THE GENUS *AEQUATORIUM* B. NORD. (COMPOSITAE-SENECIONEAE) IN ECUADOR

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Abstract

A survey of the genus *Aequatorium* B. NORD. (Compositae-Senecioneae) in Ecuador is presented. The genus is divided in two distinct subgenera, viz. subgen. *Aequatorium* with white rays, obtuse style branches of disc-florets, and a characteristic stellate tomentum, and subgen. *Praegynoxys* (CUATREC.) B. NORD., with yellow rays, pointed style branch tips, and substellate or irregularly branching trichomes. Five Ecuadorian species are recognized, three of which are here described as new,viz., *A. repandiforme* B. NORD., *A. lepidotum* B. NORD., and *A. limonense* B. NORD. *Senecio simulans* BENOIST is a new synonym of *A. jamesonii* (C. F. BLAKE) C. JEFFREY. A key to the Ecuadorian species is presented.

Introduction

Since the genus *Aequatorium* B. NORD. was described (NORDENSTAM 1978) the knowledge of the genus has increased considerably (DÍAZ-PIEDRAHÍTA & CUATRECASAS 1990, JEFFREY 1992, ROBINSON & CUATRECASAS 1992, DÍAZ-PIEDRAHÍTA & CUATRECASAS 1994) and it now comprises about 30 species distributed in Argentina, Bolivia, Peru, Ecuador and Colombia. These species belong to two distinct groups, here treated as subgenera.

Subgenus *Aequatorium* is characterized by white rays, obtuse style branches of disc-florets, and characteristic more or less peltate trichomes with a central stalk and a stellately branched flattened disc (cf. NORDENSTAM 1978 Fig. 28K). The lower sides of the leaves are densely covered by such trichomes of a white or greyish colour, and typically they have an overlying layer of a scurfy brown or

orange-brown stellate tomentum, which is looser and peels off in patches. All species of this subgenus have alternate leaves, but some opposite leaves may occur in the upper parts. The subgenus comprises according to my current knowledge ten species known only from Ecuador (4 spp.) and Colombia (6 spp.).

Subgenus *Praegynoxys* (CUATREC.) B. NORD., comb. nov. - Basionym: *Senecio* L. sect. *Praegynoxys* CUATREC., Fieldiana Bot. 27 (2): 72 (1951). Syn.: *Gynoxys* CASS. sect. *Praegynoxys* (CUATREC.) CUATREC., Brittonia 8: 157 (1955). - Type: *Senecio alternifolius* (SCH. BIP.) GREENM. (= *Aequatorium repandum* (WEDD.) C. JEFFREY).

Members of this subgenus have either opposite or alternate leaves. The tomentum consists of irregularly branching trichomes, which are sometimes substellate or rarely globular with short points, but not regularly stellate and peltate like in the former subgenus. Also, the overlying evanescent brownish tomentum is lacking. The rays are consistently yellow, and the styles of the disc-florets are pointed. The subgenus is distributed from Argentina through Bolivia and Peru to southern Ecuador. About ten species have been recognized as transfers from *Senecio* and *Gynoxys*, or described as new (DÍAZ-PIEDRAHÍTA & CUATRECASAS 1990, JEFFREY 1992, ROBINSON & CUATRECASAS 1992). Some more Bolivian species remain to be described (NORDENSTAM, in prep.), and the subgenus obviously comprises about 20 species.

The differences between the two subgenera may be sufficient for generic distinction, since it is possible that subgenus *Praegynoxys* is closer to the genus *Gynoxys* than to typical *Aequatorium*. Further investigations to elucidate these relationships are in progress by the present author.

Material and methods

Herbarium material was studied from AAU, BR, F, K, MO, NY, P, S, and US, and occasional sheets from a few more herbaria (abbreviations in accordance with HOLMGREN et al. 1990). Field studies were carried out in Ecuador in February 1992 (together with ROGER LUNDIN, who was studying mainly *Gynoxys*), but little material of *Aequatorium* was collected, the flowering season of this genus being in a different time of the year, viz. mainly in July to November. The drawings were made by the present author.

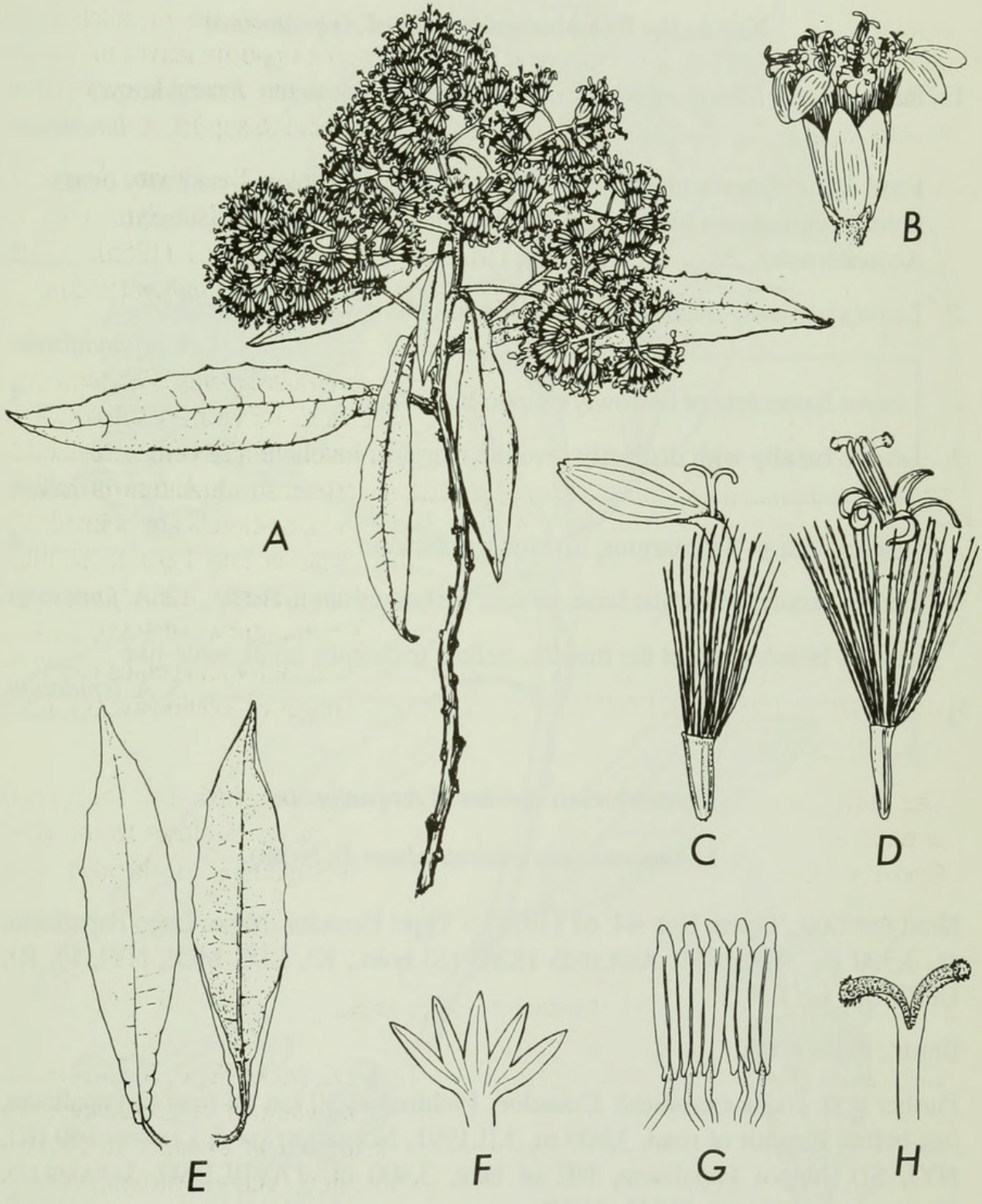


Fig. 1. *Aequatorium asterotrichum* B. NORD. - A: Portion of plant, × ½. - B: Leaf, upper and lower side, ×½. - C: Capitulum, x 3. - D: Ray-floret, × 6. - E: Disc-floret, ×6. - F: Corolla of disc-floret, laid out, ×6. - G: Stamens, ×12.5. - H: Style branches (disc-floret), ×12.5. - ASPLUND 18263 (S holo.).

Key to the Ecuadorian species of *Aequatorium*

1. Rays yellow. Leaves opposite, ovate, quite entire (subgen. *Praegynoxys)* ..... 5. *A. limonense*

- Rays white. Leaves alternate or some opposite, lanceolate—narrowly ovate-oblong with sinuate-dentate or dentate—denticulate margins (subgen. *Aequatorium*) 2

2. Leaves narrowly ovate-oblong or elliptic-oblong with flat margins ..... 4. *A. repandiforme*

- Leaves lanceolate or narrowly elliptic-lanceolate 3

3. Leaves basally with distinctly revolute margins; involucre glabrous ..... 1. *A. asterotrichum*

- Leaves with ± flat margins; involucre pubescent 4

4. Leaves broadest near the base; stellate trichomes large, fluffy .... 2. *A. jamesonii*

Leaves broadest about the middle; stellate trichomes small, scale-like ..... 3. *A. lepidotum*

Ecuadorian species of *Aequatorium*

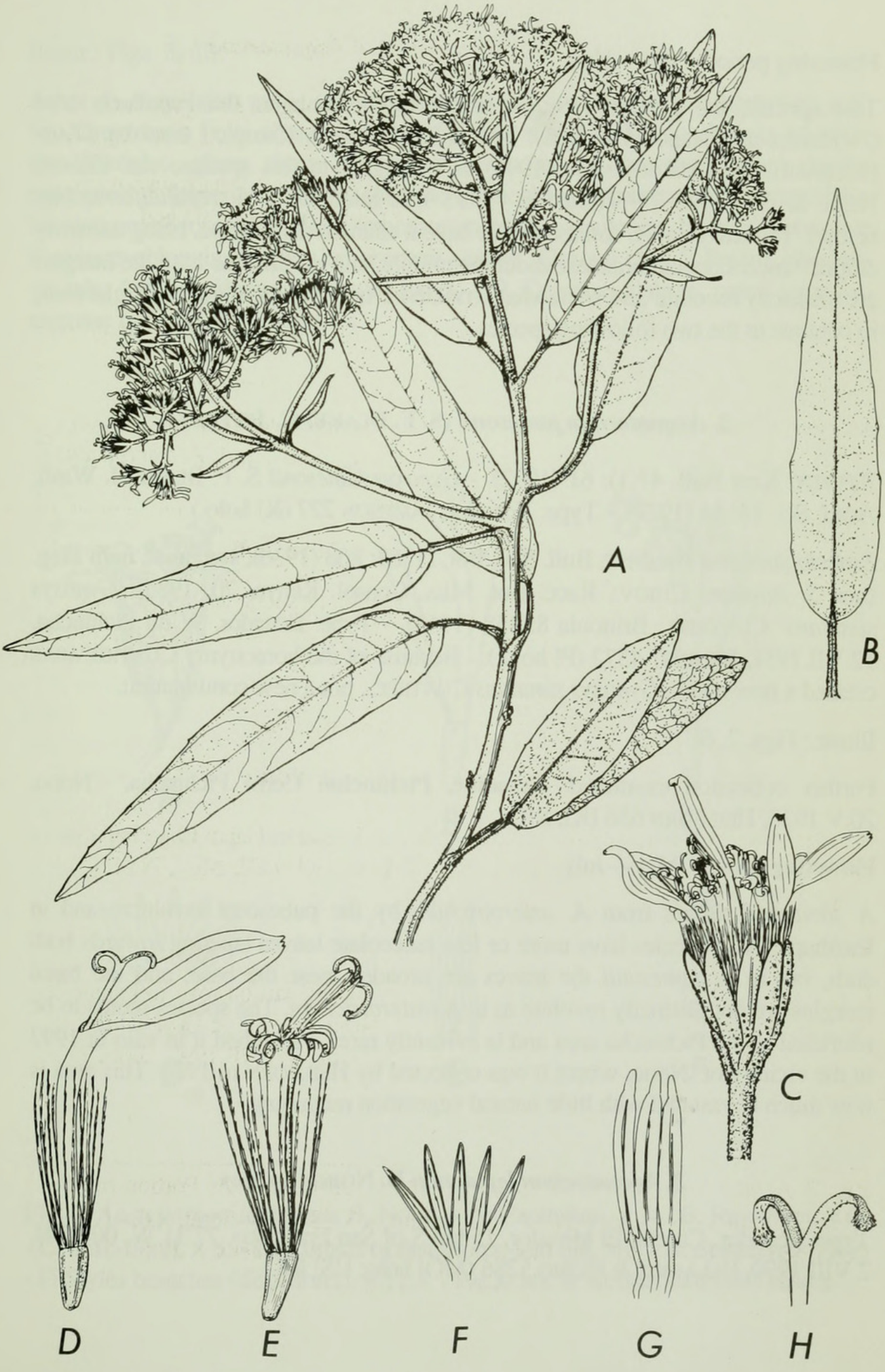
1. *Aequatorium asterotrichum* B. NORD.

NORDENSTAM , Opera Bot. 44: 61 (1978). - Type: Ecuador. Napo: Lago Papallacta, ca. 3,300 m, 31.X.1955, ASPLUND 18263 (S! holo.; K!, LD!, MO!, NY!, P!, R!, UPS!, US! iso.).

Illustr.: Figs. 1, 6A.

Further collections examined: **Ecuador. Pichincha:** 50 km on road to Papallacta, just before summit of road, 3,900 m, 3.II.1991, NORDENSTAM & LUNDIN 160 (K!, NY!, S!). **Napo:** Papallacta, NE of lake, 3,400 m, 17.VIII.1990, JARAMILLO, GRIJAIVA & GRIJAIVA 11841 (MO!).

Fig. 2. *Aequatorium jamesonii* (S. F. BLAKE) C. JEFFREY. - A: Portion of plant, × ½. - B: Leaf, upper side, × ½. - C: Capitulum, × 3. - D: Ray-floret, × 6. - E: Disc-floret, × 6. - F: Corolla of disc-floret, laid out, × 6. - G: Stamens, × 12.5. - H: Style branches (disc-floret), × 12.5. - HEILBORN 656 (S).


A
B
C
D
E
F
G
H

Flowering period: Aug.—Nov.

This species, the generic type, is apparently endemic to the Papallacta area (Pichincha and Napo Provinces). The collection from Cotopaxi cited by DÍAZ-PIEDRAHÍTA & CUATRECASAS (1990) as belonging to this species, viz. CÉRON, NEILL & PALACIOS 3793 (cited as "3993"), is referable to *A. repandiforme* (see below). The leaves of *A. asterotrichum* have a characteristic shape, being narrowly elliptic-lanceolate and broadest about the middle, and towards the base the margins are distinctly revolute and somewhat wrinkled. The involucral bracts are glabrous, in contrast to the two following species.

2. *Aequatorium jamesonii* (S. F. BLAKE) C. JEFFREY

JEFFREY, Kew Bull. 47(1): 61 (1992). - *Gynoxys jamesonii* S. F. BLAKE, J. Wash. Acad. Sci. 18: 34 (1928). - Type: Ecuador, JAMESON 227 (K! holo.).

Senecio simulans BENOIST, Bull. Soc. Bot. Fr. 83: 808 (1936), syn. nov., nom illeg. (non *S. simulans* CHIOV., Racc. Bot. Miss. Consol. Kenya, 70, 1935); *Gynoxys simulans* CUATREC., Brittonia 8: 158 (1955). - Type: Ecuador, W du Pichincha, 12.VII.1931, BENOIST 4572 (P! holo.). - Because of the homonymy CUATRECASAS created a new name, *Gynoxys simulans* CUATREC., not a new combination.

Illustr.: Figs. 2, 6C.

Further collection examined: **Ecuador. Pichincha:** Cerro Pichincha, Nono, 20.V.1920, HEILBORN 656 (K!, S!).

Flowering period: May—July.

A. jamesonii differs from *A. asterotrichum* by the pubescent involucre and in leafshape. Both species have more or less lanceolate leaves tapering towards both ends, but in *A. jamesonii* the leaves are broadest near the base, and the basal margins are not distinctly revolute as in *A. asterotrichum*. The species seems to be restricted to the Pichincha area and is evidently rare. I searched it in vain in 1992 in the vicinity of Nono, where it was collected by HEILBORN in 1920. This area is now much devastated with little natural vegetation remaining.

3. *Aequatorium lepidotum* B. NORD., sp. nov.

Type: Ecuador. Carchi: El Mirador, 15 km S of San Francisco, 77°31'W, 00°37'N, 2.VIII.1990, PALACIOS & RUBIO 5286 (MO! holo; US! iso.).

Illustr.: Figs. 3, 6B.

Arbor 4—6 m. alta, ramis et ramulis striatis vel costatis, ramulis hornotinis stellato-tomentosis. Folia alterna petiolata, lamina anguste elliptico-oblonga ad elliptico-lanceolata plana supra plerumque glabra subtus tomento stellato duplici canescenti et ferrugineo vestita, margine denticulata. Capitulescentia pyramidalis. Involucrum obconicum stellato-tomentosum paucicalyculatum, bracteis plerumque 8 anguste oblongis vel elliptico-oblongis obtusis. Flosculi radii 5, lamina alba brevis tubo fere aequilonga. Flosculi disci 5—10. Cypselae glabrae; pappi setae numerosae barbellatae persistentes.

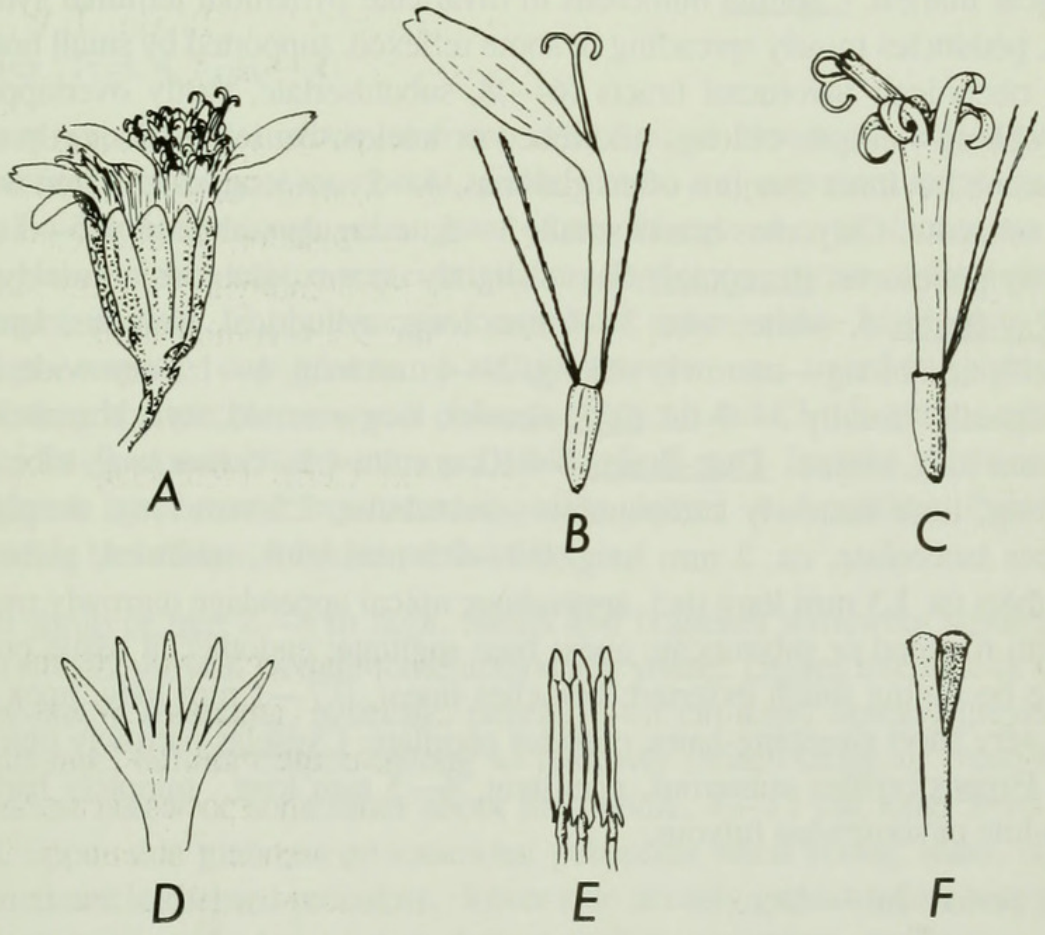


Fig. 3. *Aequatorium lepidotum* B. NORD. - A: Capitulum, × 3. - B: Ray-floret, × 6. - C: Disc-floret, × 6. - D: Corolla of disc-floret, laid out, × 6. - E: Stamens, × 12.5. - F: Styles branches (disc-floret), × 12.5. - PALACIOS & RUBIO 5286 (MO holo.).

Tree 4—6 m tall. Stems and branches striate—ribbed, with a dense brownish—greyish tomentum of small intermingled stellate hairs, becoming more greyish and subglabrescent with age. Leaves alternate, spreading, petiolate; petiole 1—2.5 cm long, densely stellate-tomentose; lamina flat, narrowly elliptic-oblong to elliptic-lanceolate, usually broadest around the middle and tapering towards both ends, 7—13 cm long and 2—3.5 cm wide (uppermost leaves smaller); upper side glabrous or young leaves and midrib with a patchy short tomentum; lower side densely appressed-tomentose with small stellate trichomes in 2—3 layers: innermost layer silvery-grey, very dense and entangled, overtopped with a layer of scale-like brownish stellate trichomes, and sometimes with scattered whitish stellate trichomes on top; leaf margins distantly denticulate-mucronate; apex acute—acuminate and apiculate; base subcuneate to truncate; lateral veins prominent on lower side, emitted at almost right angles, arching and anastomising before reaching leaf margin. Capitula numerous in divaricate pyramidal terminal synflorescences, peduncles mostly spreading or some reflexed, supported by small bracts. Involucre obconical; involucral bracts (6—)8, subuniseriate, partly overlapping, narrowly oblong—elliptic-oblong, midribbed or keeled, densely and shortly stellate-pubescent, but inner margins often glabrous, 4—5 mm long, ca. 1.5 mm wide, obtuse to subacute. Calyculus bracts small, 3—5, triangular-subulate, 0.5—1 mm long, shortly pubescent. Receptacle flat or slightly convex, glabrous, minutely foveolate. Ray-florets 5, white; tube 3—4 mm long, cylindrical, glabrous; lamina narrowly elliptic-oblong—narrowly oblong, 2—4 mm long, 1—1.7 mm wide, 2—4-veined, apically usually 2—3-fid. Style slender, long exserted; style branches ca. 0.5—0.8 mm long, obtuse. Disc-florets 5—10; corolla 4.5—5 mm long; tube 2—2.5 mm long; limb narrowly campanulate—subtubular, 2.5 mm long, deeply 5-lobed; lobes lanceolate, ca. 2 mm long, 0.3—0.5 mm wide, midlined, glabrous, acute. Anthers ca. 1.5 mm long incl. appendage; apical appendage narrowly ovate-oblong with rounded or subtruncate apex; base sagittate; endothecial tissue polarized. Style becoming much exserted; branches linear, 0.7—1 mm long; apex obtuse with very short sweeping-hairs, outsides papillate. Cypselas narrowly oblong, glabrous. Pappus bristles numerous, persistent, 4—5 mm long, minutely barbellate, off-white or somewhat fulvous.

Flowering period: July—Dec.

Further collections examined: **Ecuador. Carchi:** El Mirador, 15 km S of San Francisco, 77°31'W, 00°37'N, 3,300 m, 2.VIII.1990, PALACIOS & RUBIO 5280 (MO!, US!); Montufar Canton, Loma El Corazón (Bretaña), 77°42'W, 00°35'N, 3,150 m, 22—23.II.1992, PALACIOS & TIPAZ 10538 (MO!); Espejo, Reserva Ecológica El Angel, viejo camino El Angel-Tulcán, sitio La Rabija, 77°54'W, 00°40'N, 3,400 m, 31.X.1993, PALACIOS 11688 (MO!, QCNE).

This species resembles *A. jamesonii*, but the leaves are differently shaped, being broadest around the middle. Also, the synflorescence is more lax and divaricate with branches divergent at often right angles, and the bracts and calycular bracts are smaller. From *A. asterotrichum* it is distinguished i. a. by the pubescent involucre and the flat leaf-margins. The very small and scale-like trichomes are a characteristic feature, differing from those in other species of the subgenus. The species is so far only known from a restricted range in northern Ecuador (Carchi Prov.).

4. *Aequatorium repandiforme* B. NORD., sp. nov.

Type: Ecuador. Pichincha: Over high pass en route to Quito, 92 km E of Quevedo, 3,400 m, 19.IX.1959, B. MAGUIRE & C. MAGUIRE 44246 (NY! holo.; K!, US! iso.).

Illustr.: Figs. 4, 5, 6D—E.

Frutex procerus vel arbor ad 5 m. alta. Ramuli hornotini stellato-pubescentes, vetustiores glabrescentes costati. Folia alterna vel superiora opposita petiolata; lamina elliptico-oblonga vel anguste ovato-oblonga ad ovato-lanceolata plana, supra glabra nitida, subtus tomento stellato duplici canescenti et ferrugineo vestita, margine dentato. Capitulescentia corymbosa ramosissima. Involucrum subcylindricum—anguste cupuliforme ± stellato-tomentosum, interdum glabrescens vel glabrum; bracteis plerumque 8 oblongis. Flosculi radii 2—5, lamina alba. Flosculi disci 5—9, corolla flavovirens vel albida. Styli rami lineares obtusi vel truncati. Antherae basi breviter sagittatae. Cypselae glabrae c. 8-costatae. Pappi setae numerosae barbellatae fulvidae persistentes.

Tall shrub or tree 2—8 m high. Stems and branches somewhat square, furrowed and ribbed, greyish stellate-tomentose when young. Leaves alternate or upper ones opposite, ± spreading, petiolate; petiole 1—3 cm long, densely greyish stellate-tomentose; lamina elliptic-oblong to narrowly ovate-oblong or ovate-lanceolate, broadest below or sometimes about the middle, 4—17 cm long, 2—6 cm wide, flat, upper side glabrous or somewhat pubescent when young, shiny, deep green, sometimes impressed-reticulate, lower side densely greyish-white-tomentose with stellate hairs, and a looser, rusty brown, stellate tomentum, evanescent in patches; margins irregularly dentate with blunt mucronate teeth mainly basally, otherwise denticulate-mucronate; leaf-base obtuse—truncate or slightly emarginate-cordate, often oblique; apex acute—subobtuse; midrib distinct esp. on lower side, ca. 8—15 lateral veins on each side, emitted at ± right angles, and a faint to distinct reticulate venation pattern. Synflorescence broadly corymbose, richly branched, brac-

teate, with erect—spreading branches. Involucre narrowly cupshaped— obconical or subcylindrical; involucral bracts (5—)8 , subuniseriate and partly overlapping, narrowly oblong or elliptic-oblong, 4—6 mm long, 1—2.5 mm wide, pale green, at least partly stellate-tomentose (inner margins glabrous), sometimes glabrescent or rarely nearly glabrous, midribbed with fainter parallel veins, obtuse with usually purple or brownish apical margins. Calyculus bracts 3—5, inconspicuous, 0.5—1.5 mm long, lanceolate or deltoid. Ray-florets 2—5; tube cylindrical, 4—5 mm long; lamina narrowly oblong or elliptic-oblong, 3—5 mm long, 0.7—1.5 mm wide, white, faintly or distinctly veined, usually 2—3-fid at the apex; style branches linear, obtuse to truncate. Disc-florets 5—8(—10); corolla 6—7 mm long, greenish yellow or greenish white; tube 2.5—3.5 mm long, cylindrical; limb narrowly campanulate, 3—3.5 mm long, lobes lanceolate, 1.5—2.2 mm long, midlined, becoming recurved. Anthers 1.8—2 mm long, brown with rosy-purple margins and connective; appendage oblong-ovate, obtuse; base shortly sagittate; collar straight. Style branches linear, yellow or purplish, apically obtuse to truncate with very short sweeping-hairs. Cypselas narrowly oblong-obovate, glabrous, with ca. 8 ribs or veins. Pappus bristles numerous, 5—6 mm long, somewhat fulvous, minutely barbellate, persistent, basally connate.

Flowering period: June—Dec.

The vernacular name is "Yacupato" (in 'Quech', fide coll. CAZALET & PENNINGTON 5512).

Further collections: **Ecuador. Imbabura:** Along trail between Río Clavadero and ridge 10 miles S of Las Toldadas, E of Cayambe, 3,100 m, 27.VII.1944, WIGGINS 10493 (US!); Lago San Marcos, Cayambe, 3,400 m, 28.XI.1961, CAZALET & PENNINGTON 5381 (B, BM, F, K!, MICH, NY, US!); Lago San Marcos, Cayambe, 3,400 m, 4.XII.1961, CAZALET & PENNINGTON 5512 (B, BM, F, K!,MICH, NY, US!). **Napo:** Llanganati, N slope towards Río Golpe, just N of Chosa Aucacocha, 78°18'W, 01°08'S, 3,500 m, 15.V.1982, ØLLGAARD et al. 38621 (US!) (Somewhat deviating, but material insufficient for a definite determination). **Cotopaxi:** Carretera Latacunga-Pilaló-Quevedo, 5—15 km E of Pilaló, 79°01'W, 00°55'S, 2,700—3,350 m, 22.V.1988, CÉRON, NEILL & PALACIOS 3793 (MO!), wrongly cited as no. "3993" and as *A. asterotrichum* in DÍAZ-PIEDRAHÍTA & CUATRECASAS (1990). **Morona-Santiago:** E slopes of the cordillera, valley of the Río Negro, down to the Río Pailas (on the trail to Mendez), between Tambo Cerro Negro and the Páramo del Castillo, 2,900—3,350 m, 20—24.VIII.1945, CAMP E-4976 leg. F. PRIETO (K!, MO!, NY!, S!, US!); Muletrack Sevilla de Oro—Méndez, E slope, at Cerro Negro, El Castillo, 78°34'W, 02°47'S, 3,000—3,250 m, 16.IX.1976, ØLLGAARD & BALSLEV 9498 (AAU!, NY!).

A rather widespread though endemic species, which is variable especially in leaf shape and texture, and pubescence. The leaves are large, generally broadest well below the middle, and the leaf-margins are sometimes distinctly dentate, sometimes only shallowly denticulate-mucronate. The involucre generally has some stellate pubescence, sometimes patchy, sometimes dense, but inner margins of involucral bracts are usually glabrous, rarely all of them.

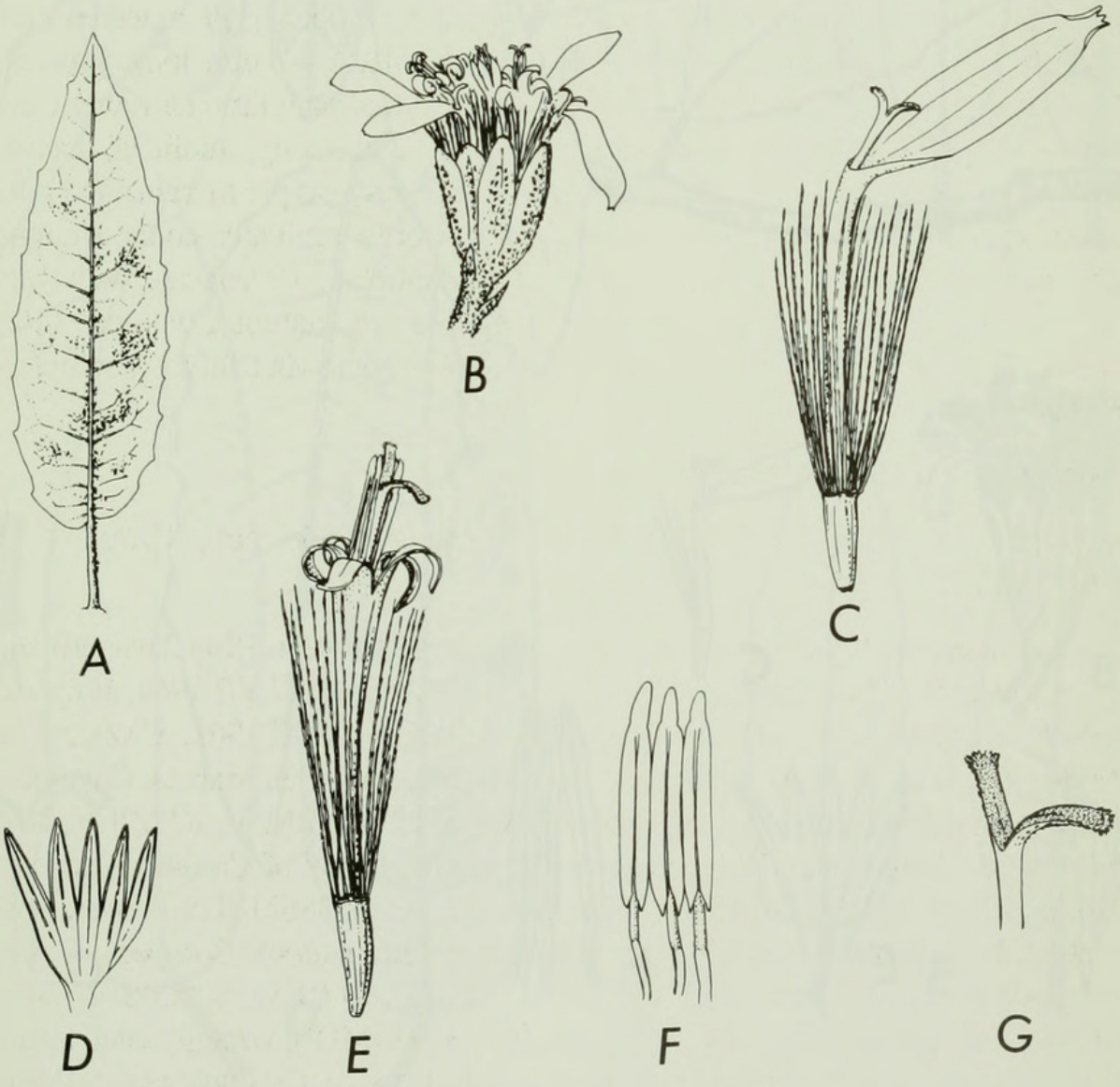


Fig. 4. *Aequatorium repandiforme* B. NORD. - A: Leaf, lower side, × ½. - B: Capitulum, × 3. - C: Ray-floret, × 6. - D: Disc-floret, × 6. - E: Corolla of disc-floret, laid out, × 6. - F: Stamens, × 12.5. - G: Style branches (disc-floret), × 12.5. - CAMP E-4976 (S).

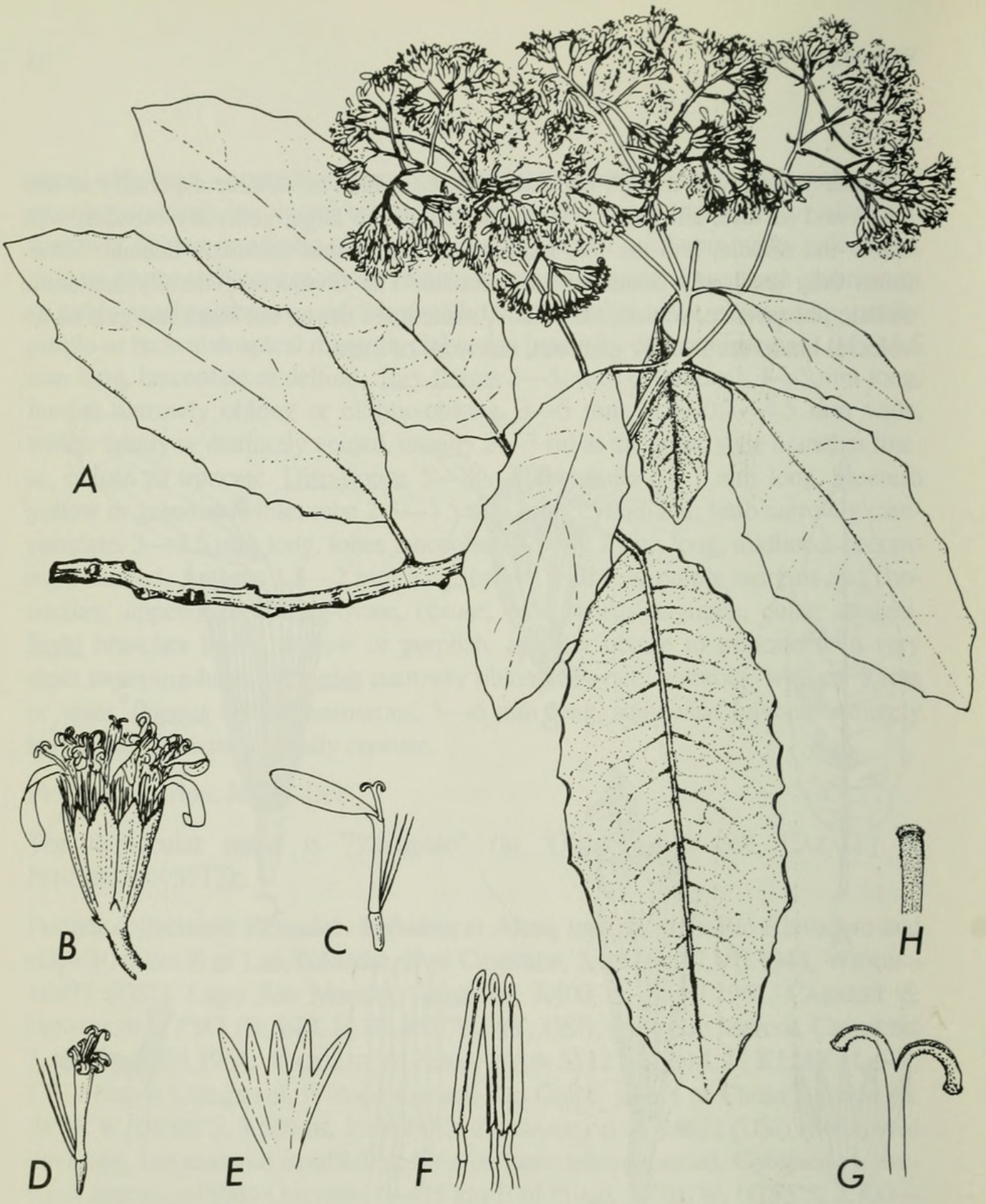


Fig. 5. *Aequatorium repandiforme* B. NORD., form with glabrous involucres. - A: Portion of plant, × ½. - B: Capitulum, × 3. - C: Ray-floret, × 3. - D: Disc-floret, × 3. - E: Corolla of disc-floret, laid out, × 6. - F: Stamens, × 12.5. - G: Style branches (disc-floret), × 12.5. - H: Style branch (disc-floret), inside, × 12.5. - MAGUIRE & MAGUIRE 44246 (K).

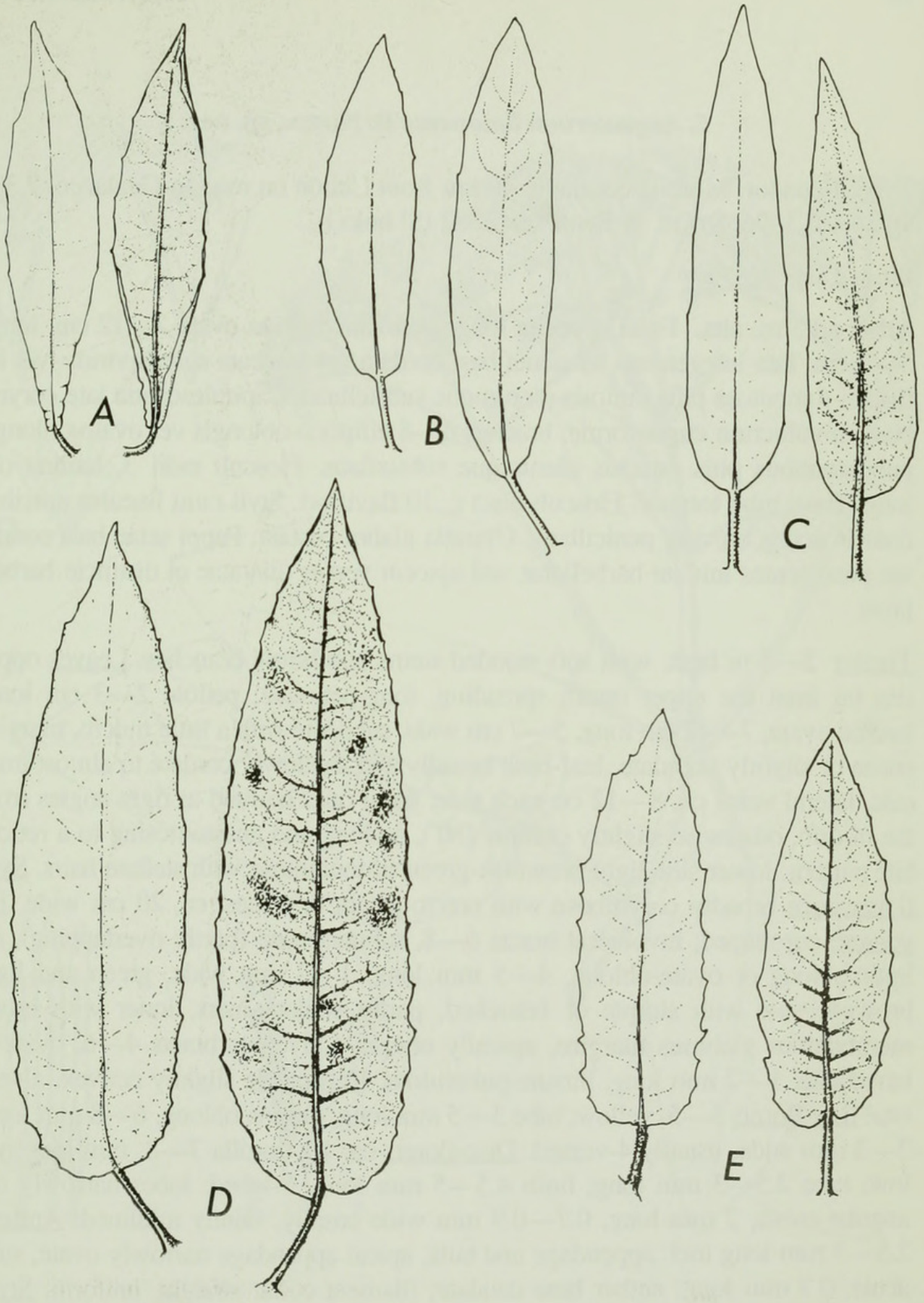


Fig. 6. Leaves of *Aequatorium* spp., upper (left) and lower (right) sides, × ½. - A: *A. asterotrichum* B. NORD. (ASPLUND 18263, S). - B: *A. lepidotum* B. NORD. (PALACIOS & TIPAZ 10538, MO). - C: *A. jamesonii* (S. F. BLAKE) C. JEFFREY (HEILBORN 656, S). - D: *A. repandiforme* B. NORD. (CAZALET & PENNINGTON 5381, K). - E: *A. repandiforme* B. NORD. (CAMP E-4976, NY, K)

5. *Aequatorium limonense* B. NORD., sp. nov.

Type: Ecuador. Morona-Santiago: 49 km from Limón on road to Gualaceo, 2,300 m, 16.VII.1996, STÅHL & KNUDSEN 2882 (S! holo.).

Illustr.: Fig. 7.

Arbor ad 5 m. alta. Folia opposita longe petiolata, lamina ovata 7—12 cm. longa 5—7 cm. lata integerrima subacuta basi cordata vel truncata subtus viridi- vel infuscati-tomentosa pilis ramosis plerumque substellatis. Capitulescentia late corymbosa. Involucrum cupuliforme, bracteis 6—8 elliptico-oblongis vel ovato-oblongis pubescentibus pilis ramosis plerumque substellatis. Flosculi radii 3, lamina oblonga flava tubo longior. Flosculi disci c. 10 flaviflori. Styli rami lineares apicibus conicis acutis breviter penicillatis. Cypsela glabra costata. Pappi setae basi connatae persistentes minute barbellatae sed apicem versus dilatatae et distincte barbellatae.

Treelet 2—5 m high, with soft-wooded stems and brittle branches. Leaves opposite (at least the upper ones), spreading, long-petiolate; petiole 2—3 cm long; lamina ovate, 7—12 cm long, 5—7 cm wide, subacute with a little mucro, margins entire or slightly undulate, leaf-base broadly and shallowly cordate to almost truncate, lateral veins ca. 8—12 on each side, basal ones emitted at right angles from the midrib, otherwise slightly oblique (80°), arching and anastomosing to a reticulate pattern; lower side light brownish-greenish-tomentose with stellate hairs. Synflorescence broadly corymbose with erecto-patent branches, ca. 20 cm wide. Involucre cupshaped; involucral bracts 6—8, subuniseriate (partly overlapping), elliptic-oblong or ovate-oblong, 4—5 mm long, 1—2 mm wide, green and light brown-hirsute with simple or branched, partly stellate hairs, inner with broad membranous glabrous margins, apically obtuse. Calyculus bracts 4—6, ovate—lanceolate, 1—2 mm long, hirsute-puberulous. Receptacle slightly convex, alveolate. Ray-florets 3—5, yellow; tube 3—5 mm long; lamina oblong, 6—8 mm long, 2—3 mm wide, usually 4-veined. Disc-florets ca. 10; corolla 7—8 mm long, yel low; tube 2.5—3 mm long; limb 4.5—5 mm long, 5-lobed; lobes narrowly triangular-ovate, 2 mm long, 0.7—0.9 mm wide basally, faintly midlined. Anthers 2.5—3 mm long incl. appendage and tails; apical appendage narrowly ovate, subacute, 0.7 mm long; anther base caudate; filament collar straight, uniform. Style branches linear, 2 mm long, apically triangular-conical with an acute small tuft of hairs and papillae; stigmatic area finely divided basally but confluent towards the apex; outsides puberulous distally. Cypselas glabrous, oblong-obovate, ca. 8—10-

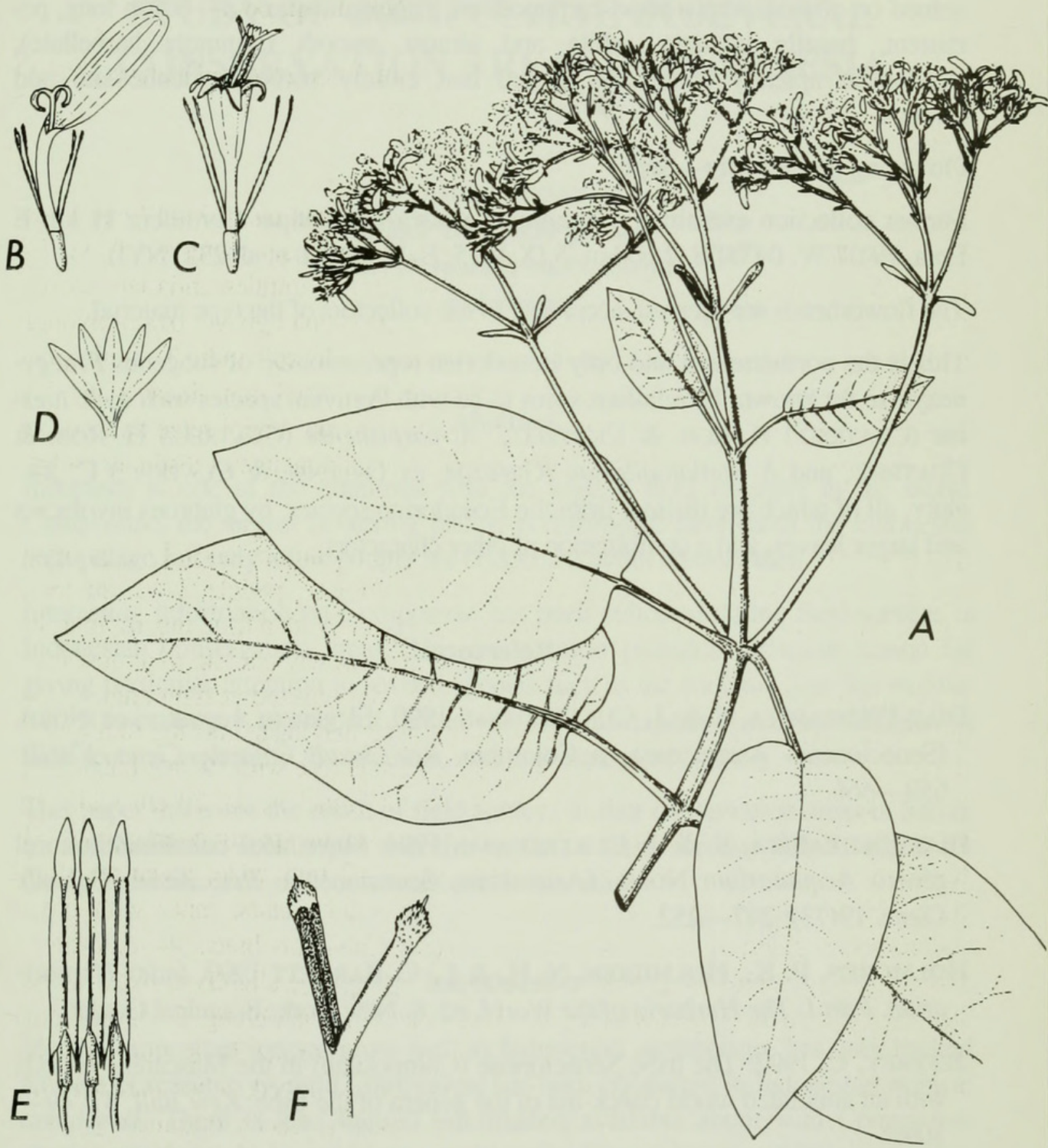


Fig. 7. *Aequatorium limonense* B. NORD. - A: Portion of plant, × ½. - B: Ray-floret, × 3. - C: Disc-floret, × 3. - D: Corolla of disc-floret, laid out, × 3. - E: Stamens, × 12.5. - F: Style branches (disc-floret), × 12.5. - STÅHL & KNUDSEN 2882 (S holo.).

veined or -ribbed, with a short carpopodium. Pappus bristles 4.5—6 mm long, persistent, basally connate, white and almost smooth (minutely barbellate), slender,but apically somewhat dilated and closely barbellate-denticulate and fulvous.

Flowering period: July—Sept.

Further collection examined: **Ecuador. Zamora-Chinchipe:** Cordillera 11 km E Loja, 79°07'W, 04°00'S, 2,600 m, 5.IX.1975, E. L. LITTLE et al. 232 (NY!).

The flowerheads are scented, according to the collectors of the type material.

This is the northernmost and only Ecuadorian representative of subgenus *Praegynoxys* so far known. Its relations seem to be with Peruvian species such as *A. tuestae* (CUATREC.) H. ROB. & CUATREC., *A. carpishense* (CUATREC.) H. ROB. & CUATREC., and *A. stellatopilosum* (GREENM. ex GREENM. & CUATREC.) C. JEFFREY, all of which are distinct from the Ecuadorian species by glabrous involucres and larger leaves, and a combination of other characters.

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