New genera and combinations in the Senecioneae of the Greater Antilles

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Abstract

Generic limits in the tribe Senecioneae of the Greater Antilles are revised. Seven new genera are described: *Antillanthus* B. NORD., *Herreranthus* B. NORD., *Lundinia* B. NORD., *Elekmania* B. NORD., *Nesampelos* B. NORD., *Leonis* B. NORD., and *Zemisia* B. NORD. Altogether 33 new combinations are made. As a consequence there are no indigenous species of *Senecio* L. and *Pentacalia* CASS. in Cuba, Hispaniola and Jamaica.

Introduction

The present study is part of an ongoing revision of generic limits in the Senecioneae of the Greater Antilles, particularly Cuba and Hispaniola. It has been necessary to distinguish a number of new genera, some of which are still insufficiently known in all details and deserving a closer study. The treatment of the tribe Senecioneae in the Greater Antilles has up to now or recently been very conservative, with most species remaining in an over-expanded concept of *Senecio* L., plus a number of transfers to the poorly understood and ill-defined genus *Pentacalia* CASS.

The Jamaican Senecioneae were sorted out in a preliminary way by NORDENSTAM (1978), who recognized two new endemic genera, viz. *Odontocline* B. NORD. and *Jacmaia* B. NORD.These were accepted by H. ROBINSON in PROCTOR (1982), who however added the genus *Pentacalia* with three Jamaican species (two described as new and one transferred from *Senecio*).

In the Flora de Cuba vol. 5 (ALAIN 1963) the tribe Senecioneae was represented by four genera.Three of these are quite small, namely *Erechtites* with one species (plus one variety), *Emilia* with two species, and the monotypic and endemic *Shafera*. In *Senecio* 21 species were recognized, including the type species, *S. vulgaris*, which is a widespread annual weed, although uncommon in Cuba .The other 20 species listed under *Senecio* are all indigenous shrubs or vines, most of them endemic to Cuba, but two of them also occurring on Hispaniola (*S. plumbeus* and *S. trineurus*). One of the

Cuban *Senecios*, viz. S. *almironcillo*, was transferred to the genus *Pentacalia* in 1982 by PROCTOR, and another was recently described as the monotypic *Oldfeltia* B. NORD. & LUNDIN (NORDENSTAM & LUNDIN 2002). The remainder are now disposed in four new genera, and only the occasional weed *S. vulgaris* remains in the genus in the Cuban flora.

In Hispaniola (Haiti and the Dominican Republic) three small endemic genera have been recognized, viz. *Herodotia* URB., *Mattfeldia* URB. and *Ekmaniopappus* BORHIDI. Twelve species of shrubs, small trees or vines have been traditionally been placed in *Senecio* (LIOGIER 1996). One particularly deviating taxon is described elsewhere as the new genus *Ignurbia* B. NORD. (NORDENSTAM 2006). Further genera of the tribe in Hispaniola are the more or less weedy *Erechtites*, *Emilia* and *Crassocephalum*.

Some ten years after ROBINSON and PROCTOR, BORHIDI followed their track and transferred another eleven Cuban species and one from the Dominican Republic to *Pentacalia*. He also described a new species from Cuba as *Pentacalia acunae* BORHIDI, related to *P. almironcillo* (BORHIDI 1992). None of these transferred species is well placed in *Pentacalia*, which in the broad sense of ROBINSON, CUATRECASAS a.o., is a large Andean genus with a northern limit in Costa Rica, where the northernmost outpost of *páramo* vegetation is found. Within the broad concept of *Pentacalia* there are (at least) two distinct groups, treated as subgenera by CUATRECASAS, ROBINSON and others, but better treated as genera, as by JEFFREY, BREMER and myself. *Pentacalia* sensu stricto comprises vines or epiphytes, whereas *Monticalia* C. JEFFREY is a genus of erect shrubs with closely set leaves and terminal synflorescences. These two genera both have an Andean distribution and are not represented in the Caribbean.

The purpose of the present paper is to briefly describe the new genera and make the necessary new combinations. A fuller treatment with keys and discussions will follow, and a global overview of the Senecioneae with a generic key will be published in the *Families and Genera of Vascular Plants* (NORDENSTAM, in press).

New genera and combinations

Antillanthus B. NORD., gen. nov.

Frutices erecti vel scandentes. Folia caulina sessilia vel breviter petiolata linearia vel lanceolata ad oblongo-ovata supra glabra subtus tomentosa. Capitula pauca vel plura corymbosa–cymoso-paniculata discoidea vel interdum radiata. Involucri bracteae uniseriatae. Receptaculum alveolatum glabrum. Flosculi radii feminei vel nulli. Flosculi disci hermaphroditi; corolla resinifera, lobis ovatis. Antherae basi sagittatae vel breviter caudatae. Styli rami lineares intus areis stigmaticis confluentibus apice obtusi pilis brevibus sparsis. Cypselae elliptico-oblongae 8–10-costatae pubescentes. Pappi setae numerosae basi connatae albae persistentes.

Typus: *Antillanthus ekmanii* (Alain) B. Nord.

Erect or scandent shrubs 0.5–2 m; branches mostly white-tomentose. *Leaves* cauline, sessile or shortly petiolate, (linear or) lanceolate to oblong-ovate, 3–13 cm long, 1–4 cm wide, entire or sometimes shallowly sinuate-dentate, glabrous (or at least glabrescent) above, densely white- or grey-tomentose beneath; margins usually revolute. *Capitula* few to several in terminal corymbose or cymose-paniculate synflorescences, discoid or rarely radiate, yellow-flowered or rarely white–cream-coloured; peduncles bracteate. *Involucre* cylindrical to narrowly campanulate, calyculate; involucral bracts uniseriate 5–13, oblong–lanceolate, obtuse–acute. *Receptacle* glabrous, alveolate. *Disc-florets* 5–13; corolla tubular below, narrowly campanulate or funnel-shaped above; lobes deltoid to narrowly ovate, midlined, apically subcucullate and papillate. Resin canals often present in corolla and style. Anthers basally sagittate or shortly caudate; apical appendage ovate, obtuse; endothecial tissue radial with elongated cells; filament collar balusterform. Style branches apically obtuse with rather few and short lateral sweeping-hairs; inside with stigmatic areas continuous. *Cypselas* elliptic-oblong, 8–10-ribbed, shortly hirsute. *Pappus* bristles numerous, slender, usually shorter than the corolla, basally connate, white, persistent.

This is the largest genus of the tribe in Cuba, with 17 species presently recognized.

1. *Antillanthus acunae* (Borhidi) B. Nord., comb. nov.

Basionym: *Pentacalia acunae* Borhidi, Acta Bot. Hung. 37: 88 ("1992" = 1994).
Type: J. Acuña 13412 SV, Cuba, Prov. Las Villas, Sierra de Escambray, in saxosis calcareis montis Pico Potrerillo, 900—930 m, V.1939 (HAC holo.!).

2. *Antillanthus almironcillo* (Maza Gomez) B. Nord., comb. nov.

Basionym: *Senecio almironcillo* Maza Gomez, Anales Hist. Nat. 19: 277 (1890).
Syn.: *Pentacalia almironcillo* (Maza Gomez) G. R. Proctor, J. Arnold Arbor. 63(3): 312 (1982).
Further syn.: *Cacalia discolor* Griseb., non DC.; *Senecio brittonii* Greenm., Field Mus. Nat. Hist. 164, Bot. Ser. 2(8): 323 (1912).
Type: C. Wright 2870, Cuba.

3. *Antillanthus azulensis* (Alain) B. Nord., comb. nov.

Basionym: *Senecio azulensis* Alain, Contr. Ocas. Mus. Hist. Nat. Colegio "De La Salle" no. 18: 10 (1960).
Type: Alain & M. López Figueiras 7352, Cuba, Oriente, Sierra Azul, Barracoa, 4.I.1960 (LS holo., SV, "UO" iso.).

4. *Antillanthus biseriatus* (Alain) B. Nord., comb. nov.

Basionym: *Senecio biseriatus* Alain, Contr. Ocas. Mus. Hist. Nat. Colegio "De La Salle" no. 18: 11 (1960).
Type: Alain 3429, Cuba, Oriente, Sierra de Moa, 25-26.VII.1953 (LS holo., NY iso.).

5. *Antillanthus carinatus* (Greenm.) B. Nord., comb. nov.

Basionym: *Senecio carinatus* Greenm., Field Mus. Hist. Nat. 164, Bot. Ser. 2(8): 323 (1912).
Syn.: *Pentacalia carinata* (Greenm.) Borhidi, Acta Bot. Hung. 37: 88 ("1992" = 1994).
Type: J. A. Shafer 4079, Cuba, Oriente, Sierra de Moa, Camp San Benito, 900 m, 24.II.1910 (F, NY).

6. *Antillanthus cubensis* (Greenm.) B. Nord., comb. nov.

Basionym: *Senecio cubensis* Greenm., Field Mus. Hist. Nat. 164, Bot. Ser. 2(8): 324 (1912).
Syn.: *Pentacalia cubensis* (Greenm.) Borhidi, Acta Bot. Hung. 37: 88 ("1992" = 1994).
Type: J. A. Shafer 4084, Cuba, Oriente, Sierra de Moa, Camp San Benito, 900 m, 24.II.1910 (F, NY).

7. *Antillanthus ekmanii* (Alain) B. Nord., comb. nov.

Basionym: *Senecio ekmanii* Alain, Contr. Ocas. Mus. Hist. Nat. Colegio "De La Salle" no. 18: 11 (1960).
Type: Alain, Acuña & López Figueiras 5606, Cuba, Oriente, Sierra de Cristal, en charrascos, 2-7.IV.1956 (LS holo., NY, SV, "UO" iso).

8. *Antillanthus eriocarphus* (Greenm.) B. Nord., comb. nov.

Basionym: *Senecio eriocarphus* Greenm., Torreya 13: 257 (1913).
Syn.: *Pentacalia eriocarpha* (Greenm.) Borhidi, Acta Bot. Hung. 37: 88 ("1992" = 1994).
Syntypes: J. A. Shafer 4149, Cuba, Oriente, from Camp Toa to Camp La Barga, 22-26.II.1910 (F, NY, MO fragment); J.A. Shafer 8257, Camp La Gloria, S of Sierra de Moa, 24-30.XII. 1910 (F, NY, MO fragment).

9. *Antillanthus leucolepis* (Greenm.) B. Nord., comb. nov.

Basionym: *Senecio leucolepis* Greenm., Field Mus. Hist. Nat. 164, Bot. Ser. 2(8): 324 (1912).
Syn.: *Pentacalia leucolepis* (Greenm.) Borhidi, Acta Bot. Hung. 37: 89 ("1992" = 1994).
Type: J. A. Shafer 4146, Cuba, Oriente, Camp Toa to Camp La Barga, 400-450 m, 22-26.II.1910 (F, NY).

10. *Antillanthus moaensis* (Alain) B. Nord., comb. nov.

Basionym: *Senecio moaensis* Alain, Contrib. Ocas. Mus. Hist. Nat. La Salle 18: 11 (1960).
Syn.: *Pentacalia moaensis* (Alain) Borhidi, Acta Bot. Hung. 37: 89 ("1992" = 1994).
Type: León & Clemente 23203, Sierra de Moa, Mina Johnson, 20.VII.1947 (LS holo., NY iso.).

11. *Antillanthus moldenkei* (Greenm. ex Alain) B. Nord., comb. nov.

Basionym: *Senecio moldenkei* Greenm. & Alain, Contrib. Ocas. Mus. Hist. Nat. Colegio "De La Salle", Habana, no. 18: 12 (1960).
Type: Acuna 12775, Cuba, Oriente, Gran Tierra, Moa, 16.IV.1945 (HAC holo.!)

12. *Antillanthus pachylepis* (Greenm.) B. Nord., comb. nov.

Basionym: *Senecio pachylepis* Greenm., Field Mus. Hist. Nat. 164, Bot. Ser. 2(8): 325 (1912).
Type: J. A. Shafer 4008, Cuba, Oriente, Rio Yamaniguey to Camp Toa, 22-26.II.1910 (F, NY).

13. *Antillanthus pachypodus* (Greenm.) B. Nord., comb. nov.

Basionym: *Senecio pachypodus* Greenm., Publ. Field Mus. Nat. Hist. Chicago, Bot. 2: 325 (1912).
Syn.: *Pentacalia pachypoda* (Greenm.) Borhidi, Acta Bot. Hung. 37: 89 ("1992" = 1994).
Type: J. A. Shafer 8186, Cuba, Oriente, S of Sierra de Moa, Camp La Gloria 24-30.XII.1910 (NY holotype, F fragment).

14. *Antillanthus saugetii* (Alain) B. Nord., comb. nov.

Basionym: *Senecio saugetii* Alain, Contrib. Ocas. Mus. Hist. Nat. La Salle 18: 12

(1960).
Syn.: *Pentacalia saugetii* (Alain) Borhidi, Acta Bot. Hung. 37: 89 ("1992" = 1994).
Type: León 12196, Sierra de Imias, Puntón del Mate, 1924 (LS holo., NY iso.).

15. *Antillanthus shaferi* (Greenm.) B. Nord., comb. nov.

Basionym: *Senecio shaferi* Greenm., Field Mus. Hist. Nat. 164, Bot. Ser. 2(8): 326 (1912).
Syn.: *Pentacalia shaferi* (Greenm.) Borhidi, Acta Bot. Hung. 37: 89 ("1992" = 1994).
Type: J. A. Shafer 3107, Cuba, Oriente, Sierra de Nipe, between Piedra Gorda and Woodfred, 400-500 m, 8.XII.1909 (F, NY).

16. *Antillanthus subsquarrosus* (Greenm.) B. Nord., comb. nov.

Basionym: *Senecio subsquarrosus* Greenm., Ann. Missouri Bot. Gard. 8: 97 (1922).
Type: J. Shafer 3722, Cuba, Oriente, Rio Guayabo, 450-550 m, 21-30.I.1910 (GH, NY, MO fragment).

17. *Antillanthus trichotomus* (Greenm.) B. Nord., comb. nov.

Basionym: *Senecio trichotomus* Greenm., Field Mus. Hist. Nat. 164, Bot. Ser. 2(8): 326 (1912).
Syn.: *Pentacalia trichotoma* (Greenm.) Borhidi, Acta Bot. Hung. 37: 89 ("1992" = 1994).
Type: J. A. Shafer 3821, Cuba, Oriente, Loma Menquara, 680 m, 1-3.II.1910 (F, NY).

***Leonis* B. Nord., gen. nov.**

Fruticulus scandens glaber praeter pedunculos et petiolos rufo-asperulos. Folia alterna petiolata ovata ad elliptica integra vel interdum trilobata trinervia. Synflorescentiae axillares breves corymbosae. Capitula heterogama radiata vel disciformia . Involucrum calyculatum; involucri bracteae uniseriatae lineis resinosis instructae. Flosculi radii feminei flavi; lamina brevi. Flosculi disci numerosi hermaphroditi, corolla flava quinquelobata, lobis deltoideis vel ovatis ducto mediano resinifero notatis. Antherae basi sagittatae ecaudatae. Styli rami apice obtusi pilis sparsis brevibus lateralibus. Cypselae elliptico-oblongae glabrae (setis sparsis apicalibus repertis) decemcostatae stramineae. Pappi setae numerosae albae basi connatae.

Type: *Leonis trineura* (Griseb.) B. Nord.

Monotypic:

***Leonis trineura* (Griseb.) B. Nord., comb. nov.**

Basionym: *Senecio trineurus* Griseb., Mem. Am. Acad. N. S. 8: 514 (1862).
Syn.: *Pentacalia trineura* (Griseb.) Borhidi, Acta Bot. Hung. 37(1–4): 89 ("1992", prob. 1994).
Type: C. Wright 327, Cuba, Monteverde, Guantánamo (S = isotype!)

Further syn.: *Senecio leonis* ("*Leonis*") Britton & Wilson, Bull. Torrey Bot. Club 50: 50 (1923).

Senecio domingensis Urb., Symb. Antill. 7: 431 (1912).

Syntypes: H. v. Türckheim 3347, Sto. Domingo prope Constanza.

Illustr.: Fig. 1.

Scandent shrub, glabrous in most parts, but young branches, peduncles and petioles rufous-asperulous, and peduncles sometimes finely glandular-papillate below the capitulum; stems striate. *Leaves* alternate on short axillary flowering shoots, ovate to elliptic, 1.5–4 cm long, (0.5–)1–2.5 cm wide, entire or shallowly trilobate or grossly 1–4-dentate, petiolate, herbaceous, three-nerved from near the base; leaf-blade basally cuneate to truncate or occasionally hastate; petiole slender, 1–3 cm long. *Synflorescences* corymbose, terminating the lateral axillary leafy shoots. *Peduncles* slender, 1–4 cm long, with a few linear bracts, asperulous with rufous short trichomes and sometimes apically papillate-glandular. *Capitula* campanulate, heterogamous, radiate or disciform, yellow-flowered. *Involucral bracts* uniseriate, 8–12(–13), narrowly oblong to lanceolate, (1.5–)2–7 mm long, 1–2 mm wide, distinctly 3–5-veined with blackish (often interruptedly) resiniferous veins, apically acute and puberulous, otherwise glabrous or rarely somewhat puberulous throughout. Calyculus bracts 2–5, generally shorter than the phyllaries but varying in size, 5–8 mm long, 0.5–1 mm wide, linear and acuminate, sparsely pubescent with whitish or short rufous trichomes or subglabrous, sometimes with a median resin vein. *Receptacle* slightly convex, shortly fimbrilliferous, but not denticulate or distinctly alveolate. *Ray-florets* female, 1–5(–8), glabrous; tube cylindrical, 2–5 mm long; lamina oblong or narrowly elliptic-oblong, 1–5 mm long, 3–5-veined. Style branches linear, glabrous, obtuse, with separated stigmatic lines. *Disc-florets* 16–24, hermaphroditic. Corolla basally tubular, widening above, 4.5–6 mm long, glabrous, shortly 5-lobed; lobes deltoid–ovate, 0.5–0.7 mm long, with a median subapical dark resin canal, apically subcucullate and ± papillate outside. Anthers 1.5–2.5 mm long incl. appendage, basally sagittate, but ecaudate; apical appendage narrowly ovate-lanceolate; filament collar 'balusterform' (with enlarged cells basally). Style with two dark resin canals, branches linear with continuous stigmatic area inside; base indurated; stylopodium distinct; style branches linear-oblong, ca. 1–1.5 mm long, apically obtuse with few and very short lateral sweeping-hairs or subglabrous. *Cypselas* elliptic-oblong, glabrous (sometimes

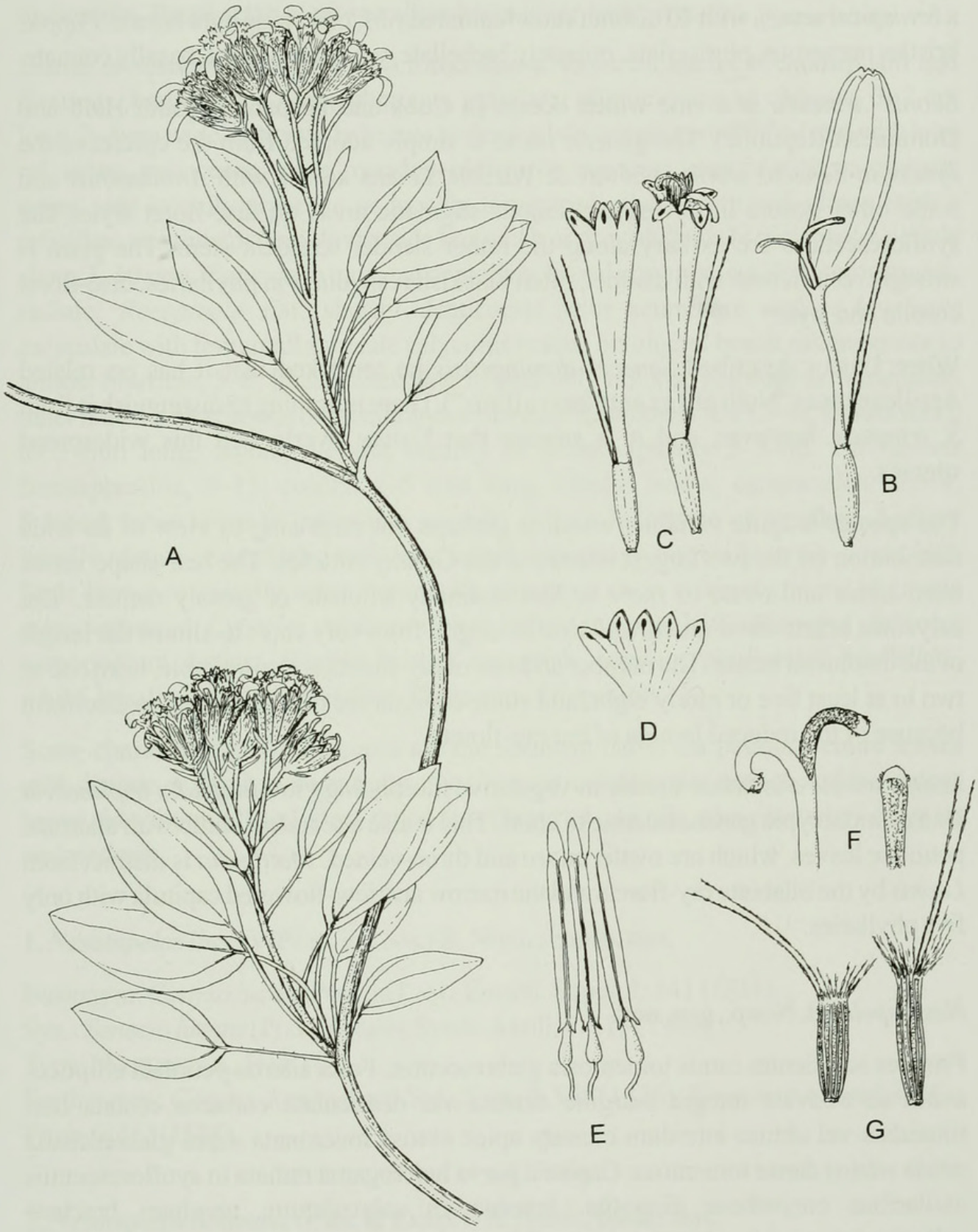

Fig. 1. ***Leonis trineura*** **(GRISEB.) B. NORD.**

A Portion of plant, × 1. B Ray-floret, × 6. C Disc-florets, × 6. D Corolla of disc-floret, laid out, × 6. E Stamens, × 12. F Style branches of disc-floret, × 12. G Cypselas, × 6. (A–F L. B. SMITH & al. 3238 in S; G EKMAN 14504 in S). Del. B. NORDENSTAM.

a few apical setae), with 10 distinct straw-coloured ribs, otherwise light brown. *Pappus* bristles numerous, pluriseriate, minutely barbellate, white, persistent, basally connate.

Leonis trineura is a vine which occurs in Cuba and Hispaniola (both Haiti and Dominican Republic). The generic name is simply adopted from the epithet of the synonym *Senecio leonis* BRITTON & WILSON. *Leonis* agrees with *Antillanthus* and some other genera in having continuous stigmatic areas on disc-floret styles.The synflorescences are axillary along the rather slender scandent stems.The plant is strongly resiniferous with distinct, often blackish resin ducts in phyllaries, disc-floret corolla and style.

When URBAN described *Senecio domingensis* he remarked that it has no related Antillean taxa ("Nulli alii ex antillanis affinis").There is nothing to distinguish it from *S. trineura*, however, and it is strange that URBAN overlooked this widespread species.

The species is quite variable, which is perhaps not surprising in view of its wide distribution on the two largest islands of the Greater Antilles. The leaf-shape varies from entire and ovate to more or less distinctly trilobate or grossly dentate. The calyculus bracts show much variation in length, from very short to almost the length of the involucral bracts. The number and size of ray-florets is also variable, from one or two to at least five or rarely eight, and some capitula are best described as disciform because of the reduced lamina of the ray-florets.

Leonis trineura is rather similar in vegetative morphology to *Mattfeldia triplinervia* URB., a monotypic genus endemic to Haiti. This is also a scandent shrub with alternate petiolate leaves, which are ovate, entire and three-veined. *Mattfeldia* is distinct from *Leonis* by the bilabiate ray-florets and the narrow and few-flowered capitula with only five phyllaries.

***Nesampelos* B. NORD., gen. nov.**

Frutices scandentes ramis tomentosis glabrescentes. Folia alterna petiolata elliptico-ovata ad obovata integra margine dentata vel denticulata coriacea costata basi rotundata vel obtusa interdum cuneata apice obtusa mucronata supra glabrescentia nitida subtus dense tomentosa. Capitula parva heterogama radiata in synflorescentiis axillaribus corymbose disposita. Involucrum calyculatum; involucri bracteae subuniseriatae vel fere biseriatae lineari-lanceolatae vel anguste oblongae glabrae vel pubescentes. Flosculi radii pauci lamina brevi flava vel cremea-alba. Flosculi disci hermaphrodita; corolla superne campanulata quinquelobata, lobis ovatis vel lanceolatis apice papillatis. Antherae basi obtusae vel sagittatae. Styli rami apice subtruncati pilis eferrentibus numerosis, areis stigmaticis separatis. Cypselae striatae-costatae apicem versus sparse setosae aliter glabrae; carpopodium

distinctum. Pappi setae copiosae albae barbellatae basi connatae.

Lianas or scandent shrublets with tomentose glabrescent stems; trichomes soft and flexuous, branching. *Leaves* alternate, petiolate, elliptic-ovate to obovate, 3–7 cm long, 2–4 cm wide, entire with dentate to denticulate margins, midribbed and with lateral veins, coriaceous, base rounded–obtuse or cuneate; apex obtuse mucronate; upper side initially araneose or loosely tomentose, glabrescent and glossy with a reticulate venation pattern, lower side brownish or greyish densely tomentose; petiole short, 3–10 mm. *Capitula* in terminal or axillary lateral corymbs, small, heterogamous, radiate. *Receptacle* flat, shortly denticulate with acuminate scales. *Involucre* calyculate with few small subulate calyculus bracts; involucral bracts subuniseriate to almost biseriate, 5–8, linear-lanceolate to narrowly oblong, glabrous or tomentose; inner bracts with scarious or membranous margins. *Ray-florets* few (2–5), lamina short, to 5 mm long, oblong, yellow, creamy or white, apically 2–3-fid. *Disc-florets* hermaphrodite, 5–13; corolla 4–5 mm long, tubular below, campanulate above, 5-lobed; lobes ovate to lanceolate, apically callous-incrassate or papillate. Anthers basally obtuse or sagittate, ecaudate; apical appendage narrowly ovate–lanceolate. Style branches apically subtruncate with numerous short sweeping-hairs; stigmatic areas separated. *Cypselas* striate or ribbed, ciliate in upper half, otherwise glabrous; carpopodium distinct. *Pappus* bristles numerous–copious, pluriseriate, barbellate, white, basally connate, persistent. Three spp., Hispaniola.

Some characteristics of the genus are the scandent habit, the petiolate entire leaves with dentate or denticulate margins, the shiny reticulate upper surface and tomentose lower side, the small and short-rayed few-flowered capitula, plus characters of styles and anthers.

1. *Nesampelos lucens* (Poir. in Lam.) B. Nord., comb. nov.

Basionym: *Conyza lucens* Poir. in Lam., Encycl. Suppl. 2: 341 (1811).
Syn.: *Senecio lucens* (Poir.) Urban, Symb. Antill. 3: 413 (1903).
Type: Nectoux s.n., Haiti (P).
Further syn.: *Conyza domingensis* Spr., Syst. 3: 508 (1826); *Senecio conyzoides* DC., Prodr. 6: 412 (1838).

2. *Nesampelos hotteana* (Urb. & Ekman) B. Nord., comb. nov.

Basionym: *Senecio hotteanus* Urb. & Ekman, Arkiv f. Bot. 23A(11): 93 (1931).
Type: E. L. Ekman H 7430, Hispaniola, Haiti: Massif de la Hotte, western group, Torbec, Morne Formon, limestone ridge, in thickets, 1400–1500 m, 27.XII.1926 (S holo.!, iso.!)./

Illustr.: Fig. 2.

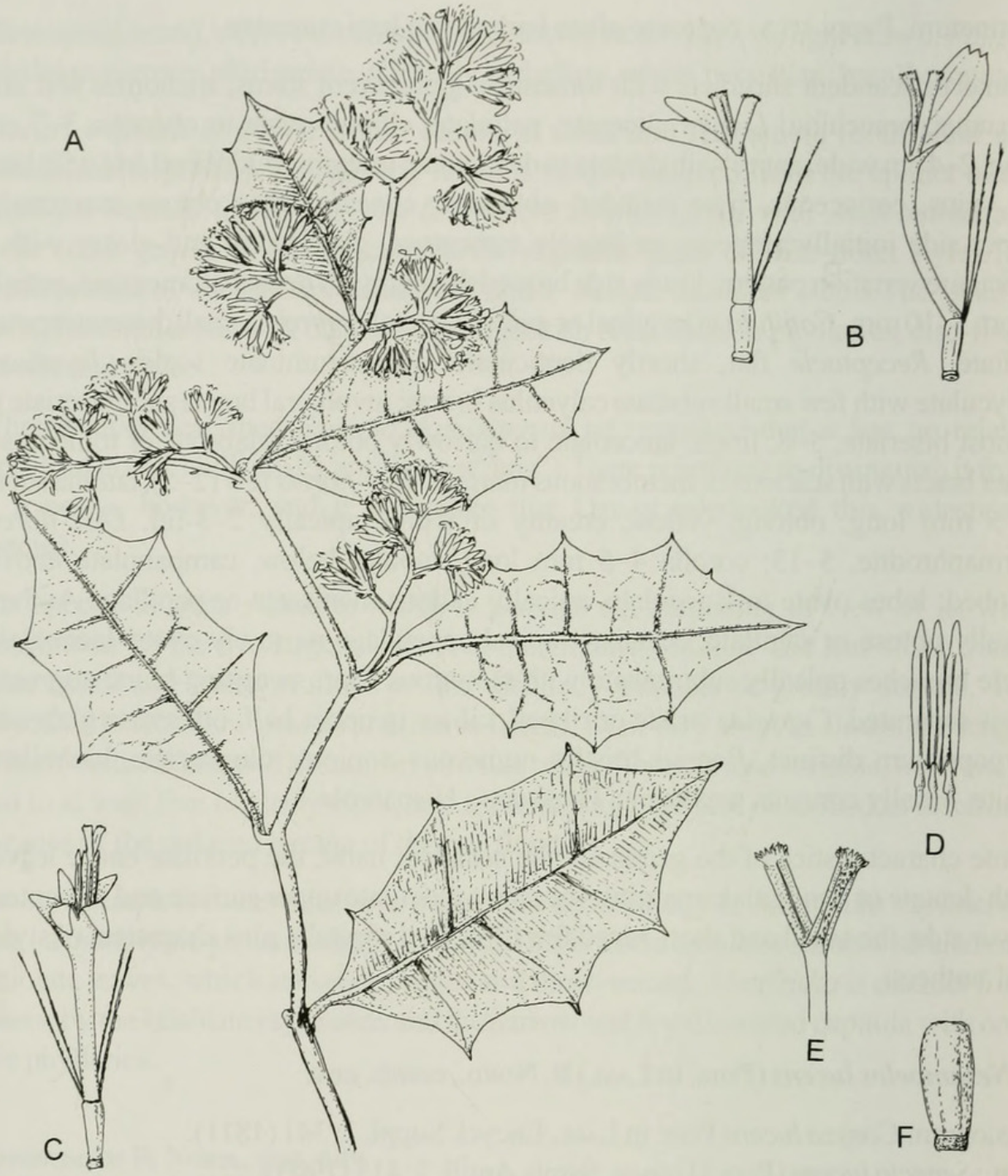

Fig. 2. ***Nesampelos hotteana*** **(URB. & EKMAN) B. NORD.**

A Portion of plant,× 1. B Ray-florets, × 6. C Disc-floret, × 6. D Stamens, × 12. E Style branches of disc-floret, × 12. F Cypsela, × 12. (EKMAN H7430 in S, typus). Del. B. NORDENSTAM.

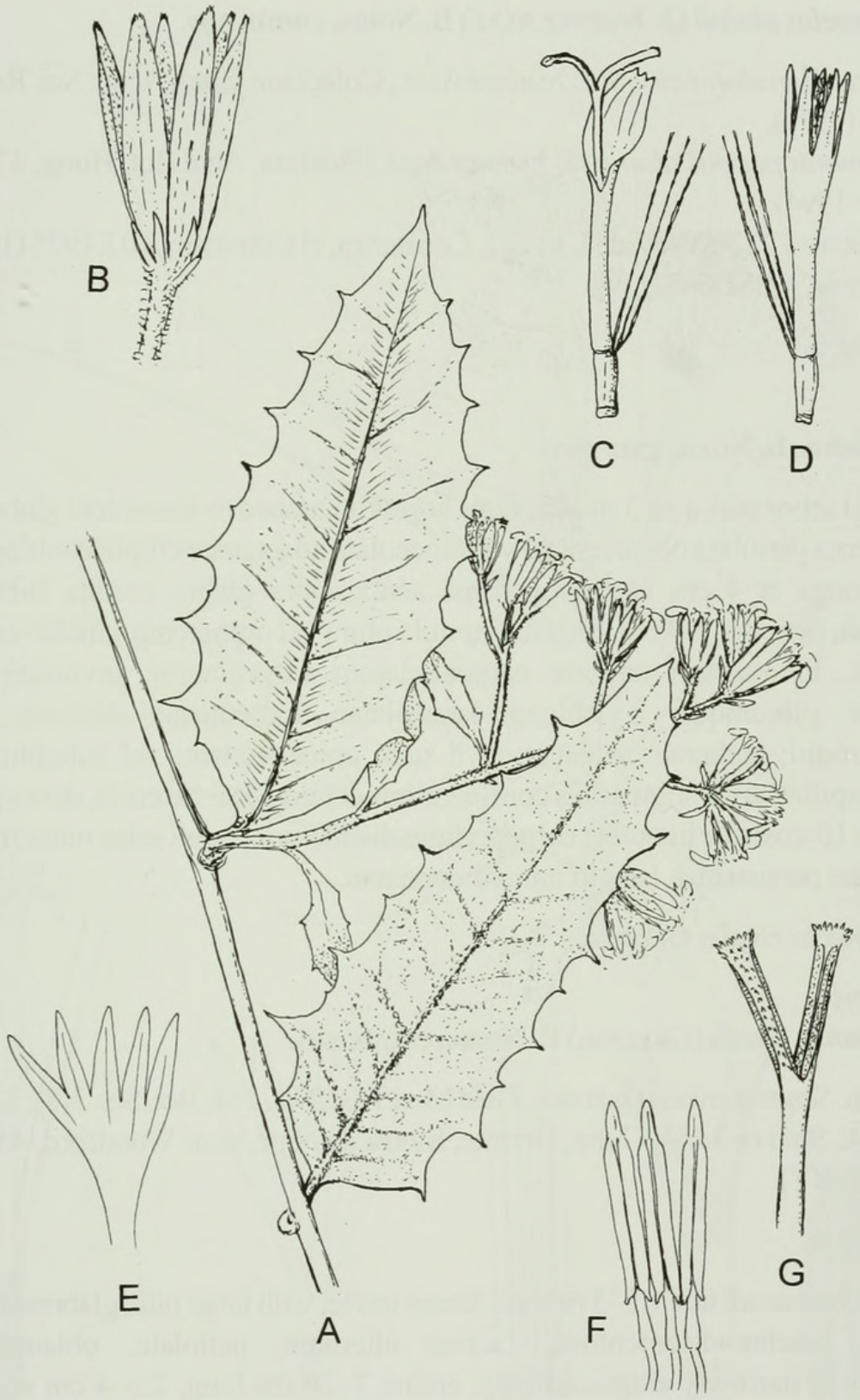

Fig. 3. ***Nesampelos alainii*** **(J. Jimenez Alm.) B. Nord.**

A Portion of plant,× 1. B. Involucre, × 6. C Ray-floret, × 6. D Disc-floret, × 6. E Corolla of disc-floret, laid out, × 6. F Stamens, × 12. G Style branches of disc-floret, × 12. (Liogier 22276 in JBSD, isotypus). Del. B. Nordenstam.

3. *Nesampelos alainii* (J. Jiménez Alm.) B. Nord., comb. nov.

Basionym: *Herodotia alainii* J. Jiménez Alm., Coleccion Conf. Acad. Sci. Rep. Dom. 2(11): 15 (1977).
Syn.: *Ekmaniopappus alainii* (J. Jiménez Alm.) Borhidi, Acta Bot. Hung. 37: 111 ("1992" = 1994).
Type: Liogier 22276, Prov. de La Vega, Constanza, el Convento, 10.I.1975 (Herb. Jiménez holo., JBSD iso.!).

Illustr.: Fig. 3.

***Herreranthus* B. Nord., gen. nov.**

Frutex vel arbor parva ad 3 m alta, rami hornotini araneoso-tomentosi glabrescentes. Folia alterna petiolata oblanceolata vel lanceolata ad anguste elliptico-oblonga usque 20 cm longa et 4 cm lata integerrima acuta supra glabra costata subtus dense tomentosa, petiolus 1–3 cm longus. Capitula plura vel numerosa cymosa–corymbosa discoidea. Involucrum anguste campanulatum calyculatum; involucri bracteae biseriatae plerumque 8 oblongo-lanceolatae tomentosae obtusae. Flosculi hermaphroditi; antherae caudatae; styli rami apice truncati vel subobtusi tantum minute papillati areis stigmaticis confluentibus et lateraliter extensis, dorso papillatis. Cypselae 10-costatae hirsutae; carpopodium distinctum. Pappi setae numerosae albae barbellatae persistentes basi in annulo connatae.

Type: *Senecio rivalis* Greenm.

Monotypic:
***Herreranthus rivalis* (Greenm.) B. Nord., comb. nov.**

Basionym: *Senecio rivalis* Greenm., Field Mus. Hist. Nat. 164, Bot. Ser. 2(8): 326 (1912).
Type: J. A. Shafer 3454, Cuba, Oriente, Sierra de Nipe, near Woodford, 450-550 m, 5.I.1910 (F, NY).

Illustr.: Fig. 4.

Erect shrub or small tree 1.5–3 m high. Stems terete, with large pith, glabrescent; young branches arachnoid-tomentose. *Leaves* alternate, petiolate, oblanceolate or lanceolate to narrowly elliptic-oblong, entire, 7–20 cm long, 2.5–4 cm wide, acute; upper side glabrous, midveined and with fainter lateral veins; lower side densely appressed-tomentose with light grey much-branched curled trichomes, midrib prominent and glabrous; margins somewhat revolute; leaf-blade tapering into a petiole 1–3 cm long. *Capitula* terminal, fairly densely cymose or corymbose, discoid, calyculate. *Involucre* cylindrical to narrowly campanulate, shortly tomentose; involucral bracts 8, biseriate, oblong-lanceolate, 8–10 mm long, (1.5–)2–3 mm wide, shortly tomentose, subcoriaceous with thinner margins, obtuse; calyculus bracts 3–5,

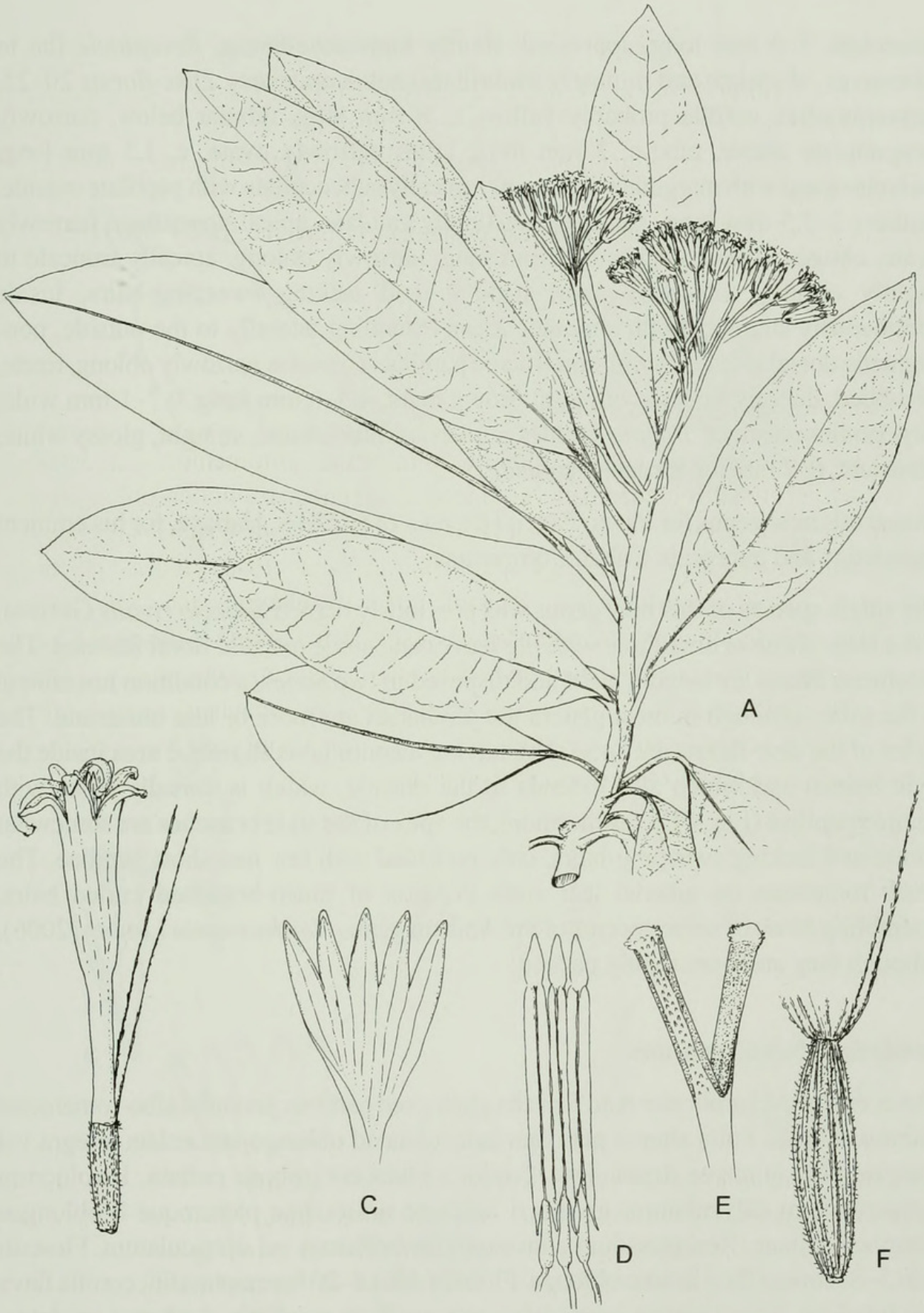

Fig. 4. *Herreranthus rivalis* (GREENM.) B. NORD.

A Flowering branch, × ½. B Floret, × 6. C Corolla, laid out, × 6. D Stamens, × 12. E Style branches, × 12. F Cypsela, ×6. (A EKMAN 4994 in S; B–F ALAIN & ACUÑA 8116 in HAC). Del. B. NORDENSTAM.

lanceolate, 1–3 mm long, appressed, shortly tomentose-lanate. *Receptacle* flat to subconvex, alveolate and minutely fimbrillate (not denticulate). *Disc-florets* 20–25, hermaphrodite; corolla probably yellow, c. 8 mm long, tubular below, narrowly campanulate above, tube c. 3 mm long, lobes narrowly ovate, c. 1.5 mm long, midveined and with marginal veins, acute, apically subcucullate with papillate outside. Anthers 3–3.5 mm long, shortly to distinctly caudate, apical appendage narrowly ovate, obtuse. Style branches c. 2 mm long, narrowly oblong, apically truncate to slightly obtuse, with very short papillae and lacking sweeping-hairs, inside continuously stigmatic with stigmatic areas extending laterally to the outside, non-stigmatic dorsal side beset with small acute papillae. *Cypselas* narrowly oblong, terete, 10-ribbed, densely hirsute with light brown hairs, 4.5–6 mm long, 0.7–1 mm wide; carpopodium distinct. *Pappus* bristles numerous, pluriseriate, straight, glossy white, persistent, 6–7 mm long, basally connate.

I name this new genus for PEDRO PABLO HERRERA of CITMA, Habana, for his eminent knowledge and interest in Cuban Compositae.

The single species of this new genus was previously named *Senecio rivalis* GREENM. It is a large shrub or small tree with big leaves and some unusual floral features. The involucral bracts are usually eight and disposed in two series, a condition not unique in the tribe, although in most genera the phyllaries are more or less uniseriate. The styles of the disc-florets are special by having a continuous stigmatic area inside the style branch and which also extends to the outside, which is dorsally beset with pointed papillae (Fig. 4 E). Furthermore, the apex of the style branches are somewhat obtuse and lacking sweeping-hairs, only provided with few and short papillae. The dense tomentum on adaxial leaf sides consists of much-branched curled hairs, resembling those of some species of the Andean genus *Nordenstamia* LUNDIN (2006), although they are more tightly packed.

***Lundinia* B. NORD., gen. nov.**

Frutex erectus vel arbor parva ad 5 m alta glabra sed partibus juvenilis albo-tomentosis glabrescentibus. Folia alterna petiolata lanceolata ad oblongo-lanceolata integra vel margine plus minusve denticulata. Capitula plura corymbosa radiata. Involucrum campanulatum calyculatum; involucri bracteae uniseriatae plerumque 8 oblongae margine hyalinae. Receptaculum convexum fimbrillatum vel denticulatum. Flosculi radii 5–8 feminei flavi lamina oblonga. Flosculi disci 8–20 hermaphroditi; corolla flava basi tubulosa, lobis anguste ovatis apice subcucullatis papillatis. Antherae caudatae. Styli rami oblongi areis stigmaticis discretis, apice truncato vel leviter obtuso pilis lateralibus brevibus interdum penicillo centrali ornato. Cypselae elliptico-oblongae breviter villosae 10-costatae vel -nervatae. Pappi setae numerosae barbellatae albae corolla breviores.

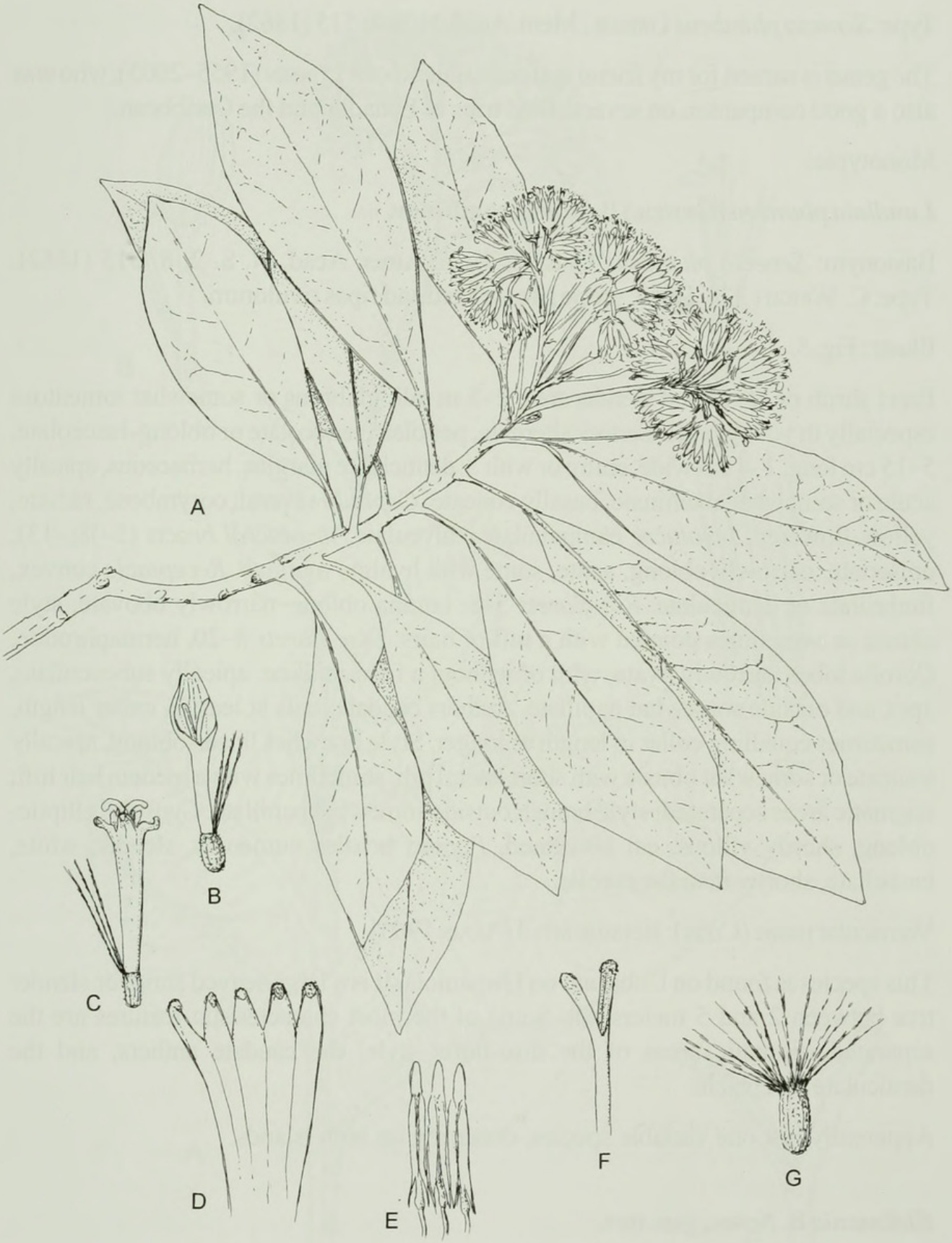

Fig. 5. *Lundinia plumbea* (Griseb.) B. Nord.

A Flowering branch, ×1. B Ray-floret, ×6. C Disc-floret, ×6. D Corolla of disc-floret, ×12. E Stamens, ×12. F Style branches of disc-floret, ×12. G Cypsela, ×12 (Nordenstam & Lundin 317 in S). Del. B. Nordenstam.

Type: *Senecio plumbeus* GRISEB., Mem. Acad. N. S. 8: 515 (1862).

The genus is named for my friend and colleague ROGER LUNDIN (1955–2005), who was also a good companion on several field trips in Ecuador and the Caribbean.

Monotypic:

***Lundinia plumbea* (GRISEB.) B. NORD., comb. nov.**

Basionym: *Senecio plumbeus* GRISEB., Mem. Amer. Acad. N. S. 2, 8: 515 (1862). Type: C. WRIGHT 328, Cuba, prope Monte Verde ad ripas rivulorum.

Illustr.: Fig. 5.

Erect shrub or small and slender tree, 2–5 m tall, glabrous or somewhat tomentose especially in young parts. *Leaves* alternate, petiolate, lanceolate or oblong-lanceolate, 5–15 cm long, 1–4 cm wide, entire or with ± denticulate margins, herbaceous, apically acute or somewhat acuminate, basally cuneate. *Capitula* several, corymbose, radiate, yellow-flowered. *Involucre* campanulate, calyculate; *involucral bracts* (5–)8(–13), uniseriate, narrowly oblong, acute, some with hyaline margins. *Receptacle* convex, fimbrillate or denticulate. *Ray-florets* 5–8; lamina oblong–narrowly obovate; style obtuse or sometimes pointed with a tuft of hairs. *Disc-florets* 8–20, hermaphrodite. Corolla lobes narrowly ovate, with or without a faint midline, apically subcucullate, apex and outside somewhat papillate. Anthers caudate; tails at least ½ collar length, sometimes equalling collar in length or longer. Style branches linear-oblong, apically truncate or somewhat obtuse with short lateral pili, sometimes with a median hair tuft; stigmatic areas separated; style branch outside somewhat papillate. *Cypselas* elliptic-oblong, shortly villous, ca. 10-veined. *Pappus* bristles numerous, slender, white, barbellate, shorter than the corolla.

Vernacular name (Cuba): Retama árbol (ALAIN 1963).

This species is found on Cuba and on Hispaniola. It is a large-leaved shrub or slender tree between 2 and 5 meters tall. Some of the most characteristic features are the separated stigmatic areas of the disc-floret style, the caudate anthers, and the denticulate receptacle.

Apparently just one variable species, occurring on both islands.

***Elekmania* B. NORD., gen. nov.**

Frutices vel suffrutices plerumque resiniferi. Folia alterna petiolata integra vel margine dentato-lobulata subtus tomentosa supra glabra vel glabrescentia.Capitula plura vel numerosa in synflorescentiam terminalem disposita radiata vel interdum discoidea. Involucri bracteae subuniseriatae.Flosculi radii pauci feminei flavi. Flosculi disci numerosi hermaphroditi; antherae ecaudatae sed plerumque sagittatae. Styli rami

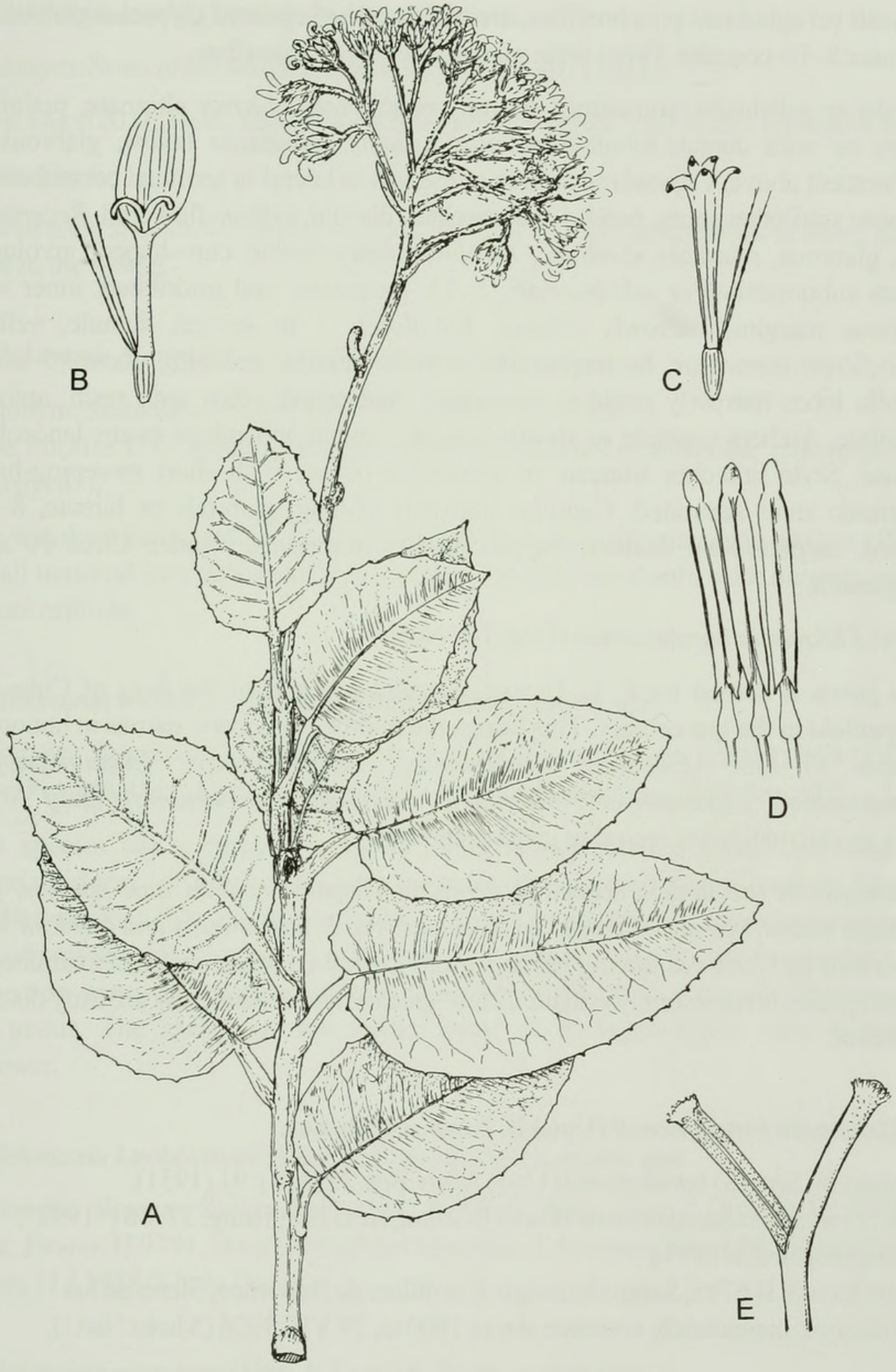

Fig. 6. *Elekmania buchii* (URB.) B. NORD.

Flowering branch, ×½. (EKMAN H1395 in S). Del. B. NORDENSTAM.

truncati vel subobtusi pilis brevibus, areis stigmaticis separatis. Cypselae glabrae vel hirsutae 8–10-costatae. Pappi setae numerosae barbellatae albae.

Shrubs or subshrubs, sometimes strongly resiniferous. *Leaves* alternate, petiolate, entire or with dentate-lobulate margins, usually tomentose below, glabrous or glabrescent above. *Capitula* several to numerous in lateral or terminal corymbose or cymose synflorescences, radiate or sometimes discoid, yellow-flowered. *Receptacle* flat, glabrous, minutely alveolate. *Involucre* campanulate–cup-shaped; involucral bracts subuniseriate or sub-biseriate, 5–13, tomentose and midribbed, inner with scarious margins, narrowly oblong. *Ray-florets* 1 to several, female, yellow. *Disc-florets* numerous, hermaphrodite; corolla tubular, widening above, 5-lobed; corolla lobes narrowly ovate to lanceolate, midveined, often with resin, apically papillate. Anthers sagittate to shortly caudate; apical appendage ovate–lanceolate, obtuse. Style branches truncate or somewhat obtuse with short sweeping-hairs; stigmatic areas separated. *Cypselas* narrowly oblong, glabrous or hirsute, 8–10-ribbed; carpopodium distinct. *Pappus* bristles numerous, slender. Circa 10 spp., Hispaniola.

Type: *Elekmania barahonensis* (URB.) B. NORD.

The genus is named for E. L. EKMAN, eminent explorer of the flora of Cuba and Hispaniola in the last century. This brings the number of generic names in honour of EKMAN to nine (*Ekmania*, *Ekmanianthe*, *Ekmaniocharis*, *Ekmaniopappus*, *Ekmanochloa*, *Ekmanomyces*, *Elekmania*, *Manekia*, *Myrtekmania*). Only ADOLF ENGLER can match this record in generic eponymy.

Elekmania is the largest senecioid genus in Hispaniola, with nine species, plus perhaps one or two undescribed. Two species, viz. *S. samanensis* and *fuertesii* were described by URBAN as having homogamous capitula, but the material examined of these species is consistently radiate. A few species, like *E. haitiensis* are truly discoid, however.

1. *Elekmania barahonensis* (URB.) B. NORD., comb. nov.

Basionym: *Senecio barahonensis* URB., Arkiv Bot. 23A(11): 91 (1931).
Syn.: *Pentacalia barahonensis* (URB.) BORHIDI, Acta Bot, Hung. 37: 88 ("1992", prob. published in 1994).
Type: EKMAN H 6795, Santo Domingo: Cordillera de Bahoruco, Sierra de los Comisarios, in pinelands, common above 1800 m, 29.VIII.1926 (S holo.! iso.!).

2. *Elekmania buchii* (URB.) B. NORD., comb. nov.

Basionym: *Senecio buchii* URB., Fedde Repert. 17: 407 (1921).

Type: BUCH 2031, Haiti, Morne Tranchant, in sylva aprica, 1800 m alt. (B destroyed?).

Illustr.: Fig. 6.

This striking species with a characteristic habit is strongly resiniferous in many parts, even in the florets.

3. *Elekmania fuertesii* (URB.) B. NORD., comb. nov.

Basionym: *Senecio fuertesii* URB., Symb. Antill. 7: 558 (1913).
Type: FUERTES 1743, Santo Domingo: Prov. De la Vega in Loma Rosilla, 2500 m (B destroyed?).

This was described as having homogamous capitula (also maintained in LIOGIER 1996), but all material later collected (in Cordillera Central) are shrubs with heterogamous radiate capitula.

4. *Elekmania haitiensis* (KRUG & URB.) B. NORD., comb. nov.

Basionym: *Senecio haitiensis* KRUG & URB., in URBAN, Symb. Antill 1: 469 (1900).
Type: PICARDA 1065, Haiti, prope Port-au-Prince in alpestribus (B destroyed?).

This species has a distinctive habit, being a suffrutescent liana, described as "Spreizklimmer" or "trepadora", with linear leaves and small discoid capitula. URBAN (1900) remarked: "Species distinctissima, nulli alii arctiis affinis". This may be true, but at least provisionally the species is grouped here with the majority of Hispaniolan taxa in the new genus *Elekmania*. In floral morphology the species agrees with others in this genus. The leaves are not unlike those of *E. kuekenthalii*, only distinctly narrower.

5. *Elekmania kuekenthalii* (URB. & EKM.) B. NORD., comb. nov.

Basionym: *Senecio kuekenthalii* URB. & EKM., Arkiv Bot. 23A(11): 92 (1931).
Type: EKMAN H 9491, Haiti: Massif des Matheux, l'Arcahaie, Caye Nicolas, hillside, 600 m, 11.I.1928 (S holo.! iso.!).

6. *Elekmania marciana* (URB. & EKM.) B. NORD., comb. nov.

Basionym: *Senecio marcianus* URB. & EKM., Arkiv Bot. 23A(11): 93.
Type: EKMAN H 8078, Haiti, Massif de Matheux, St.-Marc, southern slope of Morne

Fig 7. *Zemisia discolor* (Sw.) B. Nord.

From Curtis's Bot. Mag. Plate 2647 (1826, as *Cineraria discolor*).

Haut de St.-Marc, steep slope of Morne Long, c. 1000 m, 8.V.1927 (S holotype!).

The type specimen is poor and "longe defloratus" (citation from EKMAN's handwritten label which also says "*Senecio* n. sp."). However it clearly belongs in the genus and may be closest to *E. stenodon*.

7. *Elekmania picardae* (KRUG & URB.) B. NORD., comb. nov.

Basionym: *Senecio picardae* KRUG & URB., Symb. Antill. 1: 469 (1900). Type: PICARDA 632, Haiti, in alpestribus prope Furcy (B destroyed?).

8. *Elekmania samanensis* (URB.) B. NORD., comb. nov.

Basionym: *Senecio samanensis* URB., Fedde Repert. 18: 374 (1922). Type: ABBOTT 1301, Santo Domingo, in peninsula Samaná prope Lajana, in insula parva San Gabriel (B destroyed?).

EKMAN made three good collections in the area of the type locality in 1930. His specimens have radiate capitula, and URBAN's statement that the capitula are homogamous is no doubt a mistake. A neotype may have to be selected from EKMAN's collections.

This species shares the generic characters of resin canals in corolla, separated stigmatic areas of disc-floret styles, and the habit is similar to that of *E. stenodon*. The cypselas are sparsely setose apically, like in most members of the genus.

9. *Elekmania stenodon* (URB.) B. NORD., comb. nov.

Basionym: *Senecio stenodon* URB., Arkiv Bot. 17(7): 65 (1921). Type: EKMAN H 184 a, Haiti, Morne de la Hotte, in declivibus sept.-orient. in montibus sylvaticis cr. 800 m alt., 11.VI.1917 (S holotype!).

URBAN also described a variety *deglabratus*, which is a single specimen (Ekman H 1846 in S, holotype!) with abnormal leaves, deformed in shape and lacking pubescence on the lower side. This is regarded as an aberration not worthy of taxonomic distinction.

***Zemisia* B. NORD., gen. nov.**

Frutex erectus tomentosus. Folia alterna petiolata anguste ovata ad lanceolata margine denticulata vel subintegra supra glabrescentia subtus dense albo-tomentosa. Capitula numerosa corymbosa radiata. Involucrum campanulatum calyculatum; bracteae uniseriatae. Flosculi radii plerumque 5 feminei albi. Flosculi disci

hermaphroditi; corolla cremea quinquelobata, lobis linea mediana instructis apice incrassatis. Antherae caudatae flavae. Styli rami subtruncati pilis apicalibus paucis brevibus, areis stimaticis separatis. Cypsela 8-nervia papillato-villosa; carpopodium distinctum. Pappi setae numerosae albae barbellatae persistentes.

Erect, diffuse or divaricate shrub 1–4 m high, tomentose throughout, but leaves glabrescent adaxially. *Leaves* alternate, petiolate, narrowly ovate to lanceolate, 5–13 cm long, 1.5–4 cm wide, subcoriaceous, with denticulate to subentire margins, midribbed and pinnately veined, apically acute to subobtuse, base rounded or subcordate; upper side becoming glabrous and shiny, lower side persistently densely white-tomentose. *Capitula* numerous in terminal corymbose synflorescence, radiate. *Involucre* cupshaped-campanulate, ca. 0.5 cm wide and high, calyculate; involucral bracts uniseriate, 8–13. *Receptacle* glabrous, minutely alveolate. *Ray-florets* 3–6 (often 5); lamina oblong, 2–3 mm long, white. *Disc-florets* hermaphroditic, ca. 10–15; corolla cream or yellowish; lobes distinctly midlined, apically thickened. Anthers distinctly caudate, yellow. Style creamy white; style branches subtruncate with few short pili abaxially; stigmatic areas separated. *Cypsela* oblong, 2–2.5 mm long, 8-nerved, shortly villous with papilliform white obtuse mucilaginous hairs; carpopodium distinct. *Pappus* bristles numerous, ca. biseriate, 3–4 mm long, white, barbellate, persistent. One sp., Jamaica.

According to Adams (1972) the flowerheads are fragrant.

***Zemisia discolor* (Sw.) B. Nord., comb. nov.**

Basionym: *Cineraria discolor* Swartz, Prodr. Veg. Ind. Occ.: 114 (1788). Syn.: *Senecio discolor* (Sw.) DC., Prodr. 6: 412 (1838); *Pentacalia discolor* (Sw.) H. Rob., J. Arnold Arbor. 63(3): 311 (1982).

Lectotype (here designated): Swartz, Jamaica, "*C. discolor*" [Swartz scripsit] (S).

Illustr.: Curtis's Bot.Mag. t. 2647 (1826); Fig. 7.

Eponymy: The generic name is derived from 'zemis', the images made by the Taino people in the Greater Antilles, as representations of one of their gods, named 'Zemi'.

The affinities of this distinctive taxon are still unclear. Adams (1972) pointed to *Senecio almironcillo* (now in *Antillanthus*, cf. above) as the closest relative, but more probably some other genera are closer, such as *Mattfeldia*, *Nesampelos* and *Ekmaniopappus*. Two more Jamaican species were referred to *Pentacalia* by H. Robinson in Proctor (1982), viz. *P. inornata* H. Rob. and *P. subdiscolor* H. Rob. If they belong in *Zemisia* I cannot tell at this moment, only that they are not well placed in *Pentacalia*. These matters will be further investigated and discussed in forthcoming papers.

Acknowledgement

Many thanks to Mr. JOHN PRUSKI and Dr. THOMAS A. ZANONI for providing me with references and copies of protologues of a number of species.

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