

STUDIES IN THE EUPATORIEAE (COMPOSITAE). XXI.

A NEW GENUS, NEOMIRANDEA

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In the rain forests of Central America and the Northern Andes occur a number of related species of Eupatorieae marked by their fleshy stems and epiphytic habit which we recognize here as a new genus under the name Neomirandea. Due to the taxonomic simplicity of the group, we have included a key and descriptions of two previously undescribed species.

The habit of the plants of this group, one of its most distinctive features, has been subject to comment by many of its collectors. On labels are comments such as "epiphyte", "on tree", or "on stump". One collector, Skutch, went into considerably more detail regarding his N. araliaefolia (no. 316) of Guatemala, "shrub or small tree with branches 25 ft. long and 6 inches in diameter. Epiphytic on an oak tree, 8 ft. above ground, the roots clasping the trunk in the manner of those of a strangling fig, concretescent where touching each other. A single large root descends along the trunk to the ground. Flowers white, rare. More about this interesting plant in my journal under March 4, 1933." It was the epiphytic habit that led Klatt to name one of the species Eupatorium parasiticum. Standley (1938) described his E. brenesii as "Frutex epiphyticus vel interdum terrestris alque scandens, . . ." One species, Neomirandea arthodes, seems somewhat distinct in habit and has been referred to as a "scrambling shrub" or "liane." One other very specialized species, N. angularis, has been referred to as a "small tree, 4 meters tall", "shrub, 10 ft.", or "coarse herb or shrub, 5-8 ft." There is no reference to epiphytic habit in the latter, and it may be an exception in the genus.

Some anatomical features reenforce the overall uniformity of the genus; the smooth to slightly bulging, lax cells of the corolla which are very broad and straight-walled in all but a few species; the short carpodium with small to rather large thin-walled cells; and especially the very elongate inornate anther collars. Much more striking at the anatomical level is the marked separation of the species into two groups, those with an enlarged stylar node and with hairs inside the corolla, versus those without. Two genera could easily be recognized, but in view of the overall relationship it would serve no purpose. The two groups are treated here as subgenera.

The genus seems to be Ageratinioid. This is evidenced by the often lax-celled carpodia and the inornate anther collars. The distinct stylar node in some of the species is also indica-

tive. Such relationship is not absolutely clear, however, and some of our conviction rests on the one chromosome count of  $\underline{n} = 17$  for one of the species.

Neomirandea R.M.King & H.Robinson, genus nov.

Plantae suffrutescentes vel subarborescentes plerumque epiphyticae in partibus caulinis et foliaribus potius carnosae plerumque glabrae. Folia elliptica vel late cordata integra vel serrata vel eroso-dentata. Inflorescentiae laxae corymbosae. Involucri squamae 10-25 triseriatae valde inaequilongae; receptacula plerumque glabra interdum brevis hirsuta. Flores 5-28 in capitulo; corollae tubulares inferne interdum angustae, lobis extus glanduliferis vel pauci-setiferis, faucibus intus interdum hirsutis; filamenta antherarum in parte superiore longa inornata; appendices styli leviter vel non papillatae; achaenia prismatica 5-costata dense setifera vel subglabra; carpodia brevia, cellulis plerumque quadratis, parietibus tenuibus; pappi setiformes plerumque vix scabri.

Type species: Eupatorium araliaefolium Lessing

Chromosome numbers:  $n = 17$ ,  $n = 25$ .

The genus is named after Dr. Faustino Miranda, the renowned botanist, author of the Flora of Chiapas, and organizer of botanical gardens in Chiapas and the City of México, among other accomplishments.

Key to Species of Neomirandea

1. Hairs on inside surface of corolla; stylar node distinctly enlarged (subg. Neomirandea).
2. Leaves erose-dentate, prominently pubescent beneath
  - N. angularis
2. Leaves serrate or entire, essentially glabrous beneath.
3. Leaves entire; inner phyllaries often laciniate.
4. Heads with ca. 5 flowers; inner phyllaries not reaching tips of flowers; corollas deeply cleft, lobes twice as long as wide, exposing filaments of anthers when recurved
  - N. psoralea
4. Heads with 18-28 flowers; inner phyllaries reaching tips of flowers; corollas with lobes less than half again as long as wide
  - N. araliaefolia
3. Leaves serrate; inner phyllaries not laciniate.
  - 5. Heads with ca. 20 flowers N. hitchcockii
  - 5. Heads with 5-9 flowers N. standleyi
1. Without hairs inside the corolla; without distinct enlarged stylar node (subg. Critoniopsis).
6. Outer phyllaries orbicular, inner phyllaries prominently striate.

7. Heads with ca. 12 flowers; corolla lobes not glandular; leaves long-petiolate; straggling shrub or vine N. arthodes
7. Heads with 20-25 flowers; corolla lobes glandular; leaves short-petiolate; shrub 3-4 m high N. carnosia
6. Outer phyllaries narrow, inner phyllaries not striate.
8. Heads broad with ca. 22 flowers and ca. 18 involucral bracts; tips of pappus setae very slightly winged N. pithecobia
8. Heads narrow with 5-10 flowers and with 10 or less involucral bracts; tips of pappus setae nearly smooth.
9. Heads with 5-6 flowers; backs of corolla lobes covered with prominent large glands.
10. Leaves opposite, lax, usually remotely serrulate or crenulate; cells of corolla laxly quadrate, with straight walls N. parasitica
10. Leaves whorled, small, serrulate in distal half; cells of corolla narrow with sinuous walls N. costaricensis
9. Heads with 9-10 flowers; backs of corolla lobes with glands small or lacking.
11. Leaves ovate, prominently net-veined; achenes scabrous throughout N. ovandensis
11. Leaves narrowly elliptical to oblanceolate, venation obscure; achenes mostly smooth.
12. Leaves acute, short-petiolate N. eximia
12. Leaves obtuse, subsessile N. sciaphila

The genus contains the following 2 subgenera and 13 species.

Subgenus Neomirandea

Corollas with hairs inside; stylar node enlarged; cells of carpodium small. 5 species.

Neomirandea angularis (B.L.Robinson) R.M.King & H.Robinson, comb. nov. Eupatorium angulare B.L.Robinson, Contr. Gray Herb. n.s. 96: 19. 1931. E. fistulosum B.L.Robinson, Proc. Bost. Soc. Nat. Hist. 31: 249. 1904. not E. fistulosum Barratt. Costa Rica. Chromosome number  $n = 25$  (Turner & King, 1964).

Neomirandea araliaefolia (Lessing) R.M.King & H.Robinson, comb. nov. Eupatorium araliaefolium Lessing, Linnaea 6: 402. 1831. E. heterolepis B.L.Robinson, Proc. Amer. Acad. 35: 335. 1900. Mexico, C. Amer.

The species seems to occur in two slightly different forms. The typical form which is most common at lower elevations has a more acute base on the leaf blade and scarcely laciniate inner phyllaries. Specimens from Mt. Ovando in Mexico, Guatemala, and western Panama have more abrupt leaf bases and very laciniate

inner phyllaries.

Neomirandea hitchcockii (B.L.Robinson) R.M.King & H.Robinson, comb. nov. Eupatorium hitchcockii B.L.Robinson, Contr. Gray Herb. n.s. 73: 14. 1924. Ecuador.

Neomirandea psoralea (B.L.Robinson) R.M.King & H.Robinson, comb. nov. Eupatorium psoraleum B.L.Robinson, Proc. Amer. Acad. 31: 253. 1904. Costa Rica.

Neomirandea standleyi (B.L.Robinson) R.M.King & H.Robinson, comb. nov. Eupatorium standleyi B.L.Robinson, Contr. Gray Herb. n.s. 77: 40. 1926. E. brenesii Standley, Field Mus. Publ., Bot. 18: 1461. 1938. Costa Rica, Panama.

Subgenus Critoniopsis R.M.King & H.Robinson, subg. nov.

Corollae intus glabrae; styli inferne non nodulosi; cellulae carpodiorum laxae vel indistinctae. 8 species. Type species: Eupatorium carnosum Kuntze.

A few of the species lack the distinctive lax corolla cells and superficially resemble Critonia. When habit information is lacking these species can be distinguished most readily from Critonia by the lax cells of the carpodium.

Neomirandea arthodes (B.L.Robinson) R.M.King & H.Robinson, comb. nov. Eupatorium arthodes B.L.Robinson, Contr. Gray Herb. n.s. 68: 8. 1923. Costa Rica.

Neomirandea carnosa (Kuntze) R.M.King & H.Robinson, comb. nov. Eupatorium carnosum Kuntze, Rev. Gen. 337. 1891. Costa Rica.

Neomirandea costaricensis R.M.King & H.Robinson, sp. nov.

Frutex terrestris? carnosus. Folia tripliciter verticillata mediocria glabra, petiolo perbreve 4-5 mm longo; laminae late ellipticae vel obovatae 2.5-3.0 cm longae 1.0-1.5 cm latae acutae margine superne remote serrulatae, nervis obscure reticulatis. Involucri squamae triseriatae ca. 9 valde inaequilongae late lanceolatae extus subglabrae; receptacula glabra. Flores 5-6 in capitulo 9-10 mm longi; corollae tubulares, lobis extus dense distincte glanduliferis pauci setiferis, faucibus glabris; styli inferne non nodulosi; achaenia glabra; setae pappi ad apicem vix scabrae.

Chromosome number  $n = 17$  (as Eupatorium aff. eximium, Turner & King, 1964).

Costa Rica: Cartago: Cerro de La Muerte. elevation ca. 3000 meters, steep mountain slopes in cloud forest, locally abundant

shrubs 2-3 meters tall, open sun, flowers violet. 24 Aug. 1962. Robert Merrill King 5389 (holotype US).

A second specimen from a nearby locality shows some characters of the species. Costa Rica: Cartago: Cordillera de Talamanca; Ojo de Agua, 2900-3100 m alt. Shrub with spreading pendulous branches. 8 Nov. 1961. J. Cuatrecasas & J. León 26546 (US). This second specimen is at the elevation characteristic of N. costaricensis and above that of known N. eximia, but in all other characters it is intermediate between the two species and seems to be a hybrid. The intermediate features include flowers 6-8 per head rather than 5-6 or 9-10, backs of the corolla lobes with a few small glands rather than many large glands or none, cells of the corolla laxly oblong and slightly sinuous rather than narrow with sinuous walls or laxly quadrate with straight walls. The hybrid has mostly opposite leaves but has one verticillate-leaved branch.

Neomirandea eximia (B.L.Robinson) R.M.King & H.Robinson, comb. nov. Eupatorium eximium B.L.Robinson, Contr. Gray Herb. n.s. 73: 11. 1924. Costa Rica.

Neomirandea ovoidensis R.M.King & H.Robinson, sp. nov.

Frutex epiphyticus carnosus. Folia opposita majuscula glabra, petiolo breve ca. 1 cm longo; laminae ovatae 10-12 cm longae 3.5-5.0 cm latae acutae margine plerumque remote subserulatae, nervis prominulis reticulato-anastomosantibus. Involucri squamae triseriatae ca. 9 valde inaequilongae anguste lanceolatae extus parce pubescentes; receptacula glabra. Flores 9-10 in capitulo 10-12 mm longi; corollae tubulares, lobis extus pauce minute glanduliferis et setiferis, faucibus glabris; styli inferne non nodulosi; achaenia superne distincte setifera; setae pappi ad apicem vix scabrae.

Mexico: Chiapas: Mt. Ovando, 2000 m, on tree. 14-18 Nov. 1939. E. Matuda 3917 (holotype US).

The type locality, noted for many apparent endemics, is with this species the northernmost locality for the subgenus Critoniopsis. Neomirandea ovoidensis is most readily distinguished from its closest relatives by the prominent reticulate venation visible in the dried leaves.

Neomirandea parasitica (Klatt) R.M.King & H.Robinson, comb. nov. Eupatorium parasiticum Klatt, Ann. K. K. Hofmus. Wien 9: 357. 1894. Costa Rica.

Neomirandea pithecochia (B.L.Robinson) R.M.King & H.Robinson, comb. nov. Eupatorium pithecochium B.L.Robinson, Contr. Gray Herb. n.s. 73: 11. 1924. Costa Rica.

Neomirandea sciaphila (B.L.Robinson) R.M.King & H.Robinson, comb.  
nov. Eupatorium sciaphilum B.L.Robinson, Contr. Gray Herb.  
n.s. 55: 256. 1918. Colombia.

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