glandular and eglandular hairs mixed); corolla up to 6.5 cm. long, brilliant red, finely pubescent, the tube gradually enlarged from 3 mm. at base to 5 mm. at throat, the upper lip entire, oblong, about 15 mm. long and 6 mm. wide, the lower lip 3-lobed, the lobes subequal or the lateral ones slightly shorter, up to 2 cm. long, the middle lobe obovate, up to 8 mm. wide, the lateral lobes oblong, up to 6 mm. wide; filaments about 3.5 cm. long, glabrous or minutely pubescent toward base; staminode slender, about 13 mm. long, pubescent at tip; style puberulous; ovary glabrous below, pilosulous above.

BOYACÁ: Mount Chapón, *Lawrance* 243 (K); 244 (K, US type); 252 (K, US).

CUNDINAMARCA: Bogotá, *Saunders* s. n. (K).

39. *Aphelandra colombiensis* Lindau ex Leonard, sp. nov.

FIGURE 68

Suffrutex; caulibus parce ramosis, subteretibus, glabris vel parce hirtellis vel ad nodos aliquanto hirtellis; lamina foliorum anguste oblongo-elliptica, acuminata (apice ipso obtuso), basi angustata, in petiolum decurrens, submembranacea, integra vel undulata, utrinque glabra vel in costa hirtella et subtus in venis lateralibus puberula vel hirtella; petioli graciles, plus minusve hirtelli; spicae plures, terminales, subsessiles, confertae, rhache angulata, subtiliter puberula, pilis patulis; bracteae ascendentes, imbricatae, oblongo-lanceolatae, acutae, basi angustatae, submembranaceae, puberulae, ciliatae, pilis albis, patulis vel ascendentibus; bracteolae anguste lanceolatae, graciliter acuminatae, striatae, apice parce puberulae; calycis segmenta subaequalia, subcoriacea, striato-nervata, ciliolata, apice parce puberula, segmentum posterius lanceolatum, aliquando abrupte acuminatum, prope apicem aliquando pilos paucos minutos ferens, anteriora et lateralia anguste lanceolata, graciliter acuminata; corolla coccinea,

aliquando pubescens, tubo angusto, labio superiore erecto, oblongo-ovato, acuto, labio inferiore trilobato, lobis subaequalibus, patulis vel reflexis, oblanceolatis, subobtusis; stamina exserta, filamentis glabris, antheris linearibus, basi acutis, apice subobtusis, pubescentibus; stylus retrorse hirtellus; ovarium pilosum; capsulae ignotae.

Suffrutescent; stems up to 1.3 meters high, subterete, glabrous or very sparingly hirtellous or moderately hirtellous at the nodes, sparingly branched; leaf blades narrowly oblong-elliptic, up to 12 cm. long and 3 cm. wide, acuminate (the tip slender, often curved, its apex blunt), narrowed at base and decurrent on the petiole, sub-



FIGURE 68.—*Aphelandra colombiensis* Lindau ex Leonard (*Lehmann* 7440): *a*, Tip of plant; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, tip of same; *f*, one of the anterior calyx segments; *g*, one of the lateral segments; *h*, tip of same. (*a*, Half natural size; *b*, natural size; *c*, *d*, *f*, *g*, twice natural size; *e*, 20 times natural size; *h*, 16 times natural size.)

membranaceous, entire or undulate, both surfaces glabrous or nearly so except the costa and lateral veins (9 or 10 pairs), these rather obscure, the costa of both surfaces hirtellous, the hairs about 0.25 mm. long, subappressed, the lateral veins beneath puberulous or sparingly hirtellous; petioles up to 2.5 cm. long, slender, more or less hirtellous; spikes several, terminal, subsessile, crowded, forming a headlike cluster up to 8 cm. long and 5 cm. broad, these subtended by a pair of leaflike bracts about 7 cm. long and 8 mm. wide, the rachis angled, finely puberulous, the hairs spreading; bracts ascending, closely imbricate, oblong-lanceolate, 30 mm. long, 8 mm. wide slightly below middle, acute, narrowed toward base, submembranaceous, puberu-

lous, ciliate, the marginal hairs up to 0.75 mm. long, ascending to spreading, the costa and lateral nerves barely prominent; bractlets narrowly lanceolate, 11 mm. long, 1 mm. wide at base, slenderly acuminate, carinate, striate-nerved, sparingly puberulous toward tip; calyx segments subequal, subcoriaceous, striate-nerved, sparingly puberulous toward tip, the posterior segment lanceolate, rather abruptly acuminate, sparingly ciliolate at tip, a few of the hairs sometimes glandular, the anterior and lateral segments narrowly lanceolate, slenderly acuminate, sparingly ciliolate, the anterior ones 1.5 mm. wide near base, the lateral ones 1 mm. wide; corollas dark scarlet, up to 6 cm. long, rather densely pubescent, the hairs white, more or less curved, about 0.25 mm. long, the tube 2 mm. broad at base, 5 mm. broad at mouth, the upper lip erect, oblong-ovate, 2 cm. long, 9 mm. wide near base, acute, the lower lip 3-parted to base, spreading or reflexed, subequal, oblanceolate, about 18 mm. long and 4 mm. wide, subobtuse, obscurely veiny; stamens exerted about 15 mm. beyond the mouth of the corolla tube, the filaments slender, glabrous, the anthers linear, straight or slightly curved, about 5 mm. long and 0.5 mm. wide, acute at base, subobtuse and hairy at tip, the style sparingly and more or less retrorsely hirtellous; ovary pilose at tip; capsules not seen.

Type in the herbarium of the Royal Botanic Gardens, Kew, collected in dense bushwood formations on the Altos de Mismis above Supía, Department of Cauca, Colombia, 1,700 to 2,000 meters altitude, July 1891, by F. C. Lehmann (No. 7440).

A specimen of Lehmann's No. 7440 in the Berlin Herbarium bears in Lindau's handwriting his determination *Aphelandra colombiensis* n. sp. A photograph (No. 8662) of this specimen is in the U. S. National Herbarium.

40. *Aphelandra boyacensis* Leonard, sp. nov.

FIGURE 69

Frutex, caulibus sursum strigosis; lamina foliorum obovata, apice abrupte acuminata, basi angustata, leviter sinuato-dentata vel integra, supra glabra vel parce strigosa, subtus dense strigosa, costa et venis lateralibus prominentibus; spica terminalis, subsessilis, oblongo-ovatis, bracteis imbricatis, rhache strigosa; bracteae oblongo-ellipticae, acutae vel subobtusae, apiculatae, tenues, virides, pergamentaceae, glabrae, costa pubescente excepta; bracteolae lanceolatae, glabrae, tenues, venosae, apice spina parva terminatae; calycis segmenta lanceolata, apice acuta vel acuminata, substriata; corolla subgilva, fauce flava, fragrans, pubescens, labiis aliquanto brevibus, subaequalibus, labio superiore erecto, bilobato, lobis ovatis, rotundatis, apiculatis, labio inferiore trilobato, lobis ovalibus vel suborbicularibus, obtusis; ovarium glabrum.

Shrubs 1 to 2 meters high, up to 5 cm. in diameter at base, the branches upwardly strigose; leaf blades obovate, up to 25 cm. long

and 12 cm. wide, abruptly acuminate at tip, narrowed at base to a short petiole 5 mm. long, shallowly sinuate-dentate or entire, glabrous above or sparingly strigose, the lower surface densely strigose, the hairs about 1 mm. long, the costa and the lateral veins (6 to 12 pairs) rather prominent, more so than above; flowers borne in a subsessile termi-

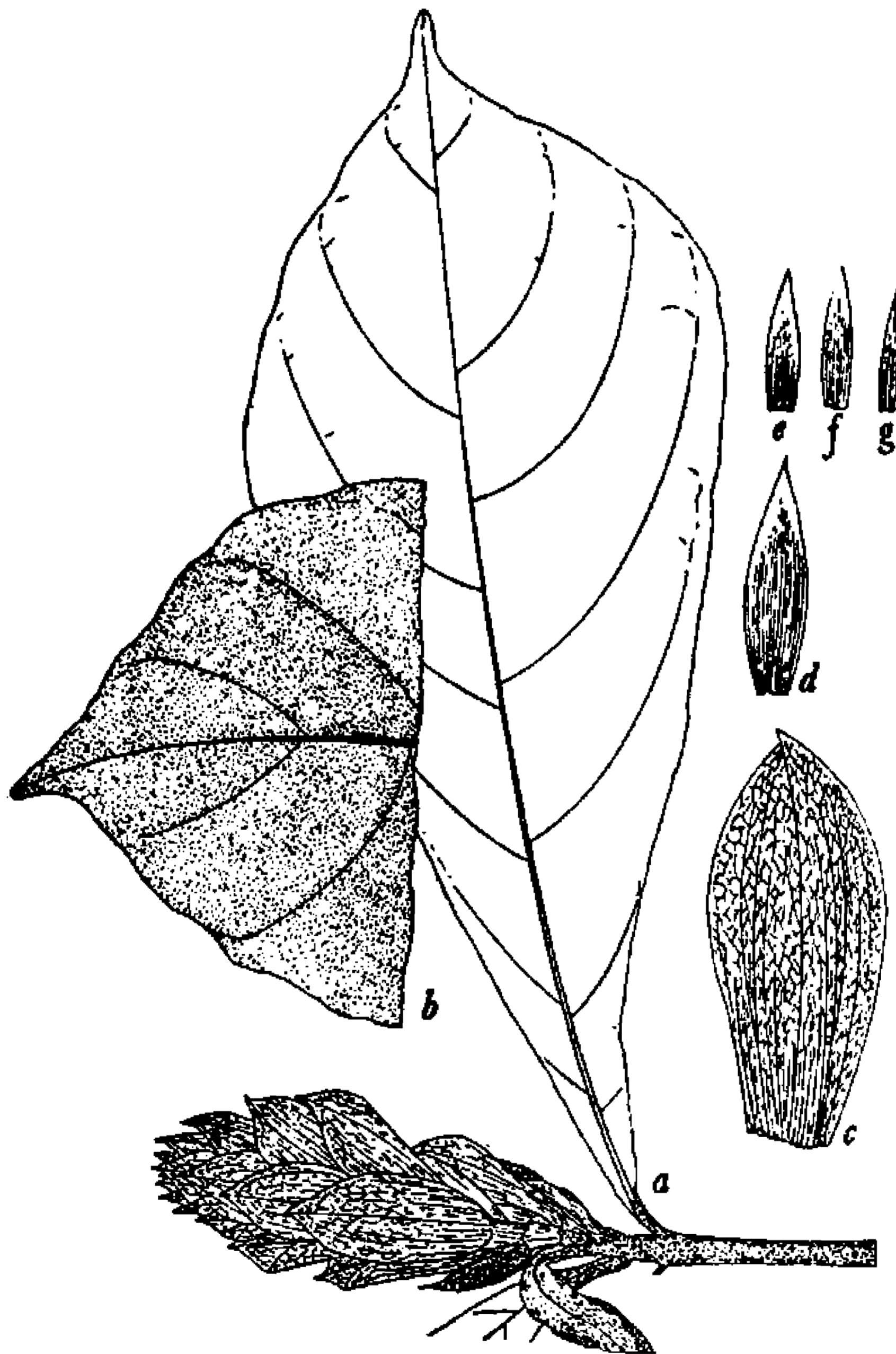


FIGURE 69.—*Aphelandra boyacensis* Leonard (*Lawrance* 565): *a*, Tip of stem; *b*, tip of leaf blade (lower surface); *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments. (*a*, *b*, Half natural size; *c*-*g*, natural size.)

nal oblong-ovate spike about 7 cm. long and 3.5 cm. in diameter, the rachis sparingly strigose; bracts imbricate, oblong-elliptic, 3.5 cm. long, 17 or 18 mm. wide (the uppermost smaller), acute or obtusish (tipped by a point 0.5 mm. long), thin, green, coarsely reticulate (the meshes open), pergamentaceous, glabrous except the costa, this sometimes sparingly pubescent; bractlets lanceolate, 2 cm. long, 5 mm.



wide, glabrous, thin, veiny, each ending in a minute spine; calyx pale green, conical, the segments lanceolate, the posterior one about 15 mm. long and 3.5 mm. wide, the anterior pair slightly shorter and more narrowed, the lateral pair 13 mm. long and 3.5 mm. wide, all acute or acuminate and substriate; corolla pubescent without, about 3 cm. long, very fragrant, creamish, the throat yellow, the lobes ovate to suborbicular, about 8 mm. long; ovary glabrous; capsule not seen.

Type in the herbarium of the Riksmuseet, Stockholm, collected in a deep forest at El Humbo, Department of Boyacá, Columbia, "3,000 ft." altitude, November 7, 1932, by A. E. Lawrance (No. 565). Type fragments in the U. S. National Herbarium. Isotypes in the herbaria of the Missouri and the New York Botanical Gardens.

*Aphelandra boyacensis* has the general appearance of *A. prismatica* Nees of Brazil but can be separated by its larger and relatively wider leaf blades, these densely strigose beneath instead of practically glabrous, and by its shorter and broader spike. The corollas of *A. prismatica* have a more slender tube than do those of this new species and are yellow instead of cream and yellow. Named for the Department from whence the type was procured. Only a fragmentary corolla could be found for examination on the type specimen, this consisting practically of lobes only.

41. *Aphelandra arisema* Leonard, sp. nov.

FIGURE 70

Herba vel suffrutex; lamina foliorum oblongo-lanceolata, acuminata (apice ipso obtuso), basi angustata, in petiolum decurrens, submembranacea, integra vel undulata, utrinque glabra vel subtus parce puberula; spicae terminales, solitariae (?), subsessiles, rhache angulata, subtiliter puberula, pilis patulis; bractee ascendentes, imbricatae, oblongo-ellipticae, acutae, basi angustatae, puberulae, ciliatae, nervis prominentibus, venulis crasse reticulatis; bracteolae subulatae, striatae, puberulae; calycis segmenta lanceolata, graciliter acuminata, subchartacea, striata, puberula; corolla ignota; capsulae cylindrico-clavatae, apice obtusae et apiculatae, minute puberulae; retinacula recta, apice cucullata; semina plana, suborbiculata, glabra.

Herb or low shrub; leaf blades oblong-lanceolate, up to 30 cm. long and 6 cm. wide, rather slenderly and somewhat abruptly acuminate (the tip itself blunt), narrowed at base and decurrent on the petiole, submembranaceous, entire or undulate, glabrous or the lower surface sparingly puberulous; spike terminal, subsessile, solitary (?), up to 26 cm. long, 1.5 to 2.5 cm. broad, the rachis angled, finely puberulous, the hairs spreading; bracts ascending or nearly erect, rather closely imbricate, oblong-elliptic, 2.5 cm. long, 8 mm. wide at middle, acute, narrowed at base, puberulous, ciliate, the marginal hairs about 0.25 mm. long, the nerves rather prominent, the veinlets coarsely reticulate; bractlets subulate, 5 mm. long, 0.75 mm. wide near base, slenderly

acuminate, striate, puberulous; calyx 1 cm. long, the segments lanceolate, slenderly acuminate, subchartaceous, striate, puberulous, the posterior segment 2.5 mm. wide near base, the anterior segments 2 mm. wide and the lateral segments 1.5 mm. wide near the base; corolla not seen; capsules cylindrically clavate, about 1.5 cm. long, 5 mm. broad,



FIGURE 70.—*Aphelandra arisema* Leonard (*Triana* s. n., Nóvita): *a*, Spike; *b*, leaf; *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, tip of same; *i*, retinaculum. (*a*, *b*, Half natural size; *c*, natural size; *d*-*g*, twice natural size; *h*, 10 times natural size; *i*, 4 times natural size.)

2 mm. thick, obtuse and apiculate at tip, minutely puberulous; retinacula erect, nearly straight, about 3 mm. long, 0.75 mm. broad at base, the tip bluntly cucullate; seeds brown, flat, suborbicular, 2.5 mm. in diameter, glabrous.

Type in the herbarium of the Royal Botanic Gardens, Kew collected in the Province of Chocó, Nóvita, Colombia, 170 meters

altitude, March, 1853, by J. Triana. An isotype, badly fragmented, is in the Herbario Nacional Colombiano.

The lack of corollas on the material examined might possibly be due to cleistogamy. The type material is in rather poor condition and consists only of detached leaves and spikes. Nevertheless, the species seems clearly distinct. The specific epithet is from the Greek *αἴμα*, meaning very remarkable.

A lighter area bordering the costa of the leaf blades, which is noticeable in the dried material, may indicate that, typical of a number of species of *Aphelandra* of the *Lagochilium* type, the leaf blades of the live plants were variegated, possibly purple with light greenish or whitish areas following costa and veins.

42. *Aphelandra killipii* Leonard, sp. nov.

FIGURE 71

Suffrutex, caulibus glabris; lamina foliorum magna, elliptica vel obovata, apice acuminata, apice ipso obtuso, basi angustata, in petiolum decurrens, supra glabra vel costa pilos raros minutos appressos ferens, minute alveolata, subtus parce et minute pubescens, pilis appressis, costa et venis aliquanto prominentibus; petioli breves, glabri; spica solitaria, triangularis, sessilis, anguste conica, bracteis arcte imbricatis, rachis glabra; bracteae coriaceae, oblongae, apice rotundatae, mucronatae, obscure striato-nervatae, glabrae, marginibus hyalinis; bracteolae minutae, triangulares, graciliter acuminatae, trinervatae; calycis segmenta minuta, glabra, triangularia, segmentum posterius apice bidentatum, alia graciliter acuminata; corolla subrubra, deorsum glabra, sursum glanduloso-pubescens, tubo angusto, labio superiore ovato, apice bilobato, lobis rotundatis et minute apiculatis, labio inferiore trilobato, lobo medio suborbiculari, lobis lateralibus oblongis, apice, rotundatis, fasciculum parvum pilorum ferentibus; antherae apice cohaerentes, dorso tomentosae; ovarium glabrum.

Coarse suffrutescent plants up to 80 cm. high; stems glabrous; leaf blades elliptic to obovate, up to 28 cm. long and 14.5 cm. wide, acuminate (the tip itself blunt), narrowed from middle or slightly above the middle to base and decurrent on the petiole, subchartaceous, glabrous above or the costa bearing a few appressed hairs about 0.5 mm. long, minutely alveolate, the lower surface sparingly and minutely pubescent, the hairs 0.25 mm. long or less, appressed, the costa and lateral veins (12 to 14 pairs) conspicuous, more so beneath than above; petioles thick (unwinged portion), up to 1 cm. long, glabrous; spike solitary, terminal, sessile, slenderly conic, about 10 cm. long, 2 cm. broad near base, the bracts appressed, the rachis glabrous; bracts coriaceous, oblong, 3 cm. long, about 1 cm. wide slightly above the middle, rounded and minutely mucronate at apex (the margins hyaline), apparently striate-nerved (the meshes of the reticulations com-

pressed), glabrous; bractlets minute, triangular, 2 mm. long, about 1 mm. wide at base, slenderly acuminate, 3-nerved, subhyaline; calyx segments about 0.75 mm. long, the posterior segment apparently bidentate, the others triangular-subulate, glabrous; corolla reddish, glabrous proximally, glandular-pubescent distally, the hairs barely

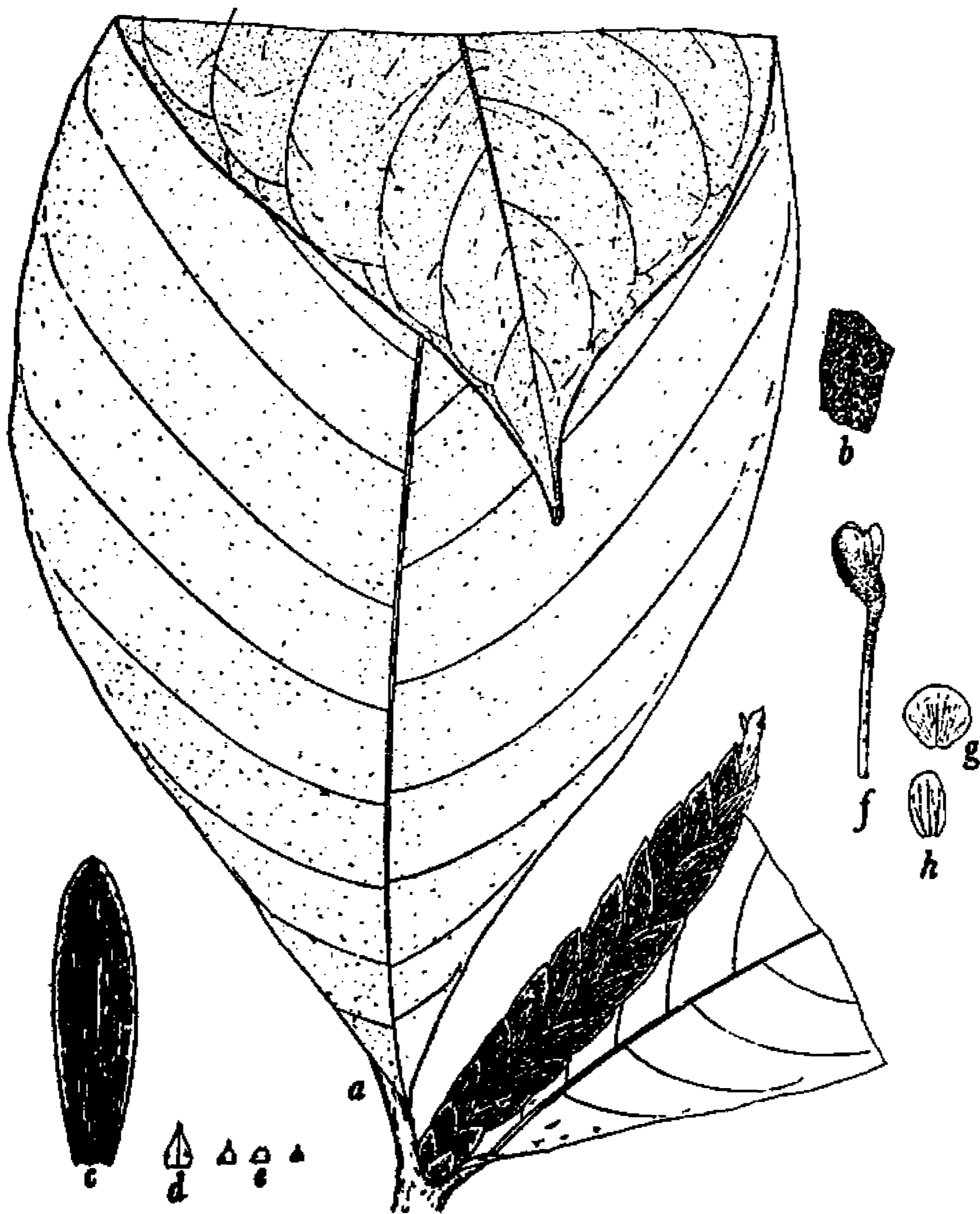


FIGURE 71.—*Aphelandra killipii* Leonard (Killip 35374): *a*, Tip of stem; *b*, upper surface of a portion of leaf blade to show markings (appearing alveolar under weak magnification); *c*, bract; *d*, bractlet; *e*, calyx segments; *f*, corolla; *g*, middle lobe of lower lip; *h*, lateral lobe. (*a*, *f*, Half natural size; *b*, about 10 times natural size; *c*, *g*, *h*, natural size; *d*, *e*, about one and a half times natural size.)

0.25 mm. long, the tube slender, the throat about 4 mm. broad, the upper lip ovate, about 4 mm. wide, bilobed at apex, the lobes rounded, about 1.5 mm. long, minutely apiculate, the middle lobe of the lower lip suborbicular, about 5 mm. long and 6 mm. wide, the lateral lobes oblong, about 6 mm. long and barely 3 mm. wide, obtuse, these and the lobes of the upper lip bearing a tuft of several minute hairs; stamens slightly exerted beyond the throat of the corolla, the anthers

barely 3 mm. long, adhering by the webby, dorsally borne hairs, these about 1 mm. long; ovary glabrous; capsules not seen.

Type in the U. S. National Herbarium, No. 1772091, collected in second growth forest at Andagoya, Department of Chocó, Colombia, 70 to 100 meters altitude, April 27, 1939, by E. P. Killip (No. 35374).

If compared with *Aphelandra dolichantha*, a related Colombian species, *A. killipii* can be recognized by its reddish flowers, glabrous stems, and obtuse bracts. The corolla of *A. dolichantha* is white or cream, the stem pubescent, at least toward tip, and the bracts acuminate.

43. *Aphelandra cuatrecasasii* Leonard, sp. nov.

FIGURE 72

Suffrutex, caulibus deorsum glabris, sursum retrorso-strigosis, pilis brunneis; lamina foliorum oblongo-elliptica vel obovata, breviter acuminata, basi angustata, in petiolum decurrens, integra vel undulata, subcoriacea, supra glabra vel parce strigosa, subtus mediocriter vel dense strigosa; petioli strigosi; spica solitaria, terminalis, conica vel cylindrica, bracteis aliquanto laxe appressis, rhache strigosa; bracteae oblongo-ellipticae, apice subobtusae et apiculatae, striato-venosae, sursum glabrae, deorsum strigosae; bracteolae anguste lanceolatae, acuminatae, minutae, tenues; corolla gilva, dense brunneo-hirsuta, labiis subaequalibus, labio superiore oblongo, apice bilobato, lobis rotundatis, labio inferiore trilobato, lobo medio ovali, rotundato, lobis lateralibus lanceolatis, obtusis; ovarium glabrum.

Suffrutescent herbs up to 40 cm. high; stems glabrous below, the upper portions rather densely and retrorsely strigose, the hairs about 0.5 mm. long, brownish; leaf blades oblong-elliptic to obovate, up to 17 cm. long and 6.5 cm wide, short-acuminate, narrowed at base and decurrent on the petiole, subcoriaceous, entire or undulate, the upper surface green, glabrous or sparingly strigose, the hairs about 0.5 mm. long, the lower surface pale ashy, more densely strigose than above, the costa and veins (10 to 12 pairs) rather prominent; petioles (unwinged portion) about 1 cm. long, retrorsely strigose like the stems; spike solitary, terminal, about 12 cm. long, 2 cm. broad, the bracts rather loosely appressed, the rachis strigose; bracts oblong-elliptic, 3 cm. long, 14.5 mm. wide, obtusish and minutely apiculate at apex, apparently closely striate-veined (the meshes of the reticulations compressed), opaque, bordered by a narrow subhyaline margin about 0.5 mm. wide, the lower half of the bract strigose, the hairs 0.75 mm. long, the upper half glabrous; bractlets narrowly lanceolate, 6 mm. long, about 1 mm. wide at base, gradually narrowed into a slender tip, thin, sparingly strigose dorsally; calyx segments minute, triangular, about 0.75 mm. long and broad, acuminate, thin, subhyaline; corolla cream white, about 3 cm. long, densely hirsute, the hairs more or less appressed, 0.75 mm. long, brown, the tube 3.5 mm. broad at base, 5 mm.

broad at mouth, the lips about equal, the upper lip oblong, about 4 mm. wide, 2-lobed at tip, the lobes rounded, the middle lobe of the lower lip oval, about 9 mm. long and 7 mm. wide, rounded, the lateral lobes lanceolate, 8 mm. long and 2.5 mm. wide at middle, blunt at tip; stamens reaching the mouth of the corolla and probably slightly exerted; ovary glabrous; capsule not seen.

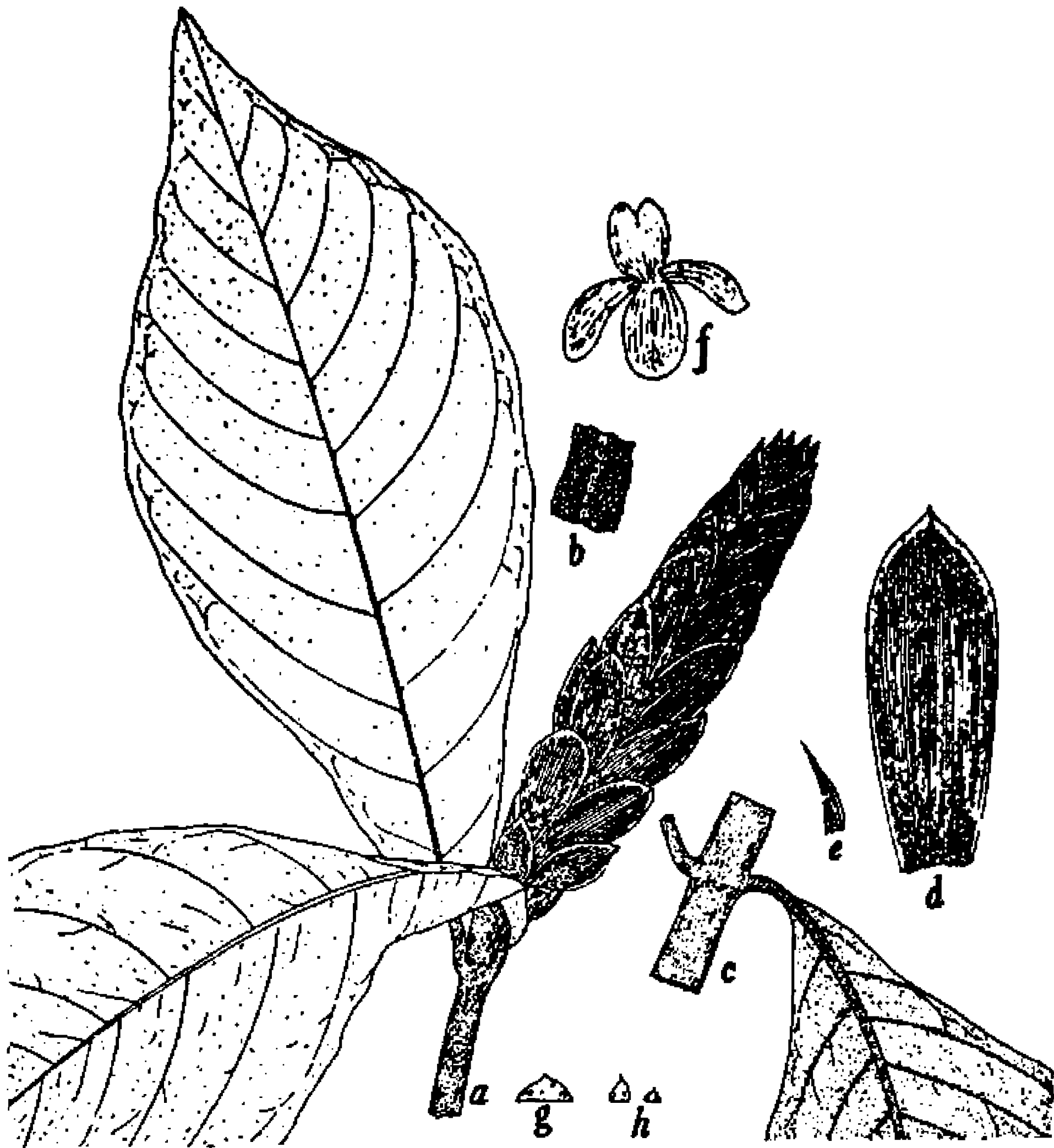


FIGURE 72.—*Aphelandra cuatrecasasii* Leonard (Cuatrecasas 16705): *a*, Tip of stem; *b*, microscopic view of upper leaf surface (appearing alveolate under lens); *c*, lower node showing part of leaf blade (lower surface); *d*, bract; *e*, bractlet; *f*, corolla limb; *g*, posterior calyx lobe; *h*, anterior and lateral lobes. (*a*, *c*, Half natural size; *b*, about 28 times natural size; *d*–*f*, natural size; *g*, *h*, about three times natural size.)

Type in the U. S. National Herbarium, No. 1852501, collected at La Trojita, along the Río Calima, Department of El Valle, Colombia, 5 to 50 meters altitude, February 19 to March 10, 1944, by J. Cuatrecasas (No. 16705). Killip's No. 34938 (US), collected in dense forest east of Buenaventura, El Valle, near sea level, April 12, 1939, is also this species.

*Aphelandra cuatrecasasii*, like *A. killipii*, is related to *A. dolichantha*, but differs by its obtusish bracts. The cream-colored corollas and narrow lanceolate bractlets of *A. cuatrecasasii* serve to distinguish

it from *A. killipii*, a species with reddish corollas and triangular bractlets.

The following field note accompanies the type: "Sufrutex, 30-40 cm.; hoja herbácea verde claro haz, pálida cenicienta envés; brácteas verdoso amarillento pálidas; corola blanco crema."

#### 44. *Aphelandra dolichantha* Donn. Smith

*Aphelandra dolichantha* Donn. Smith, Bot. Gaz. 27: 438. 1899. Type collected at Suerre, Llanuras de Santa Clara, Costa Rica, 300 meters altitude, February 1896, by John Donnell Smith, No. 6689. Type in the U. S. National Herbarium, No. 1320095. The specific name is derived from two Greek words, *δολιχός*, long, and *άνθος*, flower.

Shrubs or suffrutescent herbs up to 1.2 meters high; stems glabrous, or pubescent toward tip, the hairs brownish, about 0.5 mm. long, retrorsely appressed; leaf blades elliptic to oblong-elliptic, up to 22 cm. long and 12 cm. wide, acute or short-acuminate at apex (the tip itself blunt), narrowed at base and decurrent on the petiole, pergamentaceous, lustrous, entire, the upper surface minutely alveolar, drying dark green, glabrous or bearing a few scattered appressed hairs less than 0.5 mm. long, the costa and lateral veins (usually to 8 to 14 pairs) plane or slightly elevated, less prominent than on the lower surface, this drying light green or olive, subglabrous to finely strigose, the hairs mostly less than 0.5 mm. long, evenly distributed or confined chiefly to costa and basal portions of the lateral veins, retrorsely appressed; petioles up to 3 cm. long, the pubescence similar to that of the stem; spikes terminal, cylindric, solitary or occasionally in 3's, up to 12 cm. long and 1.5 cm. broad, the rachis angular, pilose or subglabrous, the hairs fine, up to 1.5 mm. long, upwardly appressed to spreading; bracts closely imbricate or spreading with age, ovate-lanceolate, 2.5 to 4 cm. long, 1 to 1.3 cm. wide, acuminate, green, multinerved (the meshes of the reticulations compressed), glabrous or more or less appressed-pilose, the margins subhyaline but not well defined, minutely ciliolate; bractlets linear-subulate, 10 mm. long, 1 mm. wide at base, carinate, striate-nerved, sparingly pilose and minutely puberulous, the smaller hairs gland-tipped; calyx minute, the segments subulate to lance-subulate, 1.5 to 2 mm. long, less than 0.5 mm. wide at base, the pubescence similar to that of the bractlets; corolla white or pale cream, glandular-pubescent except the lobes, these glabrous, the tube slender, up to 6 cm. long but barely 2 mm. broad, the throat short and but slightly ampliate, about 4 mm. broad, the posterior lip oblong, 13 mm. long, 5 mm. wide, 2-lobed, the lobes about 3 mm. long and 2.5 mm. wide, rounded, the middle lobe of the lower lip oblong-elliptic, 18 to 20 mm. long, 6 to 7 mm. wide, the lateral lobes linear-oblong, 15 to 17 mm. long, 4 to 5 mm. wide, all rounded at apex; stamens included, the filaments about 6 mm. long, affixed at the base of the throat, the

anthers 3 mm. long, apiculate, adhering by a lateral beard; disc cupuliform; style included; capsules narrowly clavate, about 15 mm. long and 3 mm. broad, glabrous, minutely punctate; seed flattened, obliquely ovoid, 5.5 mm. long and 3.5 mm. broad, barely 1 mm. thick, smooth, brown.

A sciaphilous species blooming from October to May, *Aphelandra dolichantha* is readily distinguishable by its slender, white corolla and minute glandular calyces. Donnell Smith in his description of the type evidently mistook the bractlets for calyx lobes ("segmenta linearia 8-10 mm. longa") and failed to find the minute calyx altogether. The vernacular name in the Chocó is "Babosa" (Archer 2003).

In Colombia this plant is usually found between altitudes of 50 and 825 meters. Its range extends northward from Colombia into Guatemala.

CHOCÓ: La Concepción, 15 km. east of Quibdó, Archer 2003 (US).

EL VALLE: Córdoba, Killip & Hernando García-Barriga 33444 (US). Along the Río Calima, near Córdoba, Killip 11788 (US). Río Digua Valley, between La Elsa and Río Blanco, Killip 34738 (US).

45. *Aphelandra craura* Leonard, sp. nov.

FIGURE 73

Suffrutex erectus, fragilis, caulibus retrorse strigosis; lamina foliorum obovata vel elliptica, apice rotundata vel subacuminata, basi angustata, in petiolum decurrens, subchartacea, undulata, supra parce strigosa, pilis minutis, subtus dense et molliter strigosa, pilis subbrunneis minutis, costa et venis aliquanto prominentibus; petioli breves, dense et minute strigosi; spicae solitariae vel plures fasciculatae, ovatae, sessiles, rhache plus minusve glabra; bracteae oblongae infimae apice obtusae, superiores apice acutae, subchartaceae, deorsum parce et minute pilosae, ut videtur striato-nervatae, maculis reticulorum angustis; bracteolae lanceolato-subulatae, integrae vel subinde dentem parvum ferentes, glabrae vel parce ciliolatae, trinervatae, subhyalinae; calycis segmenta ovata vel triangularia, apice acuminata vel rotundata et minute apiculata; corolla subpurpurea, tubo angustato, pubescente, pilis brunneis sursum appressis, labio superiore erecto, oblongo, apice bilabiato, lobis ovatis, subacutis, labio inferiore patulo, trilobato, lobo medio ovato, obtuso, labiis lateralibus lanceolatis, obtusis.

Plants suffrutescent, erect, brittle, up to 1 meter high; stems retrorsely strigose, at least above; leaf blades obovate to elliptic, rounded or subacuminate at apex, narrowed from middle or above middle to base and decurrent on the petiole, subchartaceous, undulate, the upper surface sparingly strigose, the hairs about 425  $\mu$  long, the lower surface densely and softly strigose, the hairs brownish, about 425  $\mu$  long, the costa thick, the lateral veins (about 10 pairs) more or less prominent;



petioles (unwinged portion) about 5 mm. long, densely strigose; spikes solitary or several, terminal, ovate, sessile, subtended by several small lanceolate bractlike leaves up to 27 mm. long and 6 mm. wide, these acute at apex, the rachis more or less glabrous; bracts oblong, up to 3 cm. long and 10 mm. wide, the lowermost obtuse, the upper acutish, sparingly and minutely pilose toward base, subchartaceous, apparently striate-veined, the meshes of the reticulations narrow;

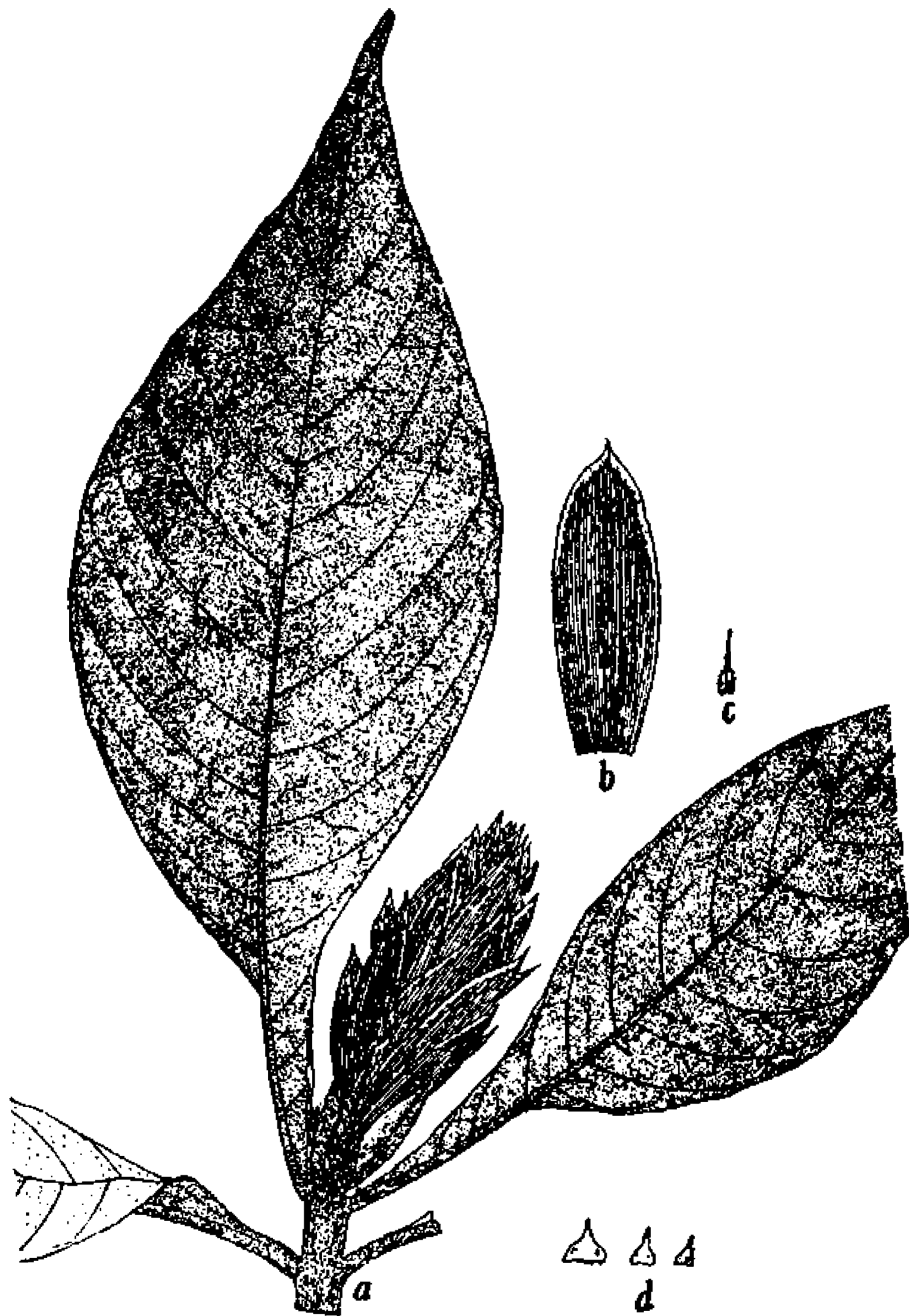


FIGURE 73.—*Aphelandra croua* Leonard (*Haught* 5337): *a*, Tip of stem; *b*, bract; *c*, bractlet; *d*, calyx segments. (*a*, Half natural size; *b*, natural size; *c*, about one and a half times natural size; *d*, about 4 times natural size.)

bractlets lance-subulate, up to 5 mm. long and 1 mm. wide at base, entire or occasionally bearing a small tooth toward tip, glabrous or bearing a few marginal hairs about 0.5 mm. long, 3-nerved, subhyaline; calyx segments minute, ovate to triangular, about 0.5 mm. long and 1 mm. wide, short-acuminate or rounded and minutely apiculate; corolla purplish, about 3 cm. long, pubescent except the glabrous basal portion, the hairs upwardly appressed, about 0.5 mm. long,

brownish, the tube slender, the upper lip erect, oblong, 7 mm. long (flower immature) and 4 mm. wide, bilobed at apex, the lobes ovate, about 2 mm. long and 1.5 mm. wide at base, subacute, the middle lobe of the lower lip spreading, ovate, 1 cm. long, 5.5 mm. wide, obtuse, the lateral lobes lanceolate, 1 cm. long and 3 mm. wide, obtuse at apex; ovary and capsule not seen.

Type in the U. S. National Herbarium, No. 1950443, collected along highway near Buenaventura, Department of El Valle, Colombia, 100 meters or less altitude, December 8, 1946, by Oscar Haught (No. 5337). *F. C. Lehmann* s. n. (K), from the same general locality, is also of this species. The label on the Kew sheet bears the following note: "Stengel bis 1 m. hoch, fingerdick. Blätter fast fleischig, matt grün. Blüten rothlich-gelbweiss."

A close relationship exists between *Aphelandra craura* and *A. dolichantha*. *Aphelandra craura*, however, has purplish corollas instead of white and the lower surfaces of the leaf blades are densely, softly, and almost silkily strigose. The name *craura* is from *κραῦρος*, meaning brittle, in allusion to the succulent, brittle stems.

46. *Aphelandra pilosa* Leonard, sp. nov.

FIGURE 74

Frutex gracilis, parce ramosus, erectus vel ascendens, caulibus sursum subquadrangularibus, dense pilosis, pilis plus minusve patulis, brunnescentibus vel albidis, deorsum teretibus, glabratis; lenticellae minutae; lamina foliorum oblonga vel oblongo-elliptica vel late oblanceolata, apice plus minusve acuminata (apice ipso saepe curvato), basi angustata, in petiolum decurrens, subcoriacea, integra vel undulata, supra parce hirsuta, costa et venis lateralibus dense hirsutis, pilis brunneis, ascendentibus, subtus aliquanto dense hirsuta, pilis patulis vel ascendentibus; petioli breves, dense pilosi; spicae solitariae vel plures fasciculatae vel paniculas laxas formantes, rhache albo-tomentosa; bracteae imbricatae, rhombeo-ovatae, acuminatae, minute puberulae vel glabratae, deorsum minute pubescentes vel pilosae, coriaceae, ciliatae, costa et venis prominentibus; ocelli (3-6) elliptici, fusco-lucentes, contigui vel aliquando coalescentes; bracteolae lanceolatae, carinatae, striato-nervatae, carina dense albo-pilosa; calycis segmenta striato-nervata, puberula, apice acuta vel subobtusa et apiculata, ciliolata, segmentum posterius anguste ovatum, segmenta anteriora lanceolata, segmenta media lineari-lanceolata; corolla angusta, rubra, minute puberula, labio posteriore erecto, bilobato, lobis lanceolatis, tenuiter acuminatis, labio inferiore trilobato, lobo medio patulo, anguste elliptico, acuto, lobis lateralibus parvis, apice rotundatis, cum labio superiore basi connatis; stamina exserta, antheris dorso pilosis.

Slender shrubs up to 3 or occasionally 5 meters high, sparingly branched, the stems erect or ascending (sometimes tortuous), subquad-

rate and densely pilose toward tip, the hairs light brown or whitish, up to 2 mm. long, spreading, descending, or appressed, the lower portions of the stem terete, gray, glabrate, the lenticels minute and corky; leaf blades oblong to oblong-elliptic or broadly oblanceolate, the uppermost 15 to 30 cm. long and 5 to 10 cm. wide, the lowermost as much as 45 cm. long and 16.5 cm. wide, all more or less abruptly acuminate (the apex often more or less curved), gradually narrowed at base and decurrent on the petiole, subcoriaceous, entire or undulate, the upper surface drying olive or brownish, glabrate or sparingly hirsute, the costa and lateral veins densely so, the hairs light brown, appressed or ascending, 0.5 to 1 mm. long, the costa and lateral veins (14 to 20 pairs) flat or slightly raised, inconspicuous, the lower surface drying light olive-green, more densely pilose than above, the hairs 0.5 to 1.5 mm. long, appressed, ascending, or spreading, the venation rather prominent; petioles up to 1.5 or occasionally 2 cm. long, the pubescence similar to that of the stem; spikes solitary or, if several, fascicled, or often forming a loose panicle (the terminal spike subsessile, the lateral ones pedunculate) 5 to 17 cm. long, 5 to 7 cm. broad, the peduncles up to 4 cm. long, the pubescence that of the stems, the rachis white-cottony; bracts closely imbricate, rhombic-ovate, 9 mm. long, 6 to 6.5 mm. wide at 1.5 mm. above base, acute, minutely puberulous or glabrate, pubescent or pilose toward base, coriaceous, ciliate, the costa and several pairs of nerves on either side prominent below the middle of the bract, the ocelli 3 to 6, elliptic, about 1 mm. long and 0.75 mm. wide, flat, varnished, variously grouped, contiguous or sometimes fused; bractlets lanceolate, 8 mm. long and 2 mm. wide, carinate, the keel densely white-pilose, the hairs very fine, about 0.6 mm. long, ascending, striate-nerved, the nerves curved at base, the margins thin; calyx 8 to 8.5 mm. long, the posterior segment narrowly ovate, 3 mm. wide near middle, the anterior pair lanceolate, 2 mm. wide, the lateral pair linear-lanceolate, 1.5 mm. wide, these obtusish and apiculate, the others acute, all minutely puberulous, ciliate toward tip and striate-nerved, the nerves indurate at base; corolla red, minutely puberulous, 6.5 cm. long from base to tip of upper lip, the tube 3 mm. broad at base, narrowed to 2 mm. at 7 mm. above base, thence gradually enlarged to a slightly curved cylindrical throat about 6 mm. broad, the upper lip erect, 2 cm. long, 7 mm. wide at base of lobes, these lanceolate, 1 cm. long, 4 mm. wide, slenderly acuminate, the middle lobe of the lower lip spreading, narrowly elliptic, 2.5 cm. long, slightly more than 6 mm. wide, acute, the lateral lobes adnate in part to the upper lip, their free portions 2 mm. long and 1.5 mm. wide, rounded at tip; stamens exerted about 15 mm. beyond the mouth of the corolla tube, the anthers 6 mm. long, 1 mm. broad, the basal lobes

minutely apiculate, the cells dorsally pilose; pistils glabrous; capsules not seen.

Type in the U. S. National Herbarium, No. 1774446, collected in woods and thickets of Zurubi, Caño Cuduyari, Comisaría of Vaupés, Colombia, 200 meters altitude, October 15, 1939, by J. Cuatrecasas (No. 7223).

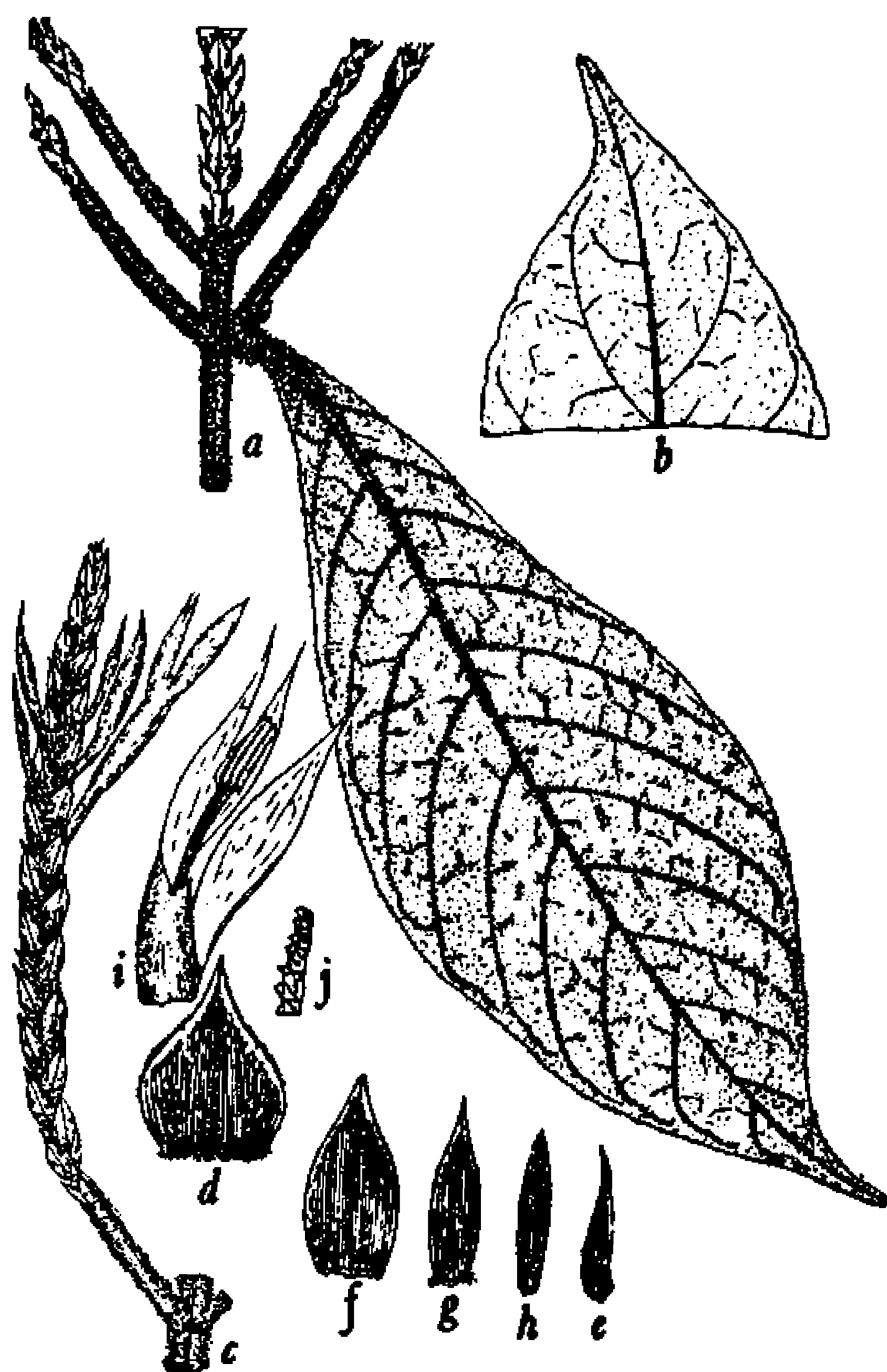


FIGURE 74.—*Aphelandra pilosa* Leonard (Cuatrecasas 7223): *a*, Tip of plant, showing lower part of inflorescence; *b*, tip of leaf blade (upper surface); *c*, branch of inflorescence; *d*, bract; *e*, bractlet; *f*, posterior calyx segment; *g*, one of the anterior segments; *h*, one of the lateral segments; *i*, tip of corolla; *j*, pubescence of the corolla. (*a-c*, Half natural size; *d-h*, twice natural size; *i*, natural size; *j*, about 20 times natural size.)

BOYACÁ: In warmer valleys, *Dawe* 900 (K).

CAQUETÁ: Woods at Sucre, 1,000 to 1,300 meters altitude, April 4, 1940, *Cuatrecasas* 9052 (US).

META: Woods of Caño Quenane, January 25, 1942, *Dugand & Jaramillo* 3117 (US). About 12 km. southeast of Villavicencio, 400 meters altitude, January 9, 1939, *Haught* 2536 (US).

PUTUMAYO: Wet woods along Río Putumayo at Puerto Ospina, 230 meters altitude, November 14, 1940, *Cuatrecasas* 10562 (US). Puerto Porvenir, above Puerto Ospina, 230 to 250 meters, November 19, 1940, *Cuatrecasas* 10656 (US).

VAUPÉS: Mesa La Lindosa, *Idrobo & Schultes* 631 (US); Río Guaviare at

San José del Guaviare, 240 meters altitude, November 6, 1939, Cuatrecasas 7478 (US).

*Aphelandra pilosa* resembles, in most respects, *A. pulcherrima* but unlike that species it has a dense, more or less spreading pubescence covering the upper portions of the stems and underside of the leaf blades, the hairs being up to 2 mm. long, instead of about 1 mm., as in *A. pulcherrima*. The name *pilosa*, hairy, alludes to this characteristic pubescence.

47. *Aphelandra pulcherrima* (Jacq.) H. B. K.

*Justicia pulcherrima* Jacq. Enum. Pl. Carib. 11. 1762: Stirp. Amer. 6, pl. 2, fig. 4. 1763. Type locality: "Habitat frequens Carthagenae in sylvaticus montis de la Popa." The illustration consists of a leaf and a corolla. *Pulcherrima* (very beautiful) alludes, no doubt, to the general aspect of the entire plant.

*Aphelandra pulcherrima* H. B. K. Nov. Gen. & Sp. 2: 236. 1817. Based on *Justicia pulcherrima* Jacq. Humboldt cites two collections, one from a shady place near Turbaco and the other from the mouth of the Río Sinú, both in Colombia. Photograph of the Turbaco plant in the U. S. National Herbarium (Field Mus. photograph No. 8713).

Shrubs or suffrutescent herbs up to 3 meters high; stems erect, sparingly branched, obscurely quadrangular toward tip, pubescent to tomentose, the hairs about 0.5 mm. long, straight and more or less spreading or variously curved, whitish, the lower portions of the stems terete, light grayish green, sparingly pubescent to glabrate, the lenticels scattered, elliptic, 0.5 to 1 mm. long, corky; leaf blades ovate to oblong-elliptic, 8 to 20 cm. long, 3.5 to 10 cm. wide, short-acuminate (the tip itself blunt and minutely apiculate to acutish), narrowed at base and decurrent on the petiole, entire, undulate or shallowly crenate, the upper surface drying olive, finely pubescent or glabrate, the hairs curved, less than 0.5 mm. long, subappressed, the costa flat or shallowly impressed, the lateral veins (16 to 20 pairs) 3 to 14 mm. apart, slightly raised, the lower surface drying to light green or gray, softly and usually densely pubescent, the hairs up to 1 mm. long, curved to nearly straight, the pubescence usually denser on costa and veins, these prominent, the veinlets finely reticulate; petioles about 5 mm. long, the pubescence similar to that of the costa; spikes solitary or several in a fascicle, quadrangular, terminal, sessile, up to 10 cm. long and 8 mm. broad, the rachis white-cottony-tomentose; bracts rhombic-ovate, 6 to 7 mm. long, 4.5 to 5 mm. wide at middle, 2 to 3 mm. wide at base, acute at apex, dorsally finely and densely puberulous becoming white-pilose toward base, ventrally glabrous except toward margins, here finely pubescent, obscurely striate-nerved, the costa and a pair of lateral nerves prominent, reticulately veined toward margin; ocelli solitary, in twos, or sometimes several, distinct or more or less fused, conspicuous, orbicular to elliptic, 0.5 to 1 mm. long, about 0.75

mm. wide, dark brown or blackish, nitid; bractlets lanceolate, 7 mm. long, about 2 mm. wide near base, acute at apex, falcate, obliquely subcarinate, puberulous without, glabrous within, finely striate-nerved; calyx about 8 mm. long, the posterior segment oblong, 3 mm. wide, the lateral segments lanceolate, about 2 mm. wide, the middle pair narrowly lanceolate, 1.5 mm. wide, all acute and striate-nerved; corolla bright red or scarlet, minutely puberulous, 5 to 6 cm. long, about 3 mm. broad at base, narrowed to 1.5 mm. at tip of ovary, thence gradually enlarged and slightly ventricose, about 6 mm. broad at mouth, the upper lip erect, ovate, 15 mm. long, 9 mm. wide, 2-lobed, the lobes narrowly triangular, 9 mm. long and 4 mm. wide, slenderly acuminate, the lower lip 3-lobed, erect or spreading with age, the middle lobe linear-oblong, 24 mm. long and 7 mm. wide, abruptly acuminate, the lateral lobes about 3 mm. long and 1 mm. wide, obtusish, adnate in part to the upper lip; stamens exerted about 7 mm. beyond the mouth of the corolla tube; ovary and style glabrous; capsules oblong, obtuse at apex, glabrous.

VERNACULAR NAMES: Picigallo (*Elias* 860), Cresta de Gallo (*Elias* 705), Pié de Gallo (*Bro. Heriberto* 415), Pisigallo (*Dugand & Jaramillo* 4053), Titirigallo (*Dugand & Jaramillo* 4053).

Partial to damp, shady places, usually in thickets or low marshy regions. Found at low altitudes mostly under 900 meters. Mexico to northern South America and in a few West Indian localities.

ATLÁNTICO: Arroyo de Megua, *Dugand & Jaramillo* 2800 (US). Barranquilla, *Bro. Elias* 440 (US). Los Pendales, *Dugand & García-Barriga* 2549 (US); *Dugand & Jaramillo* 2701 (US). Lurnaco, *Bro. Apolinar Angel* 491 (US). Piojó, vicinity of Barranquilla, *Bro. Elias* 705 (US). Puerto Colombia, *Bro. Elias* 860 (US). Tubará, *Dugand & Jaramillo* 4053 (US). Uslacurí Araque & *Barkley* 19At.081 (US); *Dugand & García-Barriga* 2273 (US).

BOLÍVAR: Arjona, *Killip & Smith* 14516 (NY, US). Caño Papayal, vicinity of Estrella, Lands of Loba, *Curran* 321 (US). Cartagena, *Billberg* s. n., Dec. 1825 (S); *Billberg*, s. n., 1826 (S); *Bro. Heriberto* 268 (US). Castillo La Popa, vicinity of Cartagena, *Araque & Barkley* 19Bo.033 (US). La Popa, *Billberg* s. n., Dec. 1825 (S). Montería, *Bechara, Araque & Barkley* 19Bo.218 (US). Sahagún, *Pennell* 4108 (NY). Turbaco, *Bro. Heriberto* 415 (NY, US); *Killip & Smith* 14310 (NY, US).

CUNDINAMARCA: Casas Viejas, *Triana* s. n., 1851-1857 (NY).

MAGDALENA: Codazzi, *Haught* 3759 (US). Poponte, *Cyril Allen* 845 (Mo).

META: Villavicencio, *Triana* s. n. (US).

NORTE DE SANTANDER: La Esmeralda, *Killip & Smith* 20931 (NY, US). Río Zulia, *Araque-Molina, Otdlora & Barkley* 18NS.066 (US).

48. *Aphelandra schieferae* Leonard, sp. nov.

FIGURE 75

Frutex, caulibus sursum dense cinereo-pubescentibus vel subtomentosis, pilis sursum appressis vel ascendentibus; lamina foliorum oblanceolata, apice acuta, basi angustata, in petiolum decurrens, crenata, supra parce hirtella, costa et venis lateralibus dense hirtellis,

pilis brunnescentibus, appressis vel ascendentibus, subtus dense et molliter pilosa, pilis ascendentibus vel patulis; petioli subtomentosi; paniculae magnae, laxae, frondosae, spicis saepe pluribus, parvis, axe et pedunculis tomentosus, rhache argenteo-tomentosa; bracteae vivae coccineae, siccae brunneae, triangulo-ovatae, subcarinatae, acutae, striatae, minute puberulae, ciliolatae; ocelli plurimumque 2, brunnei, nitidi, obscure alveolati; bracteolae lanceolatae, carinatae, acuminatae, carina dense argenteo-pilosae, pilis ascendentibus, marginibus subhyalinis, glabris, ciliolatis; calycis segmenta lanceolata, minute striato-nervata, puberula, apice pilosa; corolla coccinea, anguste hypocrateriformis, minute puberula, pilis conicis, labio superiore anguste ovato, apice bilobato, lobis triangularibus, acuminatis, labio inferiore trilobato, lobo medio lanceolato, acuminato, lobis lateralibus parvis, cum labio superiore basi connatis; stamina vix exserta, antheris dorso pilosis; ovarium glabrum.

Shrubs about 1 meter high; stems subquadrangular, thick (up to 8 mm. in diameter at base of inflorescence), the upper portions densely gray-pubescent or subtomentose, the hairs upwardly appressed or ascending, about 0.5 mm. long; lenticels light brown, corky, prominent, orbicular, oval or elongate, up to 3 mm. long; leaf blades oblanceolate, up to 36 cm. long and 10 cm. wide (slightly above the middle), acute at apex, gradually narrowed from above middle to base and decurrent on the petiole, the margins crenate, the upper surface drying dark olive-green, the costa and lateral nerves (about 21 pairs) densely hirtellous, the hairs brownish, appressed or ascending, 0.25 to 0.5 mm. long, the surface between the veins sparingly and inconspicuously hirtellous, the lower surface drying a light grayish olive-green, densely and softly pilose, the hairs 0.25 to 0.75 mm. long, ascending or spreading or those on costa and veins somewhat appressed; petioles 2 to 3 cm. long, subtomentose; spikes terminal and axillary, forming a rather loose, leafy panicle up to 27 cm. long and 17 to 20 cm. broad, the branches of the panicle ascending, 1 to 13 cm. long, light gray-tomentose, the spikes up to 9 cm. long and 5 to 8 mm. broad, the rachis silvery tomentose, except the glabrous region adjacent to the posterior calyx segment; bracts bright scarlet, drying brown, triangular-ovate, subcarinate, 8 mm. long, 4.5 mm. wide at 2 mm. above base, thence gradually narrowed to a slender tip, coriaceous, coarsely striate, minutely puberulous, the margins ciliolate, the hairs up to 0.5 mm. long; ocelli occurring usually in pairs, elliptic, 1 mm. long and 1.75 mm. wide, brown, nitid, indistinctly alveolate; bractlets lanceolate, carinate, 7 mm. long, 2 mm. wide at 2.5 mm. above base, thence gradually narrowed to a slender tip, the keel densely silvery pilose, the hairs ascending, about 0.5 mm. long, the region adjacent to the keel puberulous, the marginal area subhyaline and glabrous, the margins

sparingly ciliolate; calyx 7 mm. long, the segments lanceolate, finely striate-nerved, minutely and inconspicuously puberulous, tipped by a tuft of hairs about 0.25 mm. long, the posterior segment 2.25 mm.

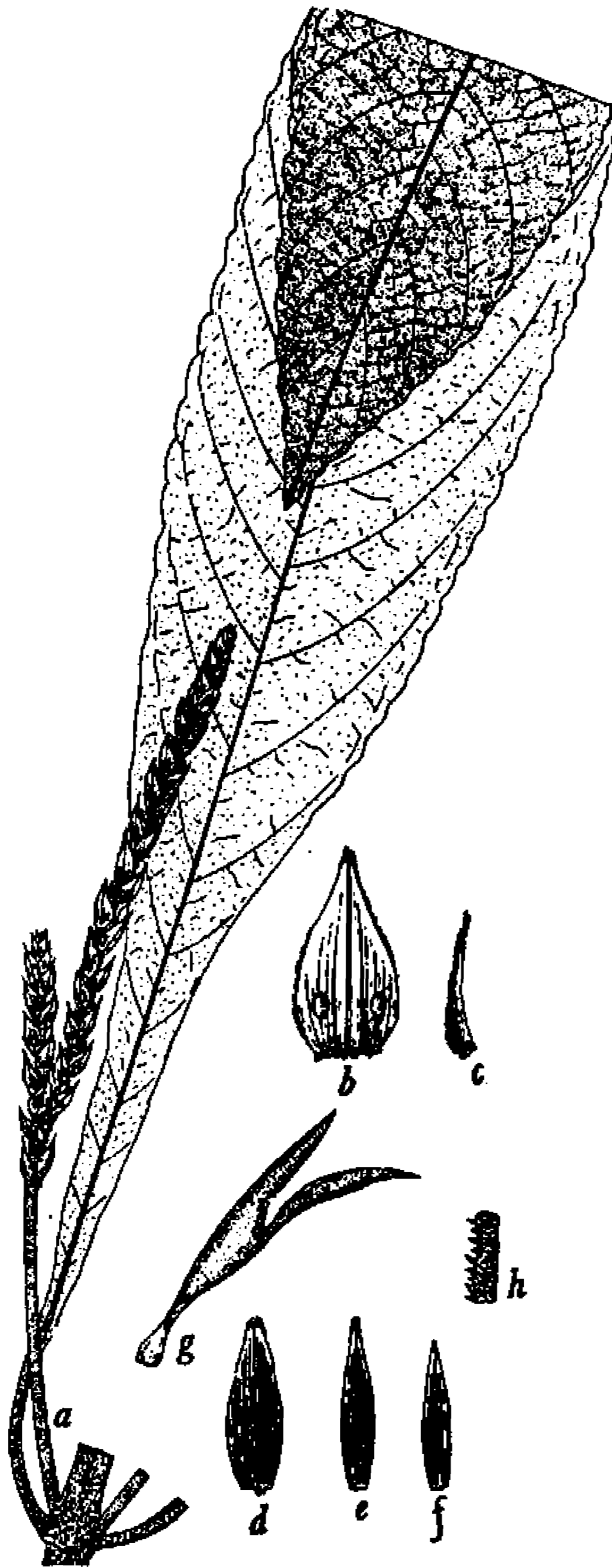


FIGURE 75.—*Aphelandra schieserae* Leonard (Schieser 791): *a*, Node from inflorescence; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, one of the lateral segments; *g*, corolla; *h*, pubescence of the corolla. (*a*, *g*, Half natural size; *b-f*, twice natural size; *h*, about 40 times natural size.)

wide near base, the anterior pair 1.75 mm. wide, the lateral pair 1 mm. wide, all narrowed from near base to a sharp, slender tip; corolla bright scarlet, 5 cm. long from base to tip of upper lip, finely puberulous, the hairs conical, the tube 4 mm. broad near base, narrowed to



1.5 mm. at 7 mm. above base, thence enlarged to 7 mm. near mouth, the upper lip narrowly ovate, 21 mm. long and 6 mm. wide at middle, tipped by 2 triangular acuminate lobes about 3 mm. long and 1.5 mm. wide at base, the middle lobe of the lower lip lanceolate, 22 mm. long, 5 mm. wide, slenderly acuminate, the lateral lobes adnate to the lower part of the upper lip, their free portions small, about 1 mm. long; stamens slightly exerted beyond the mouth of the corolla tube, the anthers 6 mm. long and 1 mm. broad, retrorsely pilose dorsally; ovary glabrous; capsules not seen.

Type in the Gray Herbarium, collected in deep woods on hill back of Tres Esquinas Mill, Villavicencio, Intendencia of Meta, Colombia, July 12, 1945, by Helen Schiefer (No. 791). Fragment of type in the U. S. National Herbarium, No. 1934948. A Triana collection, without number (Col, NY), from Servitá, vicinity of Villavicencio, 300 to 900 meters altitude, December 1855, is also of this species.

If compared with any of the numerous segregates of *Aphelandra pulcherrima*, *A. schieferae* is conspicuous because of the large, oblanceolate, crenate leaves of the inflorescence, these softly pubescent beneath; the large, silky, subtomentose inflorescence; the silvery, tomentose rachis; and the triangular, sharply pointed bracts, ornamented with two pairs of rather large nitid elliptic ocelli.

49. *Aphelandra parvispica* Leonard, sp. nov.

FIGURE 76

Frutex vel arbor parva, caulibus porrectis, teretibus, glabris vel sursum parce strigosis; lamina foliorum oblonga vel oblongo-lanceolata, reflexa, acuminate (apice ipso plus minusve curvato), basi angustata, membranacea, integra, supra glabra vel costa et venis lateralibus parce et minute strigosis, subtus glabra vel parce et minute strigosa; petioli aliquanto breves, glabri vel minute strigosi; paniculae terminales, spicis parvis, pedunculis parce et minute strigosis vel pedunculis ultimis dense hirsutis, pilis parvis, plus minusve patulis, rhache flocculoso-tomentosa, pilis albis; bracteae vivae rubrae, siccae rubro-brunneae, rhombico-ovatae, acutae vel subacutae, basi flocculoso-tomentosae, pilis albis, alibi subglabrae, vel infimae dorso strigosae, marginibus ciliolatis; ocelli 1 vel plures vel aliquando 0, minuti, elliptici, brunnei, nitidi; bracteolae rubro-brunneae (siccae), lanceolatae, acuminate, carinatae, striato-nervatae, ciliolatae, carina albotomentosa; calycis segmenta obtusa vel subobtusa, ciliolata, striato-nervata, segmentum posterius anguste ovatum, anteriora lanceolata, lateralia anguste lanceolata; corolla rubra, papillosa, tubo leviter curvato et subventricosus, labio superiore erecto, anguste ovato, apice bilobato, lobis triangularibus, acuminatis, apice curvatis, labio inferiore trilobato, lobo medio patulo, lanceolato, apice acuminato, recurvato, lobis lateralibus obtusis, cum labio superiore basi connatis; stamina vix exserta; ovarium glabrum.

Shrub or small tree; branches sprawling, terete, glabrous or the tips sparingly strigose, the hairs closely appressed, sordid, less than 0.5 mm. long, the older portions of the stems gray, the lenticels scattered, corky, about 1 mm. long, inconspicuous; leaves reflexed, the blades oblong to lance-oblong, 7 to 19 cm. long, 1.8 to 5 cm. wide, acuminate, the tip more or less curved, cuneate at base, membranaceous to subcoriaceous, entire, the upper surface drying brown or olive-green, essentially glabrous, a few small subappressed hairs sometimes found on the basal part of the costa, this and the lateral veins (10 to 14 pairs) flat or slightly raised, inconspicuous, the lower surface drying a somewhat lighter shade than the upper, glabrous or very sparingly strigose, the hairs confined chiefly to costa and lateral veins, these rather prominent; petioles rather slender, up to 1 cm. long, glabrous or sparingly and minutely strigose; flowers borne in terminal panicles of small spikes 2 to 6 cm. long and 5 to 8 mm. broad, the panicles up to 10 cm. long and 8 cm. broad, the peduncles up to 4 cm. long, slender, sparingly and minutely strigose, or the ultimate peduncles densely hirsute, the hairs more or less spreading, all sordid, the rachis white-cottony-tomentose; bracts red, drying reddish brown, rhombic-ovate, 5 to 6 mm. long, 4 to 5 mm. wide, acute to acutish, white-cottony-tomentose at base, otherwise essentially glabrous except the lowermost, these strigose dorsally, the hairs about 0.5 mm. long, the margins ciliolate toward base, the costa and nerves prominent below middle; ocelli one to several or sometimes lacking, minute, elliptic, up to 0.5 mm. long, brown, nitid; bractlets red, drying reddish brown, obliquely lanceolate, 4.5 to 6 mm. long, 1 to 2 mm. wide, acuminate, carinate, ciliolate, dorsally white-tomentose, striate-nerved; calyx 5.5 to 8 mm. long, the posterior segment narrowly ovate, 2.5 to 3.5 mm. wide, the anterior pair lanceolate, 1.5 to about 2 mm. wide, the lateral pair narrowly lanceolate, 1 to 1.5 mm. wide, all obtuse to obtusish (the lateral pair apiculate), glabrous, ciliolate toward apex, striate-nerved; corollas 4 cm. long from base to tip of upper lip, red, papillose, some of the papillae tipped by minute hairs, the tube slightly curved and subventricose, 3.5 mm. broad at base, narrowed to 1.5 mm. at 5 mm. above base, thence enlarged to about 6 mm. at mouth, the upper lip erect, narrowly ovate, 12 mm. long, 2-lobed at apex, the lobes narrowly triangular, 3.5 mm. long, about 2 mm. wide, acuminate, the tip curved, the middle lobe of the lower lip lanceolate, spreading, acuminate, the slender tip recurved, the lateral lobes adnate to the basal part of the upper lip, their free portions triangular, barely 0.5 mm. long; stamens reaching the tip of the upper lip, the anthers 4 mm. long, 0.5 mm. wide, minutely apiculate at base; ovary glabrous; capsules not seen.

Type in the U. S. National Herbarium, No. 1850296, collected in the basin of the Río Margua, between Campohermoso and Río Negro,

vicinity of Sarare, Department of Norte de Santander, 1,200 to 1,500 meters altitude, November 8, 1941, by J. Cuatrecasas (No. 12883). Cuatrecasas, Schultes, & E. Smith's No. 12516 (Col, US, fragment No. 63419), collected in woods between El Alto del Loro and Alto de Santa Inés, vicinity of Sarare, 1,800 to 2,200 meters altitude, October 18 to 21, 1941, is also of this species.

*Aphelandra parvispica* is another species of the *A. pulcherrima* complex. Its outstanding characters are its rather small, almost glabrous, reflexed leaf blades, its panicles of relatively small spikes, and its minute, inconspicuous ocelli. Its nearest relative is, perhaps, *A. macrophylla*.

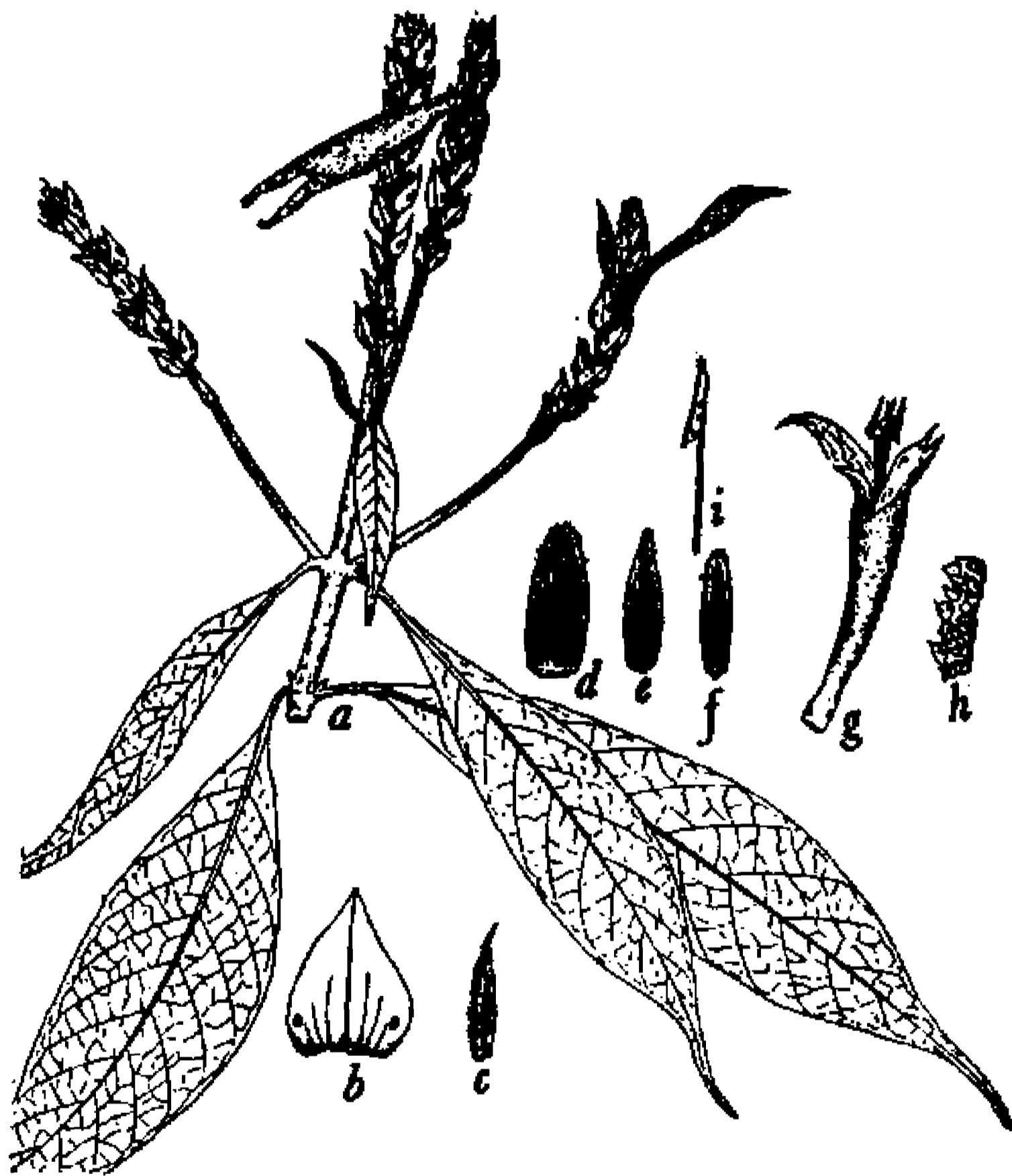


FIGURE 76.—*Aphelandra parvispica* Leonard (Cuatrecasas 12883): *a*, Tip of branch; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, one of the lateral segments; *g*, corolla; *h*, pubescence of corolla; *i*, stamen. (*a*, *g*, Half natural size; *b*-*f*, twice natural size; *h*, about 30 times natural size; *i*, natural size.)

50. *Aphelandra mildbraediana* Leonard, sp. nov.

FIGURE 77

Frutex vel arbor parva, caulibus sursum quadrangularibus, dense strigosis (pilis parvis, albidis), deorsum teretibus, glabris; lamina foliorum oblongo-elliptica vel lanceolata vel oblongo-lanceolata, acuta vel acuminata (apice ipso obtuso et saepe curvato), basi angustata, in petiolum decurrens, subcoriacea, integra vel leviter crenata, supra viridis, nitida, subglabra, subtus pallido-olivacea (sicca), minute et aliquanto strigosa; petioli breves; spicae solitariae vel subinde 3, breves, sessiles, rhache albo-flocculosa; bractae arcte imbricatae, rhombico-ovatae, acutae vel obtusae, basi albo-flocculosae, sursum glabrae

vel tenuiter pubescentes, ciliatae; ocelli 1-3, elliptici, nitidi, fuscolucenti; bracteolae oblique lanceolatae, subfalcatae, striato-nervatae, carinatae, carina dorso dense albo-pubescente, marginibus glabris; calycis segmenta oblongo-ovata, acuta, striato-nervata, tenuiter pubescentia vel glabrata; corolla rubra, minute papillosa, labio superiore erecto, anguste ovato, apice bilobato, lobis triangulo-ovatis, acuminatis, apicis patulis, lobo inferiore trilobato, lobo medio elliptico, acuminato (apice ipso apiculato et subcucullato), lobis lateralibus brevibus, triangulo-ovatis, cum labio superiore basi connatis; stamina vix exserta, antheris dorso tomentosis; ovarium glabrum.

Shrubs or small trees up to 3 meters high; stems erect or ascending, the tips quadrangular, densely strigose, the hairs whitish, straight, about 0.25 mm. long, the older portions of the stems terete, glabrous, gray, the lenticels minute, orbicular, corky; leaf blades oblong-elliptic to lanceolate or oblong-lanceolate, 8 to 13 cm. long, 2 to 4 cm. wide, acute to acuminate, the tip blunt and often curved, gradually narrowed at base, subcoriaceous, entire or shallowly crenate, the upper surface green, nitid, glabrous or sparingly and minutely strigose, the hairs barely 0.5 mm. long, the costa and lateral veins flat or slightly raised, the lower surface drying light olive green, minutely and rather sparingly strigose, the costa and veins more conspicuous than above; petioles up to 2 cm. long, strigose; flowers borne in terminal, solitary (occasionally 3), sessile spikes up to 5 cm. long and 15 mm. broad, the rachis white-cottony; bracts closely imbricate, rhombic-ovate, up to 9 mm. long and 6 mm. wide at 2.5 mm. above base, acute to obtuse, white-cottony-pubescent at base, otherwise glabrous or sparingly pubescent, ciliate, the costa rather prominent, the 4 or 5 pairs of lateral nerves parallel and becoming obscure beyond middle of bract; ocelli 1 to 3, elliptic, about 0.5 mm. long, brown, nitid, varnished; bractlets obliquely lanceolate, subfalcate, 8 mm. long, carinate, 1 to 1.5 mm. wide, the keel densely white-pubescent, the margins glabrous, subhyaline, delicately striate-nerved; calyx 7 mm. long, the posterior segment 3.5 mm. wide, the anterior pair 3 mm. wide, the lateral pair 2.5 mm. wide, all oblong-ovate, finely pubescent or glabrate, striate-nerved, acute, ciliate toward tip; corolla 6 to 7 cm. long, red, minutely papillose, the tube about 4 mm. broad at base, contracted to 3 mm. at tip of ovary, thence gradually enlarged to a cylindrical subventricose throat 7 or 8 mm. broad, the upper lip erect, narrowly ovate, 15 mm. long and 8 mm. wide, bilobed at apex, the lobes triangular-ovate, 7 mm. long, 4 mm. wide at base, acuminate, the tips outwardly curved, the middle lobe of the lower lip elliptic, spreading, 9.5 mm. wide, narrowed at base, subcucullate and apiculate at tip, the lateral lobes about 5 mm. long, the posterior edge adnate to lower part of upper lip, the free portions triangular-ovate, 1.5 mm. long, slightly over 1 mm. wide, obtuse; stamens exserted about 4 mm. beyond the mouth of the corolla tube,

the anthers 7 mm. long, 1.5 mm. wide, apiculate at each end, dorsally tomentose; ovary glabrous; mature capsules not seen.

Type in the U. S. National Herbarium, No. 703913, collected in forest ravine above Las Nubes, at Alto de Cielo, Department of Magdalena, Colombia, about "5,000 ft. altitude," December 18, 1898, by H. H. Smith (No. 1414). Isotypes (GH, Mo, Ph, NY, S).

MAGDALENA: San Lorenzo mountains, vicinity of Santa Marta, *Viereck s. n.* (US). Above Minca, Las Cumbres, in the foothills of the Sierra Nevada de Santa Marta, 2,000 meters altitude, *Hawkes 587* (US).

NORTE DE SANTANDEB: Ocaña, *Schlim 537* (K); *Kalbreyer 611* (K).

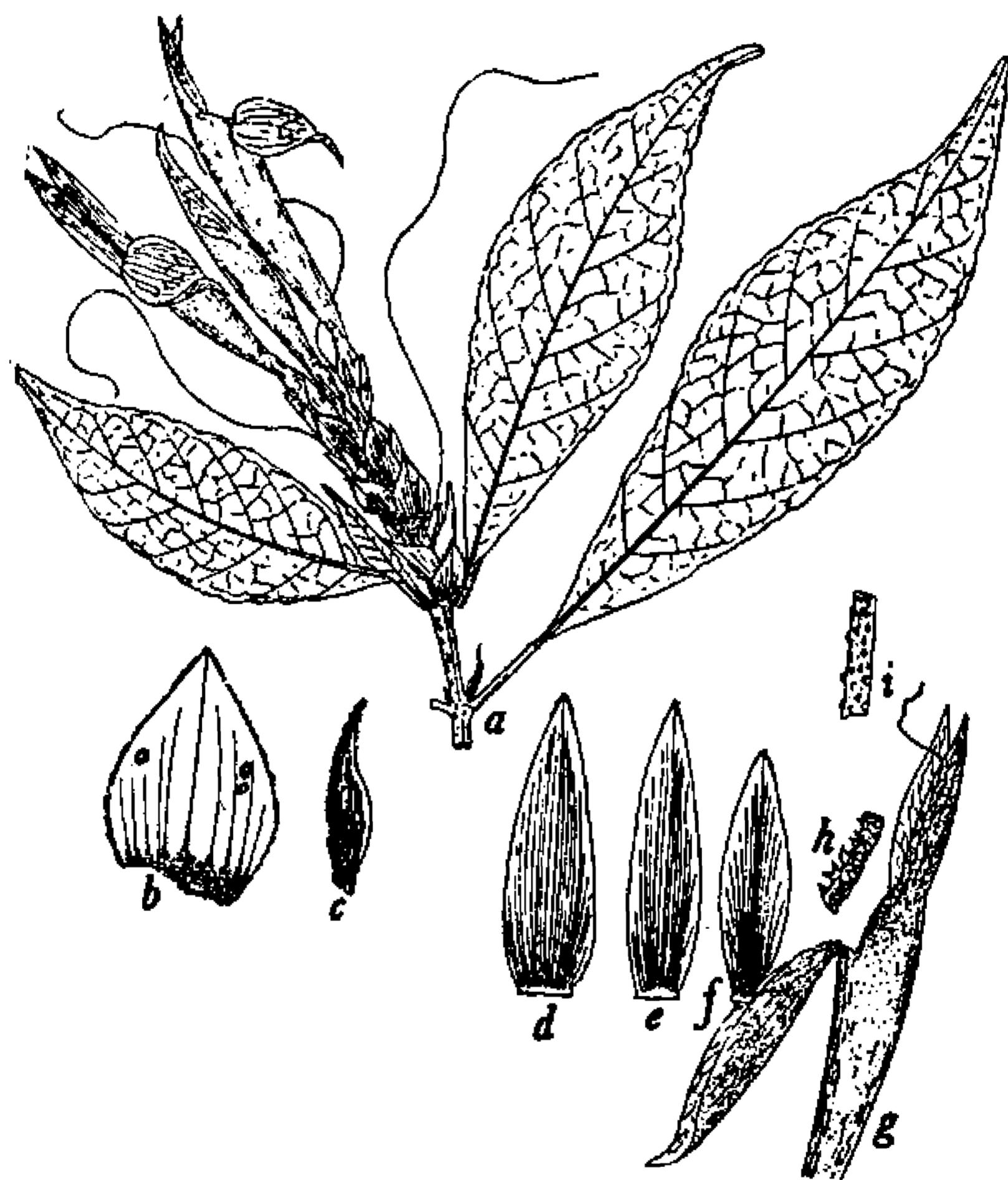


FIGURE 77.—*Aphelandra mildbraediana* Leonard (*H. H. Smith 1414*): *a*, Tip of stem; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, one of the lateral segments; *g*, tip of corolla; *h*, pubescence of corolla (from region near base of upper lip); *i*, pubescence of corolla (from about the middle of the tube). (*a*, Half natural size; *b-f*, twice natural size; *g*, natural size; *h, i*, about 25 times natural size.)

The rather small subglabrous leaf blades, short, relatively broad silky spikes and broad, finely pubescent calyx segments are characters by which one can recognize *Aphelandra mildbraediana* when compared with *A. pulcherrima* or its segregates. The species is named in honor of Johannes Mildbraed, a specialist in the family Acanthaceae.

Schultze No. 695, collected on wooded mountain slope at Casa Blanca, Colombia, 1,200 meters altitude, July 25, 1926, seems to be this species; a photograph of the Berlin specimen is in the U. S.

National Herbarium (Field Mus. photograph No. 8716). Schultze describes the plant from which he collected the specimen as a rare shrub 3 meters high producing gorgeous scarlet red flowers.

51. *Aphelandra barkleyi* Leonard, sp. nov.

FIGURE 78

Suffrutex, caulibus glabris; lamina foliorum oblongo-elliptica, breviter acuminata (apice ipso obtuso), basi angustata, in petiolum decurrens, membranacea, undulata vel subcrenata, glabra vel subtus minute et parce strigosa, costa et venis lateralibus gracilibus sed prominentibus; petioli aliquanto breves, glabri vel minute et parce strigosi; spicae 1 vel plures, spica terminalis subsessilis, spicae laterales pedunculatae, pedunculis glabris, rhache albo-tomentosa; bracteae rhombico-ovatae, subacutae, brunnescentes (siccae), glabrae vel in area mediana minute pubescentes, marginibus dense ciliolatis; ocelli (6-7) suborbiculares, brunnei, nitidi, contigui; bracteolae lanceolatae, obliquae, carinatae, striato-nervatae, intus glabrae, extus pubescentes, marginibus subhyalinis; calycis segmenta acuta, coriacea, striato-nervata, apice pilosa, deorsum puberula, segmentum posterius anguste ovatum, anteriora oblongo-lanceolata, lateralia lineari-lanceolata; corolla coccinea, minute papillosa, tubo cylindrico, labio superiore erecto, oblongo-ovato, bilobato, lobis triangularibus, acuminatis, labio inferiore trilobato, lobo medio plus minusve patulo, apice acuminato et curvato, lobis lateralibus oblongis, subobtusis, cum labio superiore basi connatis; stamina vix exserta, antheris basi et apice obtusis et apiculatis, filamentis basi puberulis, sursum glabris; ovarium glabrum.

Suffrutescent shrub up to 1 meter high; stems glabrous; leaf blades oblong-elliptic, up to 35 cm. long and 12.5 cm. wide, short-acuminate (the tip itself blunt), more or less abruptly narrowed at base and decurrent on the petiole, membranaceous, entire, undulate or subcrenate, glabrous or the lower surface very sparingly and minutely strigose, the costa and lateral veins (15 or 16 pairs) slender but prominent; petioles (unwinged portion) up to 5 cm. long, glabrous or sparingly and minutely strigose; spikes 1 to several, up to 15 cm. or occasionally as much as 30 cm. long, 1 cm. broad, the terminal spike subsessile, the others short-peduncled, the peduncles up to 1 cm. long, glabrous, the rachis white-tomentose; bracts rhombic-ovate, light brown, 7.5 mm. long, 6 mm. wide at 3.5 mm. above base, subacute, drying light brown, glabrous or the medial region minutely and inconspicuously pubescent, the margins densely ciliolate, the costa and lateral nerves (several pairs) prominent; ocelli usually 6 or 7, suborbicular, 0.5 to 0.75 mm. in diameter, light brown, nitid, contiguous; bractlets lanceolate, oblique, carinate, 8 mm. long, 2 mm. wide near base, finely striate-nerved, subhyaline on margin, glabrous within, pubescent without, the hairs at tip 0.25 mm. long, the others shorter; calyx segments 8

mm. long, acute, coriaceous, striate-nerved, pilose at tip, the hairs up to 0.25 mm. long, otherwise minutely puberulous, the posterior segment narrowly ovate, 4 mm. wide, the anterior pair oblong-lanceolate, 3 mm. wide, the lateral pair linear-lanceolate, 1.5 mm. wide; corolla scarlet, minutely papillose, 5 to 5.5 cm. long, the tube 4 mm. broad at

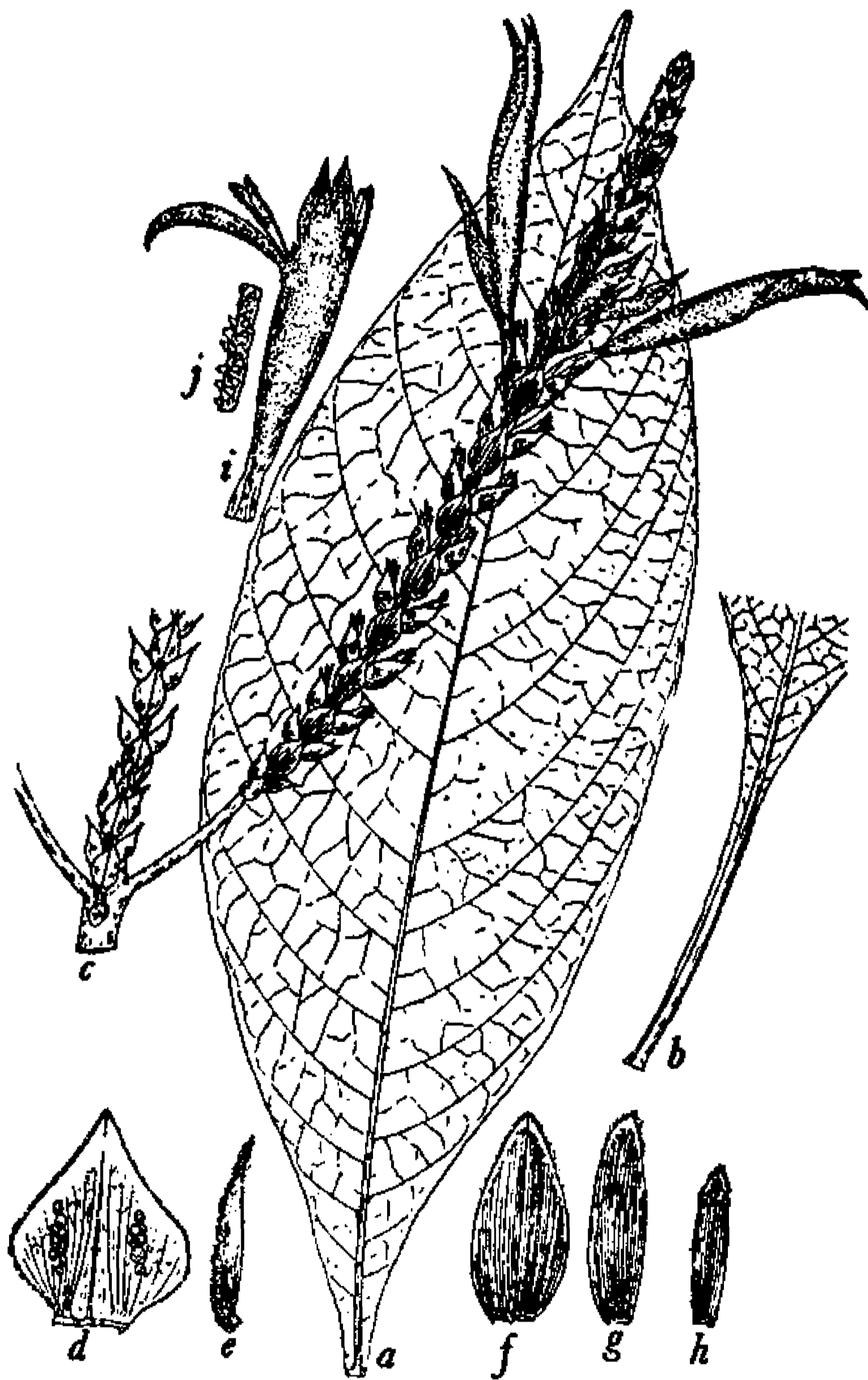


FIGURE 78.—*Aphelandra barkleyi* Leonard (*Araque-Molina & Barkley* 18M.0.33): *a*, Leaf near base of inflorescence; *b*, petiole of one of the lower stem leaves; *c*, portion of inflorescence; *d*, bract; *e*, bractlet; *f*, posterior calyx segment; *g*, one of the anterior segments; *h*, one of the lateral segments; *i*, corolla; *j*, pubescence of corolla. (*a-c*, *i*, Half natural size; *d-h*, natural size; *j*, about 20 times natural size.)

base, narrowed to 1.5 mm. at 6 mm. above base, thence enlarged to a subcylindric throat, 6.5 mm. broad at mouth, the upper lip erect, oblong-ovate, 18 mm. long, 7 mm. wide, bilobed at apex, the lobes triangular, 7 mm. long, 3.5 mm. wide at base, acuminate, the lower lip trilobed, the middle lobe more or less spreading, lanceolate, about 18 mm. long, 6 mm. wide, acuminate and recurved at tip, the lateral lobes

oblong, about 4 mm. long and 1 mm. wide, obtusish, their upper margins connate with the lower part of the upper lip; stamens reaching notch of upper lip, the anthers 6.5 mm. long, 1.5 mm. broad, obtuse and apiculate at both ends, the filaments puberulous near base, otherwise glabrous; ovary glabrous.

Type in the U. S. National Herbarium, No. 1954078, collected in rich soil of damp, rocky woods on the banks of the Río Guatiquía between the foothills and plains in the vicinity of Villavicencio, Intendencia of Meta, Colombia, 350 meters altitude, November 20, 1948, by Jorge Araque-Molina and Fred A. Barkley (No. 18M.033). An isotype is also in the U. S. National Herbarium.

CUNDINAMARCA: Quetamé to Villavicencio, *Pérez-Arbeláez* 35 (Col). Tequendamá Casas, *Triana* s. n. (NY).

META: Woods along the Río Guatiquía, 500 meters altitude, March 18 and 19, 1939, *Killip* 34489 (US). Dense, humid forest along Río Güejar, 400 meters altitude, November 7, 1949, *Philipson, Idrobo & Fernandez* 1351 (US). Villavicencio, 500 meters altitude, November 9, 1938, *Cuatrecasas* 4538 (US); *Haught* 2528 (US). Ocoa, near Villavicencio, July 21, 1945, *Schiefer* 851 (US). Apiál, Llano de San Martín, *Triana* s. n. (Col).

Characters by which *Aphelandra barkleyi* may be recognized are its membranous, nearly glabrous leaf blades, its glabrous stems, and light brown, acute, rhombic-ovate bracts. Conspicuous on this light brown background of the bracts are the darker brown nitid ocelli so closely contiguous as to appear, without a lens, as a single spot. In general appearance *A. barkleyi* is somewhat like *A. lingua-bovis*, but that species has slightly larger bracts (up to 1.5 cm. long instead of only 7.5 mm.) bearing alveolar spots instead of well-defined ocelli. The spike of Schiefer's No. 851 is blackened with the characteristic light brown of the bracts obscured. The spikes of Haught's No. 2528 are exceedingly long (30 cm.) and the red corollas are tipped with yellow.

52. *Aphelandra daemonia* Leonard, sp. nov.

FIGURE 79

Frutex parce ramosus, caulibus teretibus vel sursum subquadrangularibus, sursum dense strigosis, pilis arcte appressis, albidis, minutis, deorsum glabris; lamina foliorum ovata vel oblongo-elliptica, acuminata (apice ipso obtuso et plus minusve curvato), basi angustata, in petiolum decurrens, chartacea, crenata, supra parce strigosa vel glabra, subtus aliquanto strigosa, costa et venis aliquanto prominentibus; petioli alati, parce strigosi; spicae 1 vel plures, fasciculatae, plerumque aliquanto breves, terminales, sessiles, rhache flocculoso-pubescente, pilis albis; bracteae imbricatae, quadrifariae, rhombico-ovatae, subacutae vel obtusae, mucronatae, minute puberulae, ciliatae, costa et venis vix prominentibus; ocelli conspicui, magni, nitidi, brunnei, solitarii vel plures arcte contigui vel confluentes; bracteolae



lanceolatae, acuminatae, dorso flocculoso-tomentosae, pilis albis, marginibus hyalinis et glabris; calycis segmenta striato-nervata, coriacea, sursum puberula, marginibus hyalinis, segmentum posterius anguste ovatum, apice subacutum et subcucullatum, anteriora lanceolata, subobtusa et apiculata, lateralia anguste lanceolata, subobtusa et apiculata; corolla rubra, minute papillosa, basi excepta, tubo aliquanto angusto, vix ventricosus, labio superiore erecto, ovato, bilobato, lobis magnis, lanceolato-ovatis, acuminatis, labio inferiore trilobato, lobo medio patulo, oblongo, acuminato, apice recurvato, lobis lateralibus parvis, oblongis, subobtusis, cum labio superiore pro parte connatis; stamina vix exserta, filamentis glabris; ovarium glabrum.

Slender, sparingly branched shrubs; stems terete or subquadrangular toward tip, the upper portion densely and closely strigose, the hairs whitish, less than 0.5 mm. long, the lower portions of the stems glabrate, the lenticels orbicular to linear, the larger barely over 0.5 mm. long; leaf blades ovate to oblong-elliptic, 12 to 25 cm. long, 5 to 10 cm. wide, acuminate, the apex more or less curved (the tip itself blunt), gradually or abruptly narrowed to a winged petiole, chartaceous, the margins crenate, the upper surface drying olive brown, sparingly appressed hirsute to glabrate, the hairs about 0.5 mm. long, the costa flat or slightly impressed, the lateral veins (10 to 12 pairs) slightly raised, the veinlets inconspicuously and coarsely reticulate, the lower surface drying a slightly lighter shade than the upper and somewhat more densely hirsute, the costa and veins more conspicuous, the hairs whitish, appressed, 0.5 mm. long except at junction of costa with lateral veins, here up to 0.75 mm. long, spreading or ascending; petioles (unwinged portion) up to 1 cm. long, the winged portion becoming 1.5 cm. wide at 3 to 8 cm. above the base; smaller leaves subtending the inflorescence, sessile, the buds and young leaves densely yellowish white-pilose; flowers borne in 1 or more terminal, sessile spikes 6 to 8.5 cm. long and 8 to 10 mm. broad, the rachis cottony-white-pubescent; bracts closely imbricate, dark brown, rhombic-ovate, 5 mm. long and wide, acutish to obtuse, minutely mucronate, often bearing near middle several low blunt teeth 0.25 mm. long, coriaceous, minutely puberulous without, ciliolate, the costa and lateral nerves barely conspicuous, the ocelli elliptic, 1 mm. long and 0.75 mm. wide, dark brown or almost black, nitid, varnished, solitary or occasionally 2 or 3, then confluent or closely contiguous; bractlets lanceolate, 6 mm. long, 1.5 mm. wide, acuminate, carinate, dorsally white-cottony-tomentose, the margins hyaline and glabrous; calyx 7 mm. long, the posterior segment narrowly ovate, 4 mm. wide, acutish or subcucullate at tip, the anterior pair lanceolate, 2.5 mm. wide, the lateral pair slightly narrower, both anterior and lateral pairs obtusish

and apiculate, all striate-nerved, coriaceous, minutely puberulous toward tip, the margins hyaline, the nerves indurate at base; corollas 5.5 cm. long, red, minutely papillose except at the glabrous base, the tube 3 mm. broad at base, narrowed to 1.5 mm. at 9 mm. above base, thence enlarged to a tubular, slightly ventricose throat 5.5 mm. broad at mouth, the upper lip erect, 23 mm. long, 9 mm. wide, 2-lobed at tip,

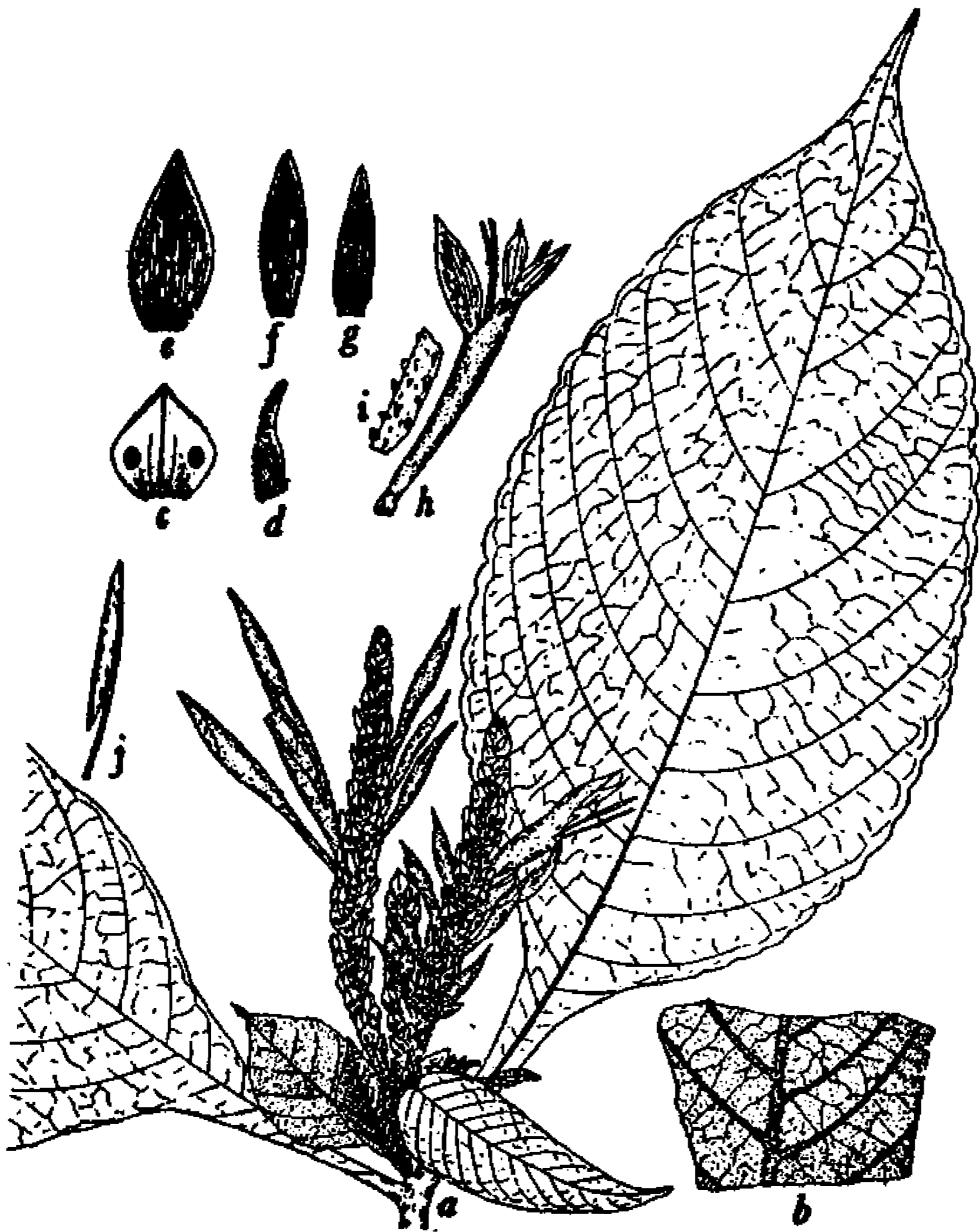


FIGURE 79.—*Aphelandra daemonia* Leonard (*H. H. Smith* 1415): *a*, Tip of stem; *b*, portion of leaf blade (undersurface); *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, corolla; *i*, pubescence of the corolla tube; *j*, anther. (*a*, *h*, Half natural size; *b*, natural size; *c*-*g*, *j*, twice natural size; *i*, about 40 times natural size.)

the lobes lance-ovate, 1 cm. long, 4 mm. wide at base, acuminate, the lower lip spreading, 24 mm. long, 7 mm. wide, acuminate, ending in a slender recurved tip, the lateral lobes adnate to the upper lip, the free portion oblong, 4.5 mm. long, 1.5 mm. wide, obtusish; stamens exerted 14 mm. beyond mouth of corolla tube, the filaments glabrous, the anthers 7 mm. long and 1 mm. broad, acute at both ends but scarcely apiculate; ovary glabrous; capsules not seen.

Type in the U. S. National Herbarium, No. 703914, collected in dry forests near Bonda, vicinity of Santa Marta, Department of Magdalena, Colombia, "below 3,000 feet" altitude, October 31, 1898, by H. H. Smith (No. 1415). Isotypes (Ch, GH, NY, Ph, S).

MAGDALENA: Guamacito, Santa Marta region, *Record* 36 (NY). Slopes of the Sierra Nevada de Santa Marta, 600 meters altitude, *Cardona, Gutiérrez & Barkley* 18C.077 (US). Tucurínca, *Romero* 583 (Ch.). Flood-plain forest, Cerrejón, 100 meters altitude, *Haught* 6730 (US).

*Aphelandra daemonia* is another species of the *A. pulcherrima* complex. Its distinguishing characters lie in the crenate, ovate to oblong-elliptic leaf blades, narrowed, and sometimes abruptly so, into slenderly winged petioles, and in the rather small, broad, obtuse bracts, ornamented with large, often solitary, nitid ocelli. These bracts have, in fact, a fanciful resemblance to a series of elfin faces peeping above the brilliant white tomentum of the rachis, thus the species name *daemonia* (*δαίμωνιον*, elf.). Dr. Samuel J. Record states that the wood is very hard.

53. *Aphelandra grandis* Leonard, sp. nov.

FIGURE 80

Frutex, caulibus glabris; lamina foliorum magna, oblonga vel oblongo-ovata, apice breviter acuminata, apice ipso obtuso, basi angustata, in petiolum decurrens, integra vel undulata vel leviter crenata, glabra, costa et venis lateralibus pilos minutos appressos ferentibus; petioli graciles, glabri; spicae solitariae vel plures fasciculatae, magnae, terminales, subsessiles, rhache albopubescente; bracteae aliquanto imbricatae, magnae, rubrae, ovatae, apice rotundatae, striato-nervatae, sericeo-pubescentes, deorsum dense sericeo-pubescentes, pilis appressis, albis; ocelli multi, minuti; bracteolae lanceolatae, dense sericeo-pubescentes, pilis appressis; calycis segmenta triangularia, subaequalia, dense sericeo-pubescentia, pilis appressis; corolla flava, minute pubescens, labio superiore oblongo, bilobato, lobis triangularibus, acuminatis, labio inferiore trilobato, lobo medio lanceolato, acuto, lobis lateralibus parvis, obtusis, cum labio superiore pro parte connatis; capsulae oblongae, apice obtusae, sursum glabrae et nitidae, deorsum opacae, minute et dense punctatae.

Shrubs up to 3 meters high; stems glabrous; leaf blades oblong or oblong-ovate, up to 35 cm. long and 18 cm. wide, short-acuminate at apex (the tip itself blunt), narrowed at base and decurrent on the petiole, glabrous or the costa and lateral veins (usually about 15 to 20 pairs) bearing a few small appressed hairs, the margin entire, undulate or shallowly crenate; petioles slender, up to 10 cm. long, glabrous; spikes stout, one or several, in fascicles, terminal, sessile, up to 30 cm. long and about 2 cm. broad; bracts ovate, up to 25 mm. long and 12 mm. wide, rounded, pubescent to glabrate, often silky toward base, the hairs up to 0.75 mm. long, appressed, the ocelli numerous

(about 20), elliptic, minute (about  $400\ \mu$  long and  $250\ \mu$  wide); bractlets lanceolate, 11 mm. long, 3 mm. wide near base, obliquely carinate, densely pubescent, the hairs silky, appressed; calyx segments triangular, subequal, 12 or 13 mm. long, the posterior segment 7 mm. wide near base, the anterior pair 4 mm. wide, the middle pair 3 mm. wide, all acute, striate-nerved, densely pubescent with silky ap-

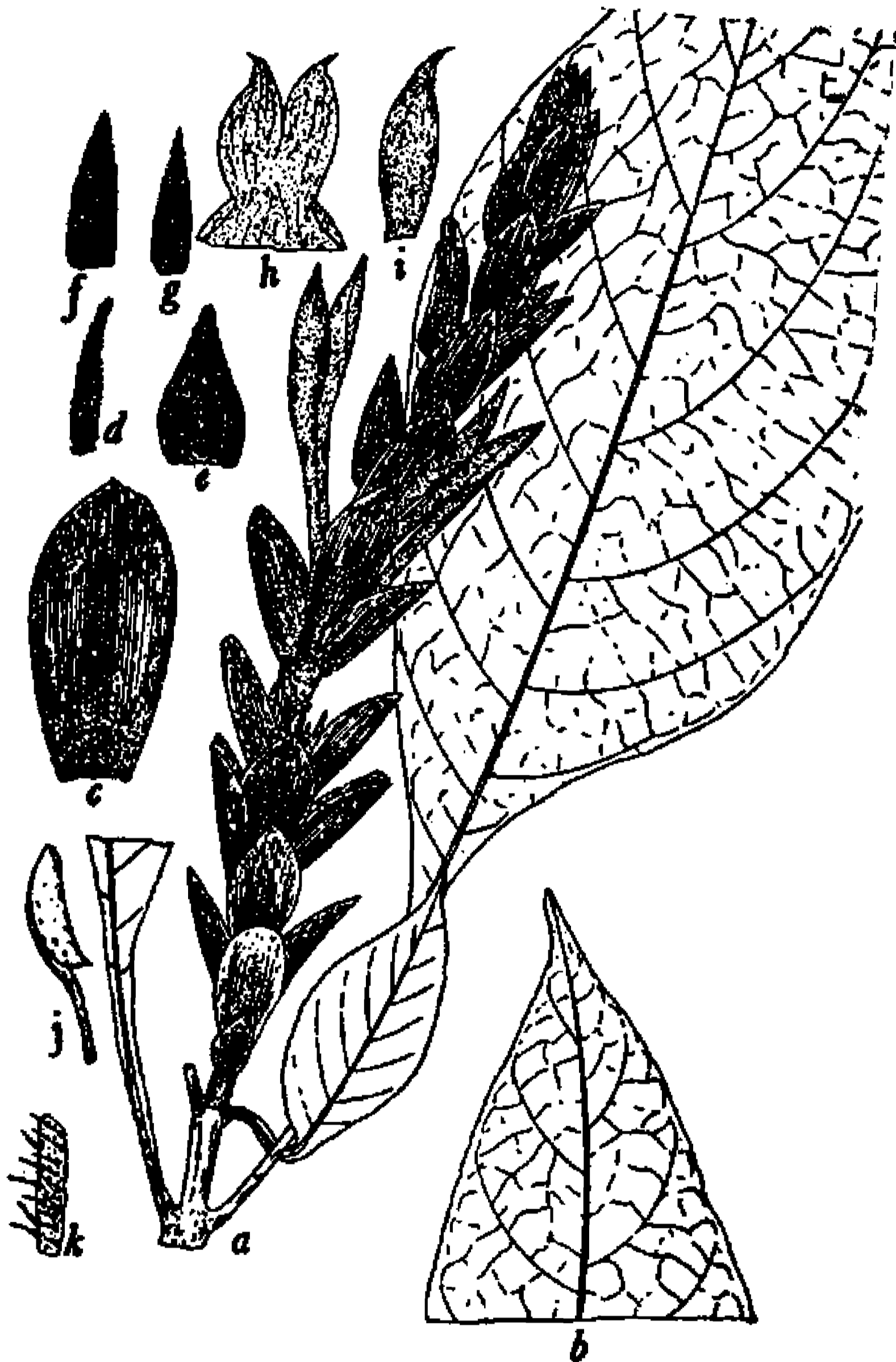


FIGURE 80.—*Aphelandra grandis* Leonard (*Guevara-Amórtégui* 260): *a*, Tip of stem; *b*, tip of leaf blade showing undersurface; *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, upper lip of corolla; *i*, middle lobe of lower lip; *j*, anther; *k*, pubescence of corolla. (*a*, *b*, Half natural size; *c*-*i*, natural size; *j*, about 3 times natural size; *k*, about 20 times natural size.)

pressed hairs except the subglabrous and subhyaline margins; corolla yellow, finely pubescent, 5.5 to 6 cm. long, 6 mm. broad at throat, the upper lip oblong, about 15 mm. long and 9 mm. wide, 2-lobed, the lobes triangular, about 6 mm. long and 5 mm. wide, acuminate, the lower lip 3-lobed, the middle lobe lanceolate, about as long as the upper lip, acute, the lateral lobes small, about 2.5 mm. long and 1 mm. wide, obtuse, their upper margins partly connate with the upper

lip; capsules oblong, 13 mm. long, 7 mm. broad, blunt at tip, nitid and glabrous toward tip, dull and minutely and densely punctate towards base; mature seed not seen.

Type in the U. S. National Herbarium, No. 1543966, collected at Albán, Department of Cundinamarca, Colombia, 1,699 meters altitude, in 1932, by B. Guevara-Amórtegui (No. 260). Ariste-Joseph's No. 1081 (GH, Ph, US), collected at Paima, Cundinamarca, and Haught's No. 1936 (US), collected in rich alluvial valley soil near Caimona Creek, Santander, 200 meters altitude, July 20, 1936, are also of this species.

The exceedingly large bracts and yellow corollas serve to distinguish *Aphelandra grandis* from among the numerous relatives of *A. pulcherrima*. *Grandis* (large) alludes to the size attained by the plant, its relatively large leaf blades, spikes, and flower bracts.

54. *Aphelandra aristei* Leonard, sp. nov.

FIGURE 81

Suffrutex, caulibus sursum dense hirsutis, pilis subappressis vel ascenduntibus; lamina foliorum oblongo-elliptica, subobtusa, basi angustata, in petiolum decurrens, integra vel undulata, supra aliquanto parce pilosa, subtus dense et molliter pilosa, pilis subappressis, brunnescentibus; petioli breves, dense et molliter pubescentes; spicae solitariae, terminales, rhache pilosula, pedunculo dense hirsuto, pilis subappressis vel patulis; bracteae ascendentes, non arcte appressae, rubro-brunnescentes (siccae), oblongo-lanceolatae, striato-nervatae, acuminatae, ciliatae, tenuiter et molliter pubescentes, pilis subappressis; ocelli minuti, elliptici, brunnescentes, glabri; bracteolae subulatae, dorso tenuiter et molliter pubescentes, striato-nervatae; calycis segmenta subaequalia, acuminata, striato-nervata, tenuiter pubescentia, segmentum posterius anguste ovatum, anteriora lanceolata, lateralia lanceolata; corolla flava (?), minute pubescens, labio superiore erecto, ovato, bilobato, lobis triangularibus, acuminatis, apicis curvatis, labio inferiore plus minusve patulo, trilobato, lobo medio oblongo, acuto, lobis lateralibus anguste ovatis, obtusis, liberis; stamina vix exserta; ovarium glabrum.

Shrubby; tips of stems densely hirsute, the hairs subappressed or ascending, about 0.5 mm. long; leaf blades oblong-elliptic, up to 14 cm. long and 6 cm. wide (the lowermost probably larger), obtusish, narrowed at base and decurrent on the petiole, entire or undulate, the upper surface rather sparingly pilose, the hairs about 0.75 mm. long, the lower surface densely and softly pilose, the hairs subappressed, brownish, about 1 mm. long; petioles up to 1 cm. long, densely and softly pubescent; spikes solitary, terminal, up to 15 cm. long and about 2 cm. broad, the rachis pilosulous, the peduncles up to 3 cm. long, the pubescence that of the stems; bracts ascending, not closely appressed, light brownish red (dry), oblong-lanceolate, up to 24 mm.

long, 4.5 mm. wide near base, 7 mm. wide at middle, prominently striate-nerved, acuminate, ciliate, finely pubescent, velvety, the hairs subappressed, the inner surface glabrous or nearly so; ocelli numerous, minute, up to 40 or more, elliptic, about 0.25 mm. long, light brown, glabrous but scarcely nitid; bractlets subulate, 1 cm. long, 1.5 mm. wide at base, finely and softly pubescent without, finely striate-nerved; calyx segments subequal, about 1 cm. long, the posterior seg-

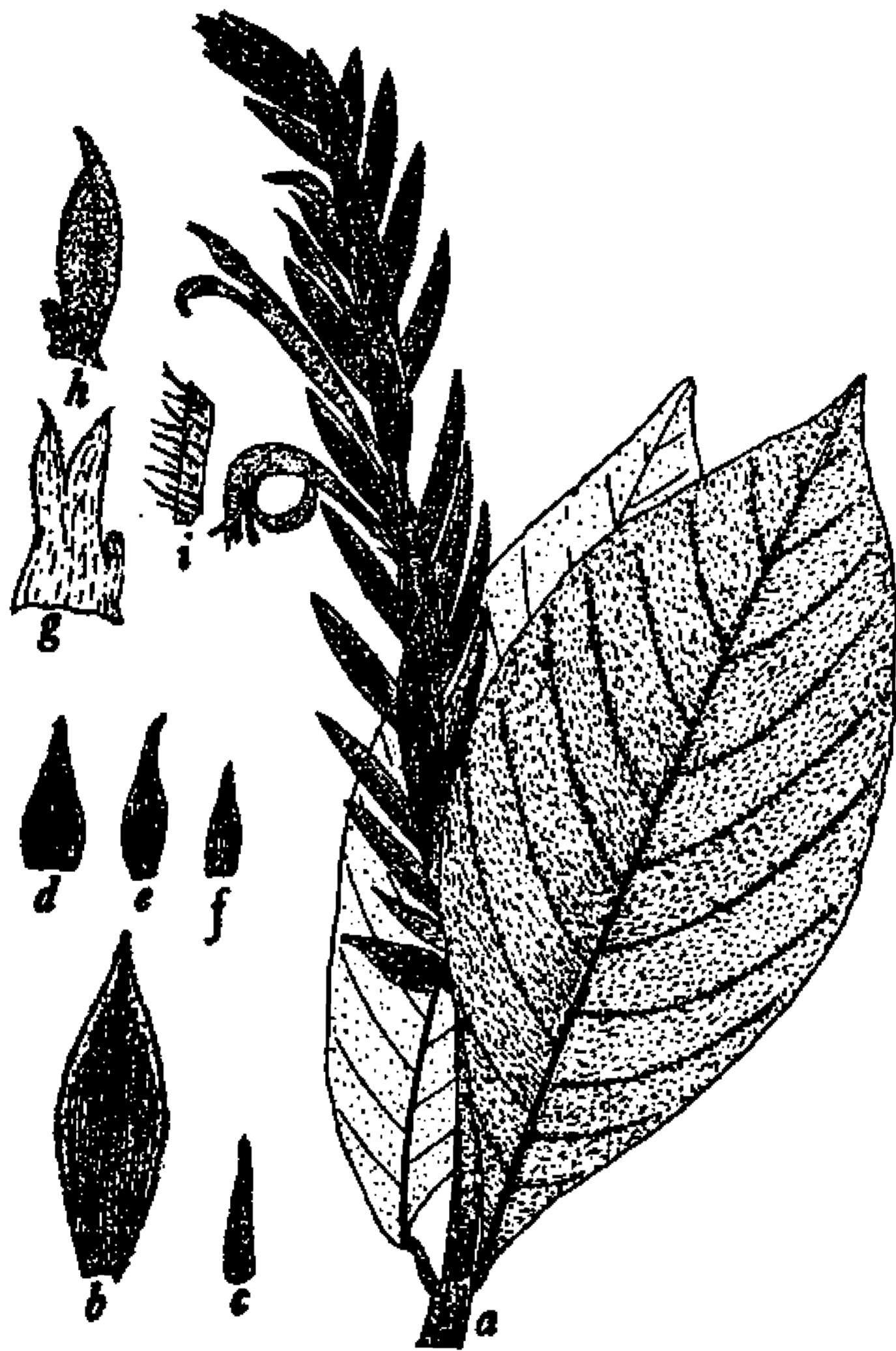


FIGURE 81.—*Aphelandra aristei* Leonard (*Ariste-Joseph*, s. n.): *a*, Tip of plant; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, one of the lateral segments; *g*, upper lip of corolla (inner surface showing one of the partly adnate lateral lobes of the lower lip; *h*, lower lip of the corolla (outer surface); *i*, pubescence of corolla tube. (*a*, Half natural size; *b-h*, natural size; *i*, about 18 times natural size.)

ment narrowly ovate, 4 mm. wide slightly above base, the anterior segments lanceolate, 2.5 mm. wide, the lateral pair narrowly lanceolate, 2 mm. wide, all gradually narrowed from just above base to a slender tip, finely pubescent and striate-nerved; corolla yellow (?), finely pubescent, 3.5 to 4 cm. long, the upper lip erect, ovate, 2-lobed, the lobes triangular, acuminate, outwardly curved at tip, the lower lip more or less spreading, 3-lobed, the middle lobe oblong, 15 mm. long, 4.5 mm. wide, acute, the lateral lobes narrowly ovate, about 5

mm. long, 1.5 mm. wide, obtuse; stamens slightly exserted; ovary glabrous; capsules not seen.

Type in the U. S. National Herbarium, No. 1185109, collected at Pacho, Department of Cundinamarca, Colombia, August 1923, by Brother Ariste-Joseph (s. n.).

*Aphelandra aristei* resembles rather closely *A. flava* Nees, from the description of that species. There are, however, no glandular hairs ("bracteis . . . pubescentibus viscidulisque") present on the bracts, as in *A. flava*; moreover, Nees makes no mention of ocelli.

55. *Aphelandra trianae* Leonard, sp. nov.

FIGURE 82

Suffrutex vel frutex, caulibus deorsum teretibus, glabratis, sursum subquadrangularibus, hirsutis, pilis rigidis, curvatis, ascendentibus; lamina foliorum oblongo-ovata, acuminata, basi angustata, in petiolum decurrens, submembranacea, supra glabra vel parce strigosa, pilis minutis, subtus parce hirtella, costa et venis lateralibus aliquanto prominentibus; petioli breves, strigosi vel hirsuti; spicae solitariae, subsessiles, bracteis ascendentibus, vix imbricatis, rhache dense pilosa, pilis rectis, albescentibus, minutis, ascendentibus; bracteae aliquanto magnae, oblongae, acutae et aristatae, ciliatae, utrinque molliter griseo-pubescentes, pilis ascendentibus, costa et venis lateralibus aliquanto prominentibus, sed propter pubescentiam obscuris; ocelli plures (8-12), elliptici, arcte contigui, brunnei, obscuri; bracteolae anguste lanceolatae, attenuatae, apice tenues, carinatae, areis marginalibus tenuibus, striatis, subglabris, carina pilosa, pilis rectis, ascendentibus, argenteis; calycis segmenta coriacea, striato-nervata (nervis basi induratis), glabra, apice ciliata, segmentum posterius oblongo-lanceolatum, glabrum, attenuatum, acutum, anteriora lanceolata, glabra, acuta, apice ciliata; corolla (immatura) pubescens, pilis patulis, tubo subcylindrico, labio superiore ovato, bilobato, lobis triangularibus, acutis, labio inferiore trilobato, lobo medio lanceolato, acuminato, apice curvato, lobis lateralibus parvis, rotundatis, cum labio superiore basi connatis; stamina vix exserta, antheris apice obtusis, cohaerentibus, basi oblique obtusis, minute apiculatis, filamentis basi pilosis, sursum glabris.

Suffrutescent herbs or shrubs; stems subquadrangular, hirsute, the hairs stiff, curved, ascending, 0.5 to 0.75 mm. long, brownish, the lower parts terete and glabrate; leaf blades oblong-ovate, up to 15 cm. long and 6 cm. wide, acuminate, narrowed at base and decurrent on the petiole, submembranaceous, entire or undulate, the upper surface glabrous or sparingly strigose, the hairs about 0.5 mm. long, the lower surface sparingly hirtellous or the costa and veins (9 or 10 pairs) more densely so, the hairs ascending, up to 0.75 mm. long, the costa and veins moderately prominent; petioles up to 1 cm. long, rather densely strigose or hirsute; spikes solitary, subsessile, about 8 cm. long and 3

cm. broad, the bracts ascending, scarcely imbricate, the rachis densely pilose, the hairs straight, whitish, ascending, slightly over 0.5 mm. long; bracts oblong, 25 mm. long, about 5 mm. wide, acute and aristate, both surfaces softly gray-pubescent, the hairs ascending, about 0.5 mm. long, the margins ciliate, the hairs up to 1 mm. long, the costa and lateral veins rather prominent but obscured by the pubescence; ocelli numerous (8 to 12), obscure, about 0.75 mm. long, 0.5 mm. wide, elliptic, brown, contiguous; bractlets narrowly lanceolate, up to 14 mm. long, attenuate, carinate, the marginal region thin, striate, subglabrous, the keel densely pilose, the hairs straight, ascend-

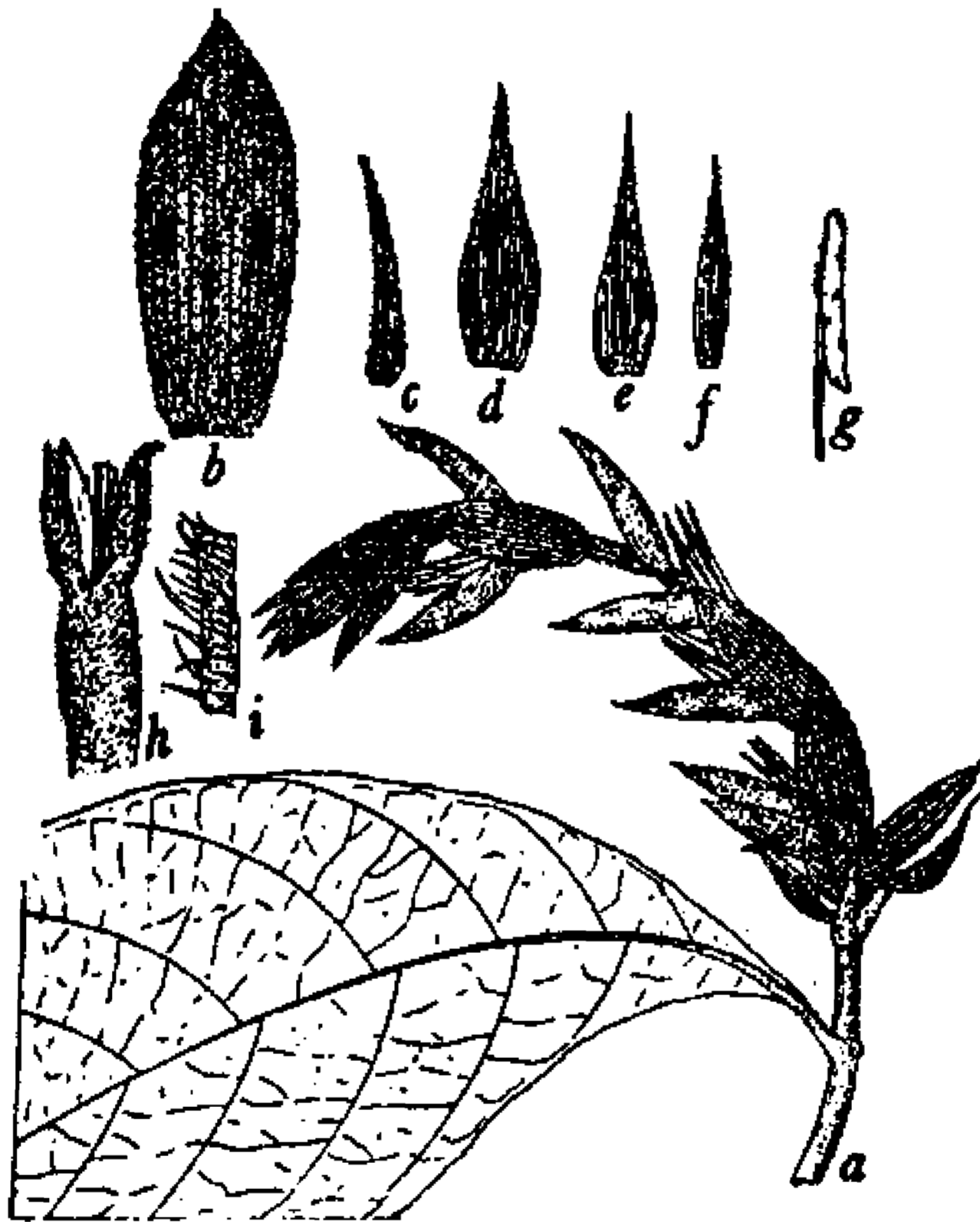


FIGURE 82.—*Aphelandra trianae* Leonard (*Triana* s. n., Quindío): *a*, Tip of plant; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, one of the lateral segments; *g*, anther; *h*, tip of corolla; *i*, pubescence of corolla tube. (*a*, Half natural size; *b-f, h*, natural size; *g*, twice natural size; *i*, about 16 times natural size.)

ing, up to 1 mm. long, silvery; calyx 18 mm. long, the segments coriaceous, striate-nerved (the nerves indurate at base), glabrous, ciliate at tip, the posterior segment oblong-lanceolate, attenuate and sharply acute, 5 mm. wide near base, anterior segments lanceolate, glabrous, attenuate and slenderly acute, the upper half ciliate, lateral segments linear-lanceolate, 2 mm. wide near base, attenuate-acuminate, glabrous, ciliate at tip; corolla about 5 cm. long, rather densely pubescent, the hairs spreading, 0.5 mm. long, the tube 2.5 mm. broad near tip of ovary, 7 mm. broad at mouth, slightly curved, the upper lip (immature corolla) ovate, about 10 mm. long and 6 mm. wide, bidentate, the lobes triangular, 5 mm. long, 3 mm. wide at base, acute, the middle lobe of the lower lip lanceolate, 8 mm. long, 4 mm. wide, slenderly acuminate,



the tip recurved, the lateral lobes small, rounded, adnate to upper lip of corolla; stamens exserted, anthers 7 mm. long, 1.5 mm. broad, obtuse and cohering at tip, obliquely obtuse at base and minutely apiculate, the filaments pilose at base, glabrous upwardly; ovary glabrous.

Type in the herbarium of the Royal Botanic Gardens, Kew, collected in the Quindío Mountains near the Tolima-Caldas border, Colombia, February, 1853, by J. Triana, s. n.; isotype (Col).

Distinguishing characters of *Aphelandra trianae* are to be found in its rather large, silvery pubescent, oblong, ascending, acute bracts, its slenderly acute calyx segments, and its subglabrous to sparingly hirsute leaf blades (undersurface). There is much similarity in the spikes of this and *A. aristei*, but the leaf blades of that species are densely and softly pilose and the ocelli very minute and numerous.

56. *Aphelandra albert-smithii* Leonard, sp. nov.

FIGURE 83

Frutex, caubibus teretibus, glabris vel sursum parce hirsutis; lamina foliorum late oblanceolata, breviter acuminata (apice ipso obtuso), basi angustata, in petiolum decurrens, subcoriacea, integra vel undulata, supra parce hirsuta, subtus aliquanto hirsuta, pilis longis (1 mm.), brunnescentibus, ascendentibus vel patulis, costa et venis lateralibus gracilibus sed prominentibus, venulis crasse reticulatis; petioli breves, hirsuti; spicae terminales, 1 vel plures, sessiles vel breviter pedunculatae, pedunculis dense hirsutis, rhache glabra vel parce pilosa; bractae brunneae (siccae), rhombico-ovatae, apice acutae et cuspidatae, ciliatae, minute et inconspicue puberulae vel basi pilosae; ocelli (fere 6) elliptici, brunnei, nitidi, contigui vel imbricati; bracteolae ovatae, acutae, obscure striato-nervatae, basi subauriculatae, aliquanto hirsutae, pilis brunnescentibus, costa aliquanto prominente, basi indurata; calycis segmenta striato-nervata, subcoriacea, apiculata, segmentum posterius oblongo-ovatum, apice apiculatum, anteriora et lateralia oblonga et acuta; corolla rubra, puberula, pilis minutis, conicis, tubo subcylindrico, labio superiore erecto, angusto, bilobato, lobis longis, lanceolatis, acuminatis, labio inferiore trilobato, lobo medio patulo, lanceolato, acuminato, lobis lateralibus triangularibus, acutis, cum labio superiore basi connatis; stamina vix exserta, filamentis gracilibus, basi retrorse hirsutis, sursum glabris; ovarium glabrum.

Shrub up to 3.5 meters high; stems terete, glabrous or the uppermost portions sparingly hirsute, the hairs appressed to spreading, up to 1.25 mm. long; leaf blades broadly oblanceolate, up to 18 cm. long and 6 cm. wide, short-acuminate (the tip itself obtuse), narrowed from above middle to a short, winged petiole, subcoriaceous, entire or undulate, the upper surface sparingly hirsute, the hairs ascending, about 0.75 mm. long, the lower surface rather densely hirsute, the hairs about 1 mm. long, ascending to spreading, light

brown, the costa and lateral veins (15 to 17 pairs) slender but prominent, the veinlets rather conspicuously and coarsely anastomosing; petioles (unwinged portion) up to 1 cm. long, hirsute; spikes terminal, solitary or several in a fascicle, the terminal spike subsessile, the lateral spikes short-pedunculate, up to 8 cm. long and 1 cm. broad, the peduncles up to 1 cm. long, densely hirsute, the rhachis glabrous or sparingly pilose; bracts drying brown, rhombic-ovate,

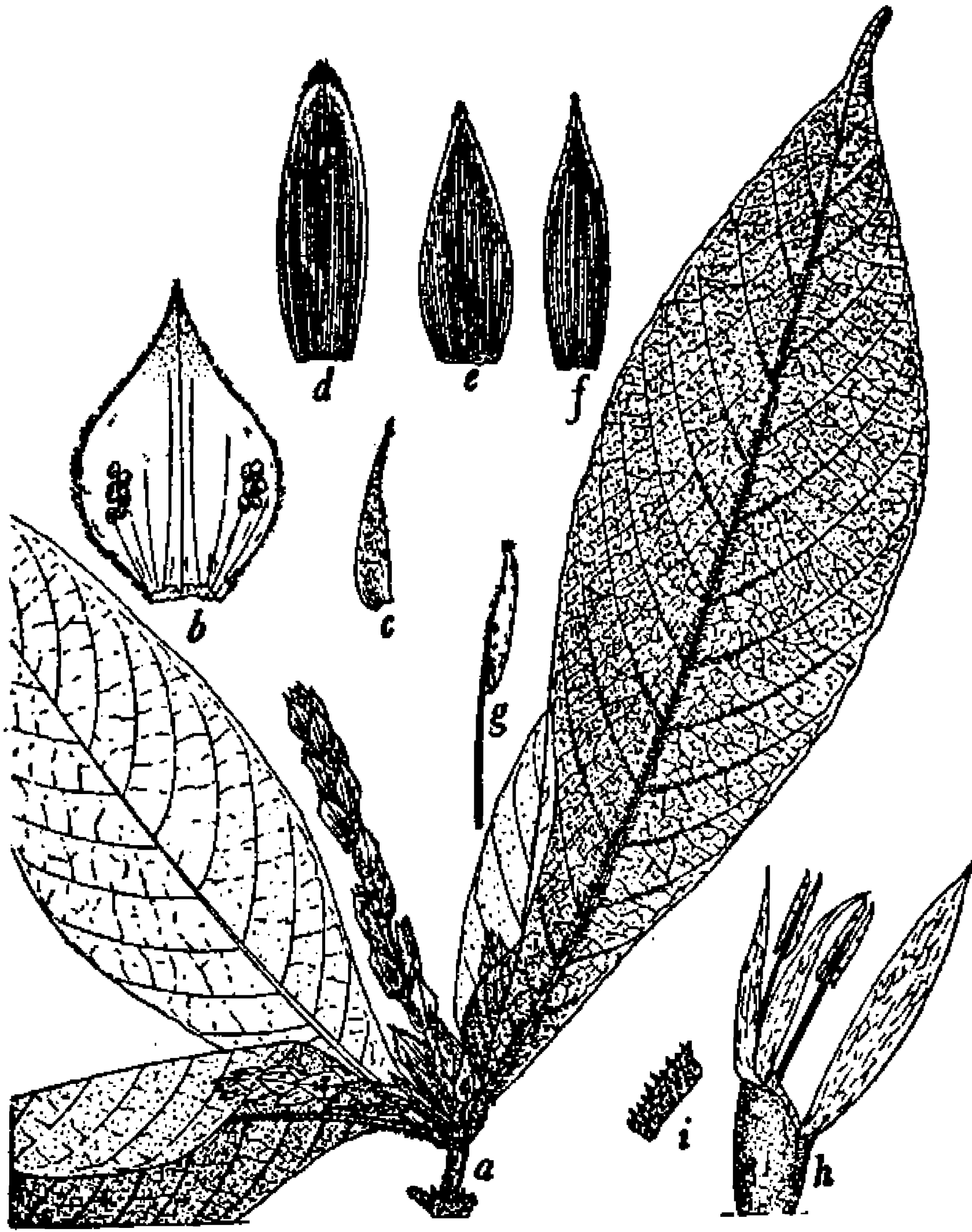


FIGURE 83.—*Aphelandra albert-smithii* Leonard (Killip & Smith 16283): *a*, Tip of stem; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, one of the lateral segments; *g*, anther; *h*, tip of corolla; *i*, pubescence of corolla tube. (*a*, Half natural size; *b-g*, twice natural size; *h*, natural size; *i*, about 25 times natural size.)

up to 11 mm. long and 7 mm. wide, acute and cuspidate at tip, minutely and inconspicuously puberulous or bearing a few longer hairs toward tip, the margins ciliate, the hairs 0.5 to 1 mm. long; ocelli usually 6, elliptic, dark brown, nitid, 0.75 to 1 mm. long, 0.5 to 0.75 mm. wide, contiguous or overlapping; bractlets ovate, obscurely striate-nerved, acute, 6 mm. long and 3.5 mm. wide, subauriculate at base, moderately hirsute, the hairs brownish, up to 0.5 mm. long, the costa rather prominent, indurate at base; calyx 9 to 11 mm. long, the segments puberulous, subcoriaceous, striate-nerved, indurate at base, the posterior segment

oblong-ovate, 4.5 mm. wide, rounded and apiculate, the anterior pair oblong, 3.5 mm. wide, acute and apiculate, the lateral pair similar but slightly narrower; corolla 5.5 cm. long, red, puberulous, the hairs minute and conical, the tube 3 mm. broad at base, narrowed to 1.5 mm. at 5 mm. above base, thence enlarged to a subcylindric throat 6 mm. broad at mouth, the upper lip erect, narrowly oblong, about 5 mm. wide, bilobed, the lobes lanceolate, 18 mm. long, 4 mm. wide, acuminate, the lower lip 3-lobed, spreading, the middle lobe lanceolate, 17 mm. long, 7 mm. wide near base, acuminate, the lateral lobes triangular, about 5 mm. long, acute, the upper margins adnate to the lower part of the upper lip; stamens barely reaching tip of the upper corolla lip, the anthers 5.5 mm. long and 1.5 mm. broad, the filaments slender, retrorsely hirsute at base, otherwise glabrous; ovary glabrous.

Type in the U. S. National Herbarium, No. 1352032, collected in a thicket in the Upper Río Lebrija Valley, northwest of Bucaramanga, Department of Santander, 400 to 700 meters altitude, December 29, 1926, by E. P. Killip and Albert C. Smith (No. 16283). An isotype is in the herbarium of the New York Botanical Garden.

The hirsute leaf blades and stems, the glabrous or sparingly pilose rachis and the narrow upper lip of the corolla with its long, slender lobes are characters by which *Aphelandra albert-smithii* can be recognized. Of the *A. pulcherrima-tetragona* complex it is probably closest to *A. haughtii*.

57. *Aphelandra macrophylla* Leonard, sp. nov.

FIGURE 84

Arbor parva, caulibus sursum subquadrangularibus, aliquanto dense hirsutis, pilis sordidis, sursum appressis vel plus minusve patulis, deorsum teretibus, glabris; lamina foliorum oblongo-elliptica, magna, acuta vel breviter acuminata (apice ipso obtuso vel subacuto), basi angustata, in petiolum breviter decurrens, submembranacea, integra vel undulata, supra glabra vel pilos raros subappressos ferens, subtus tenuiter et parce hirsuta, pilis appressis vel aliquanto patulis, costa et venis lateralibus conspicuis; petioli plus minusve hirsuti; spicae multae, paniculam grandem terminalem ferentes, pendunculis dense hirsutis, pilis appressis vel ascendentibus, rhache flocculoso-pubescente, pilis sordidis; bracteae rhombeo-ovatae, acutae, flavae vel aurantiacae, ciliolatae, glabrae vel infimae dorso strigosae; ocelli saepe 2, minuti, opaci vel fusco-lucentes; bracteolae lanceolatae, carinatae, carina dense brunescenti-flocculosa, apice apiculatae; calycis segmenta striato-nervata, apice acuta vel subacuta, minute ciliolata, segmentum posterius anguste ovatum, anteriora oblongo-lanceolata, lateralia lanceolata; corolla papilloso-puberulenta, tubo rubro, anguste hypocrateriformi, leviter curvato et subventricosos, lobis aurantiacis, labio superiore ovato, bilobato, lobis triangularibus, apice tenuiter acuminatis, recurvatis, patulis, labio inferiore trilobato, lobo medio

oblongo-elliptico, apice acuminato, recurvato, lobis lateralibus triangularibus, subobtusis, cum labio superiore basi connatis; stamina vix exserta, filamentis glabris.

Small trees; branches subquadrangular toward tip, rather densely hirsute, the hairs sordid, 0.5 mm. long, closely upwardly appressed or more or less spreading, the lower portions of the stems terete, glabrate; leaf blades oblong-elliptic, 19 to 35 cm. long, 7 to 17 cm. wide, acute to short-acuminate (the tip itself obtuse or acute), gradually narrowed at base and briefly decurrent on the petiole, submembranaceous, entire or undulate, the upper surface glabrous or the uppermost leaves bearing a few appressed or subappressed hairs 0.5 mm. long, drying olive, the costa and lateral veins (16 to 20 pairs) flat or slightly raised, scarcely conspicuous, the lower surface drying a lighter olive than the upper, sparingly hirsute, the hairs sordid, closely appressed or more or less spreading, the costa and lateral veins more conspicuous than above; petioles (unwinged portions) 1.5 to 7 cm. long, the pubescence that of the stems; flowers borne in a large terminal panicle consisting of rather small spikes, the panicle up to 30 cm. long with a spread of 20 cm., the spikes 3.5 to 9 cm. long and about 6 mm. broad, the secondary peduncles, if present, 1 to 1.5 cm. long, the primary ones 4 to 7 cm. long, or the uppermost shorter, both peduncles and axis of the panicle rather densely hirsute, the hairs appressed or some of them more or less spreading, sordid, about 0.5 mm. long, the rachis sordid cottony-pubescent; bracts rhombic-ovate, 7 mm. long, 5.5 mm. wide, acute, coriaceous, yellow or orange, glabrous or the lowermost dorsally strigose, the straight upper margins ciliolate, the hairs up to 0.5 mm. long; ocelli as many as 4 but usually 2, minute, elliptical, 0.25 to 0.5 mm. long, opaque or varnished; bractlets lanceolate, 7 mm. long, 2 mm. wide, carinate, densely brown-woolly dorsally, apiculate at tip; calyx 7.5 mm. long, the posterior segment narrowly ovate, 3 mm. wide, the anterior pair oblong-lanceolate, 2 mm. wide, the lateral pair lanceolate, 1.5 mm. wide, all acute to acutish, minutely ciliolate toward tip, striate-nerved; corolla red (tube) and orange (lobes), papillose-puberulous, 5.8 cm. long from base to tip of upper lip, the tube 3 mm. broad near base, narrowed to 1.5 mm. at 5 mm. above base, thence enlarged gradually to a slightly curved subventricose throat, 6 mm. broad at mouth, the upper lip erect, ovate, 15 mm. long and 7 mm. wide, 2-lobed at tip, the lobes triangular, about 5 mm. long and 2 mm. wide at base, ending in slenderly acuminate recurved-spreading tips, the middle lobe of the lower lip oblong-elliptic, 17 mm. long and 5.5 mm. wide, the tip slender and recurved, the lateral lobes triangular, subobtuse, connate with the upper lip, their free portions, if any, about 1 mm. long and broad; stamens reaching the tip of the upper lip, the anthers 4.5 mm. long and 1 mm. broad, the basal lobe

minutely mucronate, the filaments exerted about 1 cm. above the mouth of the corolla tube, glabrous; capsules not seen.

Type in the U. S. National Herbarium, No. 1850294, collected on a north slope, between El Amparo and La Mesa at the source of the Río Negro, vicinity of Sarare, Department of Norte de Santander,

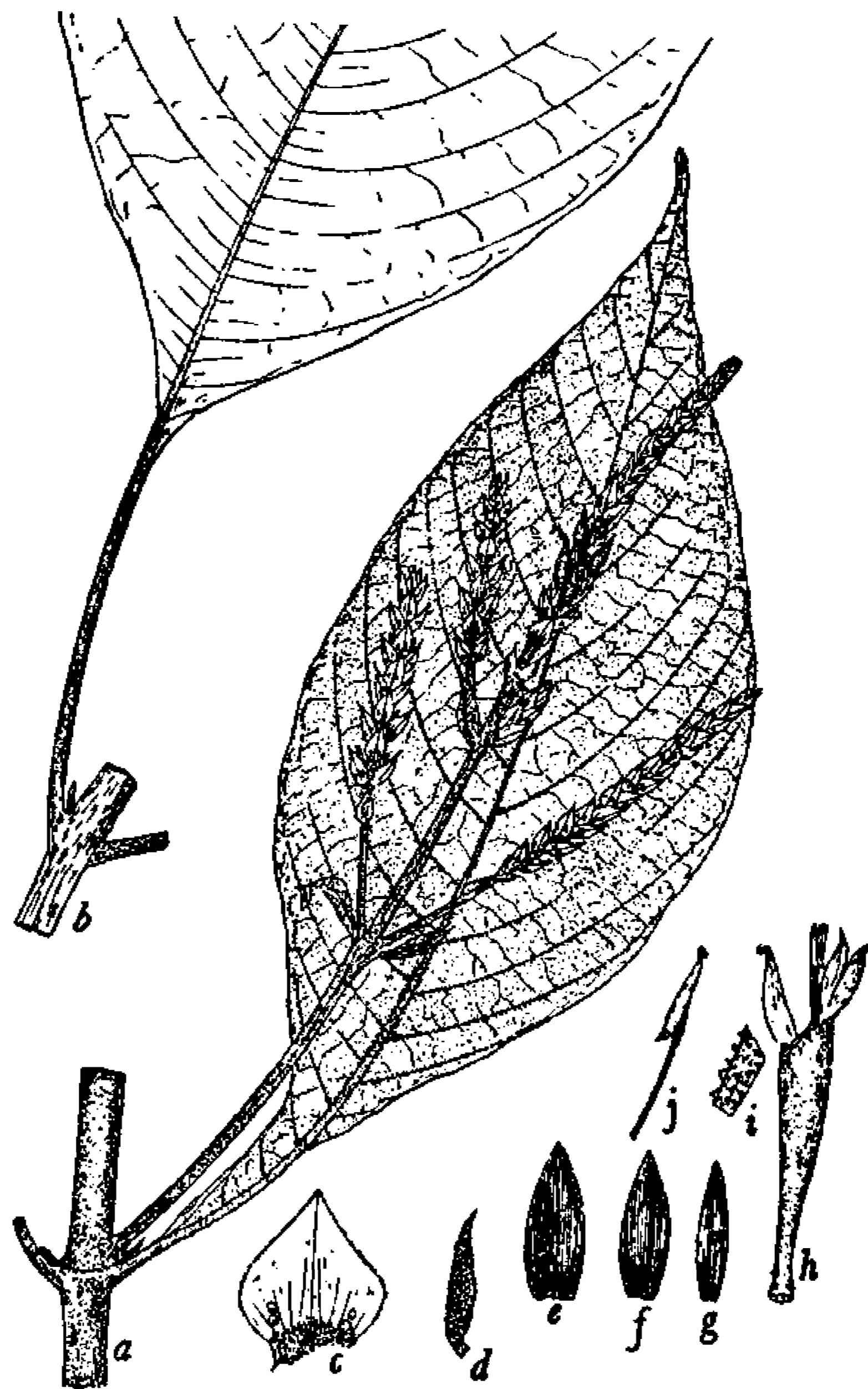


FIGURE 84.—*Aphelandra macrophylla* Leonard (*a*, Cuatrecasas 12897; *b* to *j*, Cuatrecasas 12873): *a*, Lowermost branch of inflorescence; *b*, node and basal portion of leaf blade (upper surface); *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, corolla; *i*, pubescence of corolla tube; *j*, anther. (*a*, *b*, *h*, Half natural size; *c*-*g*, twice natural size; *i*, about 20 times natural size; *j*, about twice natural size.)

Colombia, 1,400 to 1,700 meters altitude, November 7, 1941, by J. Cuatrecasas (No. 12873). Cuatrecasas' No. 12897 (US), collected between Campohermoso and the Río Negro, in the same general region as the type, 1,200 to 1,500 meters, November 8, 1941, and Schlim's No. 258 (NY), collected at Ocaña, Norte de Santander, also belong to this species.

*Aphelandra macrophylla* is related to *A. parvispica* but has larger leaves and longer petioles, the leaf blades of the latter reaching only 19 cm. in length and the petioles 1 cm. As in *A. parvispica*, the flowers are borne in terminal panicles but these in *A. parvispica* are much smaller (up to 6 cm. long), as are the individual spikes (up to 6 cm. long). The tomentum of the rachis of *A. macrophylla* is brownish instead of white as in *A. parvispica*. The specific name is from the Greek, *μακρός*, large, and *φύλλον*, leaf.

58. *Aphelandra schultesii* Leonard, sp. nov.

FIGURE 85

Suffrutex, caulibus deorsum teretibus, glabris, sursum subquadrangularibus, plus minusve strigosis, pilis aliquanto longis; lamina foliorum oblonga vel oblongo-elliptica vel late oblanceolata, acuta vel acuminata (apice ipso obtuso), basi angustata, in petiolum decurrens, submembranacea, undulata vel leviter crenata, supra glabra vel parce strigosa, in costa et venis lateralibus dense strigosa, pilis brunnescentibus, subtus aliquanto hirsuta, pilis subappressis vel ascendentibus, brunnescentibus, costa et venis lateralibus gracilibus sed prominentibus; petioli aliquanto breves, dense hirsuti; spicae 1 vel plures, sessiles vel breviter pedunculatae, pedunculis hirsutis; bracteae rhombico-ovatae, carinatae, acutae, minute puberulae, marginibus ciliolatae, costa et nervis lateralibus prominentibus, basi induratis; ocelli 2-4 vel plures, elliptici, brunnei, contigui; bracteolae lanceolatae, acuminatae, carina tomentosa, pilis brunnescentibus, marginibus striatae, glabrae, subhyalinae; calycis segmenta coriacea, acuta, apice tomentosa, deorsum glabra, striato-nervata, nervis basi induratis, segmentum posterius late lanceolatum, anteriora lanceolata, lateralia anguste lanceolata; corolla rubra, minute papilloso-puberula, tubo anguste hyprocrateriformi, labio superiore erecto, ovato-lanceolato, bilobato, lobis triangulo-ovatis, tenuiter acuminatis, labio inferiore trilobato, lobo medio oblongo-lanceolato, acuminato, lobis lateralibus, oblongis, obtusis, cum labio superiore basi connatis; stamina vix exserta, antheris apice flocculoso-tomentosis, adhaerentibus, filamentis basi puberulis, sursum glabris; capsulae apice subobtusae, glabrae, juventute pruinosa, minute punctatae.

Suffrutescent, up to 2 meters high; stems subquadrangular, more or less strigose toward tip, the hairs upwardly appressed, almost 1 mm. long, brownish, the lower parts of the stem terete, glabrous; leaf blades oblong to oblong-elliptic or broadly oblanceolate, up to 35 cm. long and 9.5 cm. wide, acute to acuminate (the tip itself blunt), narrowed at base and decurrent on the petiole, submembranaceous, undulate to shallowly crenate, the upper surface glabrous or sparingly strigose except the costa, this densely so, the hairs brownish, up to 0.75 mm. long, the lower surface moderately hirsute, the hairs subappressed to ascending, brownish, up to 0.75 mm. long, the costa and

lateral veins slender but prominent; petioles (unwinged portions) up to 3 cm. long, densely hirsute, the hairs subappressed to ascending, up to 1 mm. long; spikes solitary or several, up to 12 cm. long and 1 cm. wide, subsessile to short-pedunculate, the peduncles up to 15 mm. long, sparingly hirsute, the rachis tomentose, the hairs light brownish;

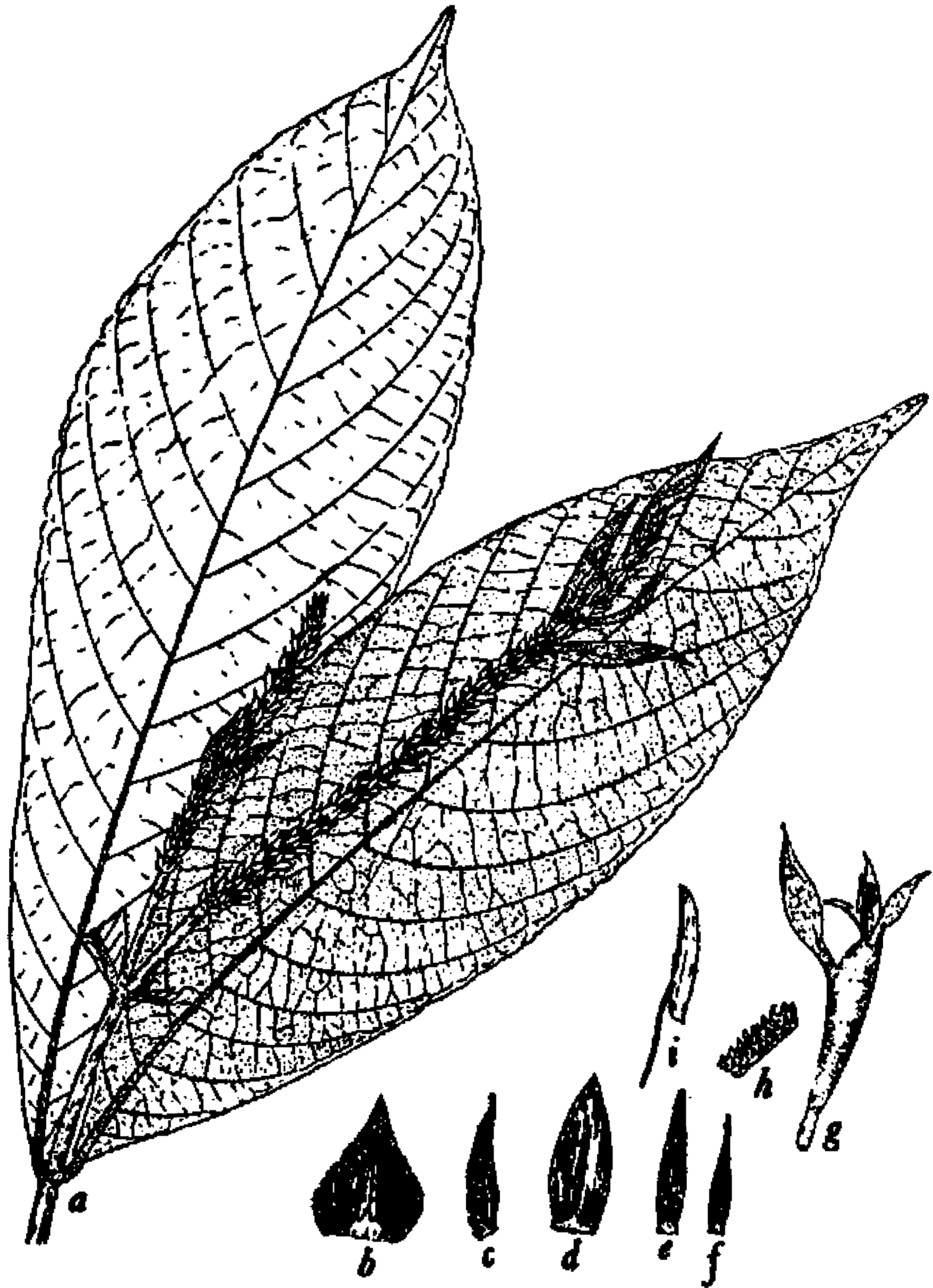


FIGURE 85.—*Aphelandra schultesii* Leonard (Gutiérrez & Schultes 936): *a*, Tip of plant; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, one of the lateral segments; *g*, corolla; *h*, pubescence of corolla tube; *i*, anther. (*a*, *g*, Half natural size; *b*-*f*, twice natural size; *h*, about 20 times natural size; *i*, slightly more than twice natural size.)

bracts rhombic-ovate, 6 mm. long, 4 mm. wide near base, acute, coriaceous, minutely puberulous, the nerves prominent, the costa and adjacent pair of nerves indurate at base, the margins of the bracts ciliolate, the hairs up to 0.5 mm. long; ocelli 2 to 4 or occasionally as many as 7, elliptic, up to 1.25 mm. long and 0.75 mm. wide, brown, nitid, contiguous; bractlets lanceolate, acuminate, 7 mm. long, 2.5 mm. wide near base, carinate, the keel densely tomentose (the hairs

light brown), the margins striate, glabrous and subhyaline; calyx segments 7 mm. long, coriaceous, acute and sparingly tomentose at tip, essentially glabrous toward base, striate-nerved, the nerves indurate at base, the anterior segment broadly lanceolate, 2.5 mm. wide, the anterior pair lanceolate, 3 mm. wide, the lateral pair narrowly lanceolate, about 1 mm. wide; corolla red, minutely papillose-puberulous both within and without, up to 5.5 cm. long, the tube 1.5 mm. broad at base, enlarged to 2 mm. at 3 mm. above base and narrowed to 1 mm. at 8 mm. above base, thence gradually enlarged to 6 mm. at throat, the upper lip erect, ovate-lanceolate, about 2 cm. long, 7 mm. broad, bilobed at tip, the lobes triangular-ovate, 9 mm. long, 3.5 mm. wide, slenderly acuminate, the middle lobe of the lower lip oblong-lanceolate, 21 mm. long, 6.5 mm. wide, acuminate, the lateral lobes oblong, about 6 mm. long and 1 mm. wide, obtuse, their upper edges adnate to the lower part of the upper lip; stamens slightly exceeding the notch of the upper lip, the anthers 6 mm. long and 2 mm. broad, adhering at tip by a webby tomentum, the filaments puberulous near base, otherwise glabrous; ovary glabrous; capsules clavate (immature), 18 mm. long, 5 mm. broad toward tip, 1.5 mm. thick, glabrous, evanescently pruinose, minutely punctate; mature seed not seen.

Type in the herbarium of the Facultad de Agronomía, Medellín, collected in the vicinity of the portage of Yuruparí, Comisaría of Vaupés, Colombia, March 3, 1944, by G. Gutiérrez-V. and R. E. Schultes (No. 936). Gutiérrez & Schultes' No. 506 (fruiting), collected along the Río Vaupés in the vicinity of Miraflores, 300 meters altitude, January 3, 1944, is also of this species. Fragments of both specimens are in the U. S. National Herbarium.

*Aphelandra schultesii* can be associated with *A. macrophylla*, both having small acute bracts and a brown tomentum covering the rachis. However, the spikes of *A. macrophylla* form a large panicle and are usually much shorter (up to 9 cm. instead of 12 cm.) and its stems are more densely strigose, with shorter hairs (0.5 mm. long).

59. *Aphelandra haughtii* Leonard, sp. nov.

FIGURE 86

Frutex gracilis, caulibus quadrangularibus, deorsum teretibus, glabris, sursum dense hirsutis, pilis patulis, sordidis; lamina foliorum elliptico-oblonga vel late oblanceolata, tenuiter vel breviter acuminata, basi angustata, in petiolum decurrens, subcoriacea, integra, supra parce hirsuta, pilis ascendentibus brunneis, costa et venis dense hirsutis, subtus hirsuta; petioli hirsuti; spicae solitariae vel plures, terminales, subsessiles, rhache glabra vel parce pubescente; bracteae rhombico-ovatae, obtusae vel rotundatae, coriaceae, apice mucronulatae, parce hirsutae, basi glabrae, marginibus ciliolatae, costa et nervis lateralibus prominentibus, basi induratis; ocelli 6, elliptici, brunnei, contigui vel imbricati; bracteolae ovatae, obliquae, acuminatae, glabrae vel parce



puberulae, basi subcarinatae; calycis segmenta glabra, acuminata, striato-nervata, segmentum posterius anguste ovatum, anteriora lanceolata, lateralia anguste lanceolata; corolla coccinea, papilloso-puberula, tubo recto vel leviter curvato, subcylindrico, labio superiore erecto, elliptico, apice bilobato, lobis triangularibus, tenuiter acuminatis, labio inferiore trilobato, lobo medio patulo, oblongo-elliptico, acuminato, lobis lateralibus parvis, apice rotundatis, cum labio superiore basi connatis; stamina vix exserta.

Slender shrubs up to 4 meters high; stems terete, subquadrangular toward tip, densely hirsute, the hairs spreading, up to 1.5 mm. long, sordid, the lower portions glabrate, gray, minutely roughened by the scars of the fallen hairs, the lenticels minute, elliptic, 0.5 mm. long, inconspicuous; leaf blades elliptic-oblong or broadly oblanceolate, 12 to 28 cm. long, 4 to 9.5 cm. wide, slenderly or shortly acuminate, narrowed at base and decurrent on the petiole, subcoriaceous, entire, the upper surface drying brownish green, sparingly hirsute, the hairs up to 1.5 mm. long, ascending, the costa and lateral veins (10 to 14 pairs) flat or slightly raised, inconspicuous, densely hirsute-pilose, the hairs spreading, up to 2 mm. long, light brown, the lower surface drying slightly lighter than the upper, the pubescence that of the upper surface except that the hairs are slightly shorter; petioles (unwinged portion) 3 to 15 mm. long, hirsute-pilose; spikes terminal, solitary or several, sessile or subsessile, up to 6 cm. long, about 8 mm. broad, the rachis glabrous or bearing a few minute, inconspicuous hairs; bracts rhombic-ovate, 5 mm. long and 4.5 mm. wide, obtuse or rounded at apex, coriaceous, subappressed, sparingly hirsute toward tip, otherwise glabrous, the margins of the upper half sparingly ciliolate, the costa excurrent, ending in a small mucro, both costa and lateral nerves (2 pairs) rather prominent and strongly indurate at base; ocelli usually 6, elliptic, dark brown, 1 mm. long and 0.75 mm. wide, closely crowded or even overlapping; bractlets ovate, oblique, 4 mm. long and 2 mm. wide, acuminate, glabrous or sparingly puberulous toward tip, subcarinate at base; calyx glabrous, 7 mm. long, the posterior segment narrowly ovate, 4 mm. wide, acute, the anterior pair lanceolate, 2 mm. wide, acuminate, the lateral pair lanceolate, 1.5 mm. wide, acuminate, all of the segments striate-nerved and inconspicuously scurfy at tip, the costa more prominent than the lateral nerves; corolla scarlet, papillose-puberulous, 7 cm. long, the tube straight or sometimes slightly curved, subcylindric, about 2 mm. broad at base, 6 mm. broad at mouth, the upper lip elliptic, 24 mm. long and 8 mm. wide, bilobed, the lobes triangular, 10 mm. long and 5 mm. wide at base, slenderly acuminate, the tips spreading, the middle lobe of the lower lip spreading, oblong-elliptic, 27 mm. long, 7 mm. wide, acuminate, the lateral lobes 6 mm. long, partly adnate to the upper

lip, the free portion triangular, 1.5 mm. long and 1 mm. wide, rounded; stamens almost reaching the tip of the upper lip, the anthers 7 mm. long and 1 mm. broad, mucronate at base; capsules not seen.

Type in the U. S. National Herbarium, No. 1742219, collected at foot of the Cerro Armas, Santander, Colombia, 300 meters alti-

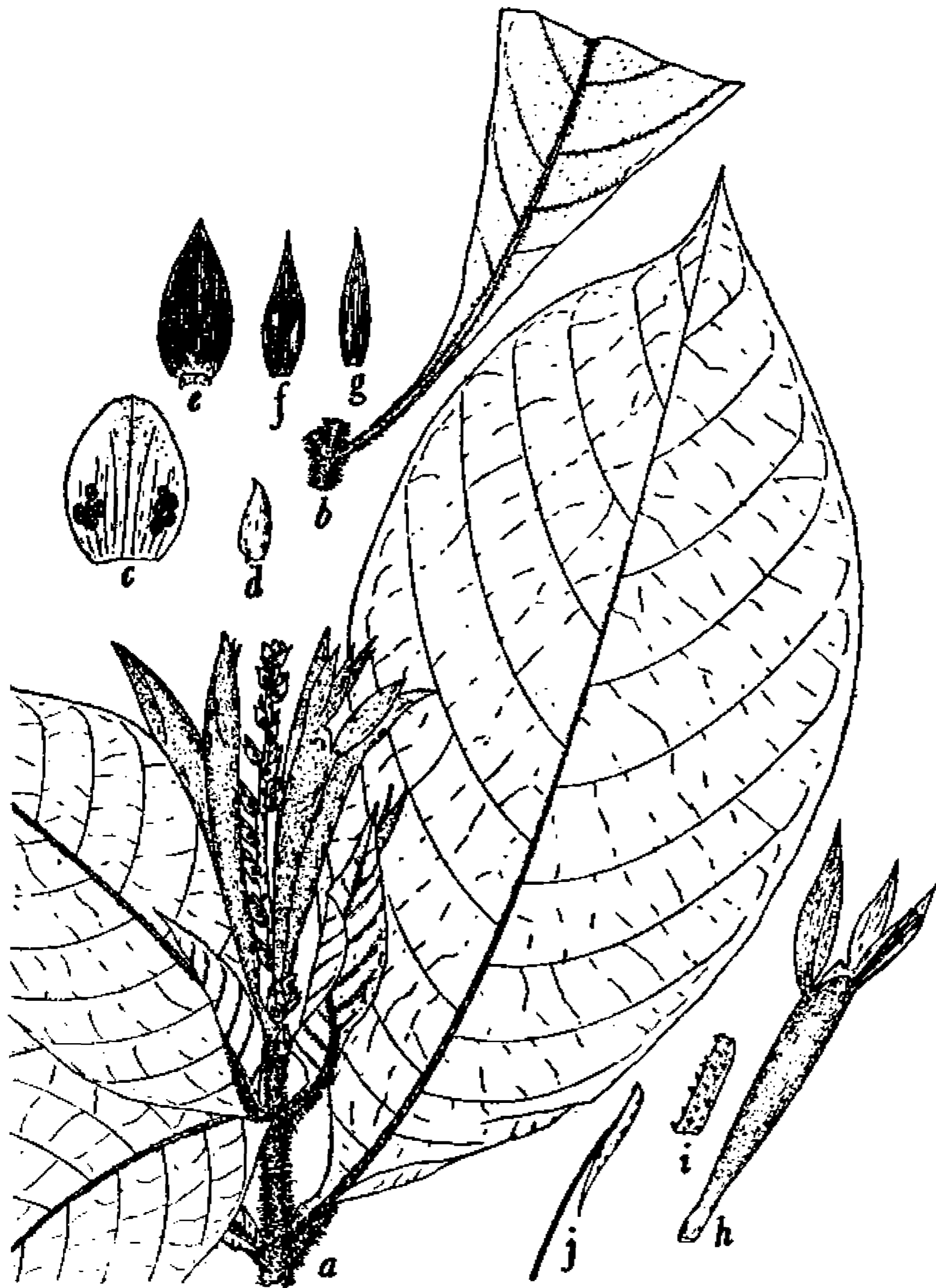


FIGURE 86.—*Aphelandra haughtii* Leonard (Haught 1948): *a*, Tip of branch; *b*, basal portion of one of the lower leaf blades (lower surface); *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, corolla; *i*, pubescence of corolla tube; *j*, anther. (*a*, *b*, *h*, Half natural size; *d*-*g*, twice natural size; *i*, about 15 times natural size; *c*, *j*, slightly more than twice natural size.)

tude, July 29, 1936, by Oscar Haught (No. 1948). Haught's No. 2086, collected along the Aguas Blancas Creek, about 25 km. south of El Centro, vicinity of Barranca Bermeja, Santander, 100 meters altitude, November 20, 1936, is also of this species.

*Aphelandra haughtii* is easily recognized by its small, ovate bracts, bearing well-defined ocelli, by its diminutive, nearly glabrous bractlets, and long crimson corollas. The densely hirsute stems and costa of

the upper surface of leaf blade are also very noticeable. It seems to have no close relative.

60. *Aphelandra incarnata* Leonard, sp. nov.

FIGURE 87

Frutex vel suffrutex frondosus, caulibus sursum subquadrangulibus, deorsum teretibus, glabratis, sursum dense puberulis, pilis brunneis, retrorse curvatis; lamina foliorum oblanceolata, abrupte acuminata (apice ipso plus minusve curvato), basi angustata, in petiolum decurrens, subchartacea, integra vel leviter crenata, supra glabra vel subglabra, costa et venis lateralibus aliquanto dense pilosa, pilis fere rectis, appressis vel patulis, subtus subglabra, costa et venis lateralibus puberulis, pilis curvatis et appressis; petioli (pars non alata) breves, puberuli; spicae plures, terminales et subterminales, pendunculatae, pedunculis aliquanto gracilibus, puberulis, pilis sursum curvatis, rhache puberula, pilis fere rectis et patulis; bractea rubrae (vivae), ovoides, apice rotundatae vel obtusae, mucronatae (infimae acutae), sericeo-puberulae, dense ciliolatae; ocelli 6-8, suborbiculares, brunnei, nitidi; bracteolae lanceolatae, acuminatae, carinatae, striato-nervatae, puberulae, apice pilosae; calycis segmenta striato-nervata, apice acuta, cuspidata, ciliata, plus minusve erosa, basi glabra, segmentum posterius ovatum, anteriora lanceolata, lateralia anguste lanceolata; corolla fere incarnata (aliquando rubra), puberula, tubo subcylindrico, labio superiore erecto, ovato, bilobata, lobis lanceolatis, acutis, labio inferiore trilobato, lobo medio ovato-lanceolato, patulo, acuminato, carinato, lobis lateralibus parvis, triangulo-ovatis, obtusis, cum labio superiore basi connatis; stamina vix exserta, antheris apice apiculatis, basi acutis; capsulae clavatae, obtusae, glabrae, nitidae, minute punctatae; semina plana, brunnea, minute hispidula.

Shrubs or suffrutescent herbs up to 3 meters high; branches subquadrangular toward tips, terete below, rather densely brown-puberulous, the hairs about 0.25 mm. long, retrorsely curved; leaves numerous, the blades oblanceolate, up to 30 cm. long and 7 cm. wide, abruptly acuminate (the tip more or less curved), gradually narrowed from above the middle to a short, naked petiole (the petiole wing ending more or less abruptly), subchartaceous, entire or shallowly crenate, the upper surface glabrous or nearly so except costa and lateral veins (12 to 16 pairs), the costa rather densely pilose, the hairs appressed to spreading, nearly straight, 0.5 to 1 mm. long, the lateral veins puberulous, the hairs mostly curved and appressed, the lower surface minutely white-punctate under lens, essentially glabrous except costa and veins, these rather prominent and puberulous, the hairs minute and curved, the veinlets coarsely anastomosing; petioles (unwinged portions) up to 1 cm. long, puberulous, the hairs recurved; spikes more or less numerous, both terminal and subterminal, peduncled, up to 6 cm. long and 10 to 12 mm. broad, the peduncles rather slender, 2 to 3 cm. long, puberu-

lous, the hairs upwardly curved, the rachis puberulous, the hairs nearly straight and spreading; bracts red (living), oval, about 1 cm. long and 6 mm. wide, 3-nerved, rounded or obtuse, mucronate or the lowermost acute, silky-puberulous, densely ciliate; ocelli usually about 6 or 8, well-defined, suborbicular, 0.5 to 0.75 mm. in diameter, brown, nitid; bractlets lanceolate, 5.5 mm. long, 1.5 mm. wide, acuminate, carinate, faintly striate-nerved, puberulous, pilose at tip; calyx segments striate-nerved, acute and cuspidate (the costa prominent), ciliate and more or less erose toward tip, glabrous toward base, the posterior segment ovate, 7 mm. long and 3 mm. wide, the anterior pair lanceolate, slightly over 1.5 mm. wide near base, the lateral pair more narrowly lanceolate, slightly over 1 mm. wide near base; corolla usually rose pink (sometimes red), puberulous, about 6 cm. long, the tube 3 mm. broad at base, 6 or 7 mm. broad at mouth, the upper lip erect, ovate, about 15 mm. long and 8 mm. wide, bilobed at tip, the lobes lanceolate, about 6 mm. long and 2 mm. wide at base, acute, the middle lobe of the lower lip spreading, ovate-lanceolate, about 21 mm. long, 7 or 8 mm. wide, acuminate, carinate, the lateral lobes partly adnate to the lower part of the upper lip, their free portions triangular-ovate, 2.5 mm. long, 2 mm. wide at base, obtuse; stamens reaching about midway between mouth of tube and tip of upper lip, the anthers 6.5 mm. long and 1 mm. broad near base, apiculate at tip, acute at base; capsules clavate, about 2 cm. long, 6 mm. broad near tip, 3 mm. broad near base, about 3 mm. thick, obtuse at tip, glabrous, nitid, minutely punctate; seed (immature) flat, brown, minutely hispidulous.

Type in the U. S. National Herbarium, No. 1662446, collected on Arenosa Creek, in the vicinity of Barranca Bermeja, Magdalena Valley, between the Sogamoso and Colorado rivers, Department of Santander, Colombia, 100 to 500 meters altitude, July 19, 1934, by Oscar Haught (No. 1315).

ANTIOQUIA: Gravel along stream bed, Malena, *Pennell* 3782 (NY). Dense, damp woods between Río Guapá and León, *Yepes, Blair & Barkley* 18C.300 (US); *Ruiz, Rivera & Barkley* 18C.388 (US).

BOLÍVAR: Forest along river, Boca Verde, on the Río Sinú, *Pennell* 4581 (NY).

CHOCÓ: Along stream in forest, Bahía Solano, *Haught* 5528 (US). Dense forest near Quebrada Seca, vicinity of Ciudad Mutis, *Killip & García* 33576 (US).

SANTANDEB: Along the Río Colorado, near El Centro, *Haught* 2098 (US).

In a general way *Aphelandra incarnata* resembles *A. sinclairiana* Nees, of Costa Rica and Panama. This new species is sufficiently distinct, however, in its puberulous stems, small spikes and bracts, and in its nitid glabrous capsules. In *A. sinclairiana* the stems are hirsute, the spikes up to 20 cm. long instead of only 6 cm., the bracts up to 2 cm. long (1 cm. in *A. incarnata*), and the capsules are densely puberulous. The name *incarnata* alludes to the pink corollas.

Lehmann's No. 7845 is scarcely different from the specimens cited above. It was collected on the Río Nuz, Antioquia, Colombia, and deposited in the Berlin Herbarium (Field Mus. photograph No. 8699). Lindau considered this to be new and proposed a name for it, but his species was, apparently, never published.

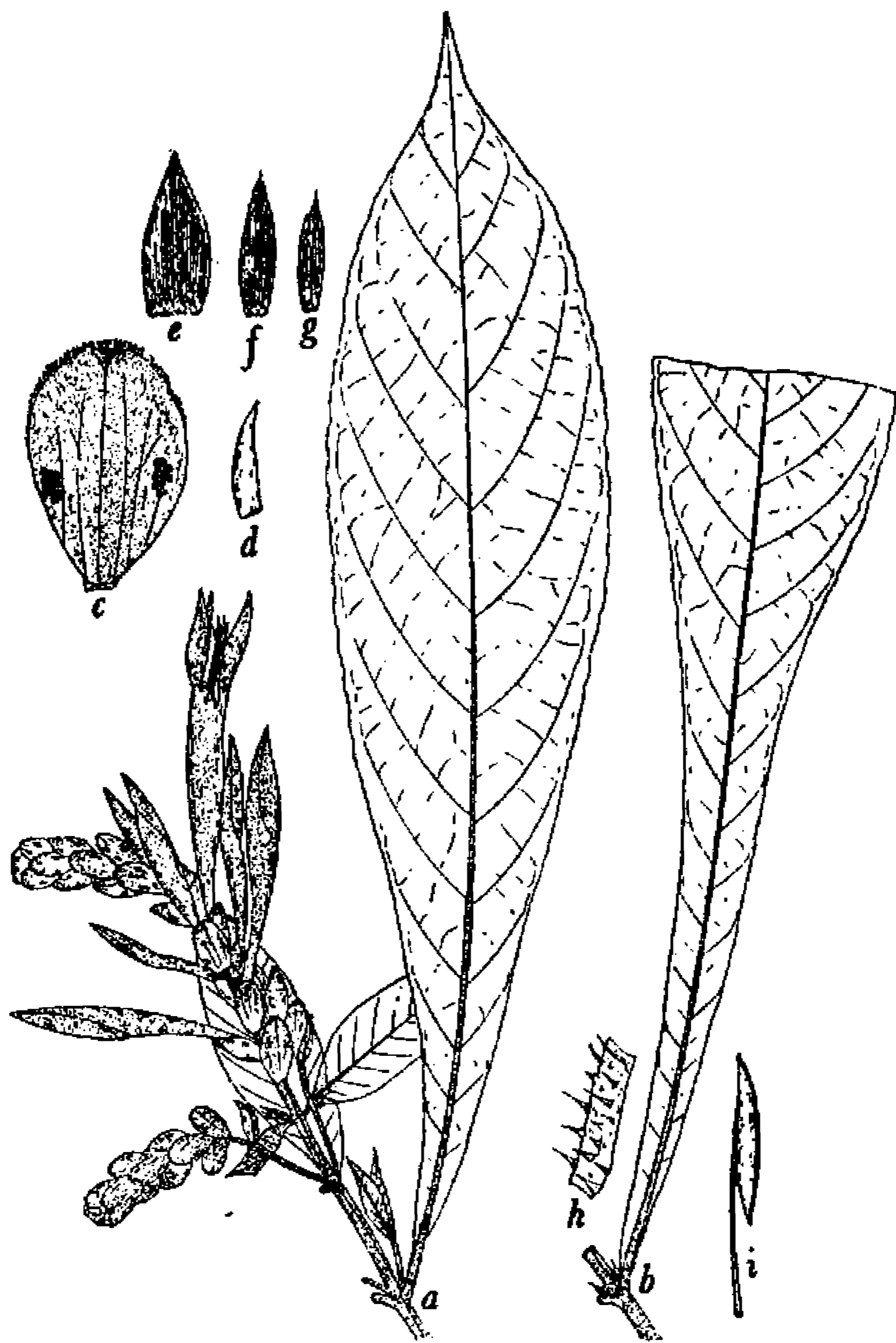


FIGURE 87.—*Aphelandra incarnata* Leonard (Haught 1315): *a*, Tip of branch; *b*, basal portion of one of the lower leaf blades; *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, pubescence of the corolla tube; *i*, anther. (*a*, *b*, Half natural size; *c*-*g*, twice natural size; *h*, about 15 times natural size; *i*, about 3 times natural size.)

The specimens cited were for the most part collected between sea level and 300 meters altitude. They all produced pink flowers, except the two Antioquia collections from the Río Guapá region, these having red corollas. Lehmann's No. 7845 according to his field notes produced blood-red flowers.

61. *Aphelandra sericantha* Leonard, sp. nov.

FIGURE 88

**Frutex**, caulibus subteretibus, deorsum glabris, sursum minute strigosis; lamina foliorum oblongo-elliptica vel late lanceolata, acuminata, basi angustata, in petiolum decurrens, submembranacea, integra vel undulata, supra glabra vel parce et minute strigosa, costa et venis inconspicuis, subtus aliquanto et minute strigosa vel hirtella, pilis praecipue in costa et venis positis, costa et venis conspicuis, venulis crasse reticulatis; petioli parce et minute strigosi; spicae terminales, solitariae, subsessiles, rhache angulata, dense hirtella, pilis dilutobrunneis, ascendentibus; bracteae ovaes, obtusae vel subacutae, apiculatae, coriaceae, basi minute pubescentes, sericeae, striatae, venulis prope margines reticulatis; bracteolae lanceolatae, acuminatae, glabrae vel apice hirtellae, basi carinatae, costa et striis tumidis et confluentibus; calycis segmenta subaequalia, lanceolata, subcoriacea, striata, glabra vel apice ciliata, costa et venis propinquis basi tumidis et confluentibus, segmentum posterius subobtusum, apice plus minusve laceratum, anteriora subobtusum, apiculata, lateralia acuta; corolla sursum dense sericeo-hirtella, pilis ascendentibus, subbrunneis, bilabiata, labiis subaequalibus, labio superiore erecto, ovato, apice bilobato, lobis parvis, rotundatis, labio inferiore patulo, trilobato, lobo medio lanceolato, lobis lateralibus parvis, triangularibus, cum labio superiore basi connatis; capsulae ignotae.

Shrubs up to a meter high or more; stems subterete, glabrous except the upper portions, these upwardly strigose, the hairs about 0.25 mm. long, closely appressed; leaf blades oblong-elliptic or broadly oblong-lanceolate, up to 20 cm. long and 5.5 cm. wide, acuminate, narrowed at base and decurrent on the petiole, submembranaceous, entire or undulate, the upper surface glabrous or thinly strigose, the hairs 0.25 mm. long, the venation rather inconspicuous, the lower surface drying a lighter olive than the upper, moderately and minutely strigose or hirtellous, the hairs confined chiefly to costa and veins (10 to 12 pairs), the venation conspicuous, the veinlets coarsely reticulate; petioles up to 5 cm. long, sparingly and minutely strigose; spikes terminal, solitary, subsessile, subtended by a pair of small leaves about 1.5 cm. long and 5 mm. wide, the rachis angled, densely hirtellous, the hairs light brown, ascending, 0.5 mm. long; bracts oval, 2 cm. long, 12 mm. wide, obtuse to subacute and apiculate, coriaceous, the basal portion minutely pubescent, silky, the hairs subappressed, light brown, 150 to 175  $\mu$  long, the inner surface evenly, sparingly and minutely puberulous with appressed hairs, the nerves closely parallel, the veinlets reticulate near the subhyaline margins; bractlets lanceolate, 8.5 mm. long, 2.25 mm. wide near base, acuminate (the lower portion carinate), glabrous except the hirtellous tip, striate-nerved, the costa and adjacent nerves

swollen and confluent at base; calyx segments subequal, 15 mm. long, lanceolate, subcoriaceous, striate-nerved, glabrous or ciliate at tip, the costa and adjacent lateral nerves swollen and confluent at base, the posterior segment 4.5 mm. wide, subobtusate and more or less lacerate, the anterior segments 2.5 mm. wide, subobtusate and apiculate, the lateral segments 2.25 mm. wide, acute; corolla up to 5 cm. long, densely and silkily hirtellous, except the glabrous basal portion, the hairs brown, ascending, about 250  $\mu$  long, the tube about 6 mm. broad at mouth, the upper lip erect, ovate, bilobate at tip, the lobes rounded, the lower lip spreading, the lateral lobes minute and connate with the basal portion of the upper lip, the free portion minute and triangular; capsules not seen.

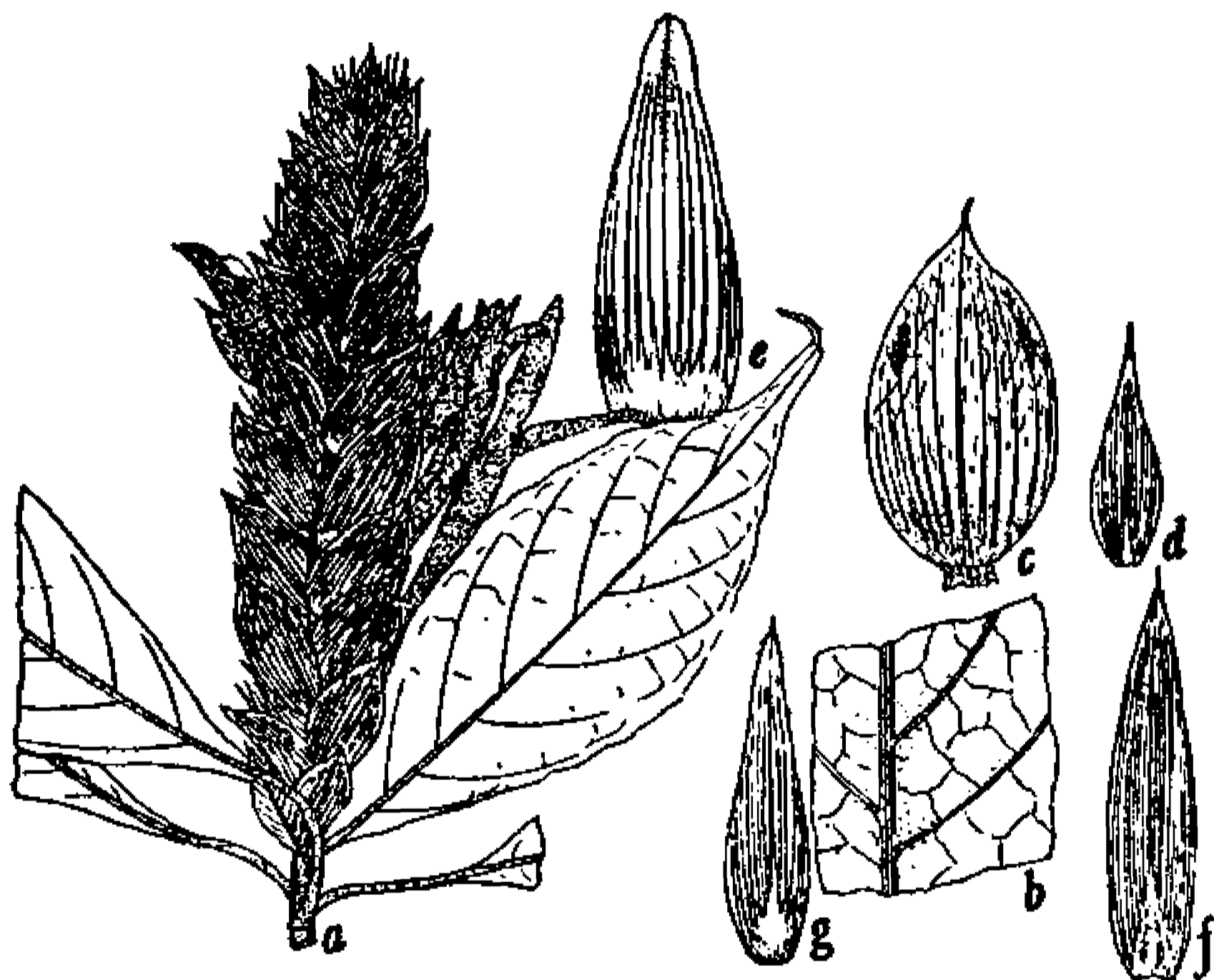


FIGURE 88.—*Aphelandra sericantha* Leonard (*Triana* s. n., Pácora): *a*, Tip of plant; *b*, portion of undersurface of leaf blade to show venation and pubescence; *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments. (*a*, Half natural size; *b*, *c*, natural size; *d*-*g*, twice natural size.)

Type in the herbarium of the Royal Botanic Gardens, Kew, collected at Pácora, Department of Cauca, Colombia, 1,800 meters altitude, February 1852, by J. Triana, s. n. An isotype is in the National Herbarium of Colombia.

The specific epithet is from the Greek *σηρικός*, silken, and *ἄνθος*, flower.

#### 62. *Aphelandra hartwegiana* Nees

*Aphelandra hartwegiana* Nees ex Benth. Pl. Hartw. 236. 1846. Type collected in shady woods (*sylvis umbrosis*) on the Hacienda de Palmar, near Guaduas, Cundinamarca, *Hartweg* 1270.

Slender shrubs or small trees up to 4 meters high; stems quadrangular toward tip, minutely strigose, the hairs about 0.25 mm. long, closely appressed, the lenticels narrowly elliptical, corky, up to 1 mm. long; leaf blades oblong-ovate to elliptic, up to 25 cm. long and 11 cm.

wide, acuminate (the tip itself obtuse and submucronulate), narrowed at base and decurrent on the petiole, subcoriaceous, entire or undulate, the upper surface glabrous, drying to olive or brownish, the costa shallowly channeled, the lateral veins (12 to 14 pairs) slightly raised, these and the costa scarcely conspicuous, the lower surface drying light olive, sparingly and inconspicuously strigose, the hairs about 0.5 mm. long, sordid, more numerous on costa and veins than elsewhere, those bordering costa sometimes more or less spreading; petioles (unwinged portion) 1.5 to 2 cm. long, minutely strigose; spikes terminal, solitary or often several, up to 45 cm. long and 3 cm. broad, the peduncles of the terminal spike up to 2 cm. long, those of the lateral spikes up to 14 cm. long, both peduncles and rachis stout, about 6 mm. in diameter, glabrous or sparingly and inconspicuously strigose; bracts red or orange (living), drying to brown (the border usually a blackish brown), broadly rhombic-ovate, 16 mm. long, 12 mm. wide, obtuse or rounded, more or less minutely apiculate, coriaceous, glabrous, the costa and lateral nerves prominent except toward tip, the ocelli replaced by irregular elliptic brown faveolate areas up to about 4 mm. long and 1.5 mm. wide; bractlets oblong, falcate, oblique, 1 cm. long, about 4 mm. broad, subcarinate, obtuse, glabrous except the minutely and sparingly hirsute keel, the hairs about 0.25 mm. long, ascending; calyx 21 mm. long, the posterior segment oblong-elliptic, 8.5 mm. wide, the anterior pair oblong, 4.5 mm. wide, the lateral pair linear-oblong, 3.5 mm. wide, all coriaceous, glabrous, obtusish to acute, submucronulate at tip; corolla 6 to 7 cm. long, glabrous, yellow or orange, the upper lip erect, lanceolate, 2 cm. long, about 6 mm. wide, bilobed at tip, the lobes triangular, about 5 mm. long and 3 mm. wide, acuminate and apiculate, the middle lobe of the lower lip spreading, lance-ovate, about 2 cm. long and 12 mm. wide, acuminate, the lateral segments about 7 mm. long, partly adnate to the upper lip of the corolla, their free portions triangular, about 1.5 mm. long and 1 mm. wide, obtuse; capsules (immature) obovoid, about 13 mm. long and 4 mm. in diameter, glabrous, nitid, minutely and sparingly punctate.

Wooded mountain slopes at lower elevations usually below 100 meters. Endemic. The species was named in honor of Karl Theodor Hartweg, a German collector of plants. During 1836 he traveled in Mexico to procure plant material for the Horticultural Society of London. He visited also Guatemala, Peru, Ecuador, Colombia and California.

Accompanying Cuatrecasas' No. 17605 is the following note: "Fruticosa; tallo sencillo 60 cm. Inflorescencia prismático tetragonal de brácteas imbricadas rojo anaranjadas. Calix rojo anaranjado. Corola amarilla." Haught says of his No. 4699: "High slender shrub, to 4 m. high. Inflorescence a very showy, tetragonal prism of red bracts, large yellow flowers. Forests, usually along streams."



ANTIOQUIA: Villa Arteaga, *Hodge* 7053 (US). Near Chigorodó, *Haught* 4699 (US). Mutatá, *Uribe-Uribe* 1505 (US).

BOLIVAR: Boca Verde, on the Río Sinú, *Pennell* 4580 (NY).

CHOCÓ: Cupica, *Fernández* 354 (US). Near Quebrada Seca, Bahía Solano, *Killip & García* 35639 (US).

EL VALLE: Barco on the Río Cajambre, *Cuatrecasas* 17231 (Valle). Le Brea, Río Calima, *Cuatrecasas* 21206 (Valle). La Trojita, Río Calima, *Cuatrecasas* 16355 (Valle). Isla de Golondro to La Amargua, Río Yurumanguí, *Cuatrecasas* 16069 (Valle). Silva, Río Cajambre, *Cuatrecasas* 17605 (Valle).

DEPARTMENT (?): Playa, *Lehmann* 9047 (NY).

63. *Aphelandra xanthantha* Leonard, sp. nov.

FIGURE 89

Frutex, caulibus sursum subquadrangularibus, dense strigosis, pilis parvis, brunnescentibus, sursum appressis; lamina foliorum reflexa, oblongo-ovata, tenuiter acuminata, basi angustata, in petiolum decurrens, supra parce et minute strigosa, subtus aliquando dense strigosa, pilis rectis, parvis, arcte appressis, costa et venis lateralibus aliquanto prominentibus; petioli breves, dense et minute strigosi; spicae terminales, solitariae, subsessiles, rhache albotomentosa; bracteae ovato-lanceolatae, acutae, coriaceae, minute et inconspicue furfuraceae, glabrae, parce ciliolatae, costa aliquanto prominente, nervis lateralibus obscuris, marginibus tenuibus; areae alveolatae anguste ellipticae, obscurae; bracteolae anguste lanceolatae, tenuiter acuminatae, carinatae, marginibus tenuibus, glabris, graciliter striato-nervatis, carina dense pilosa, pilis albis, ascendentibus; calycis segmenta tenuia, coriacea, striato-nervata, minute et inconspicue puberula, segmentum posterius oblongum, apice rotundatum, anteriora lanceolata, apice obtusa et apiculata, lateralia anguste lanceolata, apice obtusa; corolla lutea, papillosa, tubo aliquanto angusto, subcylindrico, labio superiore ovato, acuminato, apice bilobato, lobis minutis, anguste triangularibus, labio inferiore trilobato, lobo medio ovato, subacuto, intus puberulo, lobis lateralibus minutis, rotundatis, cum labio superiore basi connatis; stamina vix exserta, antheris apice obtusis, cohaerentibus, basi obtusis et minute apiculatis, filamentis basi pilosis, sursum glabris; ovarium glabrum.

Shrubs; stems subquadrangular, densely strigose, the hairs brownish, upwardly appressed, about 0.25 mm. long; leaves reflexed, the blades oblong to oblong-ovate, up to 18 cm. long and 7 cm. wide, slenderly acuminate, narrowed at base and decurrent on the petiole, the upper surface sparingly and minutely strigose, the hairs 0.25 mm. long, the lower surface rather densely strigose, the hairs slightly less than 0.5 mm. long, closely appressed, the costa and lateral veins (9 or 10 pairs) fairly prominent; petioles (unwinged portion) up to 1 cm. long, densely and minutely strigose; spikes terminal, solitary, subsessile, up to 17 cm. long and 2 cm. broad (without corollas), the rachis white-tomentose; bracts red (living), ovate-lanceolate, 18 mm. long and

8 mm. wide at about 5 mm. above base, acute, coriaceous, glabrous, minutely and inconspicuously scurfy without, sparingly ciliolate, the costa fairly prominent, the lateral nerves obscure, the margins thin, the alveolar spots narrowly elliptic, about 2 mm. long and 0.5 mm. wide, obscure; bractlets narrowly lanceolate, 15 mm. long, 2.5 mm. wide near base, slenderly acuminate, carinate, the keel densely pilose,

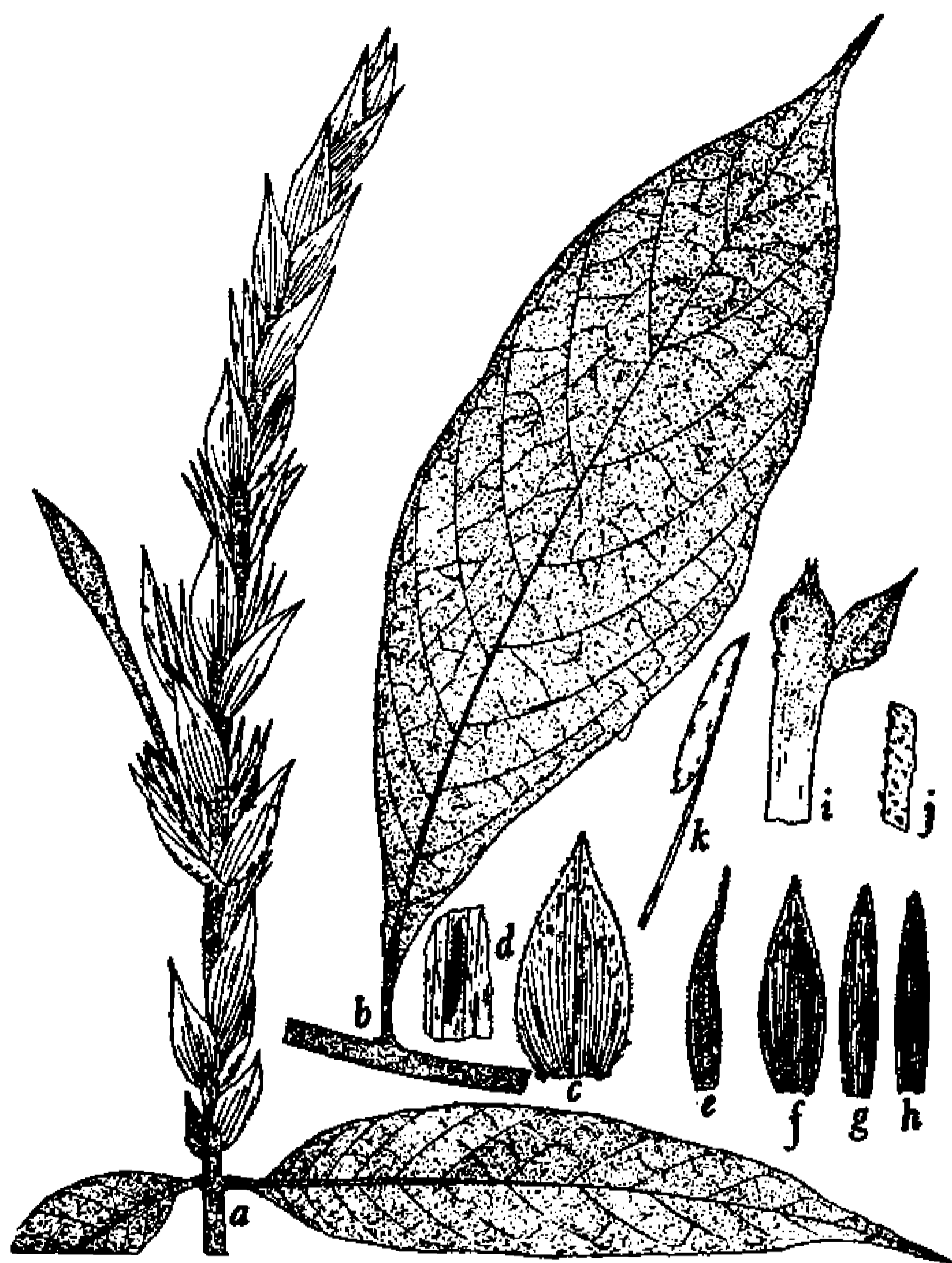


FIGURE 89.—*Aphelandra xanthantha* Leonard (*Uribe-Uribe* 1862): *a*, Tip of plant; *b*, leaf blade; *c*, bract; *d*, glandular area of bract; *e*, bractlet; *f*, posterior calyx segment; *g*, one of the anterior segments; *h*, one of the lateral segments; *i*, corolla (immature) partly spread to show lips; *j*, pubescence of corolla tube; *k*, anther. (*a*, *b*, Half natural size; *c*, *e*-*i*, natural size; *d*, about 5 times natural size; *j*, about 20 times natural size; *k*, twice natural size.)

the hairs white, ascending, 0.5 to 0.75 mm. long, the margins thin, glabrous and finely striate-nerved; calyx 18 mm. long, the segments thin and coriaceous, striate-veined, minutely and inconspicuously puberulous, the posterior segment oblong, 5 mm. wide, rounded at apex, the anterior segments lanceolate, 3.5 mm. wide, obtuse and apiculate at tip, the lateral segments narrowly lanceolate, 3 mm. wide, obtuse at apex; corollas yellow, about 5 cm. long, papillose without, glabrous within, except above insertion of filaments, here pilose, the tube rather

slender, subcylindric, about 3 mm. broad, the mouth about 5 mm. broad, the lips about 14 mm. long (immature), the upper one ovate, about 5 mm. wide, acuminate, bilobed at apex, the lobes minute, triangular, about 1 mm. long and 0.25 mm. wide, acute, the middle lobe of the lower lip ovate, 5 mm. wide, subacute, puberulous within, the lateral lobes attached to the lower part of the upper lip, their free portions about 1 mm. long and broad, obtuse; stamens barely exerted, the anthers 7 mm. long, about 1 mm. broad, obtuse at both ends, the lower lobes minutely apiculate, the tips cohering, the filaments glabrous except at base, here pilose; ovary glabrous.

Type in the U. S. National Herbarium, No. 1954767, collected in the woods of Paramitos, Nariño, Department of Antioquia, Colombia, 2,000 to 2,200 meters altitude, January 1949, by Lorenzo Uribe-Urbe (No. 1862).

*Aphelandra xanthantha* should be easily recognized by its large, red, ovate-lanceolate bracts, bearing inconspicuous, narrowly elliptical alveolar spots, and by its yellow corollas with relatively broad but rather short ovate upper lips minutely bilobed at tip. The name *xanthantha* comes from  $\xi\alpha\nu\theta\acute{o}s$ , yellow, and  $\acute{\alpha}\nu\theta\acute{o}s$ , flower.

64. *Aphelandra straminea* Leonard, sp. nov.

FIGURE 90

Suffrutex, caulibus teretibus, minute et sursum strigosis vel glabratibus, pilis brunnescentibus; lamina foliorum elliptica, oblonga vel late oblanceolata, acuminata, apice ipso obtuso, basi angustata, in petiolum decurrens, submembranacea, integra vel undulata, supra nitida, glabra, subtus parce et minute strigosa, pilis brunnescentibus, costa et venis aliquanto prominentibus, venulis crasse reticulatis; petioli longi, glabri vel parce strigosi; spicae longae, terminales, solitariae, subsessiles, rhache flocculoso-tomentosa; bracteae decussatae, arcte imbricatae, rhombeo-ovatae, acutae vel subacuminatae, apice ipso rotundato, coriaceae, marginibus subhyalinis, deorsum ciliolatis, costa et venis lateralibus prominentibus, utrinque glabrae; areola opaca elliptica alveolata pro ocellis substituta; bracteolae lanceolatae, carinatae, carina dense et molliter pubescente, marginibus subhyalinis, ciliolatis; calycis segmenta striato-nervata, segmentum posterius oblongo-ovatum, apice obtusum, sursum pubescens, segmenta anteriora lanceolata, obtusa, apiculata, glabra, lateralia anguste lanceolata, obtusa et apiculata, glabra; corolla straminea, tubo angusto, aliquanto curvato, labio superiore erecto, anguste ovato, bilobato, lobis triangularibus, acuminatis, labio inferiore trilobato, lobo medio patulo, ovato, apice acuto et recurvato, lobis lateralibus parvis, rotundatis, cum labio superiore basi connatis; stamina vix exserta; capsulae oblongae, apice rotundatae, glabrae, minute punctatae; semina plana, brunnea, parce papillosa.

Suffrutescent herbs up to 2 meters high; stems terete, minutely and upwardly strigose, or glabrate, the hairs brownish, about 0.25 mm. long, the lenticels corky, conspicuous, light brown, up to about 0.75 mm. long; leaf blades elliptic to oblong or broadly oblanceolate, 20 to 30 cm. long, 7 to 11.5 cm. wide, or the uppermost smaller, acuminate at apex (the tip itself blunt), narrowed at base and decurrent on the petiole, submembranaceous, entire or undulate, the upper surface drying olive, nitid, glabrous, the costa and lateral veins (10 to 12 pairs) flat or slightly raised, moderately conspicuous, the lower surface drying a slightly lighter shade than the upper, rather sparingly and minutely strigose, the hairs brownish and about 0.25 mm. long, the costa and lateral veins raised and rather conspicuous, the veinlets coarsely but inconspicuously reticulate; petioles 5 to 15 cm. long (the upper half or third narrowly winged), glabrous or sparingly and minutely strigose; spikes terminal, solitary, subsessile, up to 26 cm. long and 12 mm. broad, quadrangular, the rachis white-cottony-tomentose; bracts decussate, closely imbricate, rhombic-ovate, 1 cm. long, about 7 mm. wide, acute to subacuminate (the tip itself rounded), coriaceous, the margins subscarious, ciliolate near base of bract, the costa prominent, inconspicuously excurrent at tip, the lateral nerves conspicuous except on the broad scarious margins, both surfaces glabrous, the ocelli replaced by dull alveolate oval areas about 1.5 mm. long and 1 mm. wide; bractlets lanceolate, 10 mm. long and 3 mm. wide, carinate, the keel densely soft-pubescent, the margins subglabrous, ciliolate; calyx 11.5 mm. long, the posterior segment oblong-ovate, 5 mm. wide, the anterior pair lanceolate, 3 mm. wide, the lateral pair more narrowly lanceolate, 2.5 mm. wide, all striate-nerved, the posterior segment sparingly and minutely pubescent, obtuse at apex, the other glabrous and minutely apiculate; corolla straw-color, tinged with pink (*Haught*), papillose without, slightly curved, about 5 cm. long, the tube about 5 mm. broad near base, narrowed to 3 mm. at 10 mm. above base, thence gradually expanded to about 7 mm. at mouth, the upper lip erect, 15 mm. long and 7 mm. wide, the 2 apical lobes narrowly triangular, about 6 mm. long and 3 mm. wide, the middle lobe of the lower lip spreading, ovate, 17 mm. long, 8 mm. wide, the apex acute and recurved, the lateral lobes partly adnate to the upper lip, their free portions about 1 mm. long and broad, rounded; stamens exerted about 5 mm. beyond the mouth of the corolla tube, the anthers about 6 mm. long and 1 mm. broad, their basal lobe muticous; capsules oblong, 14 mm. long and 6 mm. broad, rounded, glabrous, minutely punctate under a lens; seeds brown, flat, 4 mm. long and 3 mm. broad, sparingly papillose.

Type in the U. S. National Herbarium, No. 1662504, collected in a swampy forest at Puerto Araujo on the Río Carare, vicinity of Puerto

Berrio, Department of Santander, Colombia, 100 to 700 meters altitude, June 6, 1935, by Oscar Haught (No. 1750). An isotype is in the herbarium of the New York Botanical Garden. *Mutis* 1501 (S, US) is also of this species.

*Aphelandra straminea* can be separated from *A. hodgei*, *A. longispica*, and other closely related species by its straw-colored corollas,

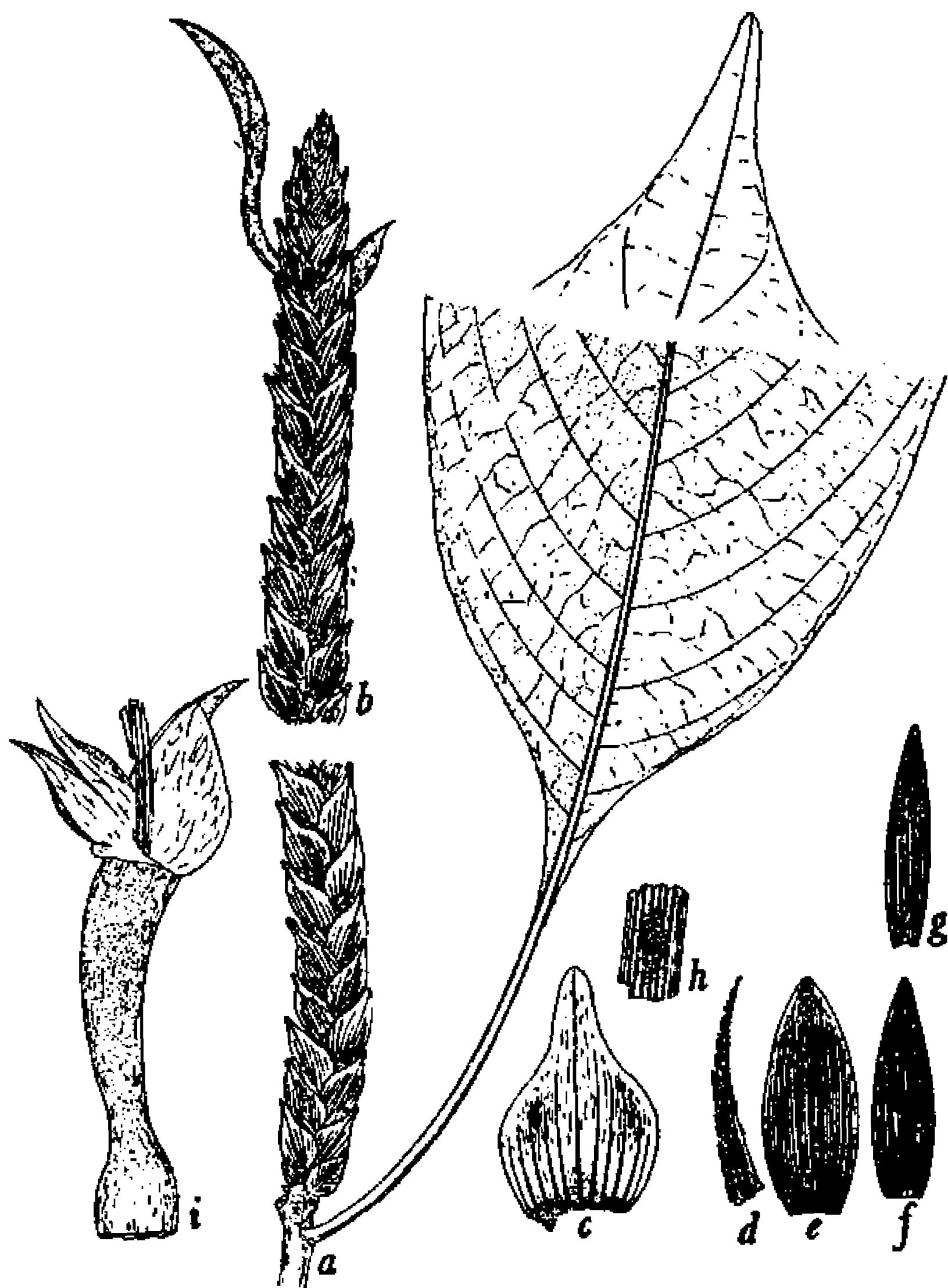


FIGURE 90.—*Aphelandra straminea* Leonard (Haught 1750): *a*, Tip of stem including basal portion of spike; *b*, tip of spike; *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, glandular area of bract; *i*, corolla. (*a*, *b*, Half natural size; *c*-*g*, twice natural size; *h*, about 3 times natural size; *i*, natural size.)

hence the specific name *straminea*. The spike of the Stockholm specimen cited above is atypical in being poorly developed (only about 5 cm. long).

65. *Aphelandra scolnikae* Leonard, sp. nov.

FIGURE 91

Frutex, caulibus teretibus, strigosis, pilis arcte appressis; lamina foliorum oblongo-ovata vel elliptica, apice breviter acuminata (apice ipso obtuso), basi angustata, in petiolum decurrens, subcoriacea, undulata vel crenata, supra glabra vel subglabra, subtus aliquanto stri-

gosa, pilis brunnescentibus et arcte appressis, costa et venis lateralibus aliquanto prominentibus; petioli breves, dense strigosi; spicae plures, terminales et subterminales, breviter pedunculatae, pedunculis minute strigosis, rhache albo-flocculoso-tomentosa; bracteae rhombico-ovatae, brunnescenti-aurantiacaе (siccae), acutae, ciliolatae, intus glabrae, extus strigosae (praecipue in area mediana), ad margines glabrae et subhyalinae, costa et nervis lateralibus obscuris, areis alveolatis ellipticis, brunneis; bracteolae lanceolatae, acuminatae, carinatae, carina dense pubescente, pilis albescentibus, ascendentibus; calycis segmenta coriacea, striato-nervata, apice subacuta, segmentum posterius oblongum, tenuiter pubescens (praecipue in area mediana), segmenta anteriora et lateralia anguste oblonga, deorsum glabra, sursum minute puberulenta; corolla ignota; capsulae subclavatae, apice rotundatae, glabrae.

Shrubs up to 3 meters high; stems woody, terete, upwardly strigose, the hairs closely appressed, about 0.25 mm. long; leaf blades oblong-ovate to elliptic, up to 14 cm. long and 5 cm. wide, short-acuminate (the tip blunt), narrowed at base and decurrent on the petiole, subcoriaceous, undulate to crenate, the upper surface glabrous or nearly so, the lower surface moderately strigose, the hairs about 0.25 mm. long, brownish, closely appressed, the costa and lateral veins (8 to 10 pairs) rather prominent; petioles (unwinged portion) up to 1 cm. long, densely strigose, the hairs about 0.25 mm. long; spikes several terminal and subterminal, pedunculate, up to 10 cm. long, about 1 cm. broad, the peduncles up to 1 cm. long and 1.5 mm. in diameter, minutely strigose, the rachis white-tomentose; bracts rhombic-ovate, drying brownish orange, 1 cm. long, 5.5 mm. wide slightly below middle, acute, subtomentose at base, the medial region moderately strigose (the hairs about 0.25 mm. long), the marginal region glabrous and subhyaline, ciliolate, the inner surface glabrous, the costa and lateral nerves inconspicuous, the alveolar spot elliptic, about 1 mm. long and 0.5 mm. wide, brown; bractlets lanceolate, 8 mm. long, 2 mm. wide, acuminate, carinate, the keel densely pubescent, the hairs whitish, ascending, slightly exceeding 0.5 mm. in length; calyx 11 mm. long, the posterior segment oblong, 3.5 mm. wide, the medial region finely pubescent, the hairs ascending, the anterior and lateral segments narrowly oblong, 2 to 2.5 mm. wide, glabrous toward base, minutely puberulous toward tip, all the segments coriaceous, striate-nerved and subacute at tip; corollas not seen; ovary glabrous; capsules subclavate, 12 mm. long, about 4 mm. broad and 3 mm. thick, rounded at tip, glabrous.

Type in the U. S. National Herbarium, No. 1954096, collected in tamp woods below the divide, Santa Elena, along the road between Medellín and Rionegro, Department of Antioquia, Colombia, 2,500

meters altitude, April 2, 1949, by Fred A. Barkley, Rosa Scolnik, and Tomás G. Orozco (No. 523). Also of this species are: *Barkley, Ríos & Betancourt* 618 (US), collected in a densely wooded region near La Palmitas, Antioquia, 1,700 meters altitude, and *Scolnik, Barkley & Peña* 554 (US), collected in a damp open woods in the Boquerón de San Cristóbal, Antioquia, 2,500 meters altitude, March 5, 1949.

*Aphelandra scolnikae* is probably related to *A. glabrata*. A close examination of the specimens cited failed to reveal the least vestige of a corolla. Yet "flores amarillo-claras" constitutes a part of the

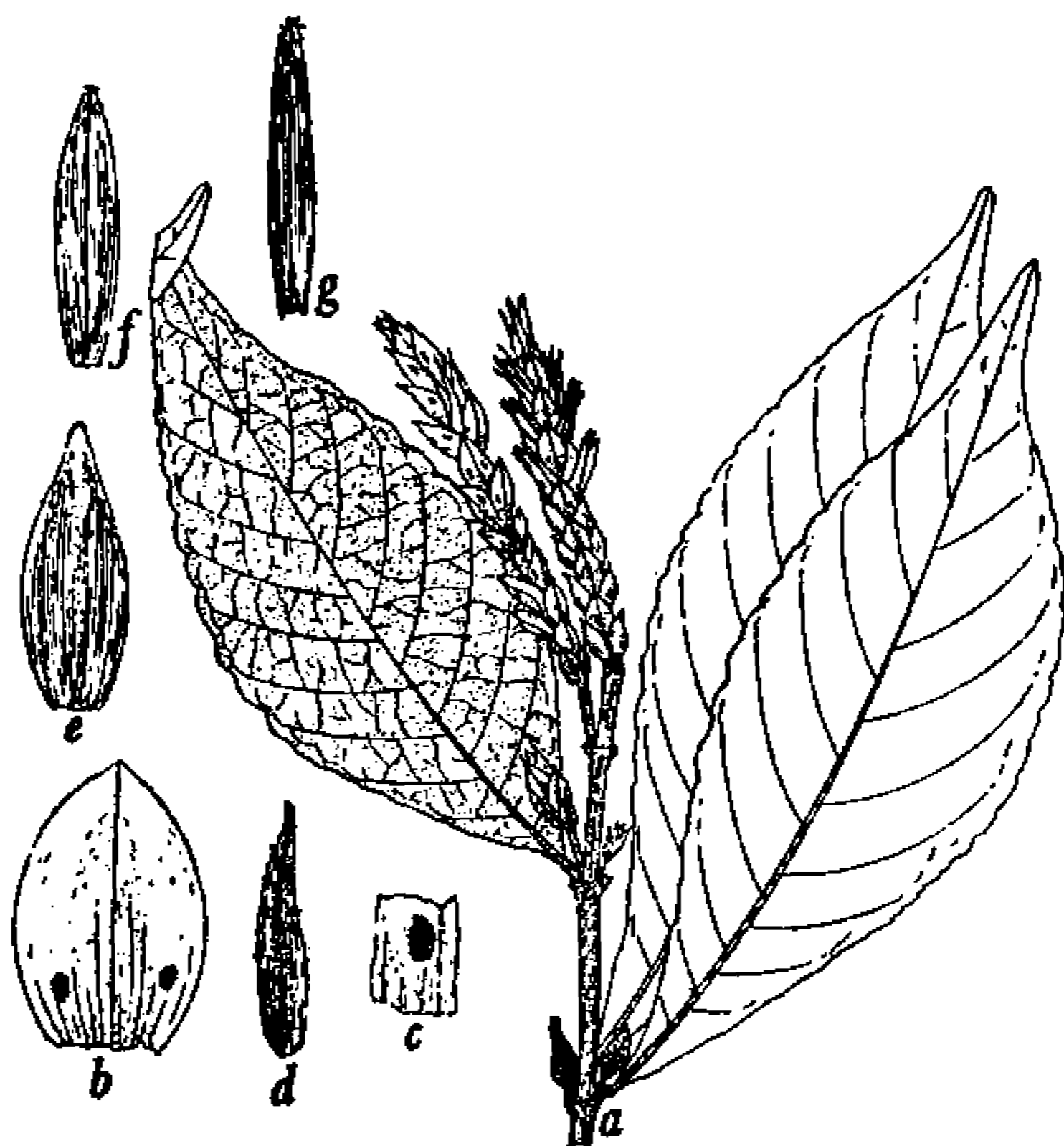


FIGURE 91.—*Aphelandra scolnikae* Leonard (*Barkley, Scolnik, & Orozco* 523): *a*, Tip of plant; *b*, bract; *c*, glandular area of bract consisting of numerous minute ocelli; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments. (*a*, Half natural size; *b*, *d*-*g*, twice natural size; *c*, about 3 times natural size.)

data of the type sheet. The note that *Barkley, Ríos, and Betancourt's* No. 618 had "flores rojas," may have applied to red bracts, which were mistaken for corollas.

66. *Aphelandra sericophylla* Leonard, sp. nov.

FIGURE 92

Frutex, caulibus teretibus, dense strigosis, pilis brunnescentibus; lamina foliorum elliptica, breviter acuminata, basi angustata, in petiolum decurrens, subcoriacea, integra vel undulata, supra glabra vel parce strigosa, subtus dense sericeo-pilosa, pilis albidis, ascendentibus, costa et venis lateralibus aliquanto prominentibus; petioli aliquanto breves, dense strigosi; spicae solitariae, sessilibus, breves, bracteis imbricatis, rhache tenuiter pilosa vel subtomentosa, pilis

albidis; bracteae rhombico-ovatae, obtusae, glabrae vel dorso parce et tenuiter pubescentes, marginibus tenuiter ciliatis, costa et nervis lateralibus aliquanto prominentibus; areolae alveolatae, opacae, ellipticae; bracteolae oblique lanceolatae, acuminatae, carinatae, area marginali glabra, striata, ciliata, carina dense et tenuiter pilosa, pilis ascendentibus; calycis segmenta coriacea, obscure striata, dorso tenuiter pubescentia, costa et venis lateralibus sursum obscuris, basi induratis, callum triangularem ferentibus, segmentum posterius anguste ovatum, apice subacutum et ciliatum, anteriora oblique lanceolata, acuta, lateralia anguste lanceolata, acuta; corolla (immatura) papillosa; ovarium glabrum.

Shrubs; stems terete or subterete, densely strigose, the hairs brownish, about 0.5 mm. long; leaf blades elliptic, up to 12 cm. long and 4 cm. wide, short-acuminate (the tip itself blunt), narrowed at base and decurrent on the petiole, subcoriaceous, entire or undulate, the upper surface drying to dark olive-brown, glabrous or sparingly strigose, the hairs confined chiefly to the costa, the lower surface drying to gray, densely and silky-pilose or subtomentose, the hairs whitish, up to 0.75 mm. long, ascending, the costa and lateral veins moderately conspicuous, more so beneath than above; petioles up to 1 cm. long, densely strigose; spikes solitary, terminal, curved, sessile, up to 6 cm. long and 8 mm. broad, the bracts rather closely imbricate, the rachis finely pilose or subtomentose, the hairs whitish; bracts rhombico-ovate, 6 mm. long, 4 mm. wide at 2 mm. above base, obtuse, glabrous or finely and sparingly pubescent dorsally, the margins finely ciliate, the costa and lateral nerves rather prominent; alveolar area dull, elliptic, about 1.5 mm. long and 0.5 mm. wide; bractlets obliquely lanceolate, acuminate, carinate, 6 mm. long and 1.5 mm. wide, the keel densely and finely pilose, the hairs ascending, up to 1 mm. long, whitish, the marginal areas 0.5 to 1 mm. wide, glabrous, striate, the margins ciliate; calyx 6.5 mm. long, the segments coriaceous, obscurely striate, finely pubescent dorsally, the costa and lateral nerves obscure except at base, here indurate forming a thick triangular callus, the posterior segment narrowly ovate, 3.5 mm. wide, subacute, ciliate at tip, the anterior segments obliquely lanceolate, 2 mm. wide, acute, the lateral pair narrowly lanceolate, 1.5 mm. wide, acute; corolla (immature) papillose; ovary glabrous.

Type in the Herbario Nacional Colombiano, collected at Casas Viejas, Limbo, Department of Cundinamarca, Colombia, 100 meters altitude, February 1858, by J. Triana (s. n.). Fragment of type in the U. S. National Herbarium.

Lehmann's No. 5506 (K), collected in dense bush-woods on steep, stony mountain slopes between Las Juntas and El Naranjo, on the Río Dagua, Andes west of Cali, Department of El Valle, 300 to 1,000



meters altitude, is also of this species. Lehmann's field note is as follows: "Shrub up to 3 m. in height, with a candelabrum-shaped ramification. Leaves dark green, shiny, fairly robust. Flowers light blood-red."

*Aphelandra sericophylla* is close to *A. glabrata*, differing chiefly in the densely silky pilose lower surface of the leaf blades. The name *sericophylla* is derived from the Greek *σηρικός*, silky, and *φύλλον*, leaf.

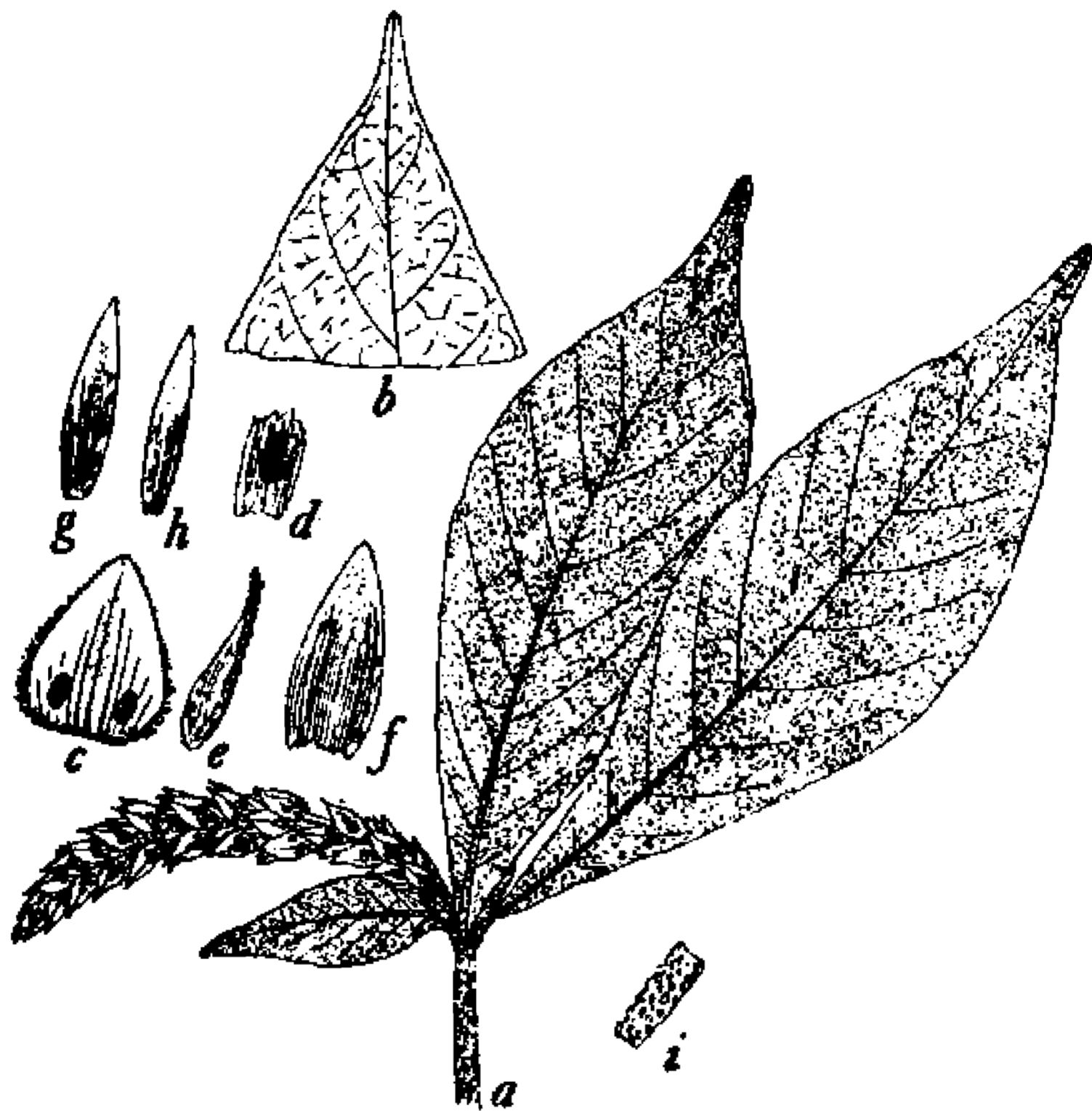


FIGURE 92.—*Aphelandra sericophylla* Leonard (*Triana* s. n., Casas Viejas, Limbo): *a*, Tip of stem; *b*, tip of leaf blade (upper surface); *c*, bract; *d*, glandular area showing numerous minute ocelli; *e*, bractlet; *f*, posterior calyx segment; *g*, one of the anterior segments; *h*, one of the lateral segments; *i*, pubescence of corolla tube (immature). (*a*, *b*, Half natural size; *c*, *e-h*, twice natural size; *d*, about 3 times natural size; *i*, about 40 times natural size.)

67. *Aphelandra garciae* Leonard, sp. nov.

FIGURE 93

Frutex gracilis, caulibus deorsum teretibus, glabris, sursum dense strigosis, pilis sordidis; lamina foliorum obovata vel late oblanceolata, breviter acuminata (apice ipso obtuso vel rotundato), basi angustata, in petiolum decurrens, submembranacea, supra glabra, minute alveolata, subtus parce strigosa, costa et venis aliquanto dense strigosis, pilis sordidis; petioli breves, dense strigosi; spicae terminales, solitariae, subsessiles, rhache minute pilosa, pilis ascendentibus; bracteae rhombico-ovatae, apice rotundatae et subapiculatae, coccineae (vivae), brunnescentes (siccae), intus glabrae, extus minute lepidotae, costa et nervis prominentibus, marginibus subhyalinis et ciliolatis; areola elliptica, opaca, alveolata pro ocellis substituta; bracteolae lanceolatae, subfalcatae, carinatae, marginibus striato-nervatis, subhyalinis, carina dense pilosa pilis brunnescentibus, ascendentibus; calycis segmenta

sursum pilosa, deorsum glabra, striato-nervata, acuta (apice ipso obtuso et minute apiculato), segmentum posterius oblongo-ellipticum, anteriora oblonga, lateralia lineari-oblonga; corolla flava, extus minute hirsuta, intus strigosa, tubo subcylindrico, leviter curvato, labio superiore erecto, elliptico, bilobato, lobis triangulari-ovatis, tenuiter acuminatis, labio inferiore trilobato, lobo medio patulo, ovato, acuminato, lobis lateralibus parvis, triangularibus, apice obtusis, cum labio superiore basi connatis; ovarium glabrum.

Shrub, up to 75 cm. high, slender, straight, the tips of the branches densely strigose, the hairs sordid, about 0.5 mm. long, the lower portions of the stems terete, glabrate, the lenticels minute, brown, corky, inconspicuous; leaf blades obovate or broadly oblanceolate, up to 30 cm. long and 11.5 mm. wide, short-acuminate (the tip itself obtuse or rounded), narrowed at base and decurrent on the petiole, submembranaceous, entire or undulate, the upper surface drying to olive-green, glabrous, minutely alveolate under lens, the costa and lateral veins flat or slightly raised, barely conspicuous, the lower surface drying to green or light olive-green, sparingly strigose, the hairs sordid, about 0.75 mm. long, the costa and lateral veins rather densely strigose, raised and more conspicuous than on the upper surface; petioles (unwinged portion) up to 1 cm. long, the pubescence similar to that of the stem; spikes solitary, terminal, up to 22 cm. long and 1 cm. broad, the peduncle barely 0.5 cm. long and 3.5 mm. in diameter, densely strigose, the rachis minutely pilose, the hairs barely 0.5 mm. long, ascending, yellowish; bracts rhombic-ovate, 12 mm. long, 8 mm. wide, rounded and subapiculate at apex, coriaceous, bright red (living), drying to yellowish brown, glabrous within, minutely scurfy without, the costa and nerves prominent, the margins subhyaline, ciliolate except toward base, the ocelli replaced by a dull elliptic faveolate area about 2.5 mm. long and 1 mm. wide; bractlets lanceolate, subfalcate, carinate, 12 mm. long, 2.5 mm. wide, the keel densely pilose, the hairs about 0.5 mm. long, light brown or whitish, ascending, the margins striate-nerved, subhyaline; calyx about 2 cm. long, the posterior segment oblong, elliptic, slightly over 5 mm. wide, finely pilose toward tip, the hairs whitish, subappressed, the anterior pair 4.5 mm. wide, the lateral pair somewhat narrower than the anterior pair and like them, glabrous or bearing a few hairs at tip, all of the segments acute (the tip itself blunt, minutely apiculate) and ciliate; corolla yellow, drying brown, minutely hirsute, the hairs subappressed or ascending, some of them as much as 0.5 mm. long, the tube slightly curved, 4 cm. long, 4 mm. broad at base, narrowed to 3 mm. at 5 mm. above base, thence gradually enlarged into a subcylindric throat 7 mm. broad at mouth, the upper lip erect, elliptic, 15 mm. long and 7 mm. wide, bilobed, the lobes triangular-ovate, about 8 mm. long, slenderly acuminate, the middle lobe

of the lower lip spreading, ovate, 15 mm. long, about 7 mm. wide, acuminate, strigose within, the hairs closely appressed, about 0.5 mm. long, the lateral lobes triangular, about 4 mm. long, partly adnate to the

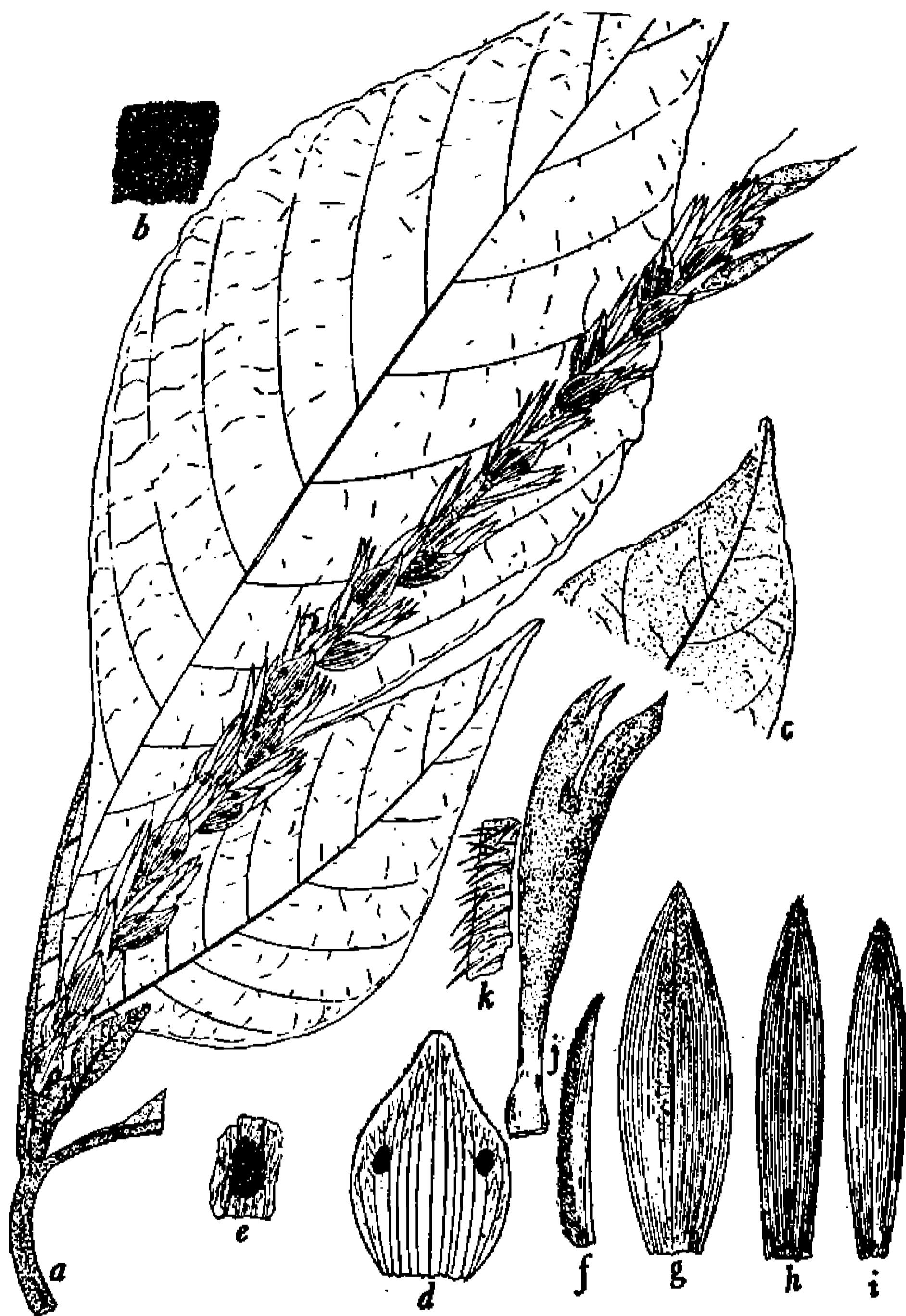


FIGURE 93.—*Aphelandra garciae* Leonard (Killip & Garcia 33532): *a*, Tip of plant; *b*, alveolar upper surface of leaf blade under strong lens; *c*, tip of leaf blade (lower surface); *d*, bract; *e*, glandular area of bract; *f*, bractlet; *g*, posterior calyx segment; *h*, one of the anterior segments; *i*, one of the lateral segments; *j*, corolla; *k*, pubescence of corolla tube. (*a*, *c*, Half natural size; *b*, about 20 times natural size; *d*, *f*-*i*, twice natural size; *e*, about 4 times natural size; *j*, natural size; *k*, about 16 times natural size.)

lower part of the upper lip, their free portions about 1.5 mm. long and 1 mm. wide, obtuse; ovary glabrous; stamens and capsules not seen.

Type in the U. S. National Herbarium, No. 1770464, collected in dense forest along the Quebrada Jellita, Bahía Solano, Department of

Chocó, Colombia, 50 to 100 meters altitude, February 22, 1939, by E. P. Killip and Hernando García-Barriga (No. 33532).

*Aphelandra garciae* is distinct from other species of the *Aphelandra pulcherrima-tetragona* complex in its yellow, minutely hirsute corollas (at least the lower lip strigose within), and in the minutely pilose rachis. Its closest relative is possibly *A. blandii*.

Killip and Cuatrecasas' No. 39123, collected in dense tidal forest along the banks of Quebrada Togoromá, Chocó, June 13, 1944, is undoubtedly of this species even though the color of the corolla is noted as red.

68. *Aphelandra crenata* Leonard, sp. nov.

FIGURE 94

Frutex erectus, caulibus sursum quadrangularibus, glabris; lamina foliorum magna, oblongo-elliptica, breviter acuminata (?), basi angustata, in petiolum decurrens, submembranacea, valde crenata, utrinque glabra vel subtus in costa et venis parce puberula; spicae plures, terminales, subsessiles, laterales pedunculatae, pedunculis glabris vel parce et minute strigosis, rhache glabra; bracteae coccineae (vivae), ovatae, obtusae, coriaceae, costa prominente, in mucrone minuto terminantes; areola elliptica opaca, alveolata, nigro-brunnescente pro ocellis substituta; bracteolae lanceolatae, falcatae, carinatae, subacutae, carina dense hirsuta, pilis flavescens, ascendens, marginibus glabris, subhyalinis, apice plus minusve ciliatae; calycis segmenta glabra, ciliata, striato-nervata, apice rotundata et mucronata, basi indurata, segmentum posterius oblongum, anteriora anguste oblonga, lateralia linear-oblonga; corolla rosea, dense papillosa, tubo subcylindrico, labio superiore erecto, elliptico, bilobato, lobis triangularibus, acutis, labio inferiore trilobato, lobo medio elliptico, apice mucronato, recurvato, lobis lateralibus parvis, ovatis, obtusis, cum labio superiore basi connatis; stamina vix exserta, antheris basi acutis.

An erect soft-wooded shrub; stems quadrangular toward tip, glabrous; leaf blades oblong-elliptic, up to 40 cm. long and 13.5 cm. wide, short-acuminate (?), narrowed at base and decurrent on the petiole, submembranaceous, prominently and irregularly crenate except the narrowed basal portion, the upper surface drying olive-green, glabrous, the costa and lateral veins (16 to 18 pairs) slightly raised, scarcely conspicuous, the lower surface drying to grayish olive-green, densely and minutely white-punctate under lens, glabrous or the costa and lateral veins sparingly puberulous, the hairs appressed or spreading; spikes several, up to 16 cm. long and 2 cm. broad, the terminal ones subsessile, the lateral borne on peduncles up to 3.5 cm. long, these glabrous or sparingly and minutely strigose, the rachis glabrous; bracts coriaceous, scarlet (*Haught*) in live plants, drying to light brown proximally, shading to blackish brown toward tip, glabrous,

ovate, 13 mm. long and 10 mm. wide, obtuse, the costa rather prominent, ending in a minute mucro, the flanking nerves fairly prominent except toward tip; ocelli replaced by elliptical, dull blackish brown faveolate areas up to 4 mm. long and 2 mm. wide; bractlets lanceolate, falcate, carinate, 10 mm. long, slightly over 3 mm. wide, acutish, the costa and keel densely hirsute, the hairs yellowish, ascending, about

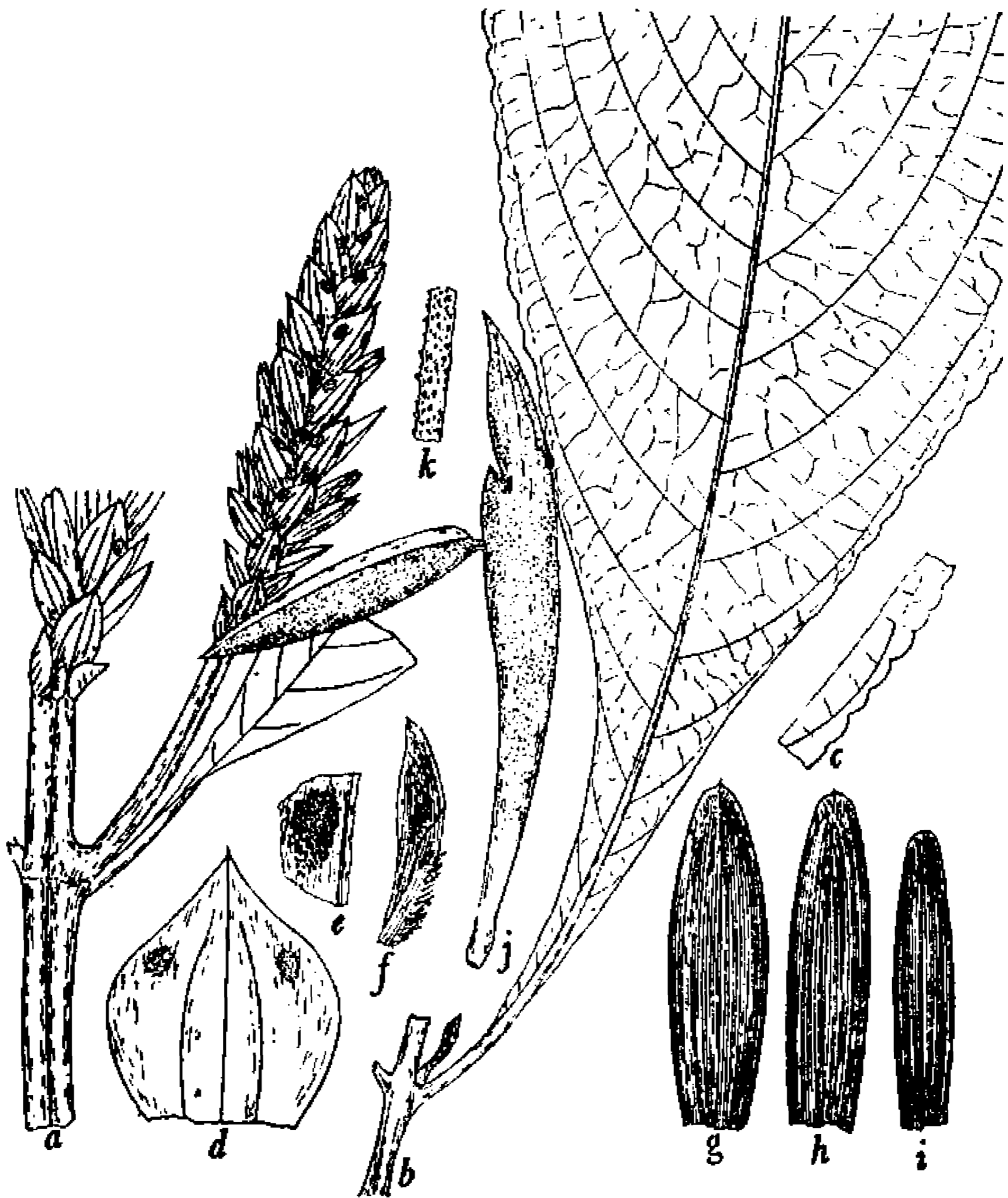


FIGURE 94.—*Aphelandra crenata* Leonard (Haught 1464): *a*, Basal portion of inflorescence; *b*, node showing lower portion of leaf blade (lower surface); *c*, crenation of margin from middle portion of leaf blade; *d*, bract; *e*, glandular area of bract; *f*, bractlet; *g*, posterior calyx segment; *h*, one of the anterior segments; *i*, one of the lateral segments; *j*, corolla; *k*, pubescence of corolla tube. (*a-c*, Half natural size; *d*, *f-i*, twice natural size; *e*, about 4 times natural size; *j*, natural size; *k*, about 20 times natural size.)

0.5 mm. long, the marginal area glabrous, bordered by a narrow subhyaline edging, the tip more or less ciliate; calyx 16 to 17 mm. long, the posterior segment oblong, slightly over 7 mm. wide, the anterior segments narrowly oblong, 5 mm. wide, the lateral segments linear-oblong, 3 mm. wide, all minutely scurfy within, glabrous and striate-nerved without, ciliate, rounded and minutely mucronate at tip, indurate at base; corollas rose, densely papillose, 7 cm. long from base

to tip of upper lip, 10 mm. broad at base, narrowed to 4 mm. at 8 mm. above base, thence enlarged to a slightly curved subcylindric throat, 7 mm. broad at mouth, the upper lip erect, elliptic, about 23 mm. long and 9 mm. wide, bilobed at tip, the lobes triangular, 9 mm. long, 4 mm. wide, acute, the middle lobe of the lower lip spreading, narrowly elliptic, 3 cm. long, 9 mm. wide, the submucronate tip slightly recurved, the lateral lobes about 1 cm. long, partly adnate to the lower part of the upper lip, their free portions 2 mm. long and 1.5 mm. wide, rounded; stamens exserted about 1 cm. beyond mouth of the corolla tube, the anthers 1 cm. long, 1.5 mm. broad, acute at base, blunt at tip; capsules not seen.

Type in the U. S. National Herbarium, No. 1662465, collected at Camp Zarzal, in the vicinity of Barranca Bermeja, in the Magdalena Valley, between the Sogamoso and Colorado rivers, Department of Santander, Colombia, 100 to 500 meters altitude, December 15, 1934, by Oscar Haught (No. 1464).

Idrobo and Schultes' No. 885, collected at Guapayita, Cordillera La Macarena, Meta, 500 to 600 meters altitude, December 20-28, 1950, is also of this species.

*Aphelandra crenata* is related to *A. hartwegiana*, differing in its rose-colored corolla, densely hirsute keel of the bractlets, and its rounded calyx segments. The specific name *crenata* alludes to the strongly crenate margins of the leaf blades.

#### 69. *Aphelandra glabrata* Nees

*Aphelandra glabrata* Willd. ex Nees in DC. Prodr. 11: 296. 1847. Type collected between Fusagasugá and Pandi, Department of Cundinamarca, Colombia, by Humboldt. Photograph of type material from the Berlin Herbarium in the U. S. National Herbarium (Field Mus. photograph No. 8708).

Shrubs, or suffrutescent herbs, up to 2 meters high; stems terete, erect or ascending, sparingly branched, the tips densely and minutely strigose, the hairs brownish, appressed, the lower portions of the stem glabrate, the lenticels raised, corky, minute, orbicular to linear, the larger barely more than 0.5 mm. long; leaf blades obovate to elliptic or oblong or oblanceolate, 10 to 20 cm. long, 3 to 12 cm. wide, more or less abruptly acuminate (the tip itself blunt, the apex often curved), gradually narrowed to base, coriaceous, the upper surface drying olive to dark brown, nitid, glabrous or the costa minutely hirsute or in young leaves the entire surface hirsute, the hairs about 0.5 mm. long, appressed or spreading, the costa and lateral veins, usually 10 to 12 pairs, flat or slightly raised, the lower surface drying light olive or brown, the entire surface usually rather densely but minutely hirsute, the hairs about 0.5 mm. long, appressed or ascending, brownish; petioles (unwinged portion) up to 10 mm. long, the pubescence similar to that of the stems; flowers borne in 1 to several terminal sessile

spikes 4 to 15 cm. long or occasionally as much as 20 cm. long, the rachis white-cottony; bracts red, closely imbricate, subrhombic, up to 7 mm. long and 5 mm. wide at 2.5 mm. above base, glabrous or softly pubescent dorsally without, densely ciliolate, the costa and 2 or more nerves on either side prominent, these flanked on either side by a flat, elliptic, subpunctate glandular spot about 1.5 mm. long and 1 mm. wide; bractlets lanceolate, oblique, 7 mm. long, 1.5 mm. wide, acute, carinate, the keel densely white-pilose, the hairs appressed to ascending, the margins subhyaline, ciliate at tip, delicately striate-nerved; calyx 7.5 mm. long, glabrous, striate-nerved, the posterior segment 4 mm. wide, obtuse, the anterior pair 2.25 mm. wide, the lateral pair 2 mm. wide, both pairs acute to obtuse; corollas 3.5 cm. long, bright red, glabrous, minutely punctate, the tube about 2.5 mm. broad at base, narrowed at tip of ovary to 1.5 mm., thence gradually enlarged to 4 mm. at mouth, the upper lip erect, 15 mm. long, about 7 mm. broad at base, narrowed to a slender 2-lobed tip, the lobes 3.5 mm. long, 1 mm. wide at base, slenderly acuminate, the middle lobe of the lower lip spreading, lance-elliptic, 4 mm. wide, obtuse at apex, conduplicate; capsules glabrous, 13 mm. long, 4.5 mm. broad, 3 mm. thick, sparingly and inconspicuously punctate; mature seed not seen.

*Aphelandra glabrata* can be recognized and readily separated from *A. pulcherrima* by its smooth, albicant stems and glossy leaves, characters which suggested the specific name. The flowering season extends from May through August. According to Killip, Dugand, and Jaramillo (No. 38155), the entire inflorescence takes on a deep purple color with age.

Woods and thickets, often along streams at various elevations ranging from 100 to 2,200 meters. Apparently endemic in Colombia.

ANTIOQUIA: Vicinity of Dabeiba, *Johnson & Barkley* 18C.409 (US); *Uribe-Urbe* 1436 (Col). Urabá, Río Rama, between Dabeiba and Urabá, *Uribe-Urbe* 1517 (Col).

CUNDINAMARCA: Along trail to Anapoima, east of Apulo, *Killip, Dugand, & Jaramillo* 38155 (US). Fusagasugá, *Holton* 595 (Ph, NY). Guaduas, *Bro. Ariste-Joseph* 1019 (US). Between Guaduas and Alto de Aguacilara, at the Hacienda Paramillo, *García-Barriga* 12358 (US). Nariño, *Pérez-Arbeláez* 417 (Col, US). Páramos of Guasca, toward Gachetá, *Bro. Ariste-Joseph* s. n. (NY, US). La Paila, *Triana* (Col). Quebrada Carmargo, north of Apulo, *Killip, Dugand, & Jaramillo* 38237 (US).

EL VALLE: Cali, *Herrera* 944 (US). La Cumbre, *Pennell* 5676 (Ph, NY, US). Río Dagua, *Killip* 35586 (US); *Lehmann* s. n. (K).

HUILA: East of Neiva, *Rusby & Pennell* 409 (US).

TOJIMA: Angostura de Honda, *André* 287 (K). Doima, *Haught* 2449 (US). Honda, *Bro. Ariste-Joseph* A360 (US).

DEPARTMENT (?): *Mutis* 720 (US), 1504 (US); *Triana* s. n. (NY, US).

70. *Aphelandra hodgsei* Leonard, sp. nov.

FIGURE 95

Suffrutex, caulibus glabris; lamina foliorum oblongo-elliptica, apice breviter acuminata (?), basi angustata, in petiolum decurrens, integra,

supra glabra, subtus parce et minute strigosa, costa et venis lateralibus prominentibus; petioli glabri; spica terminalis, solitaria, subsessilis, rhache dense sericeo-pubescente, pilis albis; bracteae coccineae, ovatae, obtusae, intus sursum puberulae, extus dorso puberulae, costa et venis lateralibus prominentibus; areola elliptica opaca alveolata pro ocellis substituta; bracteolae anguste lanceolatae, acuminatae, carinatae, carina dense albo-pubescente, ciliatae, basi dentem ascendentem subhyalinum ferentes; calycis segmenta acuta, chartacea, striato-nervata, fere glabra, apice pilos raros minutos ferentia, segmentum posterius angusto-ovatum, segmenta anteriora lanceolata, lateralia anguste lanceolata; corolla coccinea, minute papillosa, tubo subcylindrico, labio posteriore ovato, apice bilobato, lobis anguste triangularibus, subulatis, labio inferiore trilobato, lobo medio elliptico, apice acuminato, lobis lateralibus triangularibus, obtusis, cum labio superiore basi connatis; stamina vix exserta; antherae apice cohaerentes; ovarium glabrum.

Suffretescent; stems glabrous; leaf blades oblong-elliptic, up to 30 cm. long and 10 cm. wide, acuminate(?), narrowed at base and decurrent on the petiole, membranaceous, entire, glabrous above, the lower surface bearing a thin pubescence of inconspicuous, closely appressed, brownish, straight hairs about 0.25 mm. long, the costa and lateral veins (12 or 13 pairs) prominent; petioles up to 4 cm. long, glabrous; spikes terminal, solitary, subsessile, up to 13 cm. long and 1.5 cm. broad, the rhachis densely white-silky-pubescent, the hairs straight, ascending, about 0.5 mm. long; bracts scarlet, ovate, 12 mm. long and 8 mm. wide at 3 mm. above base, obtuse at apex, ciliolate, the inner surface puberulous toward tip, the outer surface sparingly puberulous on and near the costa, the hairs appressed and minute, the costa and 3 pairs of lateral veins prominent, the ocelli replaced by a small, opaque, oval, alveolar area up to 2 mm. long and 1 mm. wide; bractlets narrowly lanceolate, 12 mm. long and 3 mm. wide at 3 mm. above base, narrowed to a slender tip, carinate, the keel densely white-pubescent, the hairs fine, ascending, about 0.5 mm. long, the inner surface appressed-pubescent medially and toward tip, the margins ciliate, bearing near base an ascending, subhyaline tooth about 1 mm. long; calyx segments chartaceous, striate, bearing a few minute hairs toward tip, otherwise glabrous, the posterior segment narrowly ovate, 13.5 mm. long, 4.5 mm. wide at 3 mm. above base, the anterior segments lanceolate, 13.5 mm. long and 3.25 mm. wide at 3 mm. above base, the lateral pair narrowly lanceolate, carinate, 11 mm. long and 2.25 mm. wide at 3 mm. above base, all acute and minutely apiculate at tip; corolla 5 cm. long, scarlet, minutely papillate without, densely pilose within at and near the attachment of the stamens, the hairs white, ascending, about 0.75 mm. long, the tube 3 mm. broad at base, 4 mm. broad at 4 mm. above base, then gradually narrowed to 3.5 mm. at 12 mm. above base, thence gradually enlarged to 7 mm. at throat, the upper



lip ovate, 17 mm. long, 10 mm. wide at middle, bilobed at tip, the lobes narrowly triangular, 2 mm. long, 1 mm. wide at base, subulate at tip, the lower lip 3-lobed, the middle lobe elliptic, 6 mm. wide at middle, curved and acuminate at tip, the lateral lobes adhering in part to the upper lip, their free portions triangular, 1.25 mm. long, 1 mm. wide at base, obtuse; stamens slightly exserted, almost reaching the tip of the upper lip of the corolla, attached to the corolla tube at 6 mm. above base, the filaments sparingly pilose toward base, the anthers 7 mm. long and 1.5 mm. broad, their tips webby and slightly adhering; ovary glabrous; capsules not seen.

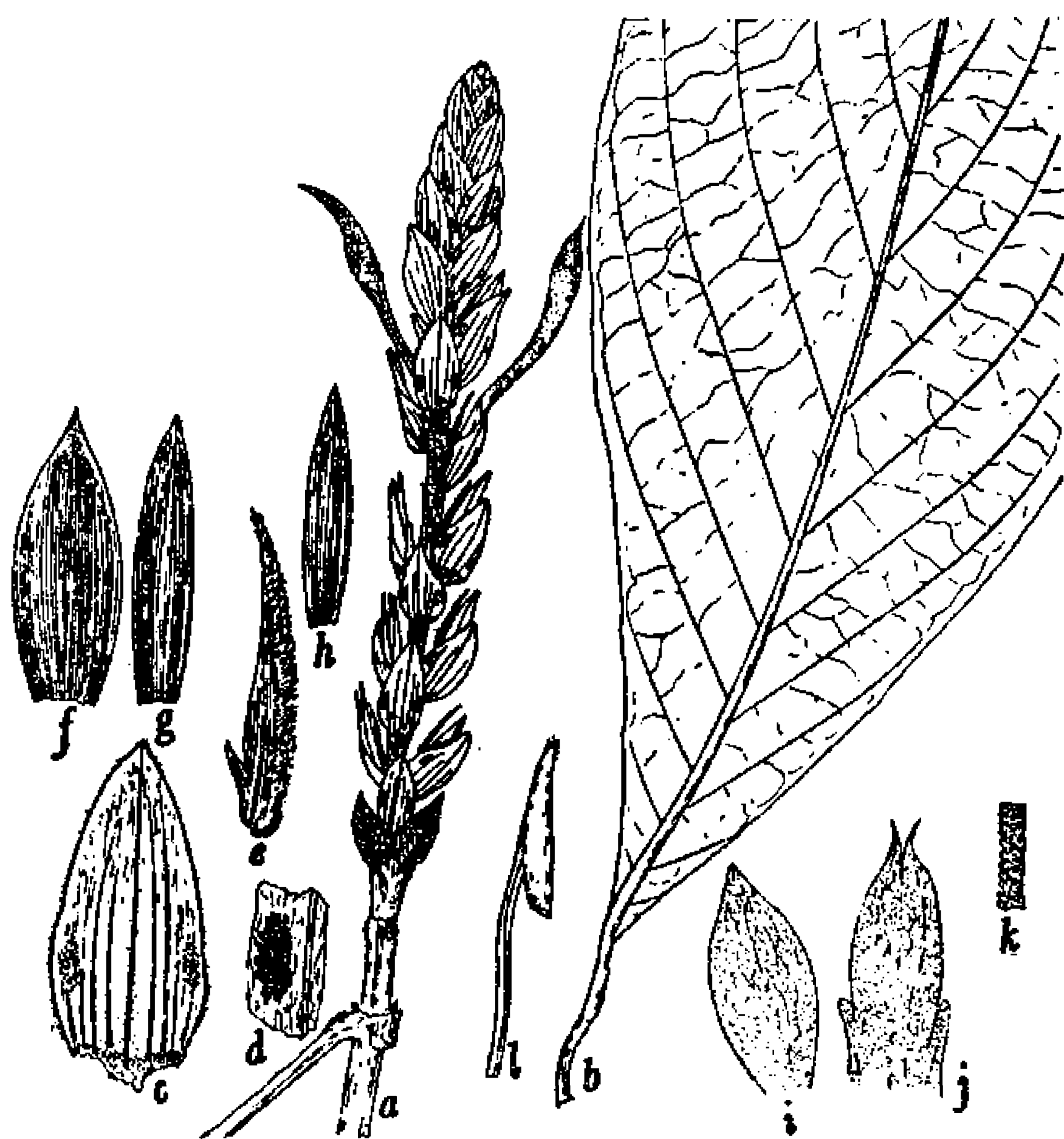


FIGURE 95.—*Aphelandra hodgei* Leonard (Hodge 6513): *a*, Spike; *b*, basal portion of leaf (lower surface); *c*, bract; *d*, glandular area; *e*, bractlet; *f*, posterior calyx segment; *g*, one of the anterior segments; *h*, one of the lateral segments; *i*, lower lip of corolla; *j*, upper lip; *k*, pubescence of corolla tube; *l*, anther. (*a*, *b*, Half natural size; *c*, *e*, *f*-*h*, twice natural size; *d*, about 4 times natural size; *i*, *j*, natural size; *k*, about 20 times natural size; *l*, about 2½ times natural size.)

Type in the Gray Herbarium, collected in forest along the Río Carare, east of Puerto Berrio, Department of Santander, Colombia, 300 to 400 meters altitude, September 28, 1945, by W. H. Hodge (No. 6513). Isotype in the herbarium of the Facultad de Agronomía, Medellín, Colombia.

*Aphelandra hodgei* is related to *A. straminea*, also from Santander, which has the same soft, silky pubescence on the rachis, the large, oblong-elliptic leaf blades, these glabrous above and inconspicuously

appressed-brown-hairy beneath, and firm, obtuse bracts with poorly defined glandular areas. *Aphelandra straminea* differs, however, in its much longer petioles and spikes. Peculiar, when compared with other related species, is the pair of thin but well-formed teeth on the inner margin of the bractlets near their base. Hodge states that the species is a common forest herb.

The leaf blades of the material cited were so completely eaten by insects that no description of their tips can be made.

71. *Aphelandra longispica* Leonard, sp. nov.

FIGURE 96

Frutex, caulibus subteretibus, parce strigosis vel glabratis, pilis minutis, sursum appressis; lamina foliorum ovato-elliptica, late oblanceolata, apice acuminata vel subacuminata (apice ipso subobtusum), basi angustata, in petiolum decurrens, membranacea, integra vel undulata, subnitida, glabra vel subtus pilos raros minutos appressos ferens, costa et venis lateralibus prominentibus; petioli aliquanto breves, glabri vel parce et minute strigosi; spicae 1 vel plures, terminales, subsessiles, rhache albo-sericeo-pilosa, pilis gracilibus; bracteae arcte appressae, quadrifariae, ovatae, obtusae, coriaceae, glabrae, prominenter striato-nervatae, ciliolatae; areola elliptica, punctata pro ocellis substituta; bracteolae lanceolatae, acuminatae, carinatae, carina dense sericeo-pilosa, pilis albis, ascendentibus, marginibus subhyalinae, striato-nervatae, ciliatae; calycis segmenta membranacea, striato-nervata, glabra, acuta vel subacuta, segmentum posterius ovatum, segmenta anteriora et lateralia lanceolata; corolla rubra, minute et dense papillosa, tubo subcylindrico, labio superiore erecto, acuto, labio inferiore trilobato, lobo medio ovato, acuto, lobis lateralibus parvis, rotundatis, cum labio superiore basi connatis; stamina vix exserta; capsulae subclavatae, apice rotundatae, glabrae, nitidae, deorsum minute punctatae; retinacula apice cucullata.

Shrubs up to 1.5 meters high; stems subterete, sparingly strigose or glabrate, the hairs about 0.25 mm. long, upwardly appressed; leaf blades ovate-elliptic or broadly oblanceolate, up to 20 cm. long and 8 cm. wide, acuminate or subacuminate (the tip itself subobtuse), narrowed at base and decurrent on the petiole, thin, entire or undulate, subnitid, glabrous or the lower surface bearing a few scattered, minute, appressed hairs, the costa and lateral veins (10 to 12 pairs) prominent, the veinlets coarsely reticulate; petioles (unwinged portion) 1 to 3 cm. long, glabrous or minutely and sparingly strigose, the channel shallow; spikes 1 or several, terminal, subsessile, up to 30 cm. long and 8 mm. broad, the rachis white-silky-pilose; bracts closely appressed, quadrifarious, ovate, 8 mm. long, 7 mm. wide, obtuse, coriaceous, glabrous, dull without, nitid within, prominently striate-nerved, ciliolate, the ocelli represented by an elliptic, dull, punctate area about 1.5 mm. long and 0.75 mm. wide; bractlets lanceolate, 8 mm. long, 2

mm. wide, acuminate, carinate, the keel densely silky-white-pilose, the hairs ascending, 0.5 to 0.75 mm. long, the marginal area subhyaline, striate-nerved, ciliate; calyx segments thin, striate-nerved, glabrous, the posterior segment 8.5 mm. long and 4 mm. wide, subacute, the

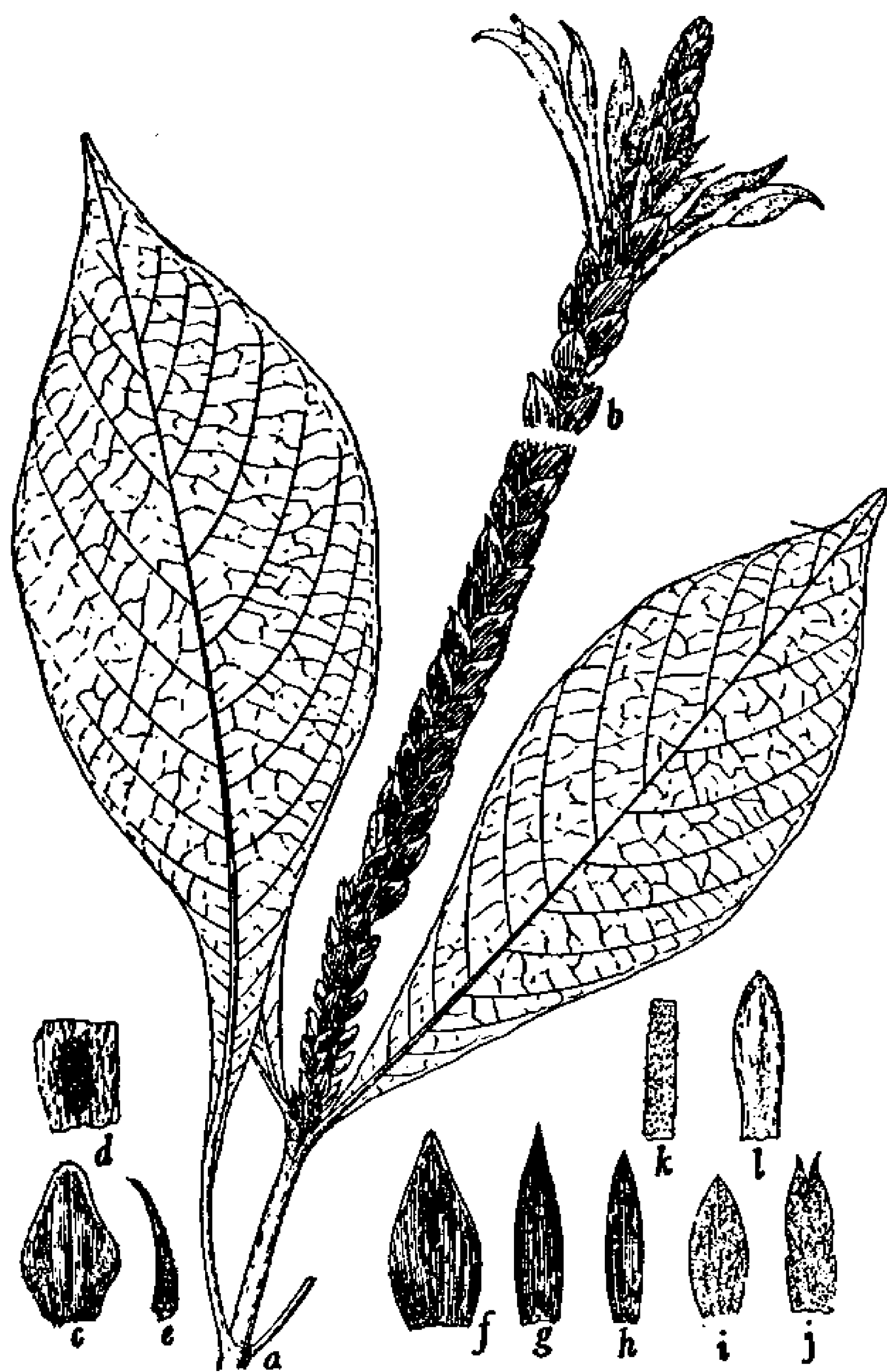


FIGURE 96.—*Aphelandra longispica* Leonard (Killip, Dugand, & Jaramillo 38346): *a*, Tip of plant showing leaves and lower half of spike; *b*, tip of spike; *c*, bract; *d*, a glandular area of bract; *e*, bractlet; *f*, posterior calyx segment; *g*, one of the anterior segments; *h*, one of the lateral segments; *i*, lower lip of corolla; *j*, upper lip; *k*, pubescence or roughening of the corolla tube; *l*, capsule, the dots representing puncta. (*a*, *b*, Half natural size; *c*, *e*, *f*-*h*, twice natural size; *d*, 4 times natural size; *i*, *j*, *l*, natural size; *k*, about 10 times natural size.)

anterior pair lanceolate, 8 mm. long, 2.5 mm. wide, acute, the inner pair lanceolate, 2 mm. wide, acute, subfalcate and subcarinate; corolla red, minutely and densely papillose, 5 mm. broad at base, narrowed at tip of ovary to 3 mm. then abruptly enlarged to 5 mm. and thence gradually to 6 mm. near mouth of tube, the upper lip erect, ovate, about

13 mm. long and 10 mm. wide, acute, the lower lip spreading(?), ovate, about 15 mm. long, 8 mm. wide, acute, the lateral lobes small, partly attached to upper lip, their free portions about 1.5 mm. long and 1 mm. wide, rounded; stamens reaching tip of upper lip; capsules subclavate, about 15 mm. long and 4 mm. in diameter, blunt at tip, glabrous, nitid, minutely punctate toward base; retinacula 3 mm. long, 1.5 mm. broad, cucullate at tip; seed not seen.

Type in the U. S. National Herbarium, No. 1855858, collected along the Quebrada Cabaña, Hacienda El Cucharo, between Tocaima and Pubenza, Department of Cundinamarca, Colombia, 380 to 600 meters altitude, May 8, 1944, by E. P. Killip, A. Dugand, and R. Jaramillo (No. 38346). Mutis' No. 1502 (US, 1562329), collected in Colombia, is also this species.

*Aphelandra longispica* closely resembles *A. straminea* in many respects, e. g. in the size and shape of the spikes, the numerous minute papillae covering the corolla, and the glabrous capsules minutely punctate toward base. The corollas, however, of *A. longispica* are red instead of stramineous, the leaf blades prevailingly smaller (up to 20 cm. long instead of 30 cm.), and the petioles much shorter (unwinged portion up to 3 instead of 12 cm.). The upper lip of the corolla of *A. longispica*, moreover, seems to be entire, instead of bilobed as in *A. straminea*.

## 72. *Aphelandra blandii* Lindau

*Aphelandra blandii* Lindau, Bull. Herb. Boiss. 5: 656. 1897. Type collected at Santa Fé de Bogotá, Colombia, by Bland, and deposited in the Berlin Herbarium. Photographs of the type in the U. S. National Herbarium (Field Mus. photograph No. 8701; Copenhagen Herbarium No. 22154).

Suffrutescent; stems terete, glabrous except the tips, these sparingly strigose, the hairs upwardly appressed, about 0.5 mm. long; leaf blades oblong-ovate, 15 to 25 cm. long, 4 to 8 cm. wide, acuminate at apex, more or less abruptly narrowed at base into a broadly winged petiole, entire or shallowly crenate, the upper surface drying dull green, glabrous, the lower surface drying light green, glabrous except the costa and lateral veins (10 to 12 pairs), these sparingly pubescent; petioles (unwinged portion) about 1 cm. long, strigose; spikes one to several, terminal and axillary, 5 to 17 cm. long, about 1 cm. broad, the rachis glabrous; bracts lanceolate to ovate-lanceolate, 12 mm. long, 4 to 5 mm. wide, acute to acuminate, prominently 3-nerved, glabrous, ciliate, the ocelli replaced by dull, elliptical, alveolate areas up to 2 mm. long and 1.5 mm. wide; bractlets lanceolate, 8 to 10 mm. long, 1.5 to 2 mm. wide, carinate, the keel pubescent, the hairs whitish, ascending, about 0.5 mm. long; calyx segments oblong-lanceolate, 15 to 16 mm. long, 2 to 3.5 mm. wide, acute to acuminate and more or less apiculate, striate-nerved, glabrous; corolla up to 7 cm. long, minutely papillose, red, the tube up to 5 cm. long, 3 mm. broad at base, 5 mm.

broad at mouth, the upper lip oblong, ovate, erect, 23 mm. long, 5 mm. wide at base, 2-lobed at apex, the lobes lanceolate, acuminate, 8 mm. long, 3 mm. wide at base, the lower lip more or less spreading, 3-lobed, the middle lobe oblong, about 25 mm. long and 5 mm. wide, obtuse and apiculate, the lateral lobes oblong, about 5 mm. long and 2 mm. wide, subacute, adnate in part to the base of the upper lip; stamens barely reaching tip of upper lip, the anthers slender, about 7 mm. long and 1 mm. broad, glabrous; ovary 3 mm. long, glabrous; style about 5.5 cm. long; capsules subclavate, 15 mm. long, 6 mm. broad, 3 mm. thick, obtuse at tip and apiculate, glabrous, minutely and inconspicuously punctate; retinacula linear, 3 mm. long and 0.5 mm. broad, subcucullate at tip; seeds brown, flat, 4 mm. long, 3.5 mm. wide, 1 mm. thick, glabrous, the margins thin.

Lindau, comparing *Aphelandra blandii* with *A. hartwegiana*, states that *A. blandii* differs from that species by having acuminate bracts and calyx lobes and pubescent bractlets. He suggests also a relationship with *A. glabrata*, a species with a shorter calyx and a densely pubescent rachis.

Araque & Barkley's No. 19An.032 was collected in rich soil of a previously wooded mountain area at 2,700 meters altitude.

ANTIOQUIA: East of Bolívar, Araque & Barkley 19An.032 (US). Jericó, Daniel & Tomás 2589 (GH, US).

73. *Aphelandra lingua-bovis* Leonard, sp. nov.

FIGURE 97

Suffrutex parvus, caulibus sursum subquadrangularibus, dense et minute strigosis, pilis sursum appressis, sordidis, deorsum teretibus, glabratis; lamina foliorum elliptica vel late oblanceolata, acuminata, basi angustata, in petiolum decurrens, subchartacea, integra vel undulata, supra glabra (vel folia novella supra parce strigosa), subtus minute et tenuiter strigosa, costa et venis lateralibus aliquanto inconspicuis; petioli strigosi; spicae solitariae vel plures, terminales, subsessiles, rhache glabra; bracteae rubrae (vivae), rhombico-ovatae subobtusae, mucronatae, glabrae vel apice pilos raros minutos ferentes, ciliatae, costa et venis lateralibus prominentibus; areola elliptica opaca brunnea alveolata pro ocellis substituta; bracteolae lanceolatae, acuminatae, carina hirsuta, pilis ascendentibus; calycis segmenta striato-nervata, segmentum posterius oblongo-lanceolatum, acutum, dorso strigosum, anteriora et lateralia anguste oblonga, acuta vel acuminata, glabra, apice ciliata; corolla rubra vel lutea, puberula, tubo subcylindrico, leviter curvato, labio superiore erecto, elliptico, bilobato, lobis triangularibus, acutis, labio inferiore trilobato, lobo medio lanceolato, acuto, lobis lateralibus parvis, triangularibus, acutis, cum labio superiore basi connatis; stamina vix exserta, antheris apice apiculatis, flocculoso-pilosis, basi apiculatis.

Small shrubs; stems simple or sparingly branched, terete or subquadrangular toward tip, densely and minutely strigose, the hairs upwardly appressed, sordid, 0.5 mm. long or less, the lower portions of the stems terete, glabrate, the lenticels corky, oval to linear, up to 2 mm. long; leaf blades elliptic, oblong or broadly oblanceolate, up to 36 cm. long and 14.5 cm. wide, acuminate, gradually narrowed to base and decurrent on the petiole, subchartaceous, entire or undulate, the upper surface drying to green or olive, glabrous or the younger leaves sparingly strigose, the hairs 0.5 mm. long, the costa and lateral veins (14 to 20 pairs) flat or slightly raised, fairly conspicuous, the lower surface drying to a somewhat lighter shade than the upper, finely and minutely strigose, the hairs appressed or a few of them spreading, about 0.25 mm. long, densest on costa and veins, these raised and fairly conspicuous; petioles (unwinged portion) up to 3 cm. long, the pubescence that of the stems; spikes solitary or several, terminal, up to 15 cm. long and 1.5 cm. broad, the peduncles about 5 mm. long, strigose, the rachis glabrous; bracts bright red (living), drying to brownish red, rhombic-ovate, 1.5 cm. long, 9 mm. wide, obtusish, glabrous or bearing a few minute hairs toward tip, minutely and sparingly scurfy without, the costa prominent and excurrent, ending in a minute mucro, the lateral nerves rather prominent, reticulately anastomosing toward tip, the margins ciliolate, the hairs about 0.25 mm. long, the ocelli replaced by dull brown, alveolar, elliptic areas up to 3 mm. long and 1 mm. wide; bractlets lanceolate, 15 mm. long, 3 mm. wide, acuminate, the keel hirsute, the hairs ascending, up to 0.75 mm. long; calyx 18 mm. long, the posterior segment oblong-lanceolate, 5 mm. wide, appressed hirsute dorsally, acute, the anterior pair narrowly oblong, about 3 mm. wide, the lateral pair slightly narrower than the anterior, both pairs glabrous, acute to acuminate, ciliate at tip, all 5 segments delicately striate-nerved; corolla 5.5 to 6 cm. long, bright red ("Chinese-red," *Archer*), or reddish yellow ("rojas-amarillas," *von Sneidern*), puberulous, the tube subcylindric, slightly curved, 3.5 mm. broad at base, 6 mm. broad at mouth, the upper lip erect, elliptic, 16 mm. long, 7 mm. wide, the lobes triangular, 4 mm. long, 3 mm. wide at base, slenderly acute, the middle lobe of the lower lip lanceolate, 18 mm. long, 6 mm. wide, acute, the lateral lobes 4 mm. long, partly adnate to lower part of upper lip, the free portions triangular, about 1.5 mm. long and 1 mm. wide, acute; stamens slightly exserted, the anthers 6 mm. long and 1 mm. broad at base, apiculate at both ends, webby-pilose at tip; capsules not seen.

Type in the U. S. National Herbarium, No. 1519101, collected at La Concepción, 15 kilometers east of Quibdó, Department of Chocó, Colombia, 75 meters altitude, April 30, 1931, by W. A. Archer (No. 2012).

ANTIOQUIA: Villa Arteaga, 150 meters altitude, August 4-8, 1947, *Hodge* 7012 (US).

CALDAS: Santa Cecilia, 800 meters altitude, November 30, 1945, *von Sneidern* 5080 (US).

The affinity between *Aphelandra lingua-bovis* and *A. garciae* is close. *A. lingua-bovis* differs, however, in its bright red or reddish yellow, finely puberulous corollas and strictly glabrous rachis. In *A. garciae* the rachis is finely pilose and corolla yellow and hirsute.

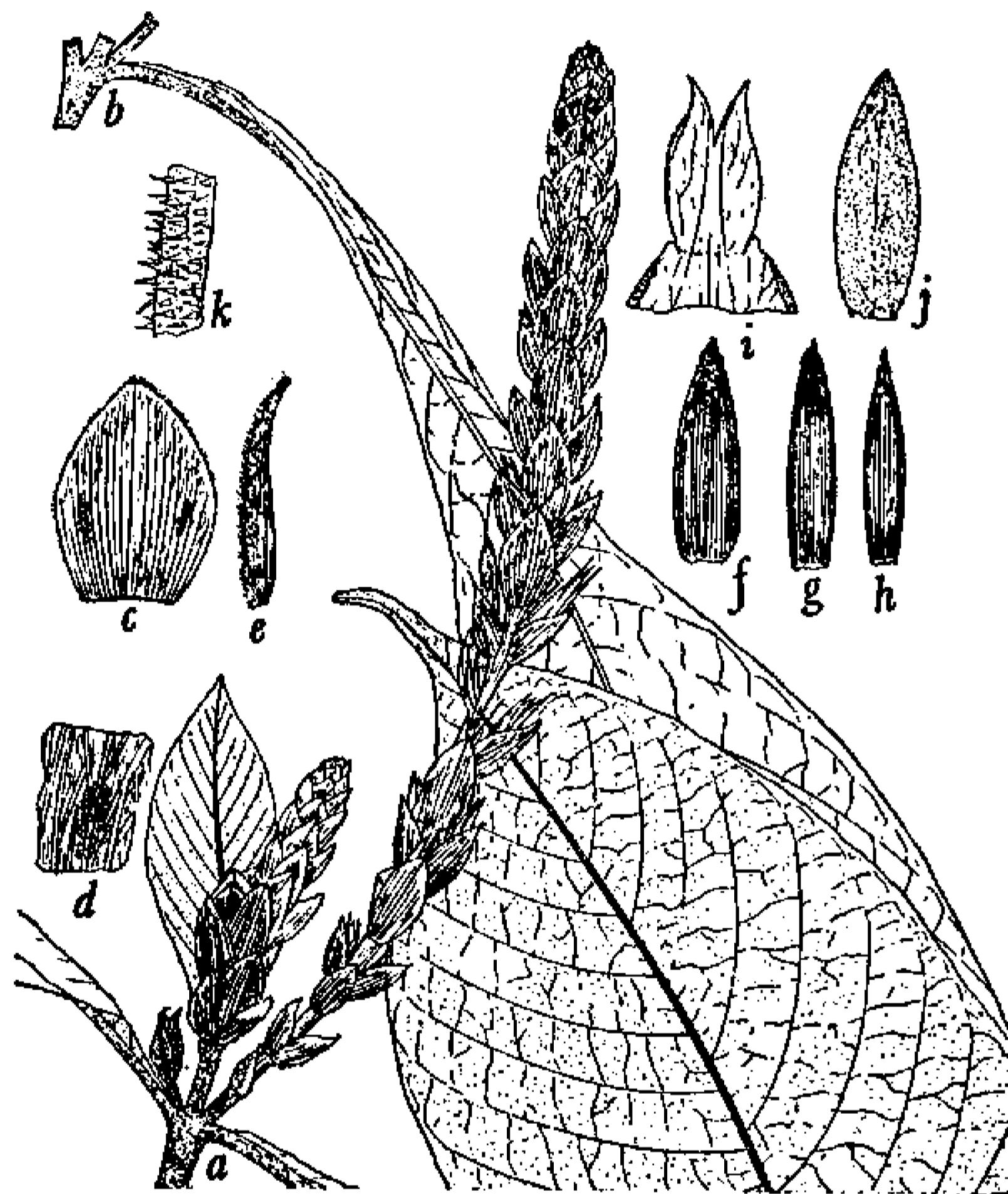


FIGURE 97.—*Aphelandra lingua-bovis* Leonard (*Archer* 2012): *a*, Inflorescence; *b*, node and leaf; *c*, bract; *d*, glandular area of bract; *e*, bractlet; *f*, posterior calyx segment; *g*, one of the anterior segments; *h*, one of the lateral segments; *i*, upper lip of corolla; *j*, lower lip; *k*, pubescence of corolla tube. (*a*, *b*, Half natural size; *c*, *e*-*j*, natural size; *d*, about twice natural size; *k*, about 18 times natural size.)

According to Archer the species is fairly common between La Oveja and Quibdó and produces “Chinese red” spikes of bright red corollas. The name *lingua-bovis* was suggested by its common name “lengua de vaca” (*Archer* 2012). The allusion of the common name is obscure, although it may possibly refer to a fancied similarity of the shape of the leaf blades to that of a cow’s tongue.

74. *Aphelandra fernandezii* Leonard, sp. nov.

FIGURE 98

Herba, caulibus subquadrangularibus, sursum dense et minute strigosis, pilis arcte adpressis; lamina foliorum elliptica vel late oblongo-

lanceolata, acuminata (apice saepe curvata), basi, angustata, in petiolum decurrens, membranacea, integra vel leviter crenata, supra glabra, minute alveolata, subtus parce hirtella, pilis ascendentibus vel subadpressis, praecipue in costa et venis prominentibus positis; petioli crassi, dense hirtelli; spicae terminales, solitariae, subsessiles, rhache glabra; bracteae rhombico-ovatae, imbricatae, subacutae, glabrae, prope apicem ciliatae, costa et nervis lateralibus prominentibus, venulis prope margines aliquanto crasse reticulatis, ocellis multis, minutis; bracteolae lineares, acuminatae, striatae, apice parce hirtellae; calycis segmenta subaequalia, glabra vel apice parce ciliata, striata, segmentum posterius oblongo-ellipticum, apice truncatum, emarginatum et apiculatum, anteriora lineari-lanceolata, acuminata, lateralia anguste lanceolata, acuminata; corolla coccinea (?), puberula, labio superiore erecto, ovato, apice bilobato, lobis triangularibus, labio inferiore lobata, lobo medio patulo vel reflexo, anguste ovato, obtuso, lobis lateralibus parvis, apice rotundatis, cum labio superiore basi connatis; stamina vix exserta, antheris basi acutis, apice subobtusis, dorso pilosis, filamentis triquetris, glabris vel angulis basi asperulis; ovarium glabrum; capsulae ignotae.

Herbs up to 1 meter high; stems subquadrangular, at least the upper portions densely and minutely gray strigose, the hairs about 0.25 mm. long, closely appressed; leaf blades oblong-elliptic or broadly oblong-lanceolate, up to 32 cm. long and 10.6 cm. wide at or slightly above middle, acuminate (the tip often curved), narrowed at base and decurrent on the petiole, membranaceous, entire or shallowly crenate, drying olive-green, the lower surface a lighter and a deeper greenish shade than the upper, the upper surface glabrous, minutely alveolate under a lens, the lower surface sparingly hirtellous, the hairs about 275  $\mu$  long, ascending or subappressed and confined chiefly to costa and lateral veins (9 to 11 pairs), these prominent on both surfaces; petioles stout, 2 cm. long, densely gray-hirtellous, the hairs similar to those of the stems; spike terminal, solitary, subsessile, 9 cm. long, 3.5 cm. broad (measured from tips of bracts), the rachis angled, glabrous; bracts rather closely imbricate, rhombic-ovate, up to 26 mm. long and 16 mm. wide (the lowermost sterile ones much smaller), subacute, glabrous, ciliate near tip, the costa and adjacent nerves prominent, the veinlets obscurely and rather coarsely reticulate toward margins, the glandular spots about 3.5 mm. long and 1.5 mm. wide, the ocelli 50  $\mu$  in diameter, very numerous; bractlets linear, 13 mm. long, 2.25 mm. wide, acuminate, striate, sparingly hirtellous dorsally but more so at tip, the hairs ascending, up to 0.5 mm. long; calyx segments subequal, 23.5 mm. long, glabrous or ciliate at tip, coriaceous, striate, the posterior segment narrowly oblong-elliptic, 5 mm. wide, truncate, emarginate and apiculate at tip, the anterior segments linear-lanceo-



late, 3 mm. wide, acuminate, the lateral segments narrowly lanceolate, 2.5 mm. wide, acuminate; corolla about 6 cm. long, puberulous, the hairs  $125\ \mu$  long, the tube 6 mm. broad at throat, the upper lip ovate, 23 mm. long, about 12 mm. wide, bilobate at tip, the lobes triangular, 5 mm. long and 3 mm. wide at base, acute, the lower lip spreading or reflexed, the middle lobe narrowly ovate, about 23 mm. long and 8 mm. wide near base, obtuse, the lateral lobes narrowly oval, 1.5 mm. wide, rounded at tip, adnate in part to the upper lip, their free portions 1.5 mm. long; stamens reaching notch of upper lip, the anthers 1 cm. long,

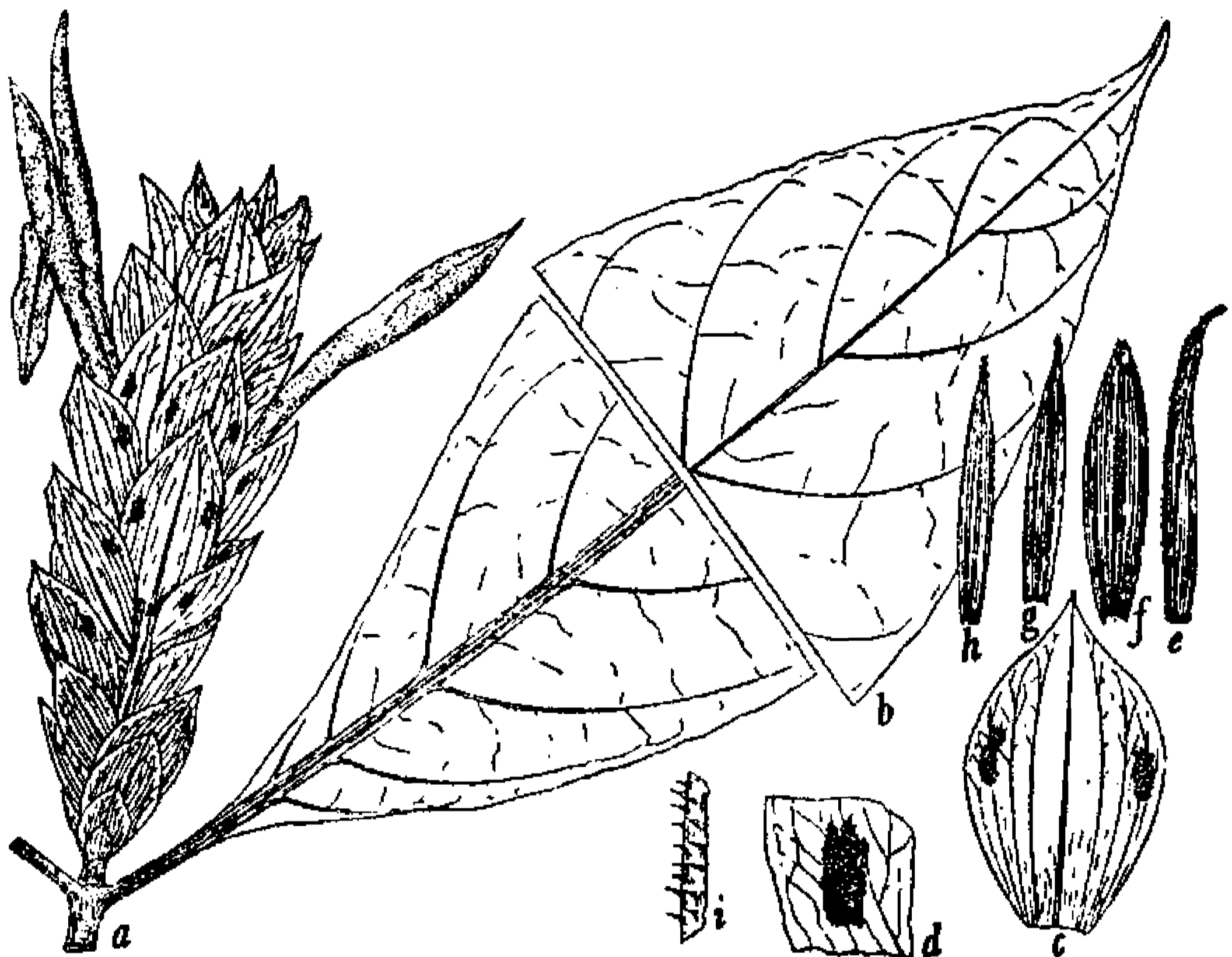


FIGURE 98.—*Aphelandra fernandezii* Leonard (Fernández 254): *a*, Tip of plant; *b*, tip of leaf blade (upper surface); *c*, bract; *d*, one of the alveolar spots on bract (composed of numerous minute ocelli); *e*, bractlet; *f*, posterior calyx segment; *g*, one of the anterior segments; *h*, one of the lateral segments; *i*, pubescence of corolla. (*a*, *b*, Half natural size; *c*, *f*-*h*, natural size; *d*, 3 times natural size; *e*, twice natural size; *i*, 15 times natural size.)

acuminate at base, subobtuse at tip, dorsally pilosulous, the filaments triquetrous, glabrous or the angles toward base minutely roughened; ovary glabrous; mature capsules not seen.

Type in the U. S. National Herbarium, No. 1997512, collected in woods at Ensenada de Utría, Department of Chocó, Colombia, June 5, 1950, by A. Fernández (No. 254).

*Aphelandra fernandezii* is a well-marked species characterized by its large, red, rhombic-ovate bracts and narrow calyx segments. As indicated by the nature of the corolla lobes, it is one of the *pulcherrima-tetragona* group.

75. *Aphelandra chaponensis* Leonard, sp. nov.

FIGURE 99

Suffrutex, caulibus sursum subquadrangularibus, minute strigosis, pilis arcte et sursum appressis, sordidis; lamina foliorum oblong-elliptica vel late oblanceolata, acutae vel breviter acuminata (apice ipso subobtusum), basi angustata, in petiolum decurrens, submembranacea, integra vel undulata, supra parce et minute strigosa, pilis praecipue in costa et venis positis, subtus aliquanto parce et minute strigosa; spicae 1 vel plures, terminales vel subterminales, pedunculo aliquanto brevi, minute strigoso, rhache glabra vel parce pubescente; bracteae rhombico-ovatae, subobtusae vel subacutae, intus nitidae, extus opacae, glabrae (infima parce strigosa), marginibus subhyalinis, ciliolatis, costa et nervis lateralibus prominentibus; areola elliptica, opaca, punctata pro ocellis substituta; bracteolae lanceolatae, subfalcatae, obliquae, striato-nervatae, carinatae, carina hirtella, pilis ascendentibus, sordidis, marginibus glabris et subhyalinis; calycis segmenta obtusa, plus minusve apiculata, striato-nervata, sursum hirtella et ciliolata, deorsum glabra, segmentum posterius ovatum, anteriora oblongo-lanceolata, lateralia aliquanto anguste lanceolata; corolla rubra, papillosa, tubo subcylindrico, labio superiore ovato, bilobato, lobis anguste triangularibus, acuminatis, labio inferiore trilobato, lobo medio ovato, acuto, sursum apice carinato, lobis lateralibus ellipticis, rotundatis, cum labio superiore basi connatis; stamina vix exserta.

Suffrutescent herbs up to 3 meters high or more; stems (upper portions) subquadrangular, minutely strigose, the hairs closely and upwardly appressed, sordid, about 0.25 mm. long; leaf blades oblong-elliptic or broadly oblanceolate, 25 to 30 cm. long, up to 12.5 mm. wide, acute or short-acuminate (the tip itself blunt), narrowed at base and decurrent on the petiole, submembranaceous, entire or undulate, the upper surface drying olive-green, sparingly and minutely strigose, the hairs less than 0.25 mm. long, closely appressed and confined chiefly to costa and lateral veins (14 to 16 pairs), both costa and veins flat or slightly raised, inconspicuous, the lower surface drying a dull brownish green, the pubescence that of the upper surface but denser and more evenly distributed, the costa and veins slightly raised, more conspicuous than above; petioles up to 5 cm. long, the pubescence that of the costa; spikes 1 to several, terminal and subterminal, up to 12 cm. long and 10 to 15 mm. broad, the peduncles up to 12 mm. long and 4 mm. thick, the pubescence that of the stem, the rachis glabrous or bearing a few slender hairs 0.25 to 0.5 mm. long; bracts rhombic-ovate, 12 mm. long, 10 mm. wide, subobtuse to subacute, nitid within, dull, glabrous and minutely roughened without (the lowermost sparingly strigose), the margins subhyaline and ciliolate, the costa prominent to tip of bract but scarcely excurrent, the lateral nerves prominent except

toward tip, the ocelli replaced by dull pitted areas up to 1.5 mm. long and 1 mm. wide; bractlets lanceolate, 11 mm. long and 2.5 mm. wide, subfalcate and oblique, striate-nerved, carinate, the keel hirtellous, the hairs ascending, sordid, about 0.5 mm. long, gradually diminishing in length and number to the glabrous subhyaline margins, the inner surface silky-hirtellous toward tip, glabrous toward base; calyx up to 12 mm. long, the posterior segment ovate, 6 mm. wide, the anterior pair

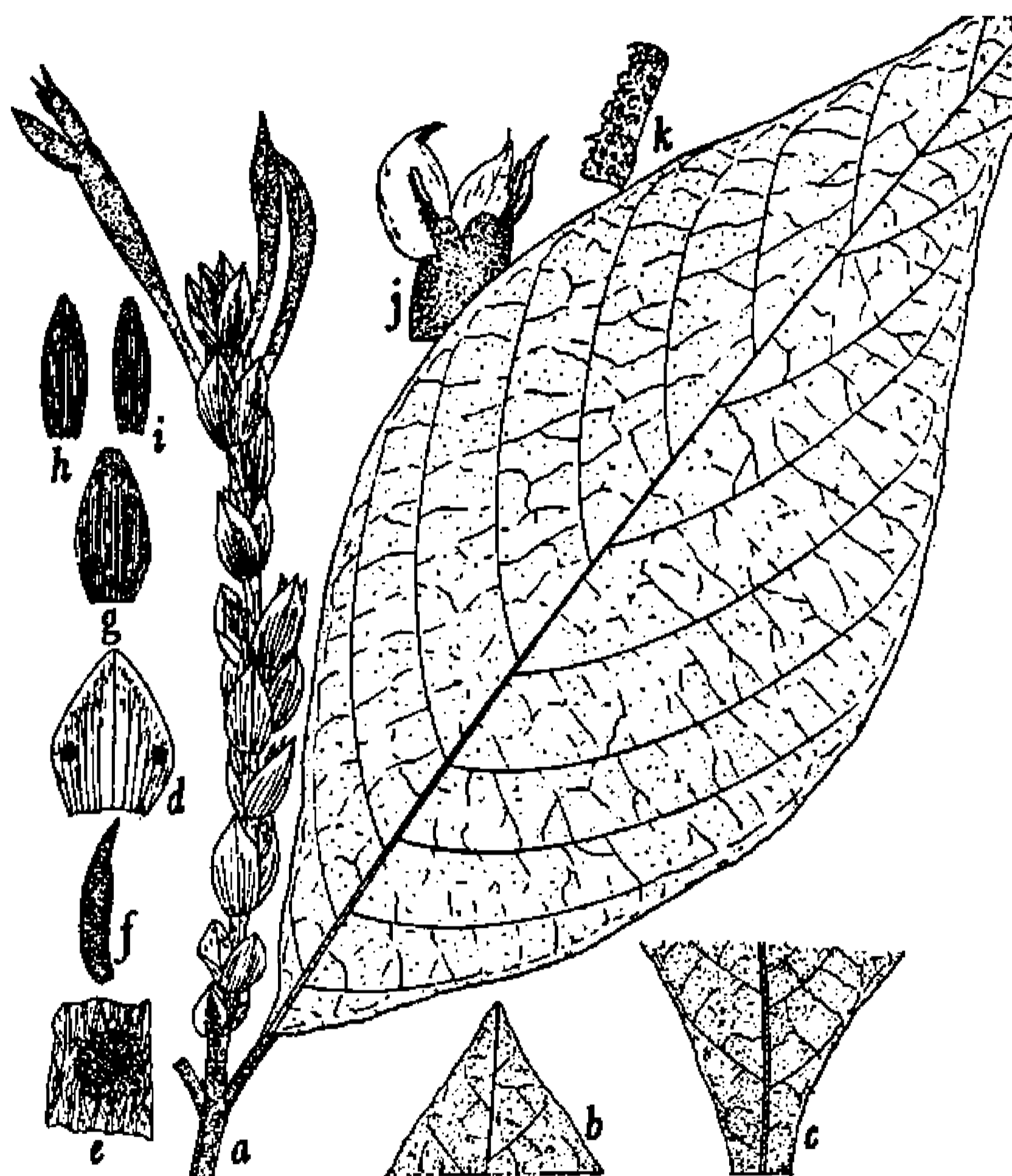


FIGURE 99.—*Aphelandra chaponensis* Leonard (*Lawrance* 18): *a*, Tip of plant; *b*, tip of leaf blade (lower surface); *c*, basal portion of leaf blade (lower surface); *d*, bract; *e*, glandular area of bract; *f*, bractlet; *g*, posterior calyx segment; *h*, one of the anterior segments; *i*, one of the lateral segments; *j*, tip of corolla; *k*, pubescence of corolla tube (most of the hairs broken). (*a*, *b*, *c*, Half natural size; *d*, *f*-*j*, natural size; *e*, twice natural size; *k*, about 20 times natural size.)

oblong-lanceolate, 3.5 mm. wide, the lateral pair more narrowly lanceolate, 3 mm. wide, all obtuse, more or less apiculate, finely striate-nerved, minutely hirsute and ciliolate toward tip, glabrous toward base; corolla 4 cm. long, red, papillose-puberulous, the upper lip erect, ovate, 1 cm. long, 7.5 mm. wide, bilobed at tip, the lobes narrowly triangular, 2.5 mm. long, 2 mm. wide at base, acuminate, the middle lobe of the lower lip ovate, 11 mm. long and 6 mm. wide, acuminate, carinate toward tip, the lateral lobes elliptic, 4 mm. long and 2 mm. wide, adnate in part to the upper lip of corolla, the free portions about

1.5 mm. long and broad, rounded; stamens reaching the tip of the upper lip, the anthers 7 mm. long and 1.5 mm. broad, the basal lobes obtuse; capsules not seen.

Type in the U. S. National Herbarium, No. 1572308, collected in dense forest in the region of Mount Chapón, Department of Boyacá, Colombia, "3,500 ft." altitude, May 8, 1932, by A. E. Lawrance (No. 18). Mutis' No. 1509 is also this species.

*Aphelandra chaponensis* is characterized by relatively small corollas, their lips much shorter and relatively broader than is usual in other species of the *A. pulcherrima-tetragona* complex. The leaf blades of this new species and those of *A. lingua-bovis* are very similar. The latter species, however, has a calyx more than twice as large, the segments of which are noticeably acute rather than obtuse.

76. *Aphelandra pharangophila* Leonard, sp. nov.

FIGURE 100

Herba magna, caulibus sursum subquadrangularibus, strigosis, pilis sursum appressis; lamina foliorum oblanceolata, apice acuta vel acuminata, basi angustata, in petiolum decurrens, integra vel undulata, supra glabra vel subglabra, costa aliquando parce et minute strigosa, subtus aliquanto dense strigosa, pilis brunnescentibus; petioli breves, aliquanto dense strigosi; spicae solitariae, terminales, parvae, sessiles, rhache glabra vel prope insertionem bractearum pilosa, pilis brunnescentibus; bractee ovatae, apice rotundatae, intus glabrae, extus strigosae (praecipue in area mediana); bractee infimae ubique strigosae, marginibus ciliatis, pilis patulis; areola elliptica, opaca, brunnescens, alveolata pro ocellis substituta; bracteolae anguste et oblique lanceolatae, acuminatae, carinatae, carina apice dense hirsuta, pilis brunnescentibus, ascendentibus, marginibus tenuibus, glabris, subtiliter striatis; calycis segmenta subtiliter striata, apice parce pilosa, deorsum glabra, segmentum posterius ovatum, acutum, anteriora lanceolata, acuta, lateralia anguste lanceolata, tenuiter acuminata; corolla coccinea, minute papillosa, tubo subcylindrico, labio superiore erecto, ovato, apice bilobato, lobis triangularibus, acuminatis, labio inferiore trilobato, lobo medio patulo, anguste ovato, acuminato, lobis lateralibus triangularibus, apice rotundatis, cum labio superiore basi connatis; stamina vix exserta, antheris parvis (4 mm. longis), basi rotundatis, apiculatis; ovarium glabrum.

Herbs, about 1.5 meters high; stems subquadrangular, strigose, the hairs upwardly appressed, brownish, 0.5 mm. long; leaf blades oblanceolate to broadly oblanceolate or obovate, up to 23 cm. long and 10 cm. wide, acute to acuminate at apex (the tip itself blunt), narrowed at base and decurrent on the petiole, drying olive brown, the margins entire or undulate, the upper surface glabrous or nearly so, the costa sometimes bearing a few small appressed hairs, the lower surface rather

densely pilose, the hairs brownish, appressed to ascending, about 0.5 mm. long; petioles about 1 cm. long, rather densely strigose, the hairs resembling those of the stem; spikes solitary, terminal, 3.5 to 10 cm. long, the peduncle 4 mm. long, densely strigose, the rachis glabrous or densely brownish pilose at and near insertion of the bracts, these ovate, 7 to 9 mm. long, 5 to 6 mm. wide, rounded at tip, glabrous within, densely brownish strigose without, the hairs borne medially for the most part (except the lowermost, these evenly disposed on the outer surface), the margins ciliate, the hairs 0.25 mm. long, spreading, the ocelli replaced by elliptic, dark brown, alveolate areas up to 1.25 mm.

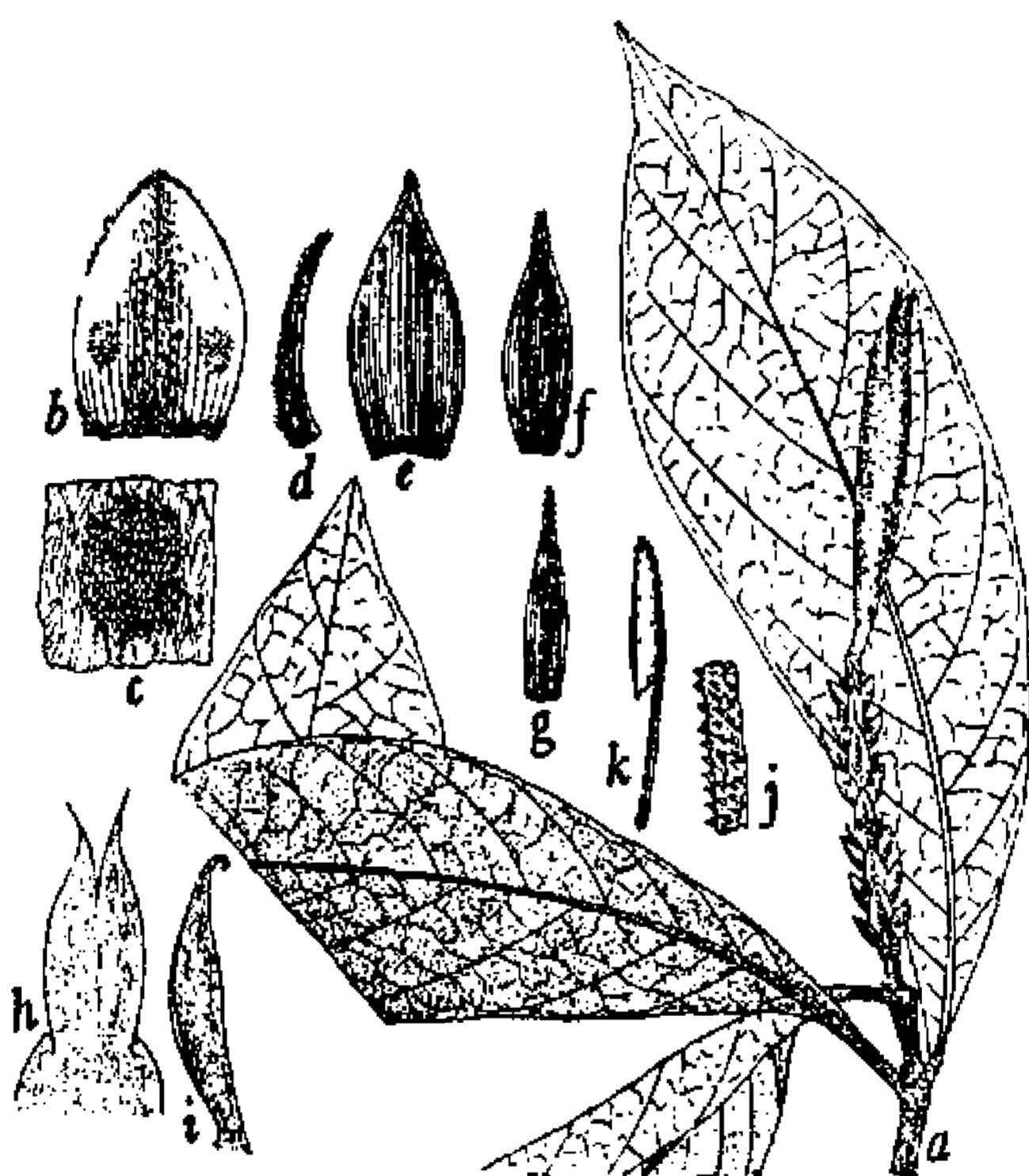


FIGURE 100.—*Aphelandra pharangophila* Leonard (Killip 5676): *a*, Tip of plant; *b*, bract; *c*, glandular area of bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, one of the lateral segments; *h*, upper lip of corolla; *i*, lower lip of corolla; *j*, pubescence of outer surface of lower lip of corolla; *k*, anther. (*a*, Half natural size; *b*, *d*-*g*, twice natural size; *c*, 4 times natural size; *h*, *i*, slightly over natural size; *j*, about 22 times natural size; *k*, 2½ times natural size.)

long and 0.75 mm. wide; bractlets narrowly and obliquely lanceolate, 7 mm. long, 1 mm. wide at base, gradually narrowed to a slender tip, carinate, the tip of keel densely hirsute, the hairs brownish, ascending, 0.5 mm. long, the margins thin, glabrous and delicately striate; posterior segment of the calyx ovate, 7 mm. long, 4 mm. wide, acute, the anterior lobes lanceolate, 7 mm. long, 2 mm. wide, acute, the lateral lobes narrowly lanceolate, 6.5 mm. long, 1 mm. wide at base, slenderly acute, all of the segments finely striate, glabrous except at tips, here sparingly pilose, the hairs 0.5 mm. long; corolla 5.5 cm. long, bright red, minutely papillose, 3 mm. broad at base, narrowed at 4 mm. above base to 2 mm., thence enlarged to about 8 mm. at throat, the upper lip

erect, ovate, about 2 cm. long and 1 cm. wide, bilobate at tip, the lobes triangular and slenderly acuminate, about 3 mm. long, the middle lobe of the lower lip narrowly ovate, about 2 cm. long, 5 mm. wide near middle, slenderly acuminate at tip, the lateral lobes adhering to the lower part of the upper lip, their free portions triangular, 1.5 mm. long, 1 mm. wide at base, rounded at tip; stamens about 5 cm. long, the filaments glabrous toward tip, retrorsely pilose toward base, the hairs about 0.25 mm. long, the anthers 4 mm. long, 0.75 mm. wide, rounded and minutely apiculate at base; ovary glabrous; style about as long as the stamens (?); capsule not seen.

Type in the Gray Herbarium, collected in wooded ravine at La Cumbre, Department of El Valle, Colombia, 1,600 to 1,800 meters altitude, May 14-19, 1922, by E. P. Killip (No. 5676).

CAUCA: Aganche, *Lehmann* B. T. 1165 (K, NY).

TOLIMA: La Trinidad, *Libano*, *Pennell* 3320 (NY). Quindío, *Triana* s. n. (Col).

WITHOUT DEFINITE LOCALITY: *Triana* s. n. (NY).

*Aphelandra pharangophila* is probably related to *A. taborensis* Leonard, agreeing rather closely in general appearance, in the size, shape, and pubescence of the leaf blades and in the color, texture and size of the corollas. The spikes of *A. taborensis* are, however, much more robust, the bracts being fully 10 mm. long and 7.5 mm. wide and their entire outer surface is densely and softly pubescent. The specific name is from the Greek φάραγξ, ravine, and φιλέω, to love.

77. *Aphelandra arborescens* Leonard, sp. nov.

FIGURE 101

Frutex vel arbor parva, caulibus sursum subquadrangularibus, dense pilosis, pilis brunnescentibus, sursum appressis vel ascendentibus, deorsum glabratis; lamina foliorum oblongo-elliptica, acuminata, basi angustata, in petiolum decurrens, subchartacea, undulata vel integra, supra glabra vel costa et venis lateralibus plus minusve strigosa, subtus tenuiter pubescens, pilis parvis patulis vel ascendentibus, costa et venis prominentibus; petioli strigosi; spicae 1 vel plures, terminales, breviter pedunculatae, pedunculis et rhache pubescentibus, pilis appressis vel ascendentibus vel patulis, brunneis; bracteae coccineae, rhombicae, obtusae vel subacutae, dorso strigosae, marginibus ciliatis, glabris; areola opaca alveolata pro ocellis substituta; bracteolae lanceolatae, acuminatae, carinatae, dorso dense pubescentes, marginibus tenuibus, glabris; calycis segmenta subacuta, striato-nervata, sursum puberula; corolla coccinea, papillosa, tubo aliquanto angustato, labio superiore erecto, oblongo, bilobato, lobis triangularibus, acutis, apice curvatis, labio inferiore trilobato, lobo medio oblongo, apice obtuso, lobis lateralibus parvis, apice rotundatis, cum labio superiore basi connatis; stamina vix exserta, filamentis glabris, antheris dorso parce pilosis; ovarium glabrum.

Shrubs or small trees up to 5 meters high; stems glabrate below, the tips densely pilose, the hairs brownish, barely 0.5 mm. long, upwardly appressed or ascending; leaf blades oblong-elliptic, up to 25 cm. long and 8.5 cm. wide, acuminate, narrowed from about middle to base and decurrent on the petiole, subchartaceous, undulate or entire, the upper



FIGURE 101.—*Aphelandra arborescens* Leonard (Cuatrecasas 15400): *a*, Tip of stem showing leaves and inflorescence; *b*, basal portion of leaf blade (lower surface); *c*, bract; *d*, glandular area of bract; *e*, bractlet; *f*, posterior calyx segment; *g*, one of the anterior segments; *h*, one of the lateral segments; *i*, upper lip of the corolla; *j*, lower lip; *k*, pubescence of corolla tube (most of the hairs broken); *l*, anther. (*a*, *b*, Half natural size; *c*, *e*-*h*, twice natural size; *d*, 4 times natural size; *i*, *j*, natural size; *k*, about 25 times natural size; *l*, about 3 times natural size.)

surface drying dull green, glabrous or the costa and veins (13 to 15 pairs) more or less strigose, obscure, the lower surface drying yellowish, finely pubescent, the hairs barely 0.5 mm. long, yellowish, spreading or ascending, the costa and veins prominent; petioles (unwinged portion) 5 to 20 mm. long, strigose; spikes 1 to several, short-pedunculate, 6 to 9 cm. long, about 1 cm. broad, the peduncles 5 to 20 mm. long, the pubescence that of the branchlets, the rachis rather sparingly pu-

bescent, the hairs barely 0.5 mm. long, more or less spreading, brownish; bracts carmine, rhombic, 1 cm. long, 5 mm. wide about the middle, glabrous except medially, here finely and thinly strigose, the margins ciliolate; ocelli replaced by an opaque, alveolar, brown, elliptic, more or less irregular area about 1.25 mm. long and 0.75 to 1 mm. wide; bractlets lanceolate, 6.5 mm. long, 1.75 mm. wide near base, acuminate, carinate, densely pubescent dorsally, the hairs ascending, about 0.5 mm. long, the margins thin, glabrous; calyx 9 mm. long, the posterior segment oblong, 4 mm. wide, the anterior segments lanceolate, 2 mm. wide, the lateral pair narrowly lanceolate, 1.5 mm. wide, all acutish, striate, puberulous toward tip, otherwise glabrous; corolla carmine, minutely papillose or bearing distally numerous microscopic spinelike hairs, the tube 5.3 cm. long, 3.5 mm. broad near base, constricted to 2.5 mm. at tip of ovary, thence gradually enlarged to about 7 mm. at mouth, the lips erect or slightly spreading, the upper lip oblong, 15 mm. long, about 5 mm. wide, bilobed, the lobes triangular, 5 mm. long, 2.5 mm. wide at base, acute, the tips outwardly curved, the middle lobe of the lower lip oblong, 15 mm. long, 6 mm. wide, rounded at tip, the lateral lobes triangular, 5 mm. long, the upper margin partly adhering to the upper lip, rounded at tip; stamens reaching the notch of the upper lip, the filaments glabrous, the anthers barely 5 mm. long, sparingly pilose dorsally, loosely adhering at tip; ovary glabrous; capsules not seen.

Type in the U. S. National Herbarium, No. 1852612, collected in woods at La Laguna, on the left bank of the Río Sanguinini, Department of El Valle, Colombia, 1,250 to 1,400 meters altitude, December 10-20, 1943, by J. Cuatrecasas (No. 15400).

CALDAS: Thicket along stream east of Belén, 1,500 to 1,700 meters altitude, September 15, 1922, *Pennell* 10624 (GH).

EL VALLE: Río Cauca, August 10, 1930, *Dryander* 681 (US). Junction of the Pichindecito and Pichindé rivers, 1,580 to 1,650 meters altitude, November 7, 1944, *Cuatrecasas* 18751 (Ch).

Distinguishing marks of *Aphelandra arborescens* are the brownish, more or less spreading hairs of the rachis, the finely strigose dorsal region of the bracts, the almost softly pubescent undersurface of the leaf blades, the hairs spreading or ascending, and the dull, irregular, alveolar areas replacing ocelli.

#### DOUBTFUL SPECIES

##### *Aphelandra flava* Nees

*Aphelandra flava* Nees in DC. Prodr. 11: 297. 1847. Type collected at Alto de Limba, Colombia, by Goudot and deposited in the Hooker Herbarium, Kew.

Fruticose; stems loosely pilose toward tip; leaf blades oblong, up to 23 cm. long and 7.5 cm. wide, sharply acuminate, acute at base and long-decurrent on the petiole, the upper surface sparingly pubescent, the lower densely and softly so; petioles 5 to 7.5 cm. long; spikes ob-



long, terminal, up to 7.5 cm. long, short-pedunculate; bracts oblong-ovate, 33 mm. long, acuminate, drying pale, striate-nerved, softly viscid-pubescent; bractlets plumose-ciliate, narrow; calyx segments subulate-acuminate, shorter than the bracts, plumose-ciliate at tip; corolla yellow, ringent, up to 33 mm. long, finely pubescent, the upper lip acuminate, the middle lobe of the lower lip oblong, obtuse, the lateral lobes much shorter, lanceolate, free.

No specimens seen. Description compiled from the original.

*Aphelandra flava* resembles in many aspects *A. aristei* but differs in the viscid pubescence of the bracts.

#### ***Aphelandra melgariensis* Nees**

*Aphelandra melgariensis* Nees in DC. Prodr. 11: 297. 1847. Type collected in Colombia by Humboldt. The type sheet, in the Willdenow Herbarium, No. 320, bore the determination "*Justicia melgariensis*."

Shrubby; leaf blades oblong-oval, attenuate at both ends, glabrous except the costa and lateral veins, these minutely hirsute; spikes terminal, short-peduncled, lax; bracts herbaceous, oblong, obtuse, entire, veiny, rough-pubescent; corolla pubescent.

No specimens seen. Description compiled from the original.

Nees compares this species with *A. schiedeana* Schlecht. & Cham. of Mexico and suggests that it may be merely a young stage of that species. It can be separated by its bracts which are only about half as long, are herbaceous instead of membranaceous, and which have more prominent nerves, some simple and some 2- or 3-forked. The bractlets of Humboldt's plant are described as linear, pubescent-ciliate and equal to the calyx in length, thus differing but slightly from those of the Mexican collections of *A. schiedeana* in the U. S. National Herbarium.

### 18. ENCEPHALOSPHERA Lindau

*Encephalosphaera* Lindau, Bull. Herb. Boiss. II. 4: 322. 1904. The genus *Encephalosphaera* is a segregate of *Aphelandra* established on the basis of its spherical pollen grains and the presence of a staminode. Its name is derived from the Greek words, ἐν with κεφαλή, head, and σφαῖρα, sphere, and alludes to the globose pollen grains. Type species: *E. vitellina* Lindau.

Shrubs with the general appearance of *Aphelandra*; stamens 4; staminode 1, lobulate; anthers 1-celled, cohering at their tips by villous hairs; pollen globose, verrucose, the roughening serpentine-cerebriform, the fissures forming 6 tetragons; stigma shortly 2-lobed.

In contrast to the spherical roughened pollen grains of *Encephalosphaera*, the surface of each divided into 6 tetragonal sectors, those of *Aphelandra* are strictly of the "spaltenpollen" type, i. e., usually ellipsoidal with three clefts, a pitted extine, and sometimes with a pore in each of the clefts.

In addition to *E. vitellina*, *E. lasiandra* Mildbr., a Brazilian species, has been described (Notizbl. Bot. Gart. Berlin 11: 68. 1930).

1. *Encephalosphaera vitellina* Lindau

FIGURE 102

*Encephalosphaera vitellina* Lindau, Bull. Herb. Boiss. II. 4: 323, 1904. Type collected in damp, rocky woods at Agua Clara, Popayán, Cauca, Colombia, 1,000 to 1,200 meters altitude, by Lehmann (No. 9048) and deposited in the Berlin Herbarium. Isotype in New York Botanical Garden. Photograph of type in the U. S. National Herbarium, No. 8722.

A sparingly branched shrub up to 1.3 meters high; branches essentially glabrous, up to 1 cm. in diameter; leaf blades ovate, 14 cm. long, about 8 cm. wide, long and subobliquely acuminate at apex, abruptly narrowed at the base and decurrent on the petiole, more or less car-

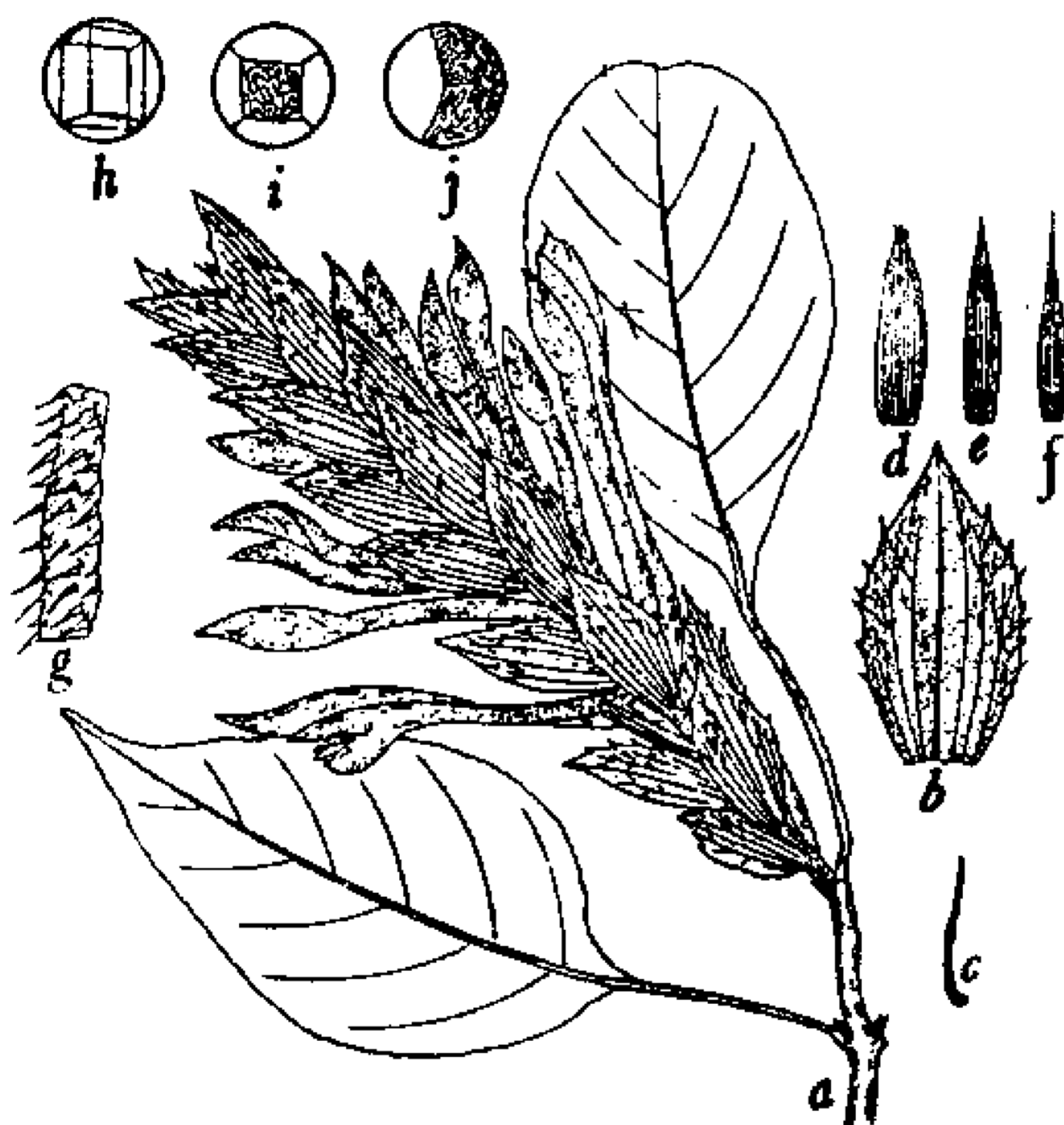


FIGURE 102.—*Encephalosphaera vitellina* Lindau (Lehmann 9048): *a*, Tip of plant; *b*, bract; *c*, bractlet; *d*, posterior calyx segment; *e*, one of the anterior segments; *f*, one of the lateral segments; *g*, pubescence of corolla; *h-j*, diagrammatic drawings of pollen grains (copied from Lindau's sketches on the type sheet). (*a*, Half natural size; *b-f*, *h-j*, natural size; *g*, about 28 times natural size.)

nose, glabrous, the lateral nerves numerous, parallel, arcuate; petioles 2 to 4 cm. long, glabrous; spikes terminal, subsessile, a little shorter than the leaves, the rachis pubescent; bracts imbricate, ovate, 20 mm. long, about 11 mm. wide, acuminate, minutely pubescent, the margins bearing 7 to 8 minute teeth; bractlets linear, 8 mm. long, 0.75 mm. wide, minutely puberulous; calyx lobes subequal, 11 mm. long and 2 mm. wide, minutely puberulous especially toward the tip, the posterior segment bidentate at tip; corolla yellowish orange, puberulous, the tube 35 mm. long, 5 mm. broad at base, 7 mm. broad at mouth, the upper lip erect, 16 mm. long, 9 mm. wide at middle, acute at apex,

the lower lip 3-lobed, the lobes rounded, the middle lobe 20 mm. long and 10 mm. wide, the lateral lobes 16 mm. long and 7 mm. wide; filaments inserted above the base of the corolla tube, 40 mm. long, curved and pilose at base; anthers 5 mm. long, cohering at tip by villous hairs; pollen grains globose, 55 to 58  $\mu$  in diameter; staminode membranous, lobulate, minute; styles 45 mm. long, sparingly pilose, stigmas 2-parted; capsule not seen.

The name *vitellina*, yellowish orange, alludes to the color of the corolla.

#### 19. CYPHACANTHUS Leonard, gen. nov.

Frutex; folia magna, opposita, oblongo-obovata, leviter dentata; panicula terminalis; spicae angustae, 6 vel plures; bracteae parvae, ovatae, acutae; bracteolae ovatae, rotundatae, mucronatae, bracteas aequantes; calycis segmenta 3, obtusa, bracteis duplo longiora; corolla anguste hypocrateriformis, labiis aequalibus, labio superiore cucullato, labio inferiore gibboso, trilobato, lobis suborbicularibus; stamina 4, inclusa, antheris unilocularibus; pollinis granulae oblongae, glabrae.

Shrubs; stems subquadrangular; leaves large, opposite, oblong-obovate, shallowly dentate, submembranaceous, the venation prominent, the lateral veins numerous; cystoliths none; petioles stout; panicles terminal, solitary, composed of 6 or more compact, narrow spikes; bracts small, ovate, acute, coriaceous; bractlets equaling the bracts in length, rounded, mucronulate, subcoriaceous, their margins thin and subhyaline; calyx composed of 3 deeply cut segments, these about twice as long as the bracts and bractlets, the posterior segment obtuse or rounded and bilobed at tip, the anterior pair acute; corolla hypocrateriform, the lips subequal, the upper lip arched and cucullate, rounded, the lower lip 3-lobed, gibbous, the lobes suborbicular; stamens 4, their filaments densely pilose, decurrent on the dorsal portion of the corolla tube, the anthers enclosed by the arched upper lip of the corolla, 1-celled, adnate at tip by webby hairs; pollen grains narrowly oblong, smooth.

The 3-parted calyx and gibbous lower lip of the corolla define the genus *Cyphacanthus* very clearly. These characters are unique, not only in the tribe Aphelandreae but in the family Acanthaceae as well. On the other hand, the 4 stamens with their slender unilocular anthers, the hypocrateriform 2-lipped corollas and the lack of cystoliths are characters by which this new genus can be associated with the other genera of Aphelandreae. It is closest of all to the genus *Aphelandra*. The slender, smooth, oblong pollen grains are also remarkable if compared with the variously etched grains of the other genera of the family.

The generic name is derived from the Greek words *κῦφος*, hump, and *Acanthus*, the name of the type-genus of the family.

1. *Cyphacanthus atopus* Leonard, sp. nov.

FIGURE 103

Frutex, caulibus subquadrangularibus, hirtellis; lamina foliorum oblongo-obovata, breviter acuminata, basi angustata, in petiolum decurrens, membranacea, leviter dentata, supra glabra vel parce pilosa, costa et venis lateralibus obscuris, subtus aliquanto pilosis, costa et venis lateralibus prominentibus, venulis crasse reticulatis; petioli crassi, glabri vel minute et parce strigosi; panicula terminalis, pedunculis et rhachibus dense brunneo-hirtellis, pilis patulis; spicae angustae, floribus inferioribus deciduis; bracteae ovatae, acutae, mucronulatae, puberulae, apice glanduloso-hirtellae, costa prominente; bracteolae bracteas aequantes, ovatae, apice rotundatae et mucronulatae, glanduloso-hirtellae; calycis segmenta oblongo-ovata, obtusa, glanduloso-hirtella, striata, marginibus subhyalinis; corolla purpurea, sursum glanduloso-hirtella, tubo hypocrateriformi, leviter curvato, labiis subaequalibus, labio superiore obovato, erecto, apice truncato, cucullato, labio inferiore gibboso, trilobato, lobis suborbicularibus; stamina inclusa, filamentis dense pilosis; ovarium glabrum; capsulae ignotae.

Shrubs up to 2 meters high; stems subquadrangular (the angles rounded), hirtellous, the hairs 0.5 to 0.75 mm. long, spreading, brownish; leaf blades oblong-obovate, up to 47 cm. long and 15 cm. wide, short-acuminate (the tips blunt), gradually narrowed from approximately 15 cm. below tip to the base and decurrent on the petiole, submembranaceous, shallowly dentate (the teeth broad, obtuse, about 2 mm. high), the upper surface glabrous or sparingly pilose, the hairs up to 1.5 mm. long, ascending, the costa and lateral veins (about 30 pairs) rather obscure, the lower surface moderately pilose, the hairs up to 1 mm. long, ascending, more numerous on the costa and lateral veins than elsewhere, the costa and veins prominent, the veinlets coarsely reticulate, a veinlet ending at the tip of each tooth; petioles up to 5 cm. long (?), stout, 3 mm. in diameter, glabrous or minutely and sparingly strigose; panicles terminal, once- or twice-branched, the peduncles 1 to 2 cm. long, these and the rachises (5 to 7 cm. long) densely brown-hirtellous, the hairs spreading, about 0.5 mm. long, the spikes compact, the lowermost flowers soon deciduous, leaving prominent raised scars; bracts subtending the branches of the inflorescence triangular-ovate, about 7 mm. long and 4 mm. wide near base, acute, carinate, sparingly puberulous; flower bracts ovate, 7 mm. long, 4 mm. wide, acute, mucronulate (the mucro 0.25 mm. long), puberulous, bearing also toward tip a number of stouter glandular hairs up to 0.5 mm. long, the costa prominent, the margins subhyaline; bractlets ovate, 7 mm. long, 4 mm. wide, rounded and mucronulate at tip, in other respects similar to the bracts; calyx segments oblong-ovate, 13 mm. long, 5 mm. wide, obtuse, hirtellous, the hairs spreading or ascending, some of them glandular, the lower portion of the segments glabrous,

the margins subhyaline; corollas purple, about 5 cm. long, moderately hirtellous except the basal glabrous portion, the hairs about 0.25 mm. long, spreading or slightly retrorse, many of them glandular, the tube curved, 4 mm. broad at base, 2 mm. broad at 5 mm. above base, 7 mm. broad at mouth, the lips subequal, about 9 mm. long, the upper lip obovate, arched, about 8 mm. wide, cucullate, truncate, the lower lip somewhat spreading, gibbous, 3-lobed, the lobes suborbicular, about 3 mm. broad, the medial area within minutely tomentose, the margins glabrous; stamens decurrent on the dorsal portion of the corolla tube becoming free at about 5 mm. below the

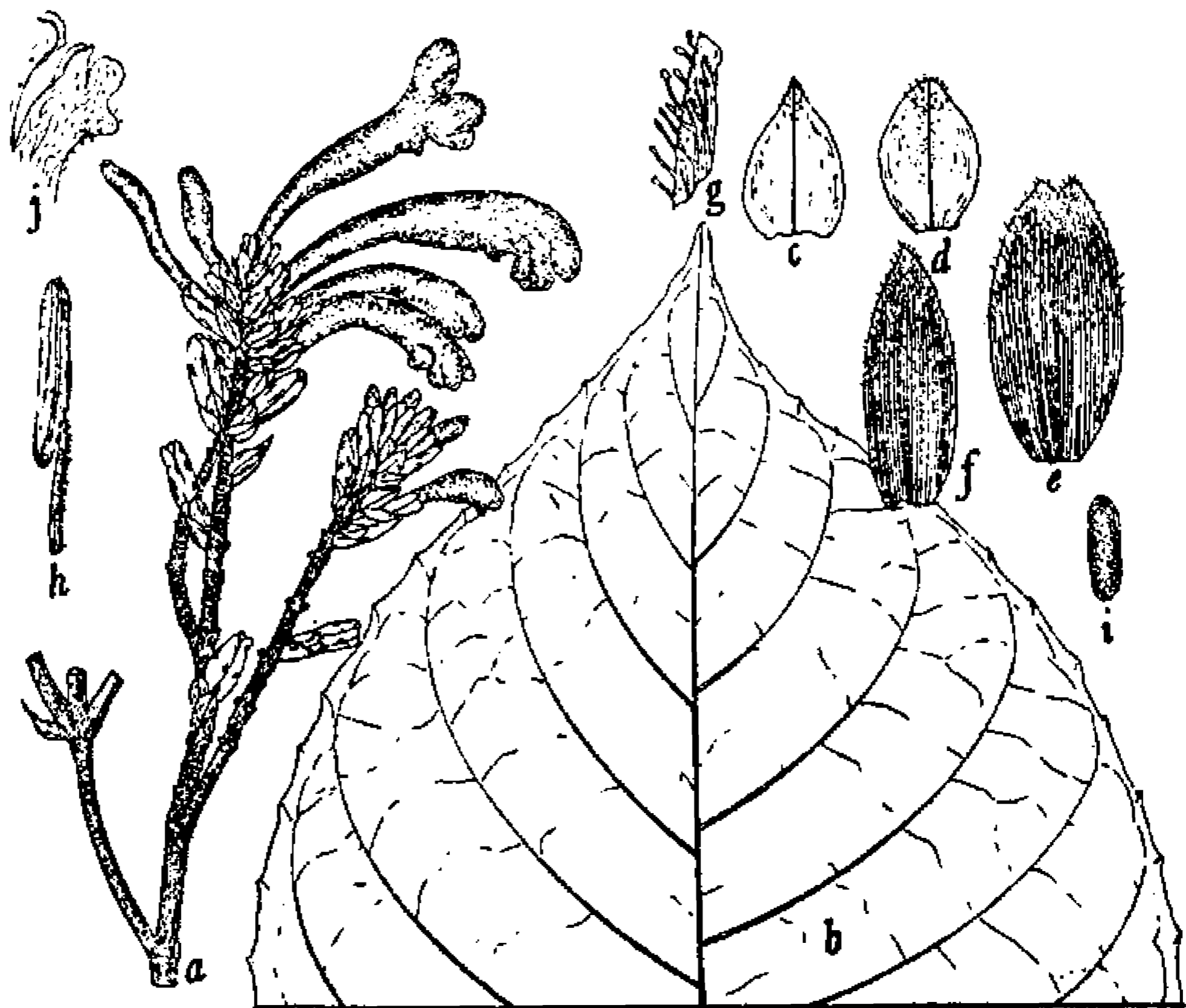


FIGURE 103.—*Cyphacanthus atopus* Leonard (Lawrance 502): *a*, Tip of panicle; *b*, tip of leaf blade; *c*, bract; *d*, bractlet; *e*, posterior calyx segment; *f*, one of the anterior segments; *g*, marginal pubescence near tip of anterior segment; *h*, anther; *i*, pollen grain; *j*, lower lip of corolla. (*a*, *b*, Half natural size; *c*-*f*, twice natural size; *g*, 15 times natural size; *h*, about 3 times natural size; *i*, 66 times natural size; *j*, 1½ times natural size.)

base of the corolla lips, the anthers oblong, 5 mm. long, 1.25 mm. wide, webby-pilose at tip, otherwise glabrous, enclosed by the curved upper lip of the corolla, the filaments densely pilose dorsally, the hairs 0.5 mm. long; pollen grains slenderly oblong, smooth, about 82  $\mu$  long and 43  $\mu$  in diameter; ovary glabrous; capsules not seen.

Type in the herbarium of the New York Botanical Garden, collected on streamside in high, thick forest at El Umbo, region of Mount Chapón, Department of Boyacá, Colombia, "2,500 feet" altitude, October 1, 1932, by A. E. Lawrance (No. 502).

The specific epithet is from the Greek *ἀτοπος*, meaning strange or marvelous.

## Tribe 7. RHOMBOCHLAMYDEAE

Rhombochlamydeae Lindau; Engl. & Prantl, Pflanzenfam. Nachtr. 303. 1897.  
The tribe contains a single genus, *Rhombochlamys*.

Herbs; flowers borne in terminal spikes, the bracts rhomboid; calyx segments 5; corollas hypocrateriform, the limb 2-lipped; stamens 4, anthers 1-celled; "daubenpollen."

Because of a resemblance of the pollen grains, Lindau associated his Rhombochlamydeae with the Old World tribe Andrographideae. But since in all other respects the two species he describes under *Rhombochlamys* are typical of *Aphelandra*, e. g., in such characters as the large rhombic bracts, and 4 stamens with slender, unilocular anthers, the creation of a new tribe was necessary.

## 20. RHOMBOCHLAMYS Lindau

*Rhombochlamys* Lindau, Bull. Herb. Boiss. 5: 659. 1897. The name is derived from the Greek *ῥόμβος*, top, and *χλαμύς*, mantle, i. e., a top-shaped mantle, alluding to the rhombic bracts. Type species: *Rhombochlamys rosulata* Lindau.

Flowers borne in spikes; bracts rhomboid, the margins dentate; bractlets lanceolate, obtuse; calyx segments 5, equal; corolla tube subcylindric, slightly and gradually enlarged at mouth, the upper lip 2-lobed, the lower 3-lobed; stamens 4, the anthers unilocular.

Description compiled from the original.

In addition to the type species, Lindau describes *R. elata*, also from Colombia.

## KEY TO THE SPECIES

Plants almost stemless; bracts 9 mm. long and 5 mm. wide,  
acuminate, glandular-pubescent..... *R. rosulata*  
Plants up to 50 cm. tall; bracts 13 mm. long and 8 mm. wide,  
obtuse, glabrous..... *R. elata*

1. *Rhombochlamys rosulata* Lindau

FIGURE 104

*Rhombochlamys rosulata* Lindau, Bull. Herb. Boiss. 5: 660. 1897. Type collected in damp sandy place on the Río Plata near Tolima, 1,300 meters altitude, December 23, 1882, by Lehmann (No. 2197). Photograph of the type material from the Berlin Herbarium in the U. S. National Herbarium, No. 8724. The Berlin specimen is poorly developed, consisting of a short portion of stem, 3 leaves and 2 spikes, one detached from plant. *Rosulata*, rosulate, i. e., forming a rosette, in allusion to the arrangement of the leaves.

Herbs, scapes very short; leaf blades dull green, 5 to 7 cm. long, 2 to 3 cm. wide, oval, rounded or abruptly short-acuminate at apex, narrowed at base and decurrent on the petiole, pubescent; petioles 7 to 15 mm. long; inflorescence a pubescent, long-pedunculate spike; bracts rhombic, acuminate at tip, narrowed at base, 9 mm. long, 5 mm. wide, glandular-pubescent, the margins bearing 2 pairs of minute teeth

toward tip, the nerves 6, parallel; bractlets lanceolate, 6 mm. long, 2 mm. wide, obtuse at tip, the margins ciliate; flowers pale lilac; calyx segments lanceolate, 5 mm. long, 1 mm. wide, puberulous; corolla tube 12 mm. long, 1.5 mm. broad at base, 3 mm. broad at throat, the upper lip bidentate, the teeth obtuse, 3 mm. long and 2.5 mm. wide, the lower lip 6 mm. long, the lateral lobes 4 mm. long and wide, the middle lobe 4 mm. long and 6 mm. wide, sinuate at apex; filaments 6 mm. long, affixed to middle of corolla tube, the anthers 2 mm. long, the tips



FIGURE 104.—*Rhombochlamys rosulata* Lindau (Photograph of *Lehmann* 2197): *a*, Plant; *b*, bract. (*a*, Natural size; *b*, twice natural size.)

barbate; pollen grains ellipsoidal,  $46\mu$  long and 36 to  $38\mu$  broad; ovary 1 mm. long; style 11 mm. long, the stigma subcapitate; capsules glabrous, 6 mm. long and 3 mm. broad, 8-seeded, very short-stipitate.

No specimens seen. Description compiled from the original.

*Rhombochlamys rosulata* and the following species, *R. elata*, strongly suggest the genus *Lagochilium* Nees (considered in this paper as a synonym of *Aphelandra*), which consists chiefly of small herbaceous or suffrutescent plants midway between *Stenandrium* and *Aphelandra*. Like *Encephalosphaera*, *Rhombochlamys* is based chiefly on pollen characters.

2. *Rhombochlamys elata* Lindau

*Rhombochlamys elata* Lindau, Bull. Herb. Boiss. 5: 661. 1897. Type collected in dense woods at Palmira, above La Vitretera, El Valle, Colombia, 1,600 to 2,000 meters altitude, June 17, 1883, by Lehmann (No. 2891). Photograph of Berlin Herbarium material in the U. S. National Herbarium, No. 8723. The name *elata* means lofty, probably referring to the height of the plant in comparison to that of *R. rosulata*.

Herb; stems up to 50 cm. high, terete, rarely branched, pubescent; leaf blades olive-green, oval, up to 12 cm. long and 3.5 cm. wide but usually somewhat smaller, narrowed at both ends, the costa pilose; petioles 12 to 20 mm. long, pubescent; spikes terminal or subterminal, one third the length of the leaves, the peduncle 1 cm. long, pubescent; bracts glabrous, imbricate, subrhombic, 13 mm. long, 8 mm. wide, obtuse, the margins bearing 5 acute teeth, the nerves 3, parallel; bractlets lanceolate, 3 mm. long, 0.75 mm. wide, ciliolate; flowers yellow; calyx segments lanceolate, 6 mm. long, 1 to 1.5 mm. wide, ciliolate; tube of the corolla 12 mm. long, 2 mm. in diameter at base, enlarged to 5 mm. at mouth, the upper lip 6 mm. long, 2-lobed, the lobes 2.5 mm. long and wide, obtuse, the lower lip 8 mm. long, 3-lobed, the middle lobe 6 mm. long and 5 mm. wide, the lateral lobes 5 mm. long and 8 mm. wide, all obtuse and subsinuate at tip; filaments 8 mm. long; anthers 2 mm. long, agglutinated at tip, barbate; ovary 2 mm. long; style 12 mm. long; capsules not seen.

No specimens seen. Description compiled from the original.

## Tribe 8. ASYSTASIEAE

Asystasieae Lindau, Bot. Jahrb. Engler 18: 47. 1893. Of the nine genera listed in Dalla Torre & Harms' Genera Siphonogamarum, *Asystasia* alone is represented in Colombia.

Herbs or shrubs; inflorescence spicate, racemose or rarely paniced; bracts and bractlets mostly small; calyx usually 5-parted; corolla distinctly or only slightly 2-lipped; stamens 4; staminodes 1 or none; anthers usually 2-celled; stigma capitate or rarely lobed; capsules slenderly stipitate; seeds 2 or 4.

## 21. ASYSTASIA

*Asystasia* Blume Bijdr. 796. 1826. Type species: *A. intrusa* Blume (Java).

Herbs or shrubs; leaves entire; flowers borne in spikes or racemes, these lax or dense, simple or branched, unilateral; pedicels short; bracts and bractlets small, narrowly triangular to linear; flowers usually solitary, opposite or alternate, white, blue, purple, rose or yellow; sepals linear or narrowly oblong; corolla tube short to long, funnel-form, ventricose or narrow, the 5 lobes subequal; stamens 4, perfect, subequal, didynamous; anthers oblong, the cells parallel, approximate, minutely spurred or muticous at base; ovary 4-ovulate, pubescent;



stigma minutely 2-parted or subcapitate; capsule elliptic, 2- or 4-seeded above, the base contracted and solid; seed compressed, orbicular or irregularly angular, rugose or tubercular, glabrous.

Approximately 70 species have been described in the genus, these chiefly from tropical Africa, Asia, and the East Indies. The generic name is probably from the Greek word *ασύστατος* (not holding together), in allusion to the widely spreading valves of the dehisced capsules.

1. *Asystasia gangetica* (L.) T. Anders.

FIGURE 105

*Justicia gangetica* L. Amoen. Acad. 4: 299. 1759. Type locality: India. The name *gangetica* alludes to the type locality, the Ganges River.

*Asystasia coromandeliana* Nees in Wall. Pl. As. Rar. 3: 89. 1832. Type locality: India. The specific name again alludes to the type locality, Coromandel.

*Asystasia gangetica* T. Anders, in Thwaites, Enum. Pl. Zeyl. 235. 1859-64. Based on *Justicia gangetica* L.



FIGURE 105.—*Asystasia gangetica* (L.) T. Anders. (*a*, Hasnali 7926, Trinidad; *b*, *c*, *f*, Hitchcock 16536, British Guiana; *d*, *e*, Rusby & Squires 38, Venezuela): *a*, Tip of branch; *b*, node of inflorescence to show bracts; *c*, pubescence of inflorescence; *d*, anther; *e*, pistil; *f*, fruit. (*a*, Half natural size; *b*, *e*, 3 times natural size; *c*, about 26 times natural size; *d*, about 4 times natural size; *f*, natural size.)

Erect or ascending shrubs sometimes climbing or trailing; stems subquadrangular, branching, glabrous or sparingly pubescent, the hairs downwardly curved, about 0.25 mm. long; leaves ovate, up to 9 cm. long and 5 cm. wide, acute to rather abruptly acuminate, obtuse, rounded or subcordate at base and decurrent on the petiole, sparingly pubescent, the hairs confined chiefly to costa and lateral veins (4 or

5 pairs) ; petioles up to 3 cm. long, pubescent, the hairs spreading or curved, about 0.25 mm. long; spikes terminating the branches, up to 20 cm. long, the peduncles up to 5.5 cm. long, these and the rachis sparingly and minutely pubescent, the flowers more or less secund, the spikes subtended by a pair of short-petioled (3 to 5 mm. long) leaves slightly smaller than the average stem leaves; bracts and bractlets similar, triangular, acuminate, 1.5 to 2 mm. long, 0.75 to 1 mm. wide at base, ciliate, the hairs 0.5 mm. long; calyx about 1 cm. long, the segments linear-lanceolate, acuminate, about 8 mm. long and 0.75 to 1 mm. wide at base, rather sparingly hirsute, the hairs spreading, about 0.25 mm. long, some of them glandular, the tube more densely hirsute with the glandular hairs predominating; pedicels up to 4 mm. long, minutely hirsute, the hairs both glandular and eglandular; corolla hirtellous, white or pale yellow, drying yellow, the tube yellowish, green or purple (*vide* A. S. Hitchcock No. 16536, U. S. Nat. Herb. No. 1055847, collected at Georgetown, British Guiana), 3 to 4 cm. long, 3 mm. broad near base, narrowed to 3 mm. at 8 mm. above base, thence enlarged to 13 mm. at throat, the enlarged portion of the tube obconic, the lobes rounded, about 1.5 cm. in diameter, conspicuously and coarsely reticulate-veined; stamens in pairs, the longer pair about 13 mm. long, the shorter about 1 cm. long, the filaments of the longer stamens bearing a line of minute, glandular, spreading hairs, the anthers 3.5 mm. long and 1.5 mm. broad, short-apiculate at tip; ovary conical, 3 mm. long, densely pilosulous; style 16 mm. long, pilosulous at and near base; capsule clavate, 20 mm. long or more, minutely pilosulous, some of the hairs glandular; seeds 2, gray, about 3.5 mm. broad, roughened, the margins crenate.

Native to tropical Africa, Asia, and Malaya. Introduced into tropical America where it is cultivated or persists as an escape. In addition to Colombia, specimens from British Guiana, Venezuela, and Trinidad were examined.

BOLÍVAR: Cartagena, Bro. Elias 622 (US).

#### Tribe 9. GRAPTOPHYLLEAE

Graptophylleae Lindau, Bot. Jahrb. Engler 18: 47. 1893. Of the 12 genera included in this tribe in Dalla Torre & Harms, *Genera Siphonogamarum*, only *Pachystachys* is represented in Colombia. The tribe is based on *Graptophyllum*, a genus found chiefly in Australia and Polynesia.

Shrubs or herbs; inflorescence spicate or paniculate; calyx usually equally 5-parted, sometimes 2-lipped; stamens 2; staminodes 2 or none; anthers 2-celled, the cells equally or unequally attached, their bases acute, obtuse or spurred; mostly "rahmenpollen"; capsules stipitate, 4-seeded.

## 22. PACHYSTACHYS Nees

*Pachystachys* Nees in Mart. Fl. Bras. 9: 99. 1847. Type species: *Pachystachys riedeliana* (Brazil). Nees described no other species in this treatment. Later the same year (DC. Prodr. 11: 319. 1847) he republished this and added five other species. No further additions were made to the genus until Rizzini described *P. albiflora* from Brazil (Bol. Mus. Nac. Rio de Janeiro, n. s. 8: 24, pl. 7. 1947). The generic name is derived from *πάχος*, thick, large or stout, and *στάχυς*, spike.

Herbaceous or suffrutescent plants; leaves large, petioled; spikes terminal, dense; bracts conspicuous, herbaceous; bractlets small or none; flowers borne in a terminal spike of verticillasters consisting of 3 or 4 flowers each; calyx 5-parted, the segments relatively short; corolla ringent, slenderly obconic, curved, 2-lipped, the upper lip narrow, 2-lobed at tip, the lower lip 3-lobed, the lobes subequal, oblong or ovate; stamens 2, about as long as the corolla, attached near the base of its tube; anthers deeply sagittate, the basal lobes muticous, equal; staminodes, if present, rudimentary.

1. *Pachystachys riedeliana* Nees

FIGURE 106

*Pachystachys riedeliana* Nees in Mart. Fl. Bras. 9: 99. 1847. Type locality: "Ad Villam de Borba in ditione fluv. Madeira," Brazil. Type collected by Riedel in whose honor the species was named.

Suffrutescent, erect, simple or sparingly branched plants up to 3 meters high; stems glabrous, terete or the upper portions subquad-rangular; leaf blades oblong, elliptic or broadly oblanceolate, up to 23 cm. long and 8.5 cm. wide, acute to acuminate (the tip itself usually blunt), gradually to rather abruptly narrowed at base, glabrous, the margins entire, the costa and lateral veins (9 to 12 pairs) rather prominent; petioles up to 5 cm. long, glabrous; spikes solitary, terminal, up to 16 cm. long or more, the rachis finely puberulous; bracts rather loosely imbricate, ovate-lanceolate, 1.5 to 2.5 cm. long, 7 to 11 mm. wide (the terminal bracts somewhat smaller, the basal ones larger), acuminate, narrowed at base, short-petiolate, both surfaces puberulous, the lower surface more densely so, bearing additional glandular hairs; bractlets narrowly linear, about 3 mm. long and 0.5 mm. wide, sparingly puberulous; calyx campanulate, 4.5 mm. long, the segments narrowly triangular, about 3 mm. long and 1 mm. wide at base, acuminate, sparingly hirtellous; corolla scarlet, up to 7.5 cm. long, the tube curved, 4 mm. broad at base, gradually enlarged to 8 mm. at throat, the upper lip erect, lanceolate, 6.5 mm. wide near base, gradually narrowed to 1.5 mm. at tip, 2-lobed, the lobes obtuse, about 1 mm. long and wide, the lower lip 3-lobed, spreading, the lobes linear, rounded at tip, the middle lobe 17 mm. long and 3 mm. wide, the lateral ones up to 24 mm. long and 4 mm. wide; stamens attached near the base of the corolla tube, the filaments 5 cm. long, puberulous, the

anthers 7 mm. long, deeply sagittate, the basal lobes muticous; staminodes rudimentary, puberulous; ovary glabrous; capsules not seen.

*Pachystachys riedeliana* has often been confused with *P. coccinea* (Aubl.) Nees (DC. Prodr. 11: 319. 1847) of French Guiana. Although the two species are superficially similar, they can readily be separated by the longer, linear calyx segments of *P. coccinea*.

Woods, margins of thickets, along trails or streams. West Indies and northern South America.

EL VALLE: Las Juntas, on the Río Dagua, Lehmann 1887 (US).



FIGURE 106.—*Pachystachys riedeliana* Nees (*a-e*, Lehmann 1887; *f-i*, Eggers 14135, Ecuador): *a*, Spike; *b*, leaf; *c*, upper surface of bract; *d*, bractlet; *e* pubescence of undersurface of bract; *f*, calyx; *g*, pistil; *h*, corolla; *i*, anther. (*a*, *b*, *h*, Half natural size; *c*, *d*, *g*, natural size; *e*, about 22 times natural size; *f*, *i*, twice natural size.)

#### Tribe 10. PSEUDERANTHEMEAE

Pseuderanthemeae Radlk. Sitzungsber. Math. Phys. Kl. Akad. Wiss. München 13: 282. 1883. *Pseuderanthemum* Radlk. is the only one of the three genera listed in the tribe Pseuderanthemeae in Dalla Torre & Harms' Genera Siphonogamarum with representatives in America.

Herbs or shrubs; inflorescence spicate, racemose, thyrsiform, or paniculate; bracts and bractlets small; calyx 5-parted; corolla more or less 2-lipped; stamens 2; staminodes 2 or none; anther cells equally or unequally attached, acute or obtuse at base; "spangenpollen" (elliptical grains with 9 longitudinal clefts arranged in 3 groups, the broader

middle cleft of each group containing a pore) and "glatterpollen" (smooth or roughened, nearly spherical grains with 2 or 3 pores, these sometimes lying in very short clefts); capsules slenderly stipitate, 2- or 4-seeded.

### 23. PSEUDERANTHEMUM Radlk.

*Pseuderanthemum* Radlk. Sitzungsab. Math. Phys. Kl. Akad. Wiss. München 13: 282. 1883. A genus found in tropical regions throughout the world. From *ψευδής*, false, and *Eranthemum*, an Old World genus belonging to the tribe *Ruellieae*, thus false *Eranthemum*. Type species: *Eranthemum alatum* Nees (Mexico).

Herbs or small shrubs; leaves opposite, usually ovate; flowers borne in terminal or axillary bracteate spikes, racemes or panicles, the bracts and bractlets subtending the flower clusters small; calyx segments 4 or 5, subulate; corolla white, blue, or pink, the tube slender, the limb spreading, the 5 lobes subequal; stamens 2, usually included; staminodes 2, minute; anthers cells mucicous or acute at the base; capsules long-stipitate; seeds 2 or 4.

In his treatment of *Eranthemum* (DC. Prodr. 11: 445. 1847) Nees classifies his species having subequal corolla lobes under two heads, one with large conspicuous bracts, all Old World species, under "a. *Grandibracteata*," and the other, with small inconspicuous bracts, partly New World and partly Old World species, under "b. *Parvibracteata*." To this latter section Radlkofer applied the generic name *Pseuderanthemum*.

#### KEY TO THE SPECIES

Leaf blades ovate, abruptly narrowed to a long, winged petiole; bracts subtending the lower branches of the inflorescence leaflike, orbicular or suborbicular, sessile or subsessile; corolla tube about 2 cm. long, very slender.

Flowers dark red; flower bracts triangular, up to 2 mm. long--- 1. *P. haughtii*

Flowers purple; flower bracts lanceolate, up to 4 mm. long---- 2. *P. idroboi*

Leaf blades elliptic or oblong to lanceolate or oblanceolate, rarely ovate, gradually narrowed to short, winged petioles; bracts subtending the inflorescence, or lower branches of the same, oblong, lanceolate, or linear-subulate, sometimes leaflike but not orbicular.

Calyx more or less glandular-puberulous.

Leaf blades (lower surface) glabrous or bearing a few scattered, minute, stiff hairs; cystoliths black----- 3. *P. leiophyllum*

Leaf blades (lower surface) definitely puberulous or hirtellous; cystoliths whitish.

Lobes of the corolla conspicuously purple-dotted----- 4. *P. poecilanthum*

Lobes of the corolla uniformly colored.

Corollas pure white----- 5. *P. ellipticum*

Corollas violet or pink.

Leaf blades glabrous above, sparingly gland-dotted beneath.

6. *P. ewanii*

Leaf blades more or less hirtellous above, not gland-dotted beneath----- 7. *P. pennellii*

Calyx eglandular.

Leaf blades 2 cm. wide or less (or up to 3 cm. in No. 9).

Calyx glabrous..... 8. *P. lanceum*

Calyx puberulous..... 9. *P. sneidernii*

Leaf blades, or at least some of them, 2.5 cm. wide or more.

Rachis glabrous; leaf blades usually obtuse or rounded at tip.

10. *P. atropurpureum*

Rachis pubescent; leaf blades acuminate.

Flowers borne in simple or forked racemes.

Leaf blades thin, up to 5.5 cm. wide..... 11. *P. potamophilum*

Leaf blades firm, up to 4 cm. wide..... 12. *P. hylophilum*

Flowers borne in panicles.

Corolla densely glandular-papillose..... 13. *P. chaponense*

Corolla sparingly puberulous or pubescent.

Tube of corolla narrow, the throat 1.5 mm. broad.

14. *P. stenostiphon*

Tube of corolla wider, the throat 2.3 to 3 mm. broad.

Corollas white; shrubs..... 15. *P. cuatrecasasi*

Corollas purplish; herbs..... 16. *P. dawsonii*

1. *Pseuderanthemum haughtii* Leonard, sp. nov.

FIGURE 107

Herba, caulibus subquadrangularibus, bifariam pilosis, pilis plus minusve patulis, cystolithis subpunctiformibus, inconspicuis; lamina foliorum ovata, abrupte acuminata (apice ipso acuto, plus minusve curvato), basi rotundata, in petiolum decurrens, integra vel undulata, membranacea, supra glabra vel parce hirtella, costa et venis prominentibus, cystolithis gracilibus, subtus parce hirtella, pilis patulis praecipue in costa et venis positis, venis prominentibus; petioli alati, glabri vel marginibus et canale pilos minutos ferentes; panicula parce ramosa, terminalis, pedunculo et rhache plus minusve bifariam pilosis, pilis albis, patulis, fasciculis 1-3 floribus, sessilibus; bracteae infimae foliis similes, suborbiculares, acuminatae, basi rotundatae, subsessiles; bracteae supremae minutae, triangulares, acuminatae, ciliatae; bracteolae anguste triangulares, minutae, ciliatae; calycis segmenta lanceolata, subtiliter 3-nervata, ciliata; corolla atrorubra, tubo praegracili, lobis ovalibus, rotundatis; antherae subsessiles, lineares, curvatae; stylus et ovarium glabri.

Herbs up to 50 cm. high; stems subquadrangular, pilose in 2 lines, the hairs more or less spreading, about 0.75 mm. long, the cystoliths barely conspicuous under a lense; leaf blades ovate, 10 to 18 cm. long, 5.5 to 7 cm. wide, abruptly acuminate (the tip itself acute, straight or slightly curved), rounded at base and abruptly and broadly decurrent on the petiole, thin, the upper surface glabrous or bearing a few coarse hairs, the costa and lateral veins (9 or 10 pairs) conspicuous, the lower veins meeting the costa almost at right angles, the cystoliths linear, delicate, the lower surface sparingly hirtellous, the hairs about 0.25 mm. long, spreading, confined chiefly to costa and veins, these slightly more conspicuous than above; petioles 4 to 7 cm. long, glabrous or the

margins and channel bearing a few minute hairs, the winged portion of the petiole near base of leaf blade 1 to 1.5 cm. wide, thence gradually narrowed to its base; leaves of the small branches produced in the axils of the stem leaves ovate, about 2 cm. long and 1.5 cm. wide; panicle terminal, sparingly branched, the flowers subsessile, the peduncle 10 cm. long, the first internode 6 cm. long, the others suc-

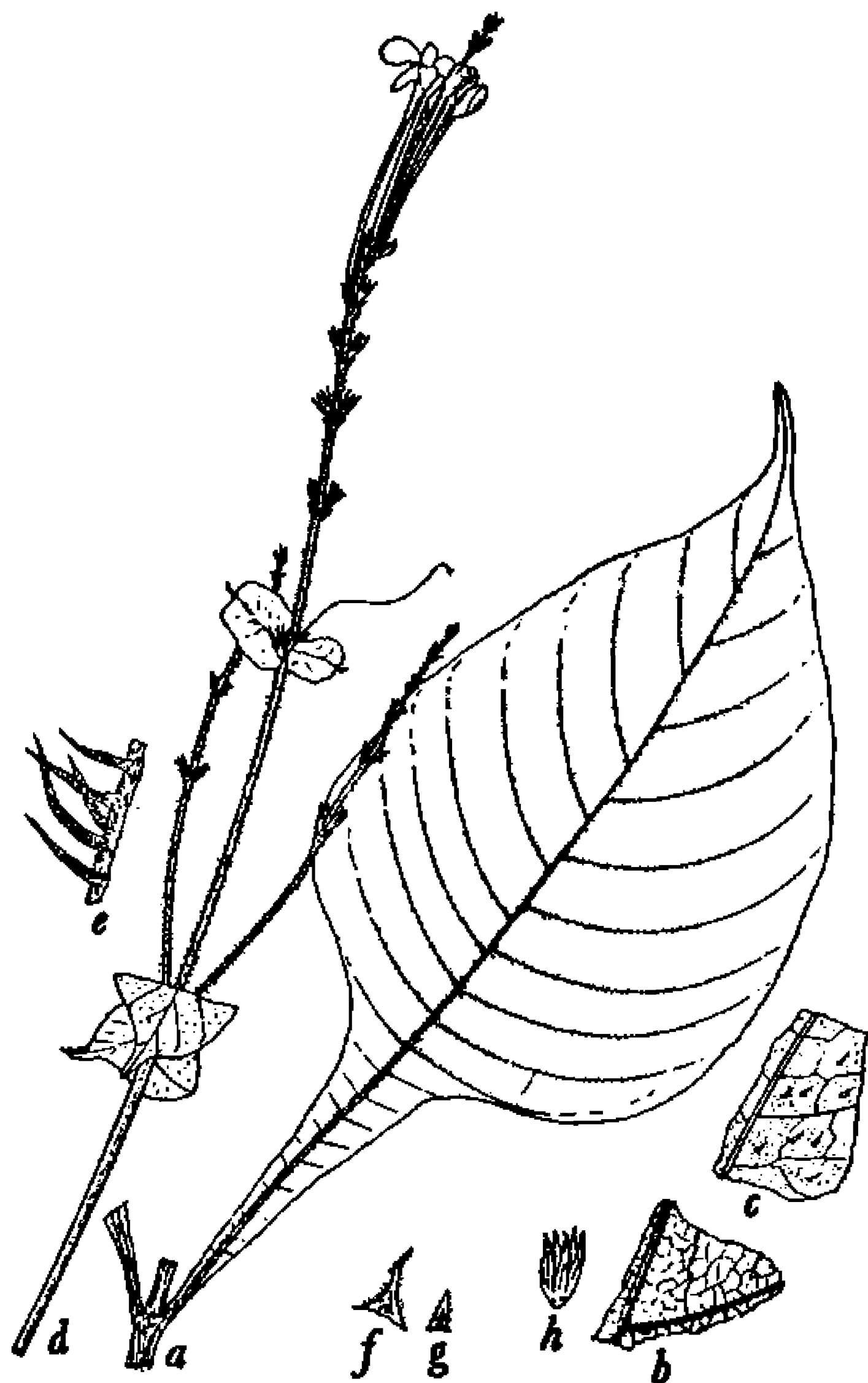


FIGURE 107.—*Pseuderanthemum haughii* Leonard (Haught 3974): *a*, Leaf; *b*, small portion of leaf (lower surface) to show venation in detail; *c*, small portion of leaf (upper surface) to show scattered hairs and cystoliths; *d*, inflorescence; *e*, pubescence of rachis; *f*, bract; *g*, bractlet; *h*, calyx. (*a*, *d*, Half natural size; *b*, *c*, natural size; *e*, 18 times natural size; *f*, *g*, twice natural size; *h*, slightly more than natural size.)

cessively shorter toward tip, the leaves subtending the panicle ovate-cordate, about 7 cm. long and 3.5 cm. wide near the base, acuminate, truncate or subcordate at base, subsessile, the short petiole winged, about 5 mm. long, the bracts subtending the lower branches of the inflorescence suborbicular, about 2.5 cm. long and wide, acuminate, rounded at base, subsessile, the bracts subtending the lowermost fascicle of flowers broadly elliptic, about 8 mm. long and 13 mm. wide,

apiculate and emarginate, the lowermost of the subsequent bracts triangular, acuminate, 2.5 mm. long and 1 mm. wide at base, ciliate, the others becoming smaller toward tip of inflorescence; the bractlets narrowly triangular, up to 1.5 mm. long, acute, the peduncle and rachis pilose, the hairs mostly spreading, about 0.5 mm. long, arranged more or less in two rows; calyx sessile, 5 mm. long, the segments lanceolate, 3 mm. long, 0.75 mm. wide at base, faintly and delicately 3-nerved, ciliolate; corolla dark red, 3 cm. long, the tube very slender, 1.75 mm. broad at base, narrowed at 4 mm. above base to 1 mm., the mouth about 3 mm. broad, the lobes oval, 5 to 6 mm. long, about 4 mm. wide, rounded at tip; stamens inserted near mouth of corolla tube, the filaments very short, the anthers curved, about 1.5 mm. long, the staminalodes subulate, 0.5 mm. long; ovary 3 mm. long, glabrous; style slender, glabrous, exerted about 5 mm. beyond mouth of the corolla tube; mature capsule not seen.

Type in the U. S. National Herbarium, No. 1708795, collected in coffee groves at Manaure, Department of Magdalena, Colombia, 500 meters altitude, January 23, 1944, by Oscar Haught (No. 3974).

Closely related to *P. alatum* (Nees) Radlk. of Mexico and Central America, *P. haughtii* differs chiefly in the shape of the leaf blades and the size of the calyx. The leaves of *P. alatum* are definitely cordate at base, the venation being subpalmate, the lowermost three pairs of veins arising nearly at a point, whereas in *P. haughtii* the leaf blades are somewhat rounded at base, and the venation is strictly pinnate. The calyx of *P. alatum* is much shorter, being only about 2 mm. long in comparison to the 5 mm. of *P. haughtii*, and the segments of the latter are glabrous or at most sparingly ciliolate instead of rather copiously ciliolate.

*Pseuderanthemum cuspidatum* (Nees) Radlk. may likewise have a resemblance to *P. haughtii*, but is described as having roughened, glabrous leaf blades and simple spikes.

2. *Pseuderanthemum idroboi* Leonard, sp. nov.

FIGURE 108

Herba, caulibus subquadrangularibus, glabris vel sursum bifarium hirtellis, cystolithis minutis, parallelis; lamina foliorum ovata, breviter acuminata (apice ipso obtuso), basi in petiolum alatum gracilem subito angustata, membranacea, integra, glabra vel parce hirtella, supra costa et venis lateralibus obscuris, subtus aliquanto prominentibus; petioli graciles, alati; racemi terminales, simplices, graciles, pedunculo et rhache aliquanto hirtellis; pedicelli breves; bracteae infimae foliis similes, suborbiculares, obtusae, basi cordatae, bracteae supremae minutae, anguste triangulares, acutae, subcarinatae, aliquanto ciliatae, glabrae vel apice minute hirtellae, marginibus subhyalinis; bracteolae anguste lanceolatae, acutae, apice minute hirtellae;



calycis segmenta lineari-lanceolata, acuminata, apice minute hirtella et ciliolata; corolla purpurea, tubo praegracili, limbo patulo, lobis oblongis, obtusis vel rotundatis; stamina vix exserta; capsulae ignotae

Simple erect herbs up to 60 cm. high; stems subquadrangular, glabrous or the upper portions hirtellous in 2 lines, the cystoliths parallel,  $250\ \mu$  long; leaves crowded at the tip of stem, the blades ovate, up to 14 cm. long and 8 cm. wide, short-acuminate (the tip itself blunt), abruptly narrowed into a slender, winged petiole, membranaceous, drying bright olive-green, entire, glabrous or sparingly hirtellous, the hairs of the upper surface coarse, about 0.5 mm. long, those

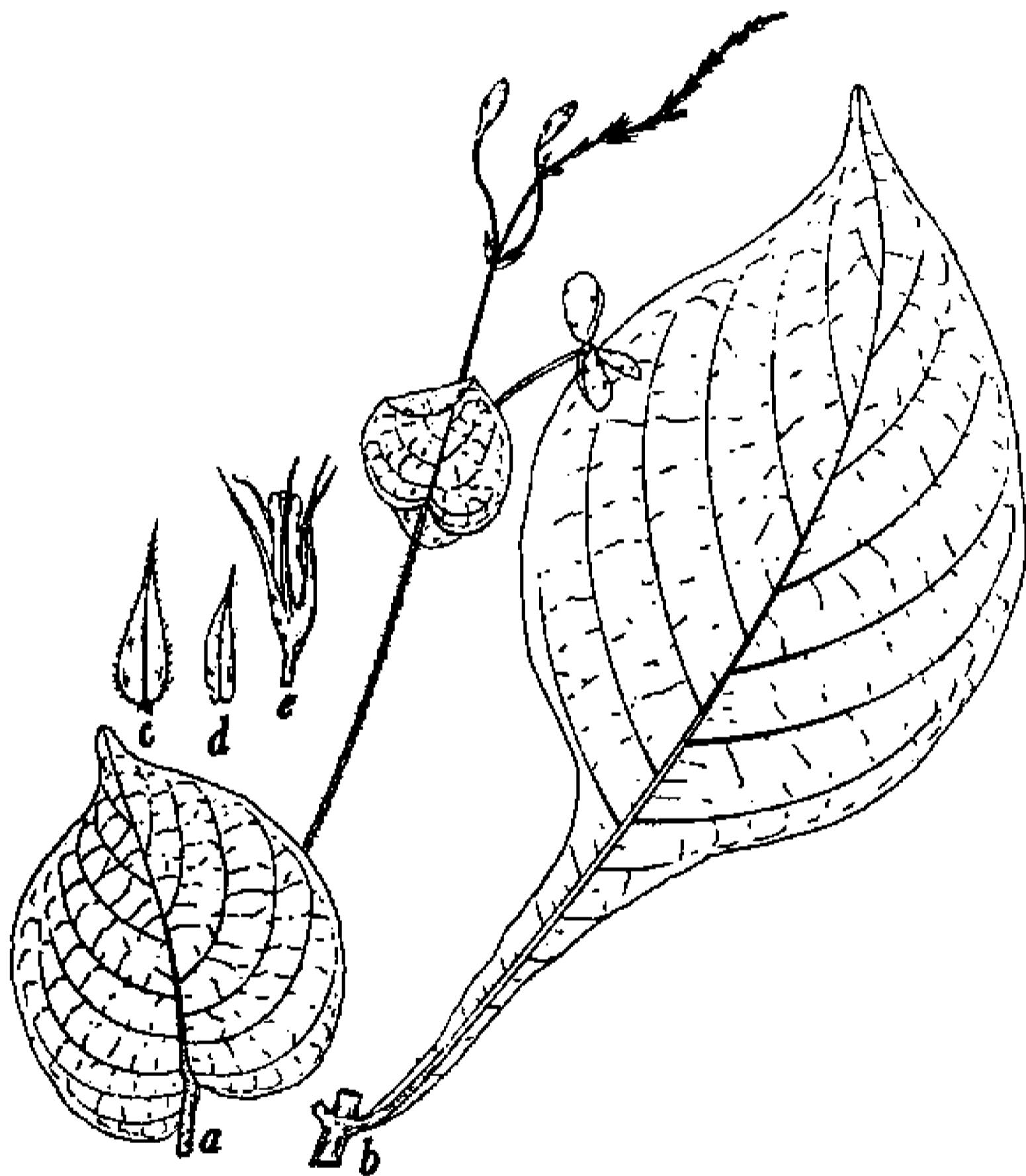


FIGURE 108.—*Pseuderanthemum idroboi* Leonard (*Id robo* 536): *a*, Inflorescence; *b*, leaf; *c*, flower bract; *d*, bractlet; *e*, calyx. (*a*, *b*, Half natural size; *c*, 4 times natural size; *d*, 6 times natural size; *e*,  $4\frac{1}{2}$  times natural size.)

on the lower surface smaller and finer, confined chiefly to costa and lateral veins (usually 8 pairs), the venation of the upper surface obscure, that of the lower more prominent and drying a bright yellowish green, the cystoliths slender, inconspicuous,  $250\ \mu$  long; petioles 4 to 10 cm. long, including the wings, about 10 mm. wide at base of blade, thence gradually narrowed to base; raceme terminal, simple, slender, the peduncle 12 cm. long, the lowermost internode 7 cm. long, the others successively shorter toward tip, both peduncle and rachis moderately hirtellous, the hairs mostly spreading, straight or curved, 0.25 mm. long, the pedicels up to 1 mm. long; bracts subtending the spike and lowermost branches of the inflorescence leaflike, suborbicu-

lar, obtuse, cordate, the lowermost pair about 4 cm. wide, the second pair 2 cm. wide, the upper flower bracts lanceolate, 4 mm. long or less, 0.75 mm. wide at base, acute, subcarinate, moderately ciliate, minutely hirtellous at tip, the margins subhyaline; bractlets narrowly lanceolate, 1.5 mm. long, 0.5 mm. wide, acute, sparingly and minutely hirtellous at tip, otherwise glabrous; calyx segments linear-lanceolate, 2.5 mm. long, 0.25 to 0.5 mm. wide at base, acuminate, minutely hirtellous and ciliolate at tip; corolla 2.5 cm. long, purple (*morada*), the tube slender, 0.75 mm. in diameter except at mouth, here 1.5 mm. broad, the limb spreading, the lobes oblong, 9 mm. long, up to 4.5 mm. wide, rounded or obtuse, the stamens slightly exserted; capsules not seen.

Type in the U. S. National Herbarium, No. 2025691, collected on the margin of the Río Guejar, Sierra de La Macarena, Intendencia of Meta, Colombia, 500–1,000 meters altitude, August 29, 1950, by J. M. Idrobo (No. 536).

*Pseuderanthemum idroboi* is closely related to the preceding species, differing chiefly in color of flower and in the shape of the flower bracts.

### 3. *Pseuderanthemum leiophyllum* Leonard, sp. nov.

FIGURE 109

Suffrutex, caulibus subquadrangularibus, sursum bifariam hirtellis, deorsum glabris, subpunctiformi-cystolithigeris; lamina foliorum lanceolata, apice acuminata, basi angustata, subauriculata, integra vel leviter undulata, subchartacea, supra glabra, subtus glabra vel minute et parce hispidula, cystolithis nigris, costa et venis aliquanto prominentibus; petioli breves; racemi terminales, rhache puberula, pilis pro parte glandulosis; pedicelli graciles, puberuli, pilis glandulosis et eglandulosis intermixtis; bracteae parvae, anguste triangulares, glabrae vel parce puberulae, aliquanto pilos glandulosos raros ferentes; bracteolae minutae; calycis segmenta lineari-lanceolata, acuta, puberula, pilis glandulosis et eglandulosis intermixtis; corolla alba vel purpurea, plus minusve curvata et ventricosa; stamina et staminodia glabra, inclusa; capsulae clavatae, puberulentae, apice obtusae; semina plana, verrucosa.

Suffrutescent plants up to 30 cm. high or more; stems subquadrangular, hirtellous in two lines (the hairs about 0.25 mm. long), the lower portions glabrate, the cystoliths subpunctiform; leaves sessile, the blades lanceolate, up to 10 cm. long and 2.5 cm. wide, acuminate (the tip itself blunt), narrowed from about middle to a subauriculate base, entire or undulate, subchartaceous, the upper surface glabrous, the lower surface glabrous or minutely and sparingly hispidulous (the hairs about 100 $\mu$  long), the cystoliths appearing black, the costa and lateral veins (7 or 8 pairs) rather prominent; petioles about 1 mm. long; flowers borne in terminal racemes up to 7 cm. long, the peduncles

up to 3 cm. long, puberulous in two lines, the rachis puberulous, the hairs about 0.25 mm. long, some of them gland-tipped, the pedicels slender, the lowermost up to 8 mm. long, successively shorter toward tip, all puberulous with both glandular and eglandular hairs; bracts narrowly triangular, the largest and lowermost up to 1 cm. long and 3 mm. wide at base, narrowed to an obtuse tip, bractlets similar but about half as large, both bracts and bractlets glabrous or sparingly puberulous, sometimes bearing a few additional glandular hairs;



FIGURE 109.—*Pseuderanthemum leiophyllum* Leonard (Toro 943): *a*, Tip of plant; *b*, node of inflorescence to show bracts and bractlets; *c*, calyx; *d*, pubescence of calyx; *e*, capsule (right valve complete). (*a*, *e*, Natural size; *b*, *c*, twice natural size; *d*, about 20 times natural size.)

calyx 6 mm. long, the segments linear-lanceolate, 5 mm. long, 1 mm. wide at base, acute, ending in a blunt tip, puberulous, the pubescence a mixture of glandular and eglandular hairs up to  $150\mu$  long; corolla white or purple(?), about 15 mm. long, the tube about 2 mm. broad at base, gradually expanded to 8 mm. at mouth, somewhat curved and ventricose, minutely and sparingly pubescent, the lobes ovate, about 6 mm. long and 4 mm. wide; stamens 4 mm. long, attached at 5 mm. above base of corolla, the anthers 2 mm. long, the staminodes 1 mm. long, both stamens and staminodes glabrous; capsules clavate, 21 mm.

long, puberulous, 4-seeded, the solid basal portion about 6 mm. long and 3 mm. broad, the tip blunt, the seed-bearing cavity 4 mm. broad, the seed flattened, about 3.5 mm. long and 3 mm. broad, verrucose, the retinacula linear, curved, about 3 mm. long, thin and acute at tip.

Type in the herbarium of the Facultad de Agronomía, Medellín, Colombia, No. 1905, collected at Támesis, Department of Antioquia, Colombia, February 1, 1928, by Rafael A. Toro (No. 943).

*Pseuderanthemum leiophyllum* is well marked and has no close resemblance to any other Colombian species. The color of the corolla is not apparent in the herbarium material. The name *leiophyllum* is derived from *λεῖος*, smooth, and *φύλλον*, leaf.

4. *Pseuderanthemum poecilanthum* Leonard, sp. nov.

FIGURE 110

Herba erecta, caulibus subteretibus, glabris vel sursum parce puberulis, pilis minutis et appressis; lamina foliorum oblongo-elliptica, subacuta (apice ipso obtuso), basi angustata, in petiolum decurrens, submembranacea, marginibus leviter et crasse crenatis, supra glabra, costa et venis lateralibus obscuris, subtus parce puberula, pilis praecipue in costa et venis positis, costa et venis magis prominentibus; petioli puberuli; racemi solitarii, terminales, rhache et pedunculis glanduloso-pubescentibus, pilis patulis, albidis; pedunculus prope basin bracteas lineari-subulatas, carinatas, parce puberulas ferens; bracteae flores subtendentes similes sed minores; bracteolae minutae, subulatae, anguste triangulares; calycis segmenta lanceolata, acuminata, subtiliter 3-nervata, plus minusve glanduloso-puberula; corolla alba, lobis purpureo-maculatis; ovarium parce glanduloso-puberulum.

Erect herbs about 30 cm. high; stems subterete, glabrous or the upper portions sparingly puberulous, the hairs minute and appressed; leaf blades oblong-elliptic, up to 18 cm. long and 4.5 cm. wide, acutish, the tip blunt, gradually narrowed from middle or slightly above the middle to base and decurrent on the petiole, rather thin, the margins shallowly and coarsely crenate, the upper surface glabrous, the costa impressed, this and the lateral veins (5 or 6 pairs) obscure, the lower surface sparingly puberulous, the hairs confined chiefly to costa and veins, these slightly more prominent than on the upper surface; petioles 5 to 10 mm. long, puberulous; flowers solitary, borne in a terminal, peduncled raceme about 12 cm. long, the peduncle (5.5 cm. long) and rachis glandular-pubescent, the hairs spreading, barely 0.25 mm. long, whitish, the lower pair of bracts borne on the peduncle about 1 cm. above its base, linear-subulate, carinate, 0.5 mm. broad at base, sparingly puberulous, those subtending the flowers similar but smaller, 3 to 1.5 mm. long; bractlets subulate, narrowly triangular, the lowermost 1.5 mm. long and 0.5 mm. wide at base; calyx 6 mm. long, the segments glandular-puberulous without, the hairs spreading, the tube 0.5 mm. long, the segments lanceolate, 1 mm. wide at base,

acuminate, delicately 3-nerved; pedicels up to 3 mm. long, glandular-puberulous; corollas 1.5 cm. long, sparingly puberulous, white, the lobes purple-spotted, the tube 10 mm. long, 2 mm. broad near the base, contracted to 1.5 mm. at 3 mm. above base, abruptly expanded at summit, the mouth 5 mm. broad, 2-lipped, the lobes of the upper lip oblong,

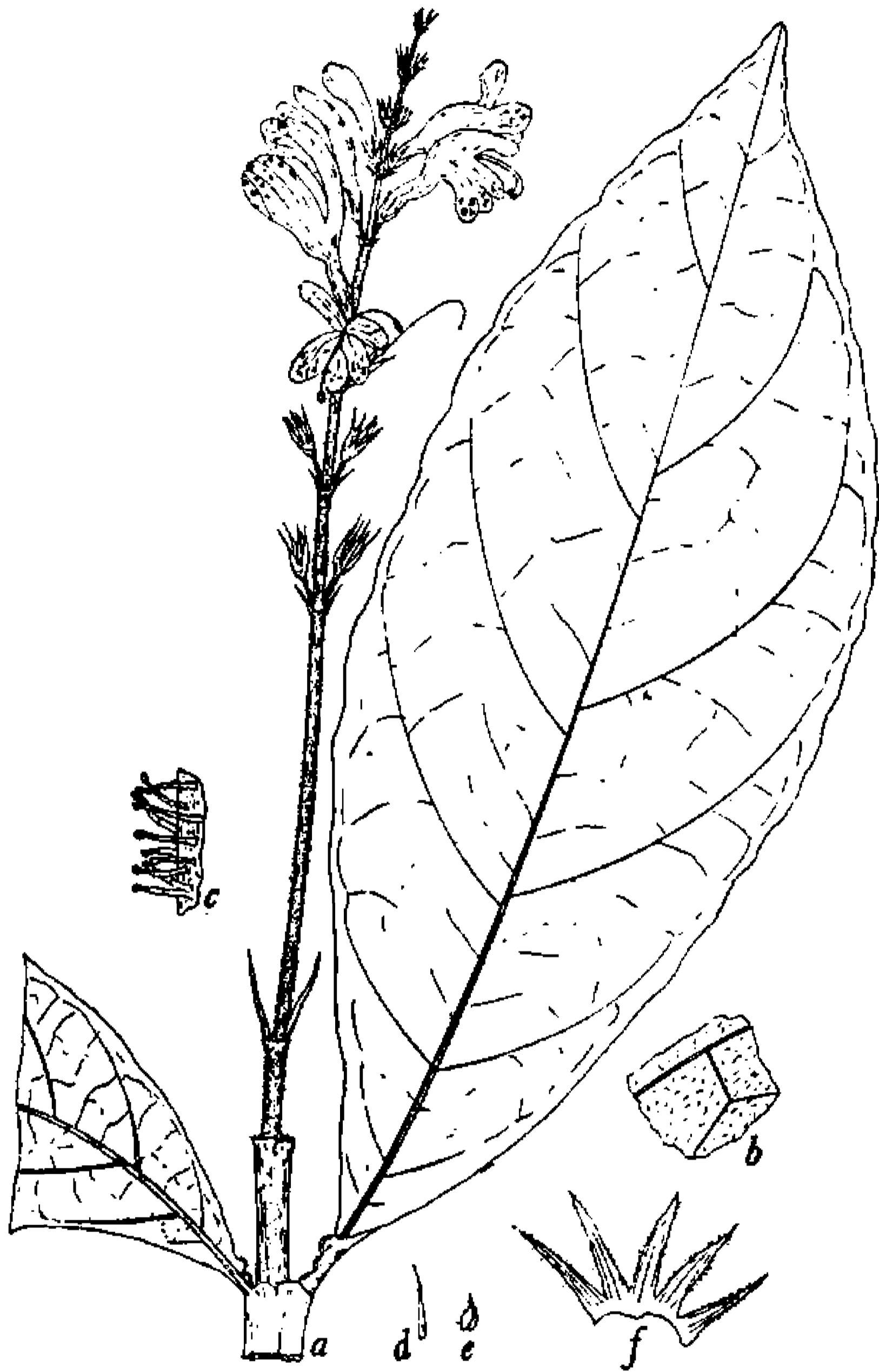


FIGURE 110.—*Pseuderanthemum poecilanthum* Leonard (*Cuatrecasas* 10671): *a*, Tip of plant; *b*, small portion of leaf blade (upper surface) to show cystoliths; *c*, pubescence of peduncle; *d*, bract; *e*, bractlet; *f*, calyx, spread to show lobes. (*a*, *d*, Natural size; *b*, about 30 times natural size; *c*, about 25 times natural size; *e*, *f*, about twice natural size.)

9 mm. long and 4 mm. wide, those of the lower lip ovate, 7 mm. long, the lateral 4 mm. wide, the middle 4.5 mm. wide, all rounded; stamens about 1 cm. long, attached in the throat of the corolla, exserted, recurved, glabrous, the anthers 2 mm. long; staminodes 1.5 mm. long; style about 2 cm. long, sparingly puberulous near base, otherwise glabrous; stigma minute, about as broad as the style; ovary ovoid, 1.5 mm. long, sparingly glandular-puberulous; capsule not seen.

Type in the U. S. National Herbarium, No. 1798532, collected in wet forests of the Río Putumayo, at Puerto Porvenir, Comisaría de Putumayo, Colombia, 230 to 250 meters altitude, November 19, 1940, by J. Cuatrecasas (No. 10671). The name *poecilanthum* is derived from ποικίλος, speckled, and ἄνθος, flower.

*Pseuderanthemum poecilanthum* is a distinct species easily recognized by its glandular inflorescence and orchidlike blossoms.

##### 5. *Pseuderanthemum ellipticum* Turrill

*Pseuderanthemum ellipticum* Turrill, Kew Bull. 1920: 69. 1920. Two cotypes are cited by Turrill, one collected in lanes and paths between coffee plantations at Fusagasugá, Department of Cundinamarca, Colombia, April, by Mrs. J. A. Tracey, the other in forest shade at Arizal, 1,700 meters altitude, May, by Kalbreyer. The epithet *ellipticum*, elliptic, alludes to the shape of the leaf blades.

Erect herbs 0.5 to 1 m. high or more; upper portion of the stem subquadrangular, rather densely hirsute, the hairs about 0.25 mm. long and more or less appressed, the lower portion of the stem terete and glabrous; leaves 8 or more, borne on the upper portion of the stem, the blades elliptic or elliptic-oblongate, up to 8 cm. long and 2.5 cm. wide, acuminate, the tips curved and blunt, narrowed at base and decurrent on the petiole, glabrous above, the costa and lateral nerves barely conspicuous, the cystoliths conspicuous under a lens, the lower surface glabrous except the costa and veins, these rather sparingly puberulous and conspicuous, the tertiary veins coarsely reticulate, the cystoliths less conspicuous than above; petioles up to 1 cm. long, channeled, puberulous; flowers several, crowded in clusters in a narrow terminal raceme up to 16 cm. long, the rachis and peduncle (about 6 cm. long) rather densely hirsute, the hairs barely 0.5 mm. long, loosely appressed or ascending, the first internode 1.5 cm. long, the others successively shorter, the lowermost pair of bracts borne at about the middle of the peduncle, linear-subulate, 6.5 mm. long, about 1 mm. wide at base, carinate, the keel and margins sparingly ciliate, the bracts subtending the flower clusters similar but smaller, 3 to 4 mm. long; bractlets subulate, 1.5 mm. long, ciliate; pedicels up to 2 mm. long, glandular-puberulous; calyx glandular-puberulous, the hairs spreading, up to 0.25 mm. long, the calyx tube about 1 mm. long, the segments lance-linear, acute, 6 to 7 mm. long, obscurely nerved; corolla white, about 2 cm. long, puberulous, the hairs spreading, up to 0.25 mm. long, the tube about 12 mm. long, slightly curved, 1.5 mm. broad at base, 2.5 mm. broad at throat, the upper portion slightly ampliate, the lobes ovate, subequal, rounded, about 6.5 mm. long and 3 to 4.5 mm. wide; stamens inserted at about the middle of the tube, the filaments 1.5 mm. long, the anthers about 2 mm. long, the lobes minutely apiculate at base; staminodes subulate, 0.5 mm. long; ovary about 2 mm. long,

glabrous, the style about 1 cm. long, the lower portion minutely hirsute; mature capsules not seen.

The specimens cited were collected at altitudes from 1,100 to 2,300 meters.

CALDAS: Tabeja, west of Armenia, *Pennell, Killip, & Hazen* 8630. (GH, NY).

CUNDINAMARCA: Albán, *Guevara-Amórtegui* 267 (US). Forest above Fusagasugá, *Pennell* 2700 (GH, NY, US). Between the quebradas of La María and La Victoria, Sasaima, vicinity of San Bernardo, *García-Barriga* 12589 (US). Wooded border of Laguna de Pedro Palo, Municipio de Tena, *Uribe-Uribe* 1754 (US).

6. *Pseuderanthemum ewanii* Leonard, sp. nov.

FIGURE 111

Suffrutex, caulibus parce ramosis, deorsum teretibus, sursum subquadrangularibus, aliquanto hirtellis; lamina foliorum oblongo-elliptica, breviter subacuminata (apice ipso obtuso), basi angustata, in petiolum decurrens, subchartacea, integra vel undulata, supra subnitida, glabra, costa et venis obscuris, cystolithis prominentibus, in costa parallelis, subtus glabra (glandulis rotundis, sessilibus parce dissitis exceptis), costa et venis lateralibus prominentibus aliquanto hirtellis, venulis crasse reticulatis; petoli aliquanto breves; racemus angustus, terminalis, interruptus, pedunculo et rache dense hirtellis; bracteae anguste lanceolatae, falcatae, carinatae, hirtellae; bracteolae lanceolatae, parvae, acutae, subcarinatae, hirtellae; pedicelli graciles, teretes, pilis subbrunneis, patulis, glandulosis et eglandulosis intermixtis praediti; calycis segmenta angusta, acuminata, hirtella, basi pilis glandulosis et eglandulosis intermixtis praedita; corolla pallidrosea, minute pubescens, marginibus loborum glabris, lobis patulis, ovatis, obtusis vel rotundatis; stamina inclusa; staminodia parva, curvata; ovarium et stylus glabri; capsulae ignotae.

Sparingly suffrutescent plants up to 1 meter high; stems terete below, subquadrangular above, moderately hirtellous, the hairs curved, ascending, about 0.25 mm. long; leaf blades oblong-elliptic, up to 13 cm. long and 4.5 cm. wide, short-subacuminate (the tip obtuse), narrowed at base and decurrent on the petiole, subchartaceous, entire or undulate, the upper surface subnitid, glabrous, the venation obscure, the cystoliths prominent, 125 to 175  $\mu$  long, those on the costa parallel, the lower surface with scattered sessile glands, otherwise glabrous, except the costa and lateral veins (5 or 6 pairs), these rather prominent, moderately hirtellous, the hairs appressed or ascending, about 0.25 mm. long, the veinlets coarsely and rather prominently reticulate; petioles up to 2 cm. long, hirtellous; raceme narrow and spikelike, terminal, up to 20 cm. long, the peduncle up to 9 cm. long, the lowermost internode 3 cm. long, the others successively shorter toward the tip, the peduncle and rachis rather densely hirtellous, the hairs more or less spreading, up to 0.5 mm. long, the flowers crowded into fascicles

of 10 to 15 flowers each at the nodes of the inflorescence; floral bracts narrowly lanceolate, long-acuminate, falcate, up to 6 mm. long, carinate, 1.5 mm. wide at base, hirtellous; bractlets lanceolate, up to 3 mm. long, 0.5 mm. wide at base, acute, subcarinate, hirtellous; pedicels up to 4 mm. long, terete, densely puberulous, the hairs brownish, spreading, up to  $175\ \mu$  long, many of them gland-tipped; calyx segments up to 6 mm. long, 1 mm. wide at base, thence gradually narrowed to the slender tip, hirtellous, some of the hairs toward the base



FIGURE 111.—*Pseuderanthemum ewanii* Leonard (*Ewan* 15629): *a*, Tip of plant; *b*, leaf blade; *c*, bract; *d*, bractlet; *e*, calyx; *f*, pubescence of lower portion of calyx segment. (*a*, *b*, Half natural size; *c-e*, twice natural size; *f*, 20 times natural size.)

of the segments gland-tipped; corolla 2 cm. long, pale pink, finely pubescent but the margins of the lobes glabrous, the tube 2 mm. broad at base, enlarged to 2.5 mm. and again narrowed to 1.5 mm. at 5 mm. above base, the throat 3 mm. broad, the lobes spreading, ovate, up to 7 mm. long and 5 mm. wide, obtuse or rounded at tip; stamens included, about 3 mm. long; staminodes 0.75 mm. long, curved; ovary and style glabrous, the style about 12 mm. long; capsules not seen.

Type in the Tulane University Herbarium, collected on moist slope above stream in relict mountain rain-forest, Quebrada Chiniata, 7 km.



east of Hilo, Department of Cundinamarca, Colombia, 2,430 meters altitude, May 1, 1944, by Joseph A. Ewan (No. 15629).

7. *Pseuderanthemum pennellii* Leonard, sp. nov.

FIGURE 112

Herba suffrutescens, caulibus subquadrangularibus, sursum plus minusve bifariam pilosis, deorsum glabratis; lamina foliorum oblongo-lanceolata, acuminata (apice ipso obtuso), basi angustata, in petiolum decurrens, marginibus integris vel undulatis, supra glabra vel parce hirtella, subtus mediocriter hirtella, pilis appressis, praecipue in costa et venis positis, cystolithis nigris; petioli plus minusve hirtelli; racemi simplices vel bifurcati, floribus (1-6) in fasciculis dis-



FIGURE 112.—*Pseuderanthemum pennellii* Leonard (Pennell 10684): *a*, Tip of plant; *b*, node of inflorescence; *c*, bract; *d*, bractlet; *e*, calyx; *f*, pubescence of calyx; *g*, corolla; *h*, stamen and staminode. (*a*, Half natural size; *b-e*, *h*, twice natural size; *f*, about 22 times natural size; *g*, natural size.)

positis; pedunculi et rhaches hirtelli, pilis brunnescentibus; bracteae et bracteolae subulatae, carinatae, parce hirtellae, pilis pro parte glandulosis; calycis segmenta anguste triangularia, hirtella, pilis rectis et patulis, pro parte glandulosis; corolla pallide violacea, pubescens, lobis ovatis, rotundatis; filamenta glabra; staminodia minuta.

Herbs up to 30 cm. high or more, suffrutescent at base; stems subquadrangular, the angles rounded, the lower portions glabrate, the upper parts pilose, the hairs about 0.75 mm. long, confined chiefly to two lines; leaf blades oblong-lanceolate, drying dark olive, up to 11 cm. long and 3.2 cm. wide, acuminate (the tip itself blunt), gradually narrowed at base and decurrent on the petiole, the margins entire or undulate, the upper surface glabrous or sparingly hirtellous, the lower

surface moderately hirtellous, the hairs appressed and confined chiefly to costa and veins (7 or 8 pairs), these rather prominent, the cystoliths blackish and inconspicuous except under lens; petioles 1 to 2 cm. long, more or less hirtellous; flowers borne in fascicles (1 to 6 flowers each) in simple or forked spikelike racemes up to 10 cm. long, or longer at maturity, the peduncles up to 4 cm. long, these and the rachis hirtellous, the hairs about 0.25 mm. long, upwardly ascending, brownish, the lower internodes about 1.5 cm. long (flowering stage), the others successively shorter toward tip of raceme, the lower pair of bracts lance-subulate, up to 6 mm. long and 1 mm. wide at base, carinate, the others gradually reduced in size toward tip of spike, the bractlets similar but much smaller, both bracts and bractlets rather sparingly hirtellous; pedicels up to 3.5 mm. long, hirtellous, the hairs spreading, up to 175  $\mu$  long, some of the shorter ones gland-tipped; calyx 4.5 mm. long, the segments narrowly triangular, 4 mm. long, 1 mm. wide at base, hirtellous, the hairs straight, spreading, 75 to 100  $\mu$  long, some of them glandular; corollas pale "hortense violet" (*Pennell*), 15 mm. long, pubescent (hairs spreading, up to 175  $\mu$  long), the tube 3 mm. broad at mouth, the lobes ovate, 3.5 mm. long, 2.5 to 3 mm. wide, rounded; stamens about 4 mm. long, the filaments glabrous, the anthers 1.25 mm. long, 0.75 mm. wide, the staminodes minute, 0.3 mm. long; capsules not seen.

Type in the U. S. National Herbarium, No. 1143046, collected at edge of woods near San Clemente, Department of Caldas, Colombia, 1,800 to 2,200 meters altitude, September 16, 1922, by Francis W. Pennell (No. 10684). An isotype is in the Gray Herbarium.

Another specimen of this species is Mutis' No. 1500 (US).

*Pseuderanthemum pennellii* closely resembles *P. ellipticum* Tur-rill, differing chiefly in its violet flowers, those of *P. ellipticum* being a pure white.

#### 8. *Pseuderanthemum lanceum* (Nees) Radlk.

*Eranthemum lanceum* Nees in DC. Prodr. 11: 451. 1847. Type collected at Cuello, Department of Tolima, Colombia, by Goudot (Hooker Herbarium, Kew). The specific epithet, *lanceum*, lance or spear, alludes to the shape of the leaf blades.

*Pseuderanthemum lanceum* Radlk. Sitzungsber. Math. Phys. Kl. Akad. Wiss. München 13 286. 1883. Based on *Eranthemum lanceum* Nees.

Medial leaf blades lanceolate, 7.5 to 9 cm. long, 12.5 to 15 mm. wide, acuminate, gradually narrowed to base and decurrent on the petiole, glabrous above, the costa on the lower surface scabrous, the lower blades a little shorter and wider than the upper; petioles short; flowers borne in short axillary and terminal spikes; bracts, at least the lower, lanceolate or linear; calyx short, glabrous, the segments subulate; corolla 10.5 mm. long, white; capsule 12.5 mm. long.

No specimens seen. Description compiled from the original.

9. *Pseuderanthemum sneidernii* Leonard, sp. nov.

FIGURE 113

Suffrutex, caulibus ascendentibus, subquadrangularibus, sursum gracilibus, parce puberulis, deorsum glabratis albidis, crassis; lamina foliorum lanceolata vel oblongo-lanceolata, acuta vel acuminata (apice ipso obtuso, plus minusve curvato), basi angustata vel rotundata, subauriculata, marginibus integris vel undulatis, supra glabra, cystolithis minutis subpunctiformibus, subtus puberula, pilis subappressis, minutis, brunnescentibus; petioli breves, glabri vel parce puberuli; paniculae terminales, pedunculis et internodiis leviter complanatis, parce

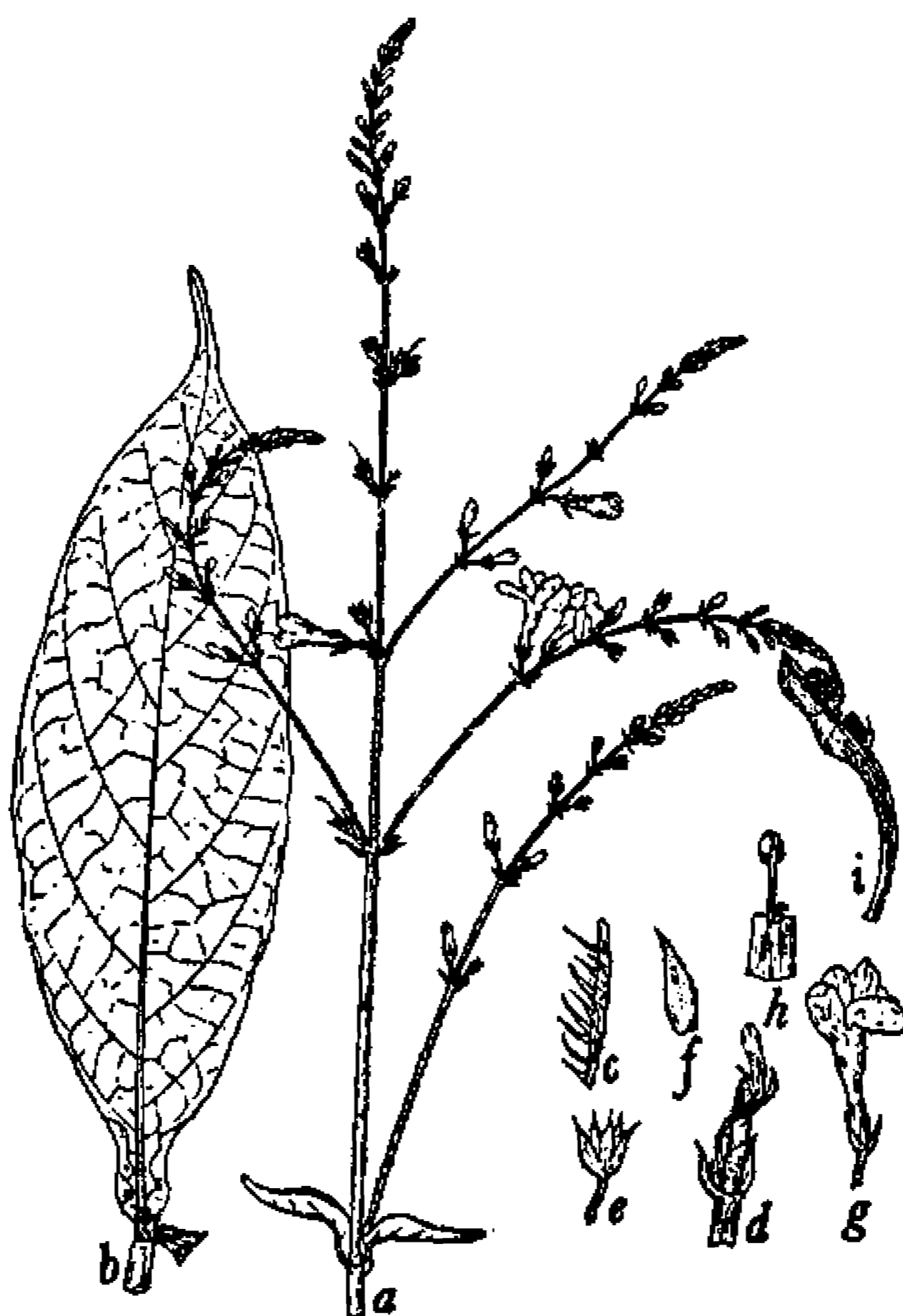


FIGURE 113.—*Pseuderanthemum sneidernii* Leonard (Sneidern 5042): *a*, Inflorescence; *b*, leaf; *c*, pubescence of rachis; *d*, node of inflorescence to show bracts and bractlets; *e*, calyx; *f*, calyx segment; *g*, corolla; *h*, stamen and staminode; *i*, valve of capsule. (*a*, *b*, Natural size; *c*, about 15 times natural size; *d*, *e*, *g*, *i*, twice natural size; *f*, 5 times natural size; *h*, 3 times natural size.)

puberulis, floribus solitariis vel fasciculatis; bracteae et bracteolae parvae, subulatae, glabrae vel parce puberulae; calycis segmenta anguste triangularia, acuta, parce puberula; corolla alba(?), tubo angusto, subcylindrico, limbo patulo, lobis ovatis, subobtusis; stamina glabra; staminodia minuta, sigmoidea; semina plana, verrucosa; retinacula apice tenuia et truncata.

Suffrutescent herbs up to 30 cm. high or more; stems ascending, subquadrangular, the upper portions slender, 1.5 mm. in diameter, sparingly puberulous, the older portions thickish, up to 3.5 mm. in diameter, whitish, glabrate; leaf blades lanceolate or oblong-lanceo-

late, the lowermost leaves up to 8 cm. long and 3 cm. wide, early deciduous, the upper leaves smaller and persistent, up to 5.5 cm. long and 1.8 cm. wide, all acute to acuminate (the tip itself blunt and more or less curved), narrowed or rounded, and more or less auriculate at base, the margins entire or undulate, the upper surface glabrous, the cystoliths numerous, minute and subpunctiform, the lower surface puberulous, the hairs subappressed, brownish, about 175 to 375  $\mu$ , long, the venation (lateral veins 6 or 7 pairs) more prominent beneath than above; petioles up to 2 mm. long, glabrous or sparingly puberulous; flowers borne in terminal panicles up to 10 cm. long and 5 cm. broad, the peduncles up to 2.5 cm. long, the lowermost internodes about 15 mm. long, the others successively shorter toward tip of inflorescence, both peduncles and rachis slightly flattened, sparingly puberulous, the flowers solitary or several, borne in bracted fascicles, the bracts subulate, the largest and lowermost pair about 2 mm. long; bractlets similar, up to 1 mm. long, both bracts and bractlets carinate, glabrous or bearing a few minute hairs; pedicels slender, up to 2 mm. long, puberulous; calyx 2 mm. long, the segments narrowly triangular (their tips slenderly acute), 0.5 mm. wide at base, sparingly puberulous; corolla about 1 cm. long, white (?), minutely puberulous or the lobes glabrous, the tube narrow, subcylindric, 1.5 mm. in diameter, the limb spreading, the lobes ovate, obtusish, about 4 mm. long and 3 mm. wide; stamens 3 mm. long, attached at 3 mm. above base of corolla tube, glabrous, the filaments slender, the anthers slightly more than 1 mm. long, 0.75 mm. broad, the staminodes minute, filiform, 0.5 mm. long, more or less sigmoid; capsules clavate, puberulous, about 15 mm. long, 4-seeded, the seed-bearing portion about 8 mm. long, 4 mm. broad and 2 mm. thick; seed light brown, flattened, about 3 mm. in diameter, verrucose; retinacula 3 mm. long, curved, thin and truncate at tip.

Type in the U. S. National Herbarium, No. 1954100, collected at Pueblo Rico, Department of Caldas, Colombia, 1,700 to 1,900 meters altitude, February 15, 1946, by Kjell von Sneidern (No. 5042).

The salient characters of *Pseuderanthemum sneidernii* are its small, lanceolate leaves, graceful panicles, minute calyx, and broad-limbed corollas abruptly contracted to narrow subcylindric tubes. The color of the flower is not apparent in dried material. It is probably white but possibly faint purple.

#### 10. *Pseuderanthemum atropurpureum* (Bull) Bailey

*Eranthemum atropurpureum* Bull, Gard. Chron. 1: 619. 1875, not Hook, f. 1902. Type grown in the Establishment for New and Rare Plants, King's Road, Chelsea, London, S. W., by William Bull. Although publishing the species in an advertisement, Mr. Bull gives an adequate description and, inasmuch as the Gardener's Chronicle is a periodical well known to botanists and available in most botanical libraries, Dr. L. H. Bailey agrees that *Eranthemum atropurpureum* is a legitimate name. (Gentes Herb. 4: 351.

1940). The specific epithet alludes to the purple leaf blades (*ater*, dark, and *purpureum*, purple.)

*Pseuderanthemum atropurpureum* Bailey, Gentes Herb. 1: 130. 1923. Based on *Eranthemum atropurpureum* Bull.

Shrubs or small trees up to 2 meters high; stems glabrous except for a tuft or band of small yellowish hairs borne on or near the stipular ring, the cystoliths subpunctiform; leaf blades ovate or oval to oblong, up to 15 cm. long and 7 cm. wide, short-acuminate to obtuse and apiculate at apex, narrowed at base, purple, glabrous, the margins entire, undulate or sometimes obscurely lobed, both surfaces bearing numerous minute subpunctiform cystoliths; petioles up to 1.5 cm. long, glabrous; flowers rather numerous, crowded in subsessile fascicles, these forming narrow terminal racemes or sparingly branched panicles, the peduncles (usually up to 4 cm. long), rachis and pedicels (up to 6 mm. long) glabrous or nearly so; bracts oblong, the lowermost about 5 mm. long and 2.5 mm. wide, the others successively smaller toward the tip of the inflorescence, all ciliolate; calyx segments narrowly triangular, up to 2.5 mm. long and 1 mm. wide at base, acute, ciliolate; corolla 15 to 20 mm. long, glabrous, purple or white with purple spotted throat, the limb 15 to 20 mm. broad, the lobes ovate, about 1 cm. long and 7 mm. broad, rounded; ovary glabrous; mature capsules not seen.

VERNACULAR NAME: San Joaquín (*Ariste-Joseph* s. n.); San José (*Dugand* 3605).

The native country of *Pseuderanthemum atropurpureum* is not definitely known, but was probably somewhere in Polynesia. It is found frequently in tropical America, either under cultivation or as an escape. Pickel (No. 2361, Brazil) states on his label that the capsules are purple.

ATLÁNTICO: Barranquilla *Bro. Elias* 143 (US); 234 (US); *Bro. Paul* 25 (US), Miramar, Puerto Colombia, *Dugand* 3605 (US).

BOLÍVAR: Cartagena, *Bro. Apolinar-Angel* 762 (US); *Bro. Hilarino-Angel* 109 (US).

CUNDINAMARCA: Girardot, *Pérez-Arbeláez* 385 (US). La Esperanza, *Pérez-Arbeláez* 3148 (US). La Mesa to San Javier, *García-Barriga* 12049 (US).

TOLIMA: Honda, *Bro. Ariste-Joseph* A375 (US); s. n. (Bog).

11. *Pseuderanthemum potamophilum* Leonard, sp. nov. FIGURE 114

Frutex, caulibus glabris vel sursum puberulis, cystolithis numerosis, minutis, subpunctiformibus; lamina foliorum oblonga-elliptica, acuta vel subacuta, basi sensim angustata in petiolum decurrens, supra glabra, costa et venis obscuris, subtus glabra, costa et venis aliquanto prominentibus, pilis paucis, minutis, in costa positis, cystolithis numerosis, linearibus, conspicuis; petioli breves, parce puberuli; thyrsi angusti, terminales, floribus in fasciculis condensatis positus, pedunculo et rhache pubescentibus; bracteae et bracteolae parvae, lineares, cilia-

tae; pedicelli breves, puberuli; calycis segmenta lineari-lanceolata, ciliata; corolla alba vel pallide lilacina, minute puberula, lobis subaequalibus, patulis, anguste ovatis, apice rotundatis vel leviter emarginatis; stamina glabra; staminodia minuta, filiformia; ovarium parce puberulum.

Shrubs; stems glabrous or the uppermost internodes puberulous, the cystoliths numerous, minute, subpunctiform, conspicuous under a

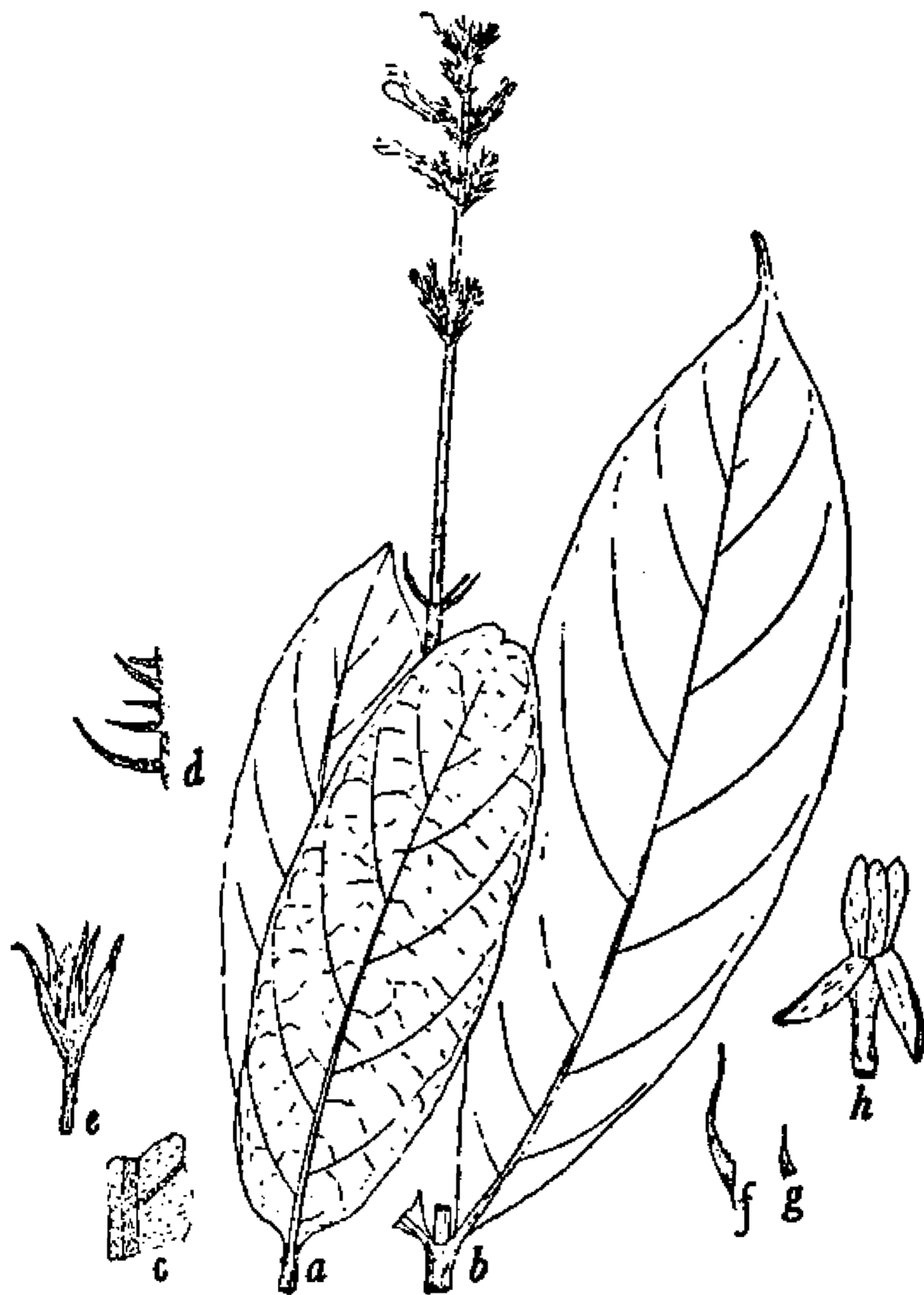


FIGURE 114.—*Pseuderanthemum potamophilum* Leonard (*a, b, d*, Cuatrecasas 11086; *c, e-h*, Cuatrecasas 10629): *a*, Tip of plant; *b*, leaf and one of the lower nodes; *c*, small portion of leaf blade (lower surface) enlarged to show cystoliths; *d*, pubescence of rachis; *e*, calyx; *f*, bract; *g*, bractlet; *h*, corolla. (*a, b*, Half natural size; *c, h*, natural size; *d*, about 18 times natural size; *e*, 5 times natural size; *f, g*, twice natural size.)

lens; leaf blades oblong-elliptic, up to 13.5 cm. long and 5.5 cm. wide, acute or subacuminate (the tip itself blunt), gradually narrowed to base and decurrent on the petiole, thin, entire or undulate, the upper surface glabrous, the costa impressed, this and the lateral veins (6 to 8 pairs) scarcely prominent, the lower surface glabrous with a few minute hairs borne on the costa, the venation rather prominent, the cystoliths of both surfaces numerous, linear, about 0.25 mm. long, conspicuous under a lens; petioles up to 5 mm. long, sparingly puberulous; racemes narrow, terminal, spikelike, up to 10 cm. long, peduncled, the

flowers rather numerous, crowded in sessile or short-peduncled fascicles, the peduncle up to 6.4 cm. long and, as is the rachis, rather densely pubescent with whitish, more or less ascending hairs up to 0.25 mm. long, the lower internode about 4 cm. long, the others becoming successively shorter toward tip of raceme, the uppermost flowers becoming contiguous; bracts narrowly linear, the lower pair 5.5 mm. long and 1 mm. wide at base, the others successively smaller toward tip of raceme; bractlets narrowly lanceolate, 1.5 to 2 mm. long, acute or acuminate; calyx about 4 mm. long, the segments narrowly lanceolate, 0.5 mm. wide at base, ciliolate, the pedicels up to 1 mm. long, minutely puberulous; corolla white or pale lilac, minutely puberulous, the tube 12 mm. long, 1.5 mm. broad at base, 2.5 mm. broad at mouth, the lobes subequal, spreading, narrowly ovate, about 1 cm. long and 3.5 mm. wide, rounded or shallowly emarginate at tip; stamens inserted at about the middle of the corolla tube, glabrous, the filaments 1.5 mm. long, slender, the anthers 1.5 mm. long, the staminodes filiform, about 1 mm. long; ovary about 2 mm. long, puberulous; style reaching the mouth of the corolla tube, puberulous, the stigma minute, capitate; capsules not seen.

Type in the Herbario Nacional Colombiano, collected in a wet forest along the Río Putumayo at Puerto Porvenir, Comisaría of Putumayo, Colombia, 230 to 250 meters altitude, November 17, 1940, by J. Cuatrecasas (No. 10629). Fragment of type in the U. S. National Herbarium, No. 1995427.

Cuatrecasas' No. 11086, collected in wet forests of Quebrada de la Hormiga, Río San Miguel, Putumayo, 290 meters altitude, December 16, 1940, is also of this species (Col).

The leaf blades of *Pseuderanthemum potamophilum* are large for the genus and, under a lens, the cystoliths are noticeably numerous and conspicuous on both surfaces of the blades. The species is further marked by the dense, crowded sessile or short-pedunculate fascicles of white or whitish flowers, these forming a narrow, spikelike raceme. The specific epithet is derived from *ποταμός*, river, and *φιλέω*, to love.

**12. *Pseuderanthemum hylophilum* Leonard, sp. nov.**

FIGURE 115

Herba vel frutex gracilis, caulibus subteretibus, deorsum glabris, sursum pubescentibus, pilis ascendentibus, curvatis; lamina foliorum lanceolata, anguste acuminata, basi angustata, subauriculata, firma, integra vel undulata, supra glabra, costa impressa, venis obscuris, subtus parce puberula, pilis praecipue in costa et venis positis, venis prominentibus, cystolithis minutis et inconspicuis; petioli breves, puberuli; racemi terminales, puberuli, angusti, simplices vel bifurcati, pedunculo et rhache pubescentibus, pilis curvatis, ascendentibus, brunnescentibus; bracteae parvae, subulatae, ciliatae; bracteolae minutae, subulatae, ciliatae; calycis segmenta angusta, lanceolata,

acuminata, puberula; pedicelli breves, puberuli, graciles; corolla (immatura) parva, alba (?), pubescens.

Suffrutescent herbs or shrubs up to 1 meter high or more; stems subterete, glabrous below, pubescent at tip, the hairs curved, ascending, about 0.25 mm. long; leaf blades lanceolate, up to 18 cm. long and 4 cm. wide, slenderly acuminate, narrowed gradually from about the middle to base, there abruptly narrowed and subauriculate, drying dark olive-green, firm, entire or undulate, the upper surface glabrous, the costa impressed, the venation obscure, the lower surface sparingly

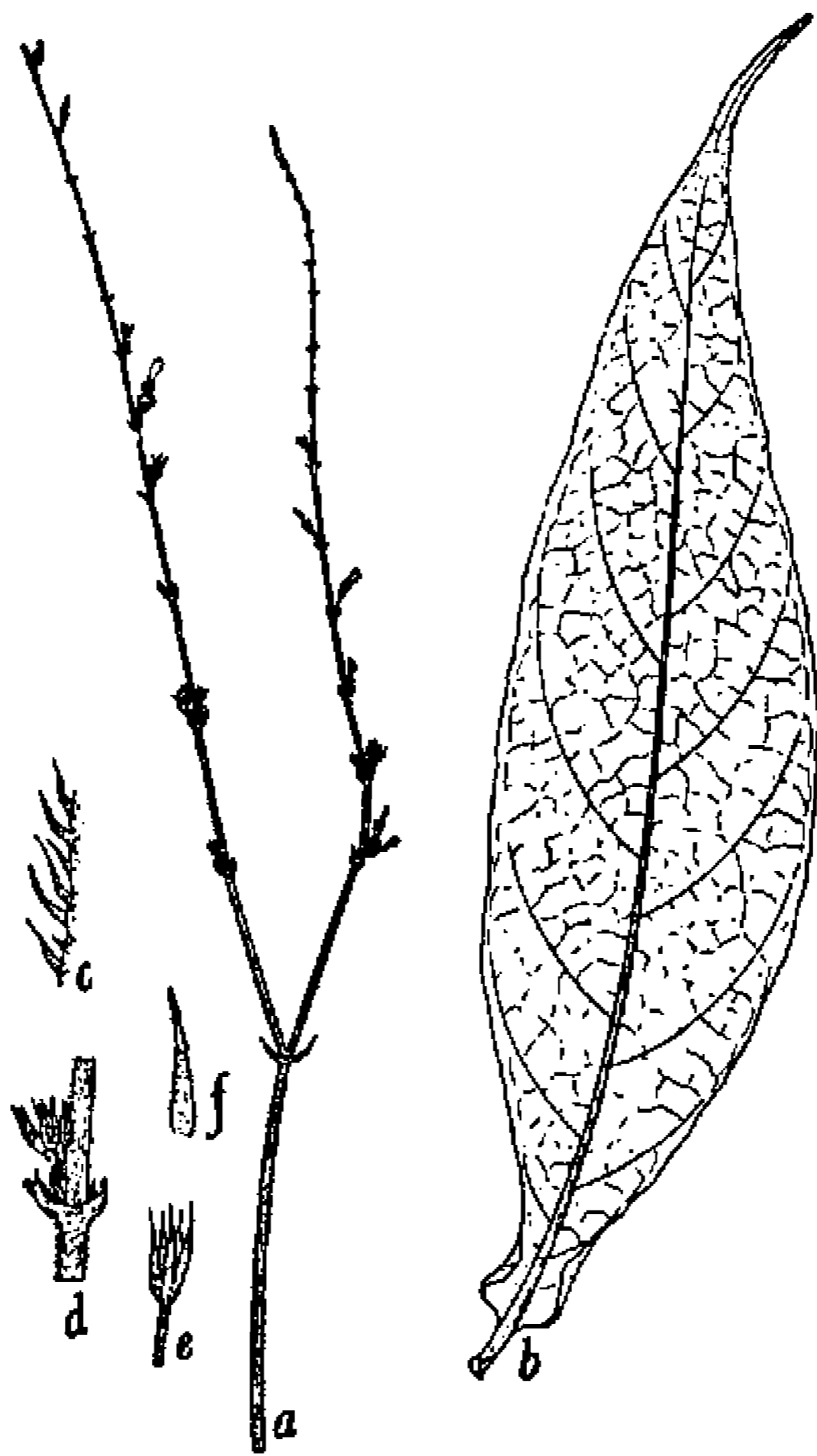


FIGURE 115.—*Pseuderanthemum hylophilum* Leonard (*Cuatrecasas* 15317): *a*, Inflorescence; *b*, leaf; *c*, pubescence of rachis; *d*, node of inflorescence; *e*, calyx; *f*, calyx lobe. (*a*, *b*, Half natural size; *c*, about 10 times natural size; *d*, about  $1\frac{1}{2}$  times natural size; *e*, 3 times natural size; *f*, 4 times natural size.)

puberulous, the hairs confined chiefly to the costa and lateral veins (8 to 10 pairs), these rather prominent, the cystoliths minute and inconspicuous even under a lens; petioles up to 1 cm. long, puberulous; flowers solitary or several borne in fascicles in narrow spikelike terminal simple or forked racemes up to 18 cm. long, the peduncle up to 6.5 cm. long, this and the rachis pubescent, the hairs brownish, curved, ascending, about 0.25 cm. long, the lowermost internode of the rachis about 2 cm. long, the others successively shorter toward the tip of the raceme, the lowermost pair of bracts leaflike, narrowly lanceolate, up to 1.5 cm. long, the others subulate, 2 mm. long and about 0.5 mm.



wide at base, ciliate, reduced in size toward tip of raceme; bractlets similar but slightly smaller than the bracts; calyx 3 to 3.5 mm. long, puberulous, the segments narrowly lanceolate, slightly more than 0.5 mm. wide at base, acuminate at tip; pedicels slender, about 2 mm. long, puberulous; corolla (immature) about 8 mm. long, white (?), pubescent, the hairs more or less spreading, about 0.3 mm. long; capsules not seen.

Type in the U. S. National Herbarium, No. 1852697, collected in woods at La Elsa, on the right bank of Río Digua, Department of El Valle, Colombia, 1,000 to 1,200 meters altitude, November 9, 1943, by J. Cuatrecasas (No. 15317). An isotype is in the herbarium of the Chicago Natural History Museum.

Such characters as its slender, simple or forked racemes and its lanceolate, slenderly acuminate, chartaceous leaf blades serve to identify *Pseuderanthemum hylophilum*. Only immature corollas are present on the type material; the color of these is not apparent. The specific epithet is derived from ὕλη, forest, and φιλέω, to love.

13. *Pseuderanthemum chaponense* Leonard, sp. nov.

FIGURE 116

Suffrutex, caulibus deorsum teretibus, glabris, sursum subquadrangularibus, aliquanto puberulis, pilis sursum curvatis; lamina foliorum oblongo-ovata, acuminata (apice plus minusve curvato), basi angustata, aliquanto firma, integra vel undulata, supra glabra, costa et venis lateralibus obscuris, subtus parce hirtella, pilis ascendentibus, costa et venis lateralibus aliquanto prominentibus; petioli glabri vel puberuli; thyrsi angusti, interrupti, in ramis axillaribus terminales vel paniculam terminalem formantes, pedunculis et rhachibus puberulis, pilis minutis, curvatis; bracteae infimae foliaceae; bracteae supremae lineares, acutae, parce puberulae et ciliolatae; bractolae subulatae, acuminatae, subglabrae vel parce ciliolatae; fasciculi 4-8-flori; pedunculi breves, puberuli; calycis segmenta linearia, acuminata, glabra vel parce ciliolata et hirtella; corolla alba, tubo angusto, basi glabro, sursum dense glanduloso-papilloso, lobis oblongis subobtusis; stamina inclusa, filamentis brevibus, glabris; staminodia brevia; capsulae ignotae.

Suffrutescent plants up to 1 meter high or more; stems simple or branched, the lower parts terete and glabrous, up to 2.5 cm. in diameter, the upper parts subquadrangular, moderately puberulous with curved hairs about 0.25 mm. long; leaf blades oblong-ovate, up to 9 cm. long and 5 cm. wide, acuminate, the tip often curved, narrowed at base, moderately firm, entire or undulate, the upper surface glabrous, the venation obscure, the cystoliths minute, blackish, 125 $\mu$  long, the lower surface sparingly and inconspicuously hirtellous, the hairs ascending, about 100 $\mu$  long, the costa and lateral veins (5 or 6 pairs) more prominent than above; petioles mostly 1 to 3 cm. long, 1 mm. thick, glabrous

or puberulous with curved hairs; panicles up to 6 cm. long and 1.5 cm. broad, interrupted, the peduncle up to 4 cm. long, the lowermost internode about 2 cm. long, the others successively shorter toward tip, both peduncles and rachises puberulous with upwardly curved hairs up to  $175\mu$  long, the lowermost branches of the inflorescence subtended by leaves appreciably smaller than the stem-leaves, the uppermost flower clusters subtended by linear bracts up to 4.5 mm. long and 0.75 mm. wide at base, sparingly puberulous and ciliolate; bractlets sublanceolate, up to 2 mm. long and 0.5 mm. wide at base, acuminate, subglabrous,

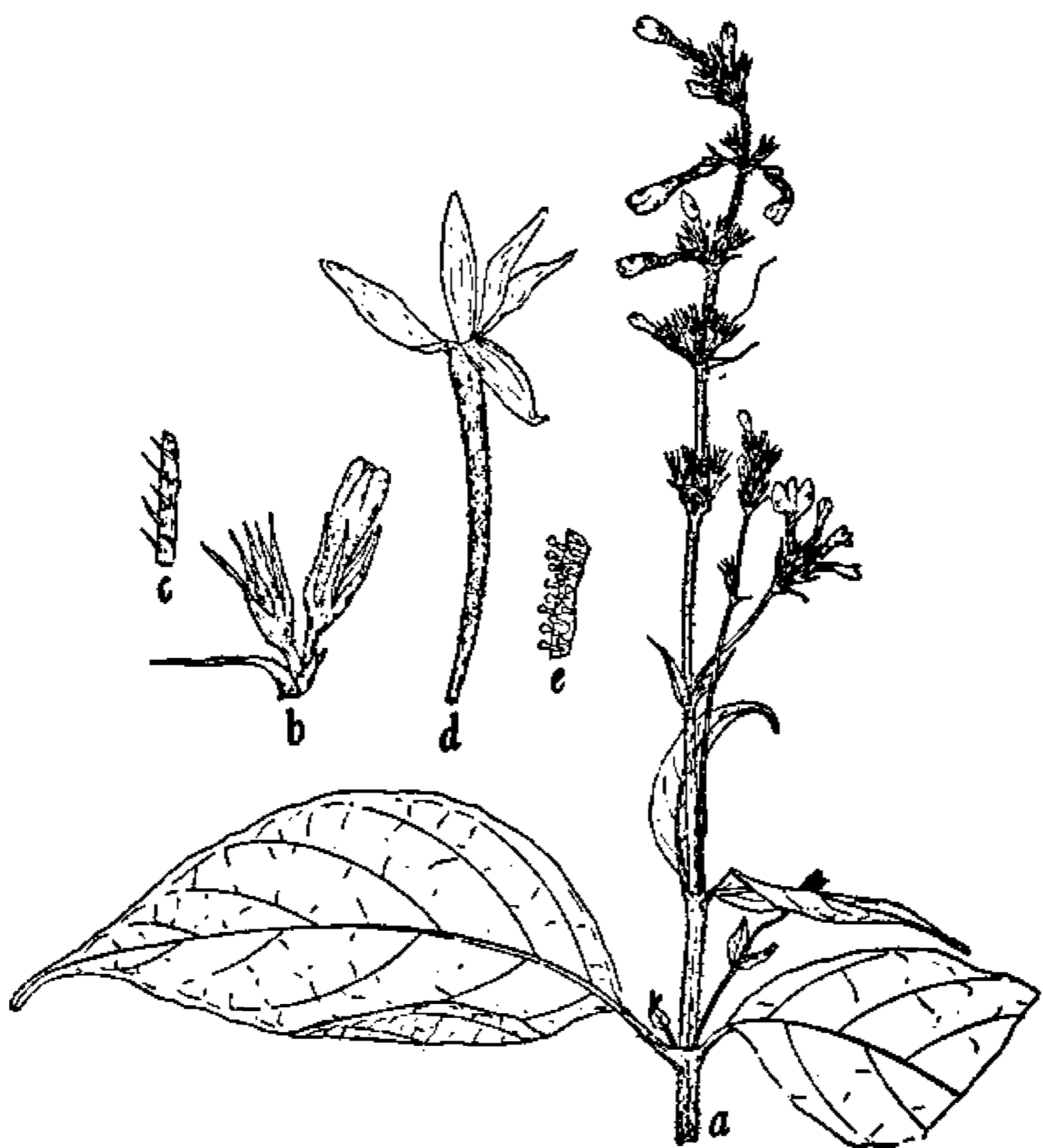


FIGURE 116.—*Pseuderanthemum chaponense* Leonard (*Lawrance* 441): *a*, Tip of plant, half natural size. *Pseuderanthemum chaponense* f. *lilacinum* Leonard (*Lawrance* 501): *b*, Portion of fascicle showing bract, bractlet and calyx; *c*, pubescence of calyx segment; *d*, corolla; *e*, pubescence of corolla tube. (*b*, *d*, 3 times natural size; *c*, 20 times natural size; *e*, 30 times natural size.)

sparingly ciliolate; flowers usually about 4 to 8 to a cluster, the pedicels 1 mm. long, sparingly puberulous; calyx 4 mm. long, the segments linear, 3 to 4.75 mm. long, 0.5 mm. wide at base, acuminate, glabrous or sparingly ciliolate and hirtellous, the hairs up to  $125\mu$  long; corolla white, the tube narrow, 0.75 mm. broad at base, gradually enlarged to 1.5 mm. at mouth, the basal portion glabrous (1.5 mm.), the remainder of the tube densely glandular-papillose, the lobes oblong, about 4 mm. long and 1 to 1.5 mm. wide, subobtuse; stamens included, 3 mm. long, the filaments 1.5 mm. long, glabrous; staminodes minute, barely 0.25 mm. long; ovary glabrous; mature capsules not seen.

Type in the herbarium of the New York Botanical Garden, collected on bank of stream in forest, El Umbo region, the vicinity of Mount Chapón in the western part of the Department of Boyacá, Colombia, "3,000 ft." altitude, September 19, 1932, by A. E. Lawrance (No. 441).

*Pseuderanthemum chaponense* can be easily recognized by the slender, densely glandular-papillose corolla tube, and narrow corolla lobes.

13a. *Pseuderanthemum chaponense* Leonard f. *lilacinum* Leonard, f. nov.

A forma typica corolla lilacina recedit.

Type in the herbarium of the New York Botanical Garden, collected on the bank of a stream in dense forest in El Umbo region, western part of the Department of Boyacá, Colombia, "2,500 ft." altitude, October 1, 1932, by A. E. Lawrance (No. 501).

The type specimen of *Pseuderanthemum chaponense* f. *lilacinum* was collected from a plant "2-4 ft." high with stems up to "½ inch" in diameter. Mr. Lawrance states that it was "beautiful in the forest and similar to lilac." The label on *Lawrance* 441, the typical white-flowered form, states that the plant was 15-20 feet high, with stems up to an inch in diameter. These data are probably erroneous. The specimen indicates that the plant is subherbaceous, slender-stemmed, and probably only a meter high or less.

14. *Pseuderanthemum stenosphon* Leonard, sp. nov.

FIGURE 117

Herba, caulibus simplicibus, subquadrangularibus, pilosis, pilis septatis, patulis vel ascendentibus; lamina foliorum oblongo-elliptica, plus minusve falcato-acuminata (apice ipso obtuso), basi angustata, aliquanto firma, integra vel undulata, supra glabra, sub lente minute alveolata, cystolithis pluribus, conspicuis, subtus aliquanto hirtella, pilis praecipue in costa et venis prominentibus positis, venulis crasse reticulatis; petioli hirtelli, pilis brunneis, curvatis; paniculae terminales, parce ramosae, fasciculis dispositis, pedunculis et rhachibus hirtellis, pilis ascendentibus, septatis; bracteae infimae foliaceae; bracteae supremae anguste lanceolatae, acutae, glabrae vel parce hirtellae et ciliolatae; bracteolae bracteis similes sed minores; pedicelli graciles, puberuli; calycis segmenta anguste lanceolata, acuta, parce puberula; corolla dilute caerulea, puberula vel marginibus lorum glabra, tubo angusto, limbo lato, lobis ovatis, obtusis vel rotundatis; stamina brevia; staminodia minuta; ovarium puberulum; capsulae ignotae.

Herbs up to 30 cm. high or more; stems simple, subquadrangular, pilose, the hairs septate, spreading or ascending, about 0.5 mm. long; leaf blades oblong-elliptic, up to 11 cm. long and 3.5 cm. wide, more or less falcate-acuminate (the tip itself blunt), narrowed to rounded

at base, moderately firm, entire or undulate, the upper surface glabrous, minutely alveolate under lens, the cystoliths numerous, conspicuous under lens,  $175\mu$  long, the lower surface moderately hirtellous, the hairs ascending or appressed, confined chiefly to costa and veins (6 to 7 pairs), these more prominent than above, the veinlets rather prominently and coarsely reticulate; petioles 1.5 cm. long, hirtellous with brownish, curved hairs; flowers arranged in fascicles of usually 2 to 8 flowers each, forming sparingly branched terminal panicles up to 7 cm. long, the peduncles up to 5.5 cm. long, the lower-



FIGURE 117.—*Pseuderanthemum stenosphon* Leonard (Pennell 4436): *a*, Tip of plant; *b*, leaf; *c*, pubescence of rachis; *d*, bract; *e*, bractlets; *f*, calyx; *g*, pubescence of calyx segment. (*a*, *b*, Half natural size; *c*, 22 times natural size; *d*, *e*, 6 times natural size; *f*,  $2\frac{1}{2}$  times natural size; *g*, 20 times natural size.)

most internode 2.5 cm. long, the others successively shorter toward tip, both peduncle and rachis hirtellous, the hairs ascending, up to 0.5 mm. long, septate; bracts subtending the lowermost branches of the inflorescence linear to narrowly lanceolate, leaflike, 1 to 2 cm. long, 1 to 6 mm. wide; bracts subtending the fascicles narrowly lanceolate, up to 3 mm. long, about 1 mm. wide at base, acute, glabrous or sparingly hirtellous and ciliolate; bractlets similar to the bracts, but slightly smaller; pedicels slender, up to 3 mm. long, 0.25 mm. in diameter, puberulous; calyx segments narrowly lanceolate, about 3 mm. long and 0.5 mm. wide, acute, sparingly puberulous; corolla 12

mm. long, white tinged with blue (*Pennell*), puberulous or the lobes glabrous toward margins, the tube narrow, 1.25 mm. broad near base, narrowed at 1.5 mm. above base to 0.75 mm., thence abruptly enlarged from about the middle to 1.5 mm., the limb 8 mm. broad, the lobes ovate, 5 mm. long, subobtuse or rounded; stamens attached at middle of tube, 2 mm. long, the anthers 1.5 mm. long, 0.5 mm. broad, the staminodes 0.5 mm. long; ovary puberulous, mature capsules not seen.

Type in the herbarium of the New York Botanical Garden, collected at edge of forest about Antizales, Department of Bolívar, Colombia, 1,500–1,800 meters altitude, February 25 or 26, 1918, by Francis W. Pennell (No. 4436).

*Pseuderanthemum stenosiphon* can be recognized among its close relatives by the bluish flowers with very narrow corolla tubes. Hence the specific epithet, *στενός*, slender, and *σίφων*, tube.

15. *Pseuderanthemum cuatrecasasii* Leonard, sp. nov.

FIGURE 118

Frutex, caulibus subscandentibus, subquadrangularibus, glabris vel pilis plus minusve bifariam pilosis; lamina foliorum lanceolata, anguste et aliquando falcato-acuminata, basi angustata, marginibus saepe recurvata, supra subnitida, glabra vel basi hirtella, costa et venis lateralibus aliquanto obscuris, cystolithis minutis et inconspicuis, subtus parce hirtella, pilis praecipue in costa et venis positis, costa et venis aliquanto prominentibus; petioli subtus glabri vel hirtelli, supra pilosi; panicula terminalis, valde ramosa, ramis interruptis, floribus paucis in fasciculis dispositis, pedunculis et rhachibus hirtellis; bracteae infimae parvae, subulatae, glabrae vel parce hirtellae; bracteae supremae parvae, anguste triangulares, glabrae vel subglabrae; bracteolae similes sed minores; pedicelli graciles, puberuli; calycis segmenta anguste triangularia, acuta, glabra vel parce ciliolata; corolla alba, minute puberula, pilis pro parte glandulosis, lobis ovalibus, rotundatis vel obtusis; stamina brevia, filamentis glabris, basi cum staminodium parvum curvatum adnatis; capsulae clavatae, minute puberulae, stipitibus gracilibus; retinacula lanceolata, tenuia, acuta; semina suborbicularia, plana, glabra, tuberculata.

Shrubs up to 2 meters high, the branches vinelike, subquadrangular, glabrous or sparingly pilose, the hairs more or less disposed in 2 lines, up to 0.75 mm. long, spreading or ascending, septate, the larger stems glabrous, subnitid, clothed with a light brownish bark; leaf blades lanceolate, up to 12 cm. long and 3 cm. wide, slenderly acuminate or falcate-acuminate, narrowed at base, the edges often recurved (giving the leaf the appearance of being hastate), rather firm, entire or undulate, the upper surface subnitid, glabrous or hirtellous at base, the costa and lateral veins (5 or 6 pairs) barely prominent, the cystoliths minute and inconspicuous, the lower surface sparingly hirtellous, the hairs about 0.25 mm. long, ascending or subappressed, confined chiefly

to costa and lateral veins, these more prominent than above; petioles 5 to 10 mm. long, glabrous or hirtellous or the channels pilose with spreading straight or curved hairs up to 0.75 mm. long; panicles terminal, rather freely branched, up to 12 cm. long and 9 mm. broad, the flowers more or less secund, 2 to 8 at each node, the peduncle (up to 8 cm. long) and rachis (lowermost internode 2 or 3 cm. long, the



FIGURE 118.—*Pseuderanthemum cuatrecasasii* Leonard (a-d, g, Cuatrecasas 21646; e, f, h, Cuatrecasas 23848): a, Panicle; b, portion of panicle to show bract, bractlets and calyx; c, node with leaf blade; d, pubescence, edge of calyx segment; e, corolla; f, pubescence of corolla; g, stamen and staminode; h, valve of capsule. (a, c, Half natural size; b, twice natural size; d, 34 times natural size; e, 1½ times natural size; f, 23 times natural size; g, 4 times natural size; h, natural size.)

others successively shorter toward tip) hirtellous with ascending septate hairs up to 0.75 mm. long; bracts subtending the lowermost branches of the inflorescence subulate, 4 mm. long, 0.75 mm. wide at base, glabrous or sparingly hirtellous; bracts subtending the flower clusters narrowly triangular, 2 mm. long, 0.5 mm. wide at base, acute, glabrous or nearly so, the bractlets similar to the bracts but slightly smaller; pedicels slender, 2 to 3 mm. long, puberulous; calyx segments narrowly triangular, 2 mm. long, 0.5 mm. wide at base, acute, glabrous

or sparingly ciliolate; corollas white (or the buds purplish white) (*Cuatrecasas*), 12 mm. long, minutely puberulous with glandular and longer eglandular hairs intermixed, the tube 1.5 to 2 mm. broad at base, slightly narrowed at 2 mm. above base, thence gradually enlarged to 3 mm. at throat, the lobes oval, 5 to 6 mm. long, 2.5 to 3.25 mm. wide, rounded or obtuse; stamens attached at 4.5 mm. above base of corolla tube, 3 mm. long, the anthers 1.25 mm. long and 0.75 mm. broad, the filaments glabrous, united at base with curved staminodes 0.5 mm. long; capsules clavate, 18 mm. long, 3.5 mm. in diameter, the stipe slender, 11 mm. long, 1 mm. broad at base, 2.5 mm. broad at base of seed-cavity, the surface of the capsule sparingly and minutely puberulous, the retinacula lanceolate, thin, 2.5 mm. long, 0.75 mm. wide at base, gradually narrowed to an acute tip; seeds 2 in each cavity, sub-orbicular, flat, about 3 mm. in diameter, glabrous, the surface strongly tuberculate.

Type in the U. S. National Herbarium, No. 1950028, collected at Los Cárpatos in the valleys of the Cali and Pichindé rivers, Department of El Valle, Colombia, 1,900–2,100 meters altitude, September 23, 1946, by J. Cuatrecasas (No. 21646).

Cuatrecasas' No. 23848 (US) (fruiting specimen), collected below Queremal along the Río San Juan in the Río Dígua Valley, El Valle, 1,300–1,500 meters altitude, March 19, 1947, is also of this species.

*Pseuderanthemum cuatrecasasii* is very closely related to *P. dawei* Turrill and may prove after more material can be examined to be only a form or variation of that species. It differs chiefly in the size of the plant and the color of the flower.

#### 16. *Pseuderanthemum dawei* Turrill

*Pseuderanthemum dawei* Turrill, Kew Bull. 1920: 69. 1920. Type in the Kew Herbarium, collected in the Cauca Valley, Colombia, July 5, 1920, by M. T. Dawe (No. 847). Isotypes in the U. S. National Herbarium (No. 142565) and the herbarium of the New York Botanical Garden.

An erect herb; tips of the stems sparingly hirsute, the hairs about 0.25 mm. long, arranged more or less in two rows, the cystoliths sub-punctiform, inconspicuous; leaf blades oblong-elliptic, 8 to 16 cm. long, 2.5 to 5.7 cm. wide, slenderly acuminate (the tip itself blunt, more or less curved), narrowed at base and decurrent on the petiole, the upper surface glabrous, bearing subpunctiform cystoliths conspicuous under a lens, the costa (impressed) and lateral veins (about 9 pairs) rather prominent, the lower surface glabrous except costa and veins, these prominent and sparingly puberulous, the hairs curved, the cystoliths less abundant and conspicuous than those of the upper surface; petioles (unwinged portions) up to 1.2 cm. long, the channel sparingly puberulous, glabrous beneath; flowers one to several, borne in fascicles in sparingly branched terminal panicles about 16 cm. long and 12 cm.

broad, the peduncles up to about 8 cm. long, the lower internode 1 to 1.5 cm. long, the others successively shorter toward the tips of the panicle, both peduncle and rachises more or less flattened, sparingly puberulous, the hairs curved; bracts linear-lanceolate, acute, glabrous or nearly so; bractlets minute, linear-lanceolate, barely 1 mm. long; calyx segments lanceolate, 2.5 mm. long, 0.5 mm. wide at base, puberulous, 3-nerved; pedicels up to 2 mm. long, puberulous; corolla purplish, 7 to 8 mm. long, puberulous, some of the hairs glandular, the tube 1.5 mm. broad at base, 2.3 mm. broad at mouth, the lobes subequal, elliptic-ovate, 2.5 to 3 mm. long, 1.5 to 2 mm. wide, rounded at tip, stamens attached at about the middle of the corolla tube, the filaments about 0.5 mm. long, the anthers 1 mm. long, the staminodes subulate, about 0.25 mm. long; ovary cylindrical, about 1.5 mm. long, minutely puberulous; style 3 mm. long, the lower portion puberulous; capsules not seen.

Usually found in wooded ravines or in dense, damp woods of mountain slopes between 1,400 and 1,800 meters altitude. The flowering season extends from June to August. Killip notes that the corollas are purple-red (No. 5692). Lehmann gives the following field note: "Weed with thin weakly ramified stems up to 1 meter in height. Leaves thin, skinny, dark green, with a greasy sheen. Flowers white, softly washed with lilac violet."

EL VALLE: La Cumbre, *Killip* 5692 (US). Roldanillo, *Lehmann* 8534 (K).

#### EXCLUDED SPECIES

*Pseuderanthemum cordatum* (Nees) Radlk.

Type collected at Atacamas, Ecuador, by Sinclair. Erroneously cited as from Colombia by Nees (DC. Prodr. 11: 450. 1847) and from Panama in *Index Kewensis*.



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