

STUDIES IN THE EUPATORIEAE (ASTERACEAE). CC.

ADDITIONS TO THE GENUS *CHROMOLAENA*.

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The genus *Chromolaena* was redelimited approximately ten years ago to include 129 species (King & Robinson, 1970). Since that time there have been comparatively few alterations. One species, *C. lundellii* from Guatemala, has been described as new (King & Robinson, 1978), *C. plumeri* (Urb. & Ekman) K. & R. of Haiti has been transferred to the genus *Osmiopsis* (King & Robinson, 1975a), *C. punctata* (Lam.) K. & R. of the West Indies has proven to be based on a nom. illeg. and should be treated as *C. mononeura* (Urb.) K. & R., and a number of new combinations have been made for species named in *Eupatorium*, *E. misellum* McVaugh from Mexico (King & Robinson, 1972), *E. heterosquamum* Urb. & Ekman and *E. sinuatum* Lam. of the West Indies and *E. mendezii* DC. and *E. stillingiaefolium* DC. of Mexico (King & Robinson, 1975b), *E. mucronatum* Gardn. of Brasil and *E. quercetorum* L. Wms. of Mexico and Guatemala (King & Robinson, 1977), and *E. voglii* B.L.Robins. of Venezuela (Huber, 1977). The present paper provides 13 additional new combinations and 9 additional new species descriptions so that the species can be included in the generic revision of the tribe.

The new combinations and new species are as follows:

CHROMOLAENA ANACHORETICA (B.L.Robins.) R.M.King & H.Robinson,
comb. nov. *Eupatorium anachoreticum* B.L.Robins., Contr.
Gray Herb. n.s. 104: 9. 1934. Peru.

CHROMOLAENA ASPERRIMA (Sch.Bip. ex Baker) R.M.King & H.Robinson,
comb. nov. *Eupatorium asperrimum* Sch.Bip. ex Baker, in
Martius, Fl. Bras. 6 (2): 292. 1876. Including *Eupatorium
meyeri* Pilg., Bot. Jahrb. 30: 202. 1901. Brasil.

CHROMOLAENA BRUNNEOLA (Baker) R.M.King & H.Robinson, comb. nov.
Eupatorium brunneolum Baker, in Martius, Fl. Bras. 6 (2):
288. 1876. Brasil.

CHROMOLAENA CRYPTANTHA (Sch.Bip. ex Baker) R.M.King & H.Robinson,
comb. nov. *Eupatorium cryptanthum* Sch.Bip. ex Baker, in
Martius, 6 (2): 296. 1876. Brasil.

CHROMOLAENA CYLINDROCEPHALA (Sch.Bip. ex Baker) R.M.King &
H.Robinson, comb. nov. *Eupatorium cylindrocephalum* Sch.Bip.

ex Baker, in Martius, Fl. Bras. 6 (2): 283. 1876. Brasil.

CHROMOLAENA DIAPHANOPHLEBIA (B.L.Robins.) R.M.King & H.Robinson, comb. nov. *Eupatorium diaphanophlebium* B.L.Robins., Proc. Amer. Acad. 54: 242. 1918. Colombia.

CHROMOLAENA GENTIANOIDES (B.L.Robins.) R.M.King & H.Robinson, comb. nov. *Brickellia gentianoides* B.L.Robins., Contr. Gray Herb. n.s. 68: 42. 1923. Brasil.

CHROMOLANEA HOOKERIANA (Griseb.) R.M.King & H.Robinson, comb. nov. *Eupatorium hookerianum* Griseb., Goett. Abh. 19: 118. 1874. Argentina, Rio de Janeiro, Brasil.

CHROMOLAENA MINASGERAENSIS (Hieron.) R.M.King & H.Robinson, comb. nov. *Eupatorium minasgeraesense* Hieron., Bot. Jahrb. 22: 749. 1897. Brasil.

CHROMOLAENA PEDUNCULOSA (Hook. & Arn.) R.M.King & H.Robinson, comb. nov. *Eupatorium pedunculosum* Hook. & Arn., Comp. Bot. Mag. 1: 240. 1835. Including *Eupatorium foliatum* Hieron. Brasil.

CHROMOLAENA PICTA (Gardn.) R.M.King & H.Robinson, comb. nov. *Eupatorium pictum* Gardn., Lond. Journ. Bot. 5: 443. 1847. Excluding the Berlin isotype. Brasil.

CHROMOLAENA PUNGENS (Gardn.) R.M.King & H.Robinson, comb. nov. *Eupatorium pungens* Gardn., Lond. Journ. Bot. 5: 474. 1846. Brasil.

CHROMOLAENA VINDEX (DC.) R.M.King & H.Robinson, comb. nov. *Eupatorium vindex* DC., Prodr. 5: 160. 1836. Brasil.

CHROMOLAENA ALVIMII R.M.King & H.Robinson, sp. nov.

Plantae herbaceae erectae ca. 0.5 m altae inferne non ramosae. Caules fuscescentes teretes striati hispido-puberuli. Folia opposita, petiolis subdistinctis brevibus ca. 2-4 mm longis; laminae anguste ovatae vel lanceolatae ad 3.4 cm longae et 1.5 cm latae superiore decrescentes et remotiores base acutae vel vix acuminatae margine plerumque 3-4-seriatae vel dentatae apice anguste obtusae vel breviter acutae supra scabridulae subtus immerse glandulo-punctatae et in nervis et nervulis minute hispidulo-puberulae fere ad basem trinervatae. Inflorescentiae laxae corymboso-paniculatae plerumque opposito-ramosae, ramis ascendentibus, bracteis ramulorum minutis, ramulis ultimis plerumque 1-4 cm longis minute hispidulo-puberulis. Capitula anguste campanulata ca. 10 mm alta et 5 mm lata; squamae involucri purpureae ca. 30 imbricatae ca. 5-seriatae anguste vel late oblongae 1.5-6.0 mm longae et 1-2 mm latae apice late obtusae subherbaceae

reflexae minute denticulatae extus inferne leniter late 4-costatae glabrae superne multo glandulo-punctatae et perminute puberulae. Flores ca. 30 in capitulo; corollae purpureae anguste infundibulares 4.5-5.0 mm longae extus in faucibus et lobis breviter glanduliferae; tubis ca. 1 mm longis, faucibus ca. 3 mm longis in ductis solitariis atro-resiniferis, lobis ovato-triangularibus ca. 1 mm longis et 0.7 mm latis intus papillois; filamenta in parte superiore ca. 0.3 mm longa; thecae ca. 1.8 mm longae; appendices antherarum oblongo-ovatae ca. 0.35 mm longae et 0.23 mm latae. Achaenia prismatica ca. 3.5 mm longa in costis inferne et ad apicem setulifera ad medio laeves; setae pappi ca. 35 plerumque 4.5-5.0 mm longae superne leniter tenuiores, cellulis apicalibus acutis. Grana pollinis abnormalia in diametro ca. 30 μ m.

TYPE: BRASIL: Bahia: Middle N.E. slopes of the Pico das Almas ca. 25 km W.N.W of the Vila do Rio de Contas. ca. 41°57'W, 13°33'S. Alt. ca. 1500-1600 m. This plant growing in damp grassland at base of massive sandstone rock outcrops. Herb to ca. 50 cm. Leaves dark glossy green above, pale beneath. Phyllaries dark green, tinged reddish-purple with dark recurved tips. Florets bright reddish-purple. 18 March 1977. *R.M. Harley, S.J. Mayo, R.M. Storr, T.S. Santos & R.S. Pinheiro 19617* (Holotype, CEPEC; isotype, US). PARATYPE: BRASIL: Bahia: Município de Rio de Contas. Pico das Almas a 18 km NW de Rio de Contas. Elev. 1600-1850 m. July 24, 1979. *R.M. King, S.A. Mori, T.S. Santos & J.L. Hage 8144* (CEPEC, US).

The new species is one of those with reflexed tips on the involucre bracts. It differs from the widely distributed *C. ivaeifolia* (L.) K. & R. by the laxer inflorescence with purple, campanulate involucre and broader more dentate leaves. The related *C. squarrosoramosa* (Hieron.) K. & R. also differs by a denser inflorescence and more cylindrical heads as well as the more spreading branches and the broader leaves. The more southern *C. squarrosulosa* (H. & A.) K. & R. is a more tomentellous plant with densely corymbose terminal inflorescences.

CHROMOLAENA BARROSOAE R.M.King & H.Robinson, sp. nov.

Plantae herbaceae erectae ad 30 cm altae inferne non vel paucae ramosae. Caules flavo-virides teretes striati minute puberuli. Folia inferne opposita vel subopposita superne alterna sessilia vel subsessilia; laminae lanceolatae 5-20 mm longae et 2-3 mm latae inferiores minutae superiores leniter minores base acutae margine saepe in partibus latissimis uni-serrulatae anguste revolutae apice acutae supra minute scabridulae subtus dense glandulo-punctatae in nervis et nervulis minute puberulae ad basem trinervatae, nervis secundariis tenuibus valde ascendentibus. Inflorescentiae terminales laxae latae cymosae alterne ramosae, ramis ultimis 5-38 mm longis minute puberulis. Capitula campanulata 8-12 mm alta et 7-9 mm lata; squamae involucri in parte superiore violaceae ca. 40 imbricatae ca. 4-seriatae latae

oblongae 1.5-5.0 mm longae et 1.0-1.5 mm latae apice erectae appressae breviter acutae interdum apiculatae extus late 4-costatae superne multo glandulo-punctatae et perminute puberulae margine superne minute puberulo-fimbriatae; receptacula sparse paleacea, paleis linearibus ad 7 mm longis. Flores ca. 40 in capitulo; corollae lavandulo-purpureae anguste infundibulares ca. 5.0-5.3 mm longae in tubis et faucibus subglabris, tubis ca. 1 mm longis in ductis binis rubro-resiniferis; faucibus ca. 3.5 mm longis; lobis ovato-triangularibus ca. 0.9 mm longis et 0.6 mm latis intus papillosis extus et in faucibus superioribus multo glandulo-punctatis et raro unisetiferis; filamenta in parte superiore ca. 0.3 mm longa; thecae ca. 1.7 mm longae; appendices antherarum oblongae ca. 0.35 mm longae et 0.23 mm latae. Achaenia prismatica 3.0-3.5 mm longa base breviter angustiora in costis et superne setulifera; setae pappi ca. 30 plerumque 4.5-5.0 mm longae apice leniter latiores et densius obtuse scabridulae. Grana pollinis in diametro ca. 25 μ m.

TYPE: BRASIL: Minas Gerais: Serra do Espinhaço, ca. 12 km N.E. of Diamantina, road to Mendanha. Elev. 1300 m. Wet sand. Sandy cerrado and thickets in sandy pockets in outcrops. Erect herb to ca. 30 cm tall. Heads lavender-purple. 28 Jan. 1969. *H.S. Irwin, R. Reis dos Santos, R. Souza & S.F. da Fonseca 22797* (Holotype, RB; isotypes, NY, UB, US).

Chromolaena barrosoae has scattered paleae on the receptacle, a character seen in a few other members of the genus, including the type. The paleaceous species have no other notable features in common, and they are obviously not a natural group. The new species is otherwise rather distinctive in the alternate upper leaves, the lax few-headed terminal inflorescence, and the comparatively few series of bracts in the involucre. Closest relationship may be to two species with similar involucre which lack paleae, *C. adenolepis* (Sch.Bip. ex Baker) K. & R. which has broader, mostly opposite leaves and a less lax more scapose inflorescence, and *C. xylorrhiza* (Sch.Bip. ex Baker) K. & R. which is more pilose with broader leaves and a denser inflorescence.

The species is named for Dr. Graziela Barroso who forwarded material noted as a possible new species.

CHROMOLAENA BREEDLOVEI R.M.King & H.Robinson

Plantae fruticosae ad 0.7 m altae mediocriter ramosae. Caules atrescentes in parte rubescentes teretes leniter multi-striati tenuiter pilosi. Folia opposita, petiolis 5-10 mm longis laxe tomentosis; laminae ovatae 2-8 cm longae et 1-3 cm latae base rotundatae margine in partibus latioribus serrulatae apice anguste acutae vix acuminatae supra sparse pilosae subtus dense glandulo-punctatae et plerumque in nervis et nervulis pilosae. Inflorescentiae in ramis candelabriformibus terminales in ramulis dense cymosae, ramulis ultimis 2-8 mm longis hirsutae. Capitula cylindrica ca. 16 mm alta et 4 mm lata; squamae involucri ca. 27 imbricatae 5-6-seriatae lanceolatae 3-12 mm longae et 1-2 mm

latae apice laxe erectae anguste acutae extus glabrae 4-6-costatae superne rubro-tinctae margine integrae saepe undulatae. Flores ca. 19 in capitulo; corollae lavandulae 6-7 mm longae anguste infundibulares glabrae vel subglabrae, tubis ca. 2.5 mm longis, faucibus ca. 4 mm longis, lobis triangularibus ca. 1 mm longis et 0.7 mm latis intus dense breviter papillois extus subapice interdum unisetiferis; filamenta in parte superiore ca. 0.4 mm longa; thecae ca. 2.3 mm longae; appendices antherarum oblongae ca. 0.5 mm longae et 0.28 mm latae. Achaenia 6.5-7.2 mm longa anguste fusiformia 5-costata in costis dense setifera; setae pappi ca. 27 ca. 6.5 mm longae apice non latiores. Grana pollinis multiformia, typis A in diametro ca. 25 μ m.

TYPE: MEXICO: Chiapas: Municipio of Carranza. 2 km SW of Aguacatenango, slope with *Quercus* along road to Pinola. Shrub 2 feet tall; flowers blue. Dec. 18, 1964. *D.E.Breedlove 7936* (Holotype, NY).

The species is related to the widely distributed *C. odorata* (L.) K. & R. from which it differs by the extremely pointed lanceolate involucral bracts. In the same general area of Central America there is a variant of *C. odorata* having enlarged herbaceous basal bracts on the involucre. The variant and the new species together suggest a small center of diversity in Central America of the generally widely distributed *C. odorata* group.

CHROMOLAENA MORII R.M.King & H.Robinson, sp. nov.

Plantae fruticosae ad 2.5 m altae mediocriter ramosae. Caules brunnescentes teretes striati puberuli inferne glabrescentes. Folia opposita, petiolis distinctis 3-8 mm longis; laminae ovatae plerumque 2-4 cm longae et 1.0-2.5 cm latae base rotundatae vel subtruncatae margine saepe 5-7 serrulatae vel obtuse serratae apice argute acutae vix acuminatae supra glabrae nitidae subbullatae subtus dense immerse glandulo-punctatae in nervis prominentes et puberulae vel pilosulae interdum in areolis puberulae fere ad basem trinervatae. Inflorescentiae in ramis candelabrifformibus terminales in ramulis dense corymboso-cymosae, bracteis ramulorum minutis in laminis 5-8 mm longis, ramulis ultimis 2-10 mm longis puberulis vel hirtellis et glandulo-punctatis. Capitula cylindrica 10-12 mm longa et 2.5-3.0 mm lata: squamae involucri ca. 35 imbricatae 6-7-seriatae oblongo-ovatae vel anguste oblongae 1.5-8.0 mm longae et 1-2 mm latae apice rotundatae vel subtruncatae appressae dense puberulo-fimbriatae extus 4-costatae inferne glabrae subapice multo glandulo-punctatae in marginis lateralibus interdum ribro-tinctae ad medio saepe virido-vittatae interdum trans apicem infuscatae. Flores 14-16 (-17) in capitulo; corollae lavandulae anguste infundibulares 4.5-5.5 mm longae extus breviter glanduliferae vel glandulo-punctatae, tubis ca. 1.2 mm longis; faucibus 3.0-3.5 mm longis, lobis triangularibus 0.6-0.8 mm longis et 0.4-0.5 mm latis intus papillois extus interdum minute unisetiferis; filamenta in parte superiore 0.3-0.4 mm longa; thecae 1.2-1.8 mm longae; appendices

antherarum oblongo-ovatae 0.3-0.4 mm longae et 0.18-0.22 mm latae. Achaenia anguste prismatica 4.0-4.8 mm longa in costis dense minute scabridula: setae pappi ca. 35 plerumque 3.5-4.5 mm longae ad apicem vix latiores, cellulis apicalibus congestis breviter acutis in aggregatis subtruncatis. Grana pollinis in diametro ca. 23-25 μ m.

TYPE: BRASIL: Bahia: Município de Rio de Contas. Base de Pico das Almas, a 18 km ao NW de Rio de Contas. Elev. ca. 1300 m. Shrub 1½ meters tall, flowers lavender. July 24, 1979. *R.M. King, S.A. Mori, T.S. dos Santos & J.L. Hage 8122* (Holotype, CEPEC; isotype, US). PARATYPES: BRASIL: Bahia: Município de Rio de Contas, a 4 km ao NW de Rio de Contas. Campo rupestre. Elev. ca. 1000 m. Shrub 1 meter tall, flowers light lavender. July 21, 1979. *R.M. King, et al. 8067* (US); Base de Pico das Almas, a 18 km ao NW de Rio de Contas. Elev. ca. 1300 m. Shrub 2-2½ meters tall, flowers lavender. July 24, 1979. *R.M. King, et al. 8131* (US); Lençóis. arbusto de + 2 m de alt. 24-9-1965. *A.P. Duarte 9177 & E. Pereira 10087* (RB, US).

The new species seems closest to *C. minasgeraesensis* (Hieron.) K. & R., but the latter has leaves with cuneate bases and more shortly acute tips. The upper leaf surfaces are glabrate without the lustrous surface, and the undersurface is only sparsely glandular. The type photographs also show the latter has rather short branchlets in the inflorescence with larger foliose bracts.

CHROMOLAENA MYRIADENIA R.M. King & H. Robinson, sp. nov.

Plantae herbaceae erectae ad 0.5 m altae pauce ramosae rhizomatosae. Caules fuscescentes teretes vix striati dense hirsuti et glandulo-punctati. Folia opposita, petiolis brevibus 2-4 mm longis; laminae lanceolatae 2-7 cm longae et 0.3-1.7 cm latae base acutae margine remote 4-10-serrulatae vel subintegrae apice breviter acutae supra et subtus hirsutae et glandulo-punctatae subtus densius pellucidius glanduliferae supra basem trinervatae, nervis secundariis valde ascendentibus sensim sublongitudinalibus. Inflorescentiae racemoso- vel thyrsoido-paniculatae apice et in ramis simplices vel 2-3-capitatae plerumque dichasialiter cymosae, ramis ultimis ad 27 mm longis interdum nullis dense hirsutis et glandulo-punctatis. Capitula anguste campanulata ca. 12 mm alta et 6-7 mm lata; squamae involucri fusco-vides ca. 50 imbricatae 6-7-seriatae oblongo-ovatae vel lineares 2-10 mm longae et 1-2 mm latae apice erectae obtusae vel breviter acutae extus 4-costatae dense rubro-glandulo-punctatae et puberulae margine puberulo-fimbriatae. Flores 35-40 in capitulo; corollae lavandulae anguste infundibulares ca. 6.5 mm longae in tubis et faucibus glabrae. tubis ca. 2 mm longis, faucibus ca. 3.5 mm longis, lobis triangularibus ca. 0.8 mm longis et 0.6 mm latis intus papillosis extus pauce glandulo-punctatis; filamenta in parte superiore ca. 0.5 mm longa inferne non latiora; thecae ca. 2 mm longae; appendices antherarum

oblongae ca. 0.5 mm longae et 0.24 mm latae. Achaenia prismatica 5-6-costata ca. 3.8 mm longa in costis perminute scabridula apice pauce setulifera; setae pappi 30-35 plerumque 6.0-6.5 mm longae apice distincte leniter latiores, cellulis apicalibus acutis. Grana pollinis in diametro 18-20 μ m.

TYPE: BRASIL: Chapada dos Veadeiros. Alto do Paraíso (formerly Veadeiros). Cerrado and gallery woods in steep rocky gorge. Cerrado. Elev. 1000 m. Erect herb to ca. 50 cm tall. Heads lavender. 21 March 1969. *H.S. Irwin, R. Reis dos Santos, R. Souza & S.F. da Fonseca 24812* (Holotype, RB; isotypes, NY, UB, US).

The new species has the most densely glanduliferous involucreal bracts that have been seen in the genus. The plant is also rather distinctive in the simple to simply cymose lateral branches of the inflorescence.

CHROMOLAENA PERIJAENSIS R.M.King & H.Robinson

Plantae herbaceae volubiles mediocriter ramosae. Caules flavo-virides distincte hexagonales glabri. Folia opposita sessilia; laminae anguste ovatae vel lanceolatae plerumque 4.5-5.5 cm longae et 1.3-1.8 cm latae base rotundatae margine subremote serrulatae apice anguste acuminatae supra et subtus glabrae a basis valde trinervatae. Inflorescentiae terminales pyramidaliter paniculatae in ramis dense corymbosae, ramis 0-7 mm longis glabris vel subglabris. Capitula saepe 2-3-fasciculata cylindrica ca. 8 mm alta et 3 mm lata; squamae involucri pallide virides vel superne violaceo-tinctae ca. 20 imbricatae 4-5-seriatae plerumque oblongae vel lineares 1.5-6.0 mm longae et 1.0-1.5 mm latae apice rotundatae vel subtruncatae extus 4-6-costatae glabrae margine superne minute puberulo-fimbriatae. Flores 8-9 in capitulo; corollae albae subcylindricae ca. 4.2 mm longae in tubis et faucibus sparse perminute glanduliferae, tubis quam faucibus leniter angustioribus ca. 0.8 mm longis, faucibus ca. 3 mm longis, lobis ovato-triangularibus 0.6-0.7 mm longis et 0.4 mm latis intus breviter papillosis extus multo piluliferis, pilis uniseriatis apice rotundatis; filamenta in parte superiore ca. 0.4 mm longa; thecae ca. 1.3 mm longae; appendices antherarum ovatae ca. 0.3 mm longae et 0.2 mm latae. Achaenia prismatica 5-7-costata ca. 3.5 mm longa dense setulifera; setae pappi ca. 30 plerumque 3.5-4.0 mm longae longiores ad apicem leniter latiores. Grana pollinis in diametro ca. 25 μ m.

TYPE: COLOMBIA: Magdalena: Cordillera Oriental. Sierra de Perijá, 11 km ENE of Manaure, 47 km E of Valledupar, 2 km from the Venezuelan border. Alt. 2700 m. Temperate forest. Herbaceous vine, heads white. Feb. 5, 1945. *Martin L. Grant 10835* (Holotype, US).

The new species is easily distinguished by the scandent habit and the sessile leaves. The somewhat similar *C. subscaedens* (Hieron.) K. & R. from Colombia and Venezuela, is a more robust plant with petiolate leaves and 11-15 flowers per head.

CHROMOLAENA PERSERICEA R.M.King & H.Robinson, sp. nov.

Plantae fruticosae mediocriter vel multo ramosae. Caules hexagonales obscure striati dense flavo-sericei. Folia opposita, petioli 2-7 mm longis; laminae ovatae 1.0-2.5 cm longae et 0.7-1.2 cm latae base obtusae vel breviter acutae margine 4-6-crenato-serrulatae vel subintegrae apice obtusae vel breviter acutae supra leniter bullatae perdense sericeae non glanduliferae subtus dense lanatae et dense glandulo-punctatae in nervis et nervulis prominentes fere ad basem ascendentiter trinervatae. Inflorescentiae thyrsoido-paniculatae in ramis ca. 45° ascendentibus dense corymbosae, ramulis dense breviter sericeis. Capitula plerumque in aggregatis triplicibus sessilia cylindracea 8-9 mm alta et ca. 2.5 mm lata; squamae involucris superne violascentes ca. 25 imbricatae ca. 5-seriatae oblongae vel lineares 1.5-7.0 mm longae et 0.7-1.3 mm latae apice obtusae in interiores breviter acutae appressae extus 4-costatae superne in exteriores ad medio setuliferae et interdum pauca glandulo-punctatae margine superne minute setulo-fimbriatae. Flores ca. 7-8 in capitulo; corollae purpureae anguste infundibulares ca. 5 mm longae, tubis inferne angustioribus ca. 2.2 mm longis extus glabris, faucibus ca. 2.5 mm longis inferne glabris superne glanduliferis, lobis breviter triangularibus ca. 0.5 mm longis et latis intus papillosis extus dense glandulo-punctatis; filamenta in parte superiore ca. 0.3 mm longa; thecae ca. 1.5 mm longae; appendices antherarum oblongo-ovatae ca. 0.27 mm longae et 0.17 mm latae. Achaenia prismatica 3-4-costata ca. 3.5 mm longa in costis dense setulifera interdum inter costam dense setulifera; setae pappi 40-45 plerumque 2.5-3.5 mm longae apice non latiores, cellulis apicalibus acutis. Grana pollinis in diametro ca. 23 μ m.

TYPE: COLOMBIA: Magdalena: Cordillera Oriental. Sierra de Perijá, Casacará Valley, 23 km east of Codazzi, 2 km from the Venezuelan border. Paramo. Alt. 3100 m. Herb, 1 foot high, corolla purple. Feb. 15, 1945. *Martin L. Grant 10957* (Holotype, US). PARATYPE: VENEZUELA: Zulia: Perija. Paramo. Alt. 2800-2900 m. Height 2 m, flor morada. 29 XII 1950. *Hermano Gines 1990* (US).

The new species is one of a series of pubescent, shrubby members of the genus centering at higher elevations in Colombia. Of the group, *C. bullata* (Klatt) K. & R. and *C. leivensis* (Hieron.) K. & R. are distinct in their longer corolla lobes and the low insertion of their anther filaments. The latter also has a flat upper leaf surface and particularly numerous hairs on the outer surface of the corolla lobes. The new species seems closest to *C. tacotana* (Klatt) K. & R. which is similar in the shorter corolla lobes, the much narrowed base of the corolla, and the higher insertion of the filaments, but is more robust and puberulous to tomentellous rather than sericeous and has the upper leaf surface visible with scattered glandular punctations. The bracts of the latter are more pubescent with 1-3 dark lines along the furrows.

CHROMOLAENA PSEUDINSIGNIS R.M.King & H.Robinson, sp. nov.

Plantae herbaceae semicarnosae 3-4 dm altae pauce vel medio-criter ramosae in sicco atro-virides; radices fasciculatae carnosae. Caules subteretes leniter striati glabri. Folia plerumque opposita sessilia anguste linearia 1-7 cm longa et 0.10-0.25 cm lata superiora minora et remotiora integra uninervia glabra. Inflorescentiae uni- vel pauci-capitatae in posteriore laxae cymosae. Capitula longe pedicellata late campanulata 9-11 mm alta et ca. 8 mm lata; squamae involucri ca. 30 imbricatae 4-5-seriatae ellipticae vel obovatae aut oblanceolatae 4-8 mm longae et 1.5-2.5 mm latae glabrae extus inferne leniter 4-costatae superne subcarnosae in marginis lateralibus anguste scariosae purpurascens in medio ad apicem atro-virides apice breviter acutae appressae vel vix reflexae; paleae paucae peripherales ad 4 mm longae et 0.5 mm latae scariosae argute acutae vel laciniatae. Flores ca. 40-45 in capitulo; corollae purpureae ca. 5 mm longae anguste infundibulares superne densim densius glandulopunctatae, tubis ca. 1 mm longis glabris, faucibus ca. 3 mm longis, lobis oblong-ovatis ca. 1 mm longis et ca. 0.8 mm latis intus papillois; filamenta in parte superiore ca. 0.35 mm longa; thecae ca. 1.5 mm longae; appendices antherarum rotundatae ca. 0.25 mm longae et 0.27 mm latae. Achaenia ca. 3.2 mm longa 5-7-costata in costis inferne et apice breviter spiculifera; setae pappi ca. 40 plerumque 3.5-4.0 mm longae ad apicem vix latiores. Grana pollinis in diametro ca. 25 μ m.

TYPE: BRASIL: Goias: Chapada dos Veadeiros. 18-19 km N of Alto Paraiso. Wet campo at 4300 ft. elev. Semisucculent herb. Florets and style branches blue. Local. Jan. 24, 1980. *R.M. King & F. Almeda 8279* (Holotype, UB; isotype, US). PARATYPES: BRASIL: Goias: 17 km West of Alto Paraiso in seasonal marsh. Herbs 30 cm tall. Flowers purple. Feb. 13, 1977. *B.B. Simpson 8609* (US); 17 km North of Alto Paraiso on the Chapada de Veadeiros in seasonally flooded marsh. *B.B. Simpson 8617* (US); Chapada dos Veadeiros, c. 65 km due North of Brasilia. Campo at foot of rocky hillside. Herb with deep purplish flowers. 21 Dec. 1968. *R.M. Harley, G.M. Barroso, et al. 11462* (NY); Chapada dos Veadeiros, ca. 20 km W. of Veadeiros. Elev. 1000 m. Rocky slopes, wet campo and creek margin. Herb ca. 25 cm tall. Heads blue-violet. 10 Feb. 1966. *H.S. Irwin, J.W. Grear, Jr., R. Souza & R. Reis dos Santos 12540* (NY); Erect herb ca. 20 cm tall. Heads white. 11 Feb. 1966. *H.S. Irwin, et al. 12606* (NY); Slender herb with ascending stems ca. 35 cm tall. 11 Feb. 1966. *H.S. Irwin, et al. 12607* (NY, US).

The species has the aspect of *Praxelis insignis* (Malme) K. & R., and the Simpson paratypes were originally determined as that species. The present entity clearly differs in the generic characters, and it can be further distinguished by the darker color of the plant, the more succulent leaves and involucre, the carnosae fasciculate roots, and the involucre bracts which are distinctly broadest above the middle.

CHROMOLAENA VERTICILLATA R.M.King & H.Robinson, sp. nov.

Plantae herbaceae erectae ad 0.4 m altae inferne non ramosae. Caules fuscescentes teretes striati puberuli. Folia plerumque 3-4-verticillata, petiolis 2-3 mm longis; laminae anguste ellipticae vel leniter oblanceolatae plerumque 2.0-3.5 cm longae et 0.3-0.7 cm latae base anguste cuneatae margine integrae vel sub-integrae apice breviter acutae supra subnitidae sparse pilosulae glabrescentes subtus dense glandulo-punctatae in nervis et nervulis puberulae a basis triplinervae. nervis secundariis sublongitudinalibus, nervis et nervulis utrinque prominulis. Inflorescentiae aliquantum laxe corymboso-cymosae plerumque alterne ramosae, ramis ultimis plerumque 1-4 cm longis puberulis. Capitula cylindrica ca. 9 mm alta et 4-5 mm lata; squamae involucri sordido-rubrescentes ca. 30 imbricatae 4-5-seriatae oblongae vel late oblongae 1-6 mm longae et 1.0-1.7 mm latae apice erectae vel in exteriores breviter reflexae breviter acutae et apiculatae extus late 4-costatae superne multo glandulo-punctatae margine superne minute puberulo-fimbriatae. Flores ca. 25 in capitulo; corollae lavandulae? 4.2-4.5 mm longae, tubis ca. 1.4 mm longis inferne sensim angustioribus extus glabris, faucibus 2.0-2.2 mm longis extus sparse glandulo-punctatis, lobis ovato-triangularibus ca. 0.7 mm longis et 0.45 mm latis intus papillosis extus sparse glandulo-punctatis; filamenta in parte superiore ca. 0.15 mm longa; thecae ca. 1.8 mm longae; appendices antherarum oblongo-ovatae ca. 0.23 mm longae et 0.2 mm latae apice obtusae. Achaenia prismatica ca. 3.3 mm longa base sensim angusta plerumque in costis distincte setulifera; setae pappi ca. 30 plerumque 3.5-4.0 mm longae apice vis vel non latiores, cellulis apicalibus acutis. Grana pollinis ca. 25 μ m.

TYPE: BRASIL: Minas Gerais: Serra do Cipo, km 137. Campo; solo alto-turfo-arenoso. 13-2-1963. *A.P.Duarte 7562* (Holotype, RB; isotype, US).

The new species is distinctive in its verticillate leaves. One plant of *C. pedunculosa* (H. & A.) K. & R. has been seen with ternate leaves, but that species has more pointed lanceolate leaf blades with more irregular margins, has a more foliose inflorescence, and has involucrel bracts with rounded appressed tips.

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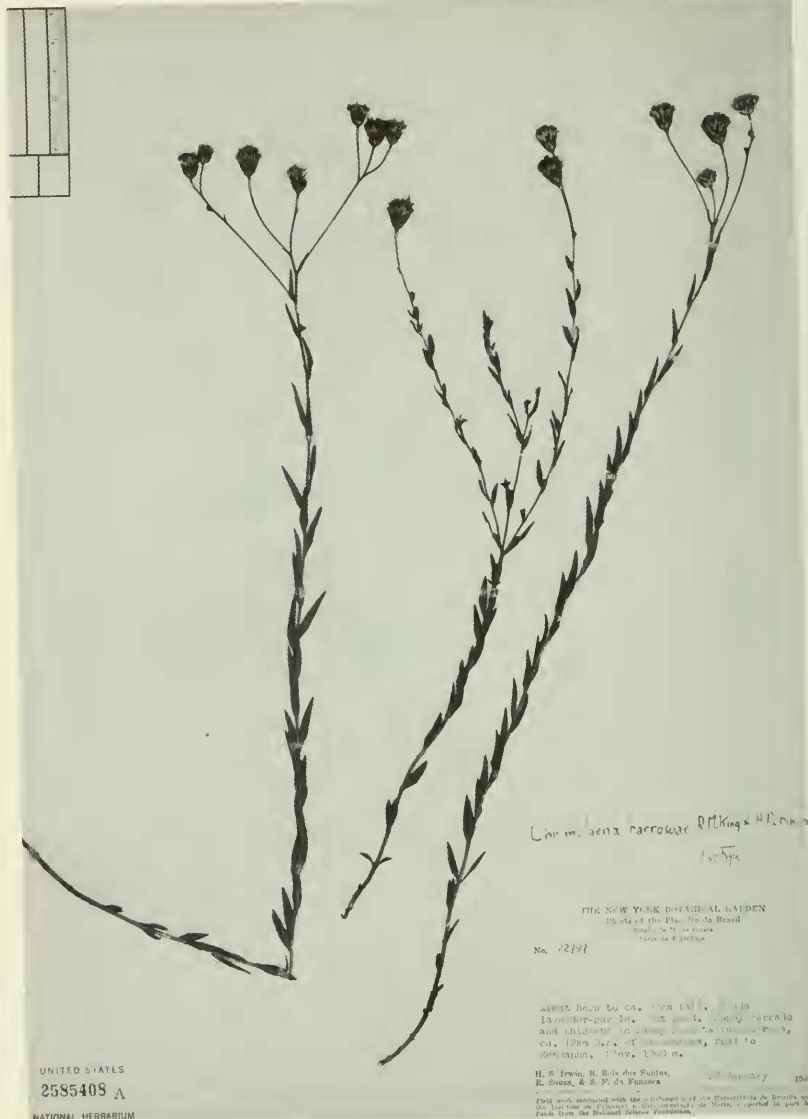
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Chromolaena alvimii R. M. King & H. Robinson, isotype,
United States National Herbarium. Photos by Victor E. Krantz,
Staff Photographer, National Museum of Natural History.



Chromolaena barrosoae R. M. King & H. Robinson
isotype

THE NEW YORK BOTANICAL GARDEN
Herbarium of the Fl. de Brazil
Rio de Janeiro, Brazil

No. 2297

ARRESTED BY CAP. J. DE LIMA, 1949
In the mountains of the Serra da Mantiqueira
and adjacent to a large forest in the Serra da
da Mantiqueira, at altitude of approximately 1,500 m.
above sea level.

H. S. Gentry, H. R. Robinson, R. S. Gentry, 1949

This work was supported with the assistance of the Rockefeller Foundation and the Department of Agriculture, United States of America, in cooperation with the Conselho Nacional de Desenvolvimento Científico e Tecnológico, Brazil.

UNITED STATES
2585408 Δ
NATIONAL HERBARIUM

Chromolaena barrosoae R. M. King & H. Robinson, isotype, United States National Herbarium.



Chromolaena breedlovei R. M. King & H. Robinson, Holotype,
New York Botanical Garden.



ASTERACEAE - BAHIA BRAZI

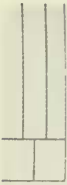
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HERBARIUM

Chromolaena morii R. M. King & H. Robinson, isotype, United States National Herbarium.



Chromolaena myriadenia R. M. King & H. Robinson, isotype,
New York Botanical Garden.



PLANTS OF COLOMBIA SOUTH AMERICA

Cardillera Oriental Magdalena
 Sierra de Perija, 1 km east ne of Manizales 47° 30' W
 east of Valledupar 2 km from the Venezuelan border
 Temperate forest 27° 30' N
 Feb 5, 1945
 Herbaceous vine.
 Corolla white

Martin L. Grant

11335 Station 11

UNITED STATES NATIONAL MUSEUM

Foreign Economic Administration, Colombia

Chromolaena perijaensis R. M. King & H. Robinson, Holotype, United States National Herbarium.



Chromolaena pseudinsignis R. M. King & H. Robinson, Holotype,
Herbário Universidade de Brasília.



JARDIN BOTANICO RIO DE JANEIRO

285461

NATIONAL HERBARIUM

Chromolaena verticillata R. M. King & H. Robinson, isotype, United States National Herbarium.



Chromolaena enlargements of heads. Top left. *C. alvimii*.
 Top right. *C. barrosoae*. Bottom left. *C. breedlovei*. Bottom
 right. *C. morii*.



Chromolaena enlargemnets of heads. Top left. *C. myriadenia*.
 Top right. *C. persericea*. Bottom left. *C. pseudinsignis*.
 Bottom middle. *C. perijaensis*. Bottom right. *C. verticillata*.