Peregrina, a New Genus of Malpighiaceae from Brazil and Paraguay

WILLIAM R. ANDERSON
University of Michigan Herbarium, North University Building,
Ann Arbor, Michigan 48109-1057

ABSTRACT. Peregrina is proposed to accommodate the single species Peregrina linearifolia, which has been assigned to four related genera since its discovery. Peregrina is probably derived from Janusia, but its unique samara with equally well-developed dorsal and lateral wings, somewhat similar to that of Gaudichaudia, makes it necessary to segregate the species as a distinct genus.

In his “Malpighiacearum synopsis” (1840) Adrien de Jussieu recognized the group Gaudichaudieae, distinguished from other neotropical Malpighiaceae by their reduced androecium. He included the genera Fimbriaria St.-Hil. (a later homonym replaced in the 1843 monograph by Schwannia Endl.), Janusia Adr. Juss., Gaudichaudia H.B.K., Aspicarpa Rich., and Camarea St.-Hil. The next monographer of the family, Franz Niedenzu, did not maintain this grouping, assigning Gaudichaudia to a tribe different from that to which the other four genera were assigned (1928). This was one of several unfortunate effects of Niedenzu’s practice of relying on single weighted characters. I agree with Jussieu that the Gaudichaudieae constitute a natural taxon. I retain in the Gaudichaudieae all the species of Jussieu, but have concluded that Schwannia must be combined with Janusia (Anderson 1982). The Gaudichaudieae were probably derived from Banisteriopsis Rob., sharing its terminal capitate stigma but differing in that the styles are usually reduced from three to one and the stamens from ten to six (one opposite the posterior petal plus five opposite the sepals) or fewer. In the process of revising all these genera, I have been unable to place one species satisfactorily in any described genus. A new genus is proposed here to accommodate that species, which is also provided a full description parallel to those that will be published for the other Gaudichaudieae in forthcoming publications.

Peregrina W. Anderson, gen. nov. (fig. 1).—Type: Peregrina linearifolia (St.-Hil.) W. Anderson.

Suffrutex ramulis herbaceis erectis non volubilibus; folium 2 glandulis disciformibus marginalibus prope basim instructum; flores omnes chasmogami, in umbellis terminalibus (2-)4-6(-12)-floris portatis; pedicellus sessilis; petala aurantiaca; stamina 5, sepalis opposita, omnia fertilia et inter se aequabilia; staminodia nulla; antherae paucipiliferae vel glabrae; carpella 3, discreta; stylum plerumque 1, in carpelllo antico portatum, stigmatem terminalem laterali laceratum; fructus schizocarpicus, ex 3 samaribus aliis membranaceis compositus; samara alis dorsali et laterali aequaliter bene evoluta, receptaculo carpophoro filiformi suspenda; chromosomatum numerus, n = 19.

This genus comprises only the following species:


Perennial with many stems from woody rootstock; stems slender, erect, non-twining, 15–45 cm tall, sericeous, eventually glabrescent. Leaves opposite or subopposite, distant, the larger laminas 15–45–(50) mm long, 1–6–(12) mm wide, linear or narrowly elliptical or ovate, tapered or cuneate at the base, often somewhat revolute at the margin, acute at the apex, thinly
Fig. 1. *Peregrina linearifolia*. a. Habit. b. Base of leaf, showing marginal glands. c. Umbel of flower buds. d. Flower, the posterior petal at upper right. e. Androecium. f. Anther, abaxial view. g. Stigma, side view (left) and end view (right). h. Samara, abaxial view (top), adaxial view (middle), side view, still attached to receptacle by carpophore (bottom). (a–c from Hatschbach 22317, d–g from Anderson 11764, h from Jörgensen 4480.)
sericeous on both sides, sometimes glabrescent above, bearing 1 disc-shaped marginal gland on each side at the base; petiole 0.5–2 mm long, sericeous, hardly distinguishable from the tapered lamina in narrow leaves; stipules minute (0.1–0.2 mm long), borne on base of petiole, often hidden under hairs. Inflorescence a terminal umbel of (2–)4–6–(12) flowers, the flowers all chasmogamous, the umbel usually single but occasionally subtended by 1 or 2 secondary umbels to produce a dichasium; floriferous bracts and bracteoles 0.5–3 mm long, sericeous to nearly glabrous, eglandular or the largest bracts biglandular, persistent, the cluster often subtended by a single pair of sterile, much-reduced, biglandular leaves; peduncle usually none, very rarely up to 5 mm long; pedicel 3–11–(15) mm long, sericeous, straight in bud. Sepals 5, free, 3.5–4.3 mm long, 1.3–2 mm wide, narrowly elliptical or ovate, entire or erose, rounded at the apex, incurred in anthesis, abaxially sericeous in the center, adaxially glabrous, the anterior eglandular, the lateral 4 biglandular, the glands 1.5–2 mm long. Petals 5, orange-yellow, glabrous, flat, short-fimbriate; lateral 4 petals spreading, with the claw 1.7–2.5 mm long, 4–7 mm wide, elliptical or orbicular, the claw 1.7–2.5 mm long; posterior petal erect, rounded at the apex, incurved in anthesis, continuing south to Castro.


As the synonymy shows, this species has been assigned to all four genera of the Gaudichaudieae over the last 160 years. The generic name proposed here, which means a wandering alien, refers to the species’ failure to find a stable home.

Camarea and Aspicarpa can be eliminated rather easily as appropriate genera for this species. Both are non-twining subshrubs like Peregrina, but that habit is common among
plants adapted to grassy campos, and it may have originated independently in all three groups. *Camarea* has six stamens, with the anterior-lateral pair of anthers replaced by elaborate staminodes. Its fruit is an unwinged nutlet without a carpophore, and the chromosome number of the species I have counted is \( n = 17 \). The androecium and chromosome number are really the only bases for separating *Camarea* from *Aspicarpa*, and *Peregrina* disagrees with *Camarea* in both respects. *Aspicarpa* is not a much better candidate for the closest relative to *Peregrina*. They have a similar androecium, but the fruit in *Aspicarpa* is an unwinged nutlet without a carpophore. Niedenzu saw only very immature fruits of *Peregrina*; I am sure he never would have placed it in *Aspicarpa* if he had seen the mature samara. The pedicels are pedunculate in *Aspicarpa*, and the stigma is terete. The species I have counted have chromosome numbers of \( n = 20 \) or 40.

*Gaudichaudia* and *Janusia* both have samaras with membranous wings and a filiform carpophore. *Gaudichaudia* is distinguished from *Janusia* by its samara, which has a dominant lateral wing and the dorsal wing reduced to a crest or lost altogether. The samara of *Peregrina* therefore resembles that of some species of *Gaudichaudia*, if we ignore the large triangular dorsal wing in *Peregrina*. However, other characters argue against placing *Peregrina* in *Gaudichaudia*. *Gaudichaudia* lacks glands on its leaves, its pedicels are always pedunculate, its anthers are glabrous, and its stigma is terete. The base chromosome number in *Gaudichaudia* is \( n = 40 \). *Gaudichaudia* diversified in Mexico, and the only species in South America now is a morphologically advanced one that has penetrated as far south as Colombia and Venezuela.

*Janusia* is the genus closest in all respects to *Banisteriopsis*, which I consider ancestral to the Gaudichaudieae. In *Janusia* the samara has an elongated dominant dorsal wing, while the lateral wing is at most a narrow crest, or absent. All species of *Janusia* are twining vines, and its stigma is terete. In several other respects it resembles *Peregrina*. Marginal glands are found on the leaves of some species; the pedicel is sessile in some species, although not the ones most like *Peregrina* in other characters; the anthers are pilose in some species; the base chromosome number is \( n = 10 \), but I have also counted species with \( n = 19, 20, \) and 40. Most species are native to central and southern South America.

*Gaudichaudia* was probably derived from an ancestor that had a samara similar to that of *Peregrina*, in which the lateral crest of a *Janusia*-type samara enlarged greatly and the dorsal wing was reduced. Those radically different samaras are the only solid morphological basis for maintaining *Gaudichaudia* distinct from *Janusia*. If we place *Peregrina* in *Gaudichaudia* on the basis of its samara, we maintain that distinction fairly well, but the other evidence convinces me that *Peregrina* is actually more closely related to *Janusia* than to *Gaudichaudia*, and may well have evolved its samara quite independently. If we place *Peregrina* in *Janusia*, we sacrifice the best generic character for *Janusia* and make its maintenance as a genus distinct from *Gaudichaudia* impracticable. While they are obviously closely related, *Gaudichaudia* and *Janusia* seem to represent independent phyletic branches. Both practical taxonomy and our understanding of the evolution of these plants are best served by maintaining them as separate genera. My solution to this dilemma is to segregate *Peregrina* as a distinct genus.

*Peregrina* probably originated in the complex of *Janusia* that includes *J. guaranitica* (St.-Hil.) Adr. Juss. and *J. schwannioides* W. Anderson. Its ancestor would have been a slender vine with both chasmogamous and cleistogamous flowers, probably with five stamens and perhaps 19 pairs of chromosomes as in *J. guaranitica*. The following changes in such an ancestor would produce *Peregrina*: 1) shift in habit from a vine to an erect perennial herb; 2) radical restructuring of the samara, as described above; 3) loss of the cleistogamous flowers; 4) loss of the peduncle; and 5) lateral flattening of the stigma.

**Acknowledgments.** This study was supported in part by NSF Grant BSR-8103522. Figure 1 was drawn by Karin Douthit. Field work in Brazil was facilitated by Dr. Gert Hatschbach of the Museu Botânico Municipal in Curitiba. I thank the curators of the herbaria cited for loans of specimens.

**Literature Cited**


