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A NEW SPECIES OF THE SOUTH AMERICAN GENUS *NASSAUVIA*
(COMPOSITAE: MUTISIEAE) FROM CHILEAN PATAGONIA

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Arroyo, Mary T. Kalin (Departamento de Biología, Facultad de Ciencias, Universidad de Chile, Casilla 653, Santiago, Chile) and Clodomiro Marticorena (Departamento de Botánica, Facultad de Ciencias Biológicas y de Recursos Naturales, Universidad de Concepción, Casilla 2407, Concepción, Chile). A new species of the South American genus *Nassauvia* (Compositae: Mutisieae) from Chilean Patagonia. *Brittonia* 40: 332-334. 1988. — *Nassauvia coronipappa* Arroyo & Marticorena, from Cerro Donoso in eastern Chilean Patagonia, is described and illustrated. It is distinguished by trifid inner involucre bracts and persistent, brief, laciniate-dentate, crown-like pappus incompletely surrounding summit of the achene. The distinctive pappus may be related to selection, in harsh alpine habitats, against dispersal away from nurse sites. *Nassauvia coronipappa* belongs to subgenus *Nassauvia*. It is seen as a relict member of an independent line of evolution, whose closest affinities are with section *Nassauvia* of that subgenus.

The endemic South American genus *Nassauvia* of the southern Andes and Patagonia was recently monographed by Cabrera (1982), who recognized 37 species assigned to two subgenera and six sections. During work on high mountain floras on the eastern border of Chilean Patagonia at latitude 50° South, a distinctive new species of *Nassauvia* of highly restricted distribution was discovered:

Nassauvia coronipappa Arroyo & Marticorena, sp. nov. (Fig. 1)

A speciebus congeneribus pappo brevissimo incompleto coroniformi et involucri bracteis intimis trifidis differt.

Stout perennial herb with deeply buried, horizontal underground stems giving rise to short, adscendant, above-ground leafy stems to 12 cm tall, densely clad in long, adpressed, sericeous pubescence. Leaves closely imbricate, rigid, spatulate to oblanceolate, obtuse-mucronate, 15-20 mm long, the elongate leaf-base 4-4.5 mm wide, gradually expanding into the blade 5-7.5 mm wide, above laxly clad in adpressed, sericeous hairs or glabrescent at the apex, beneath evenly and densely pubescent throughout; leaf-veins evident towards the base and distal part of the blade; blades 3-crenulate on both sides, margin of the crenulations continuous with the raised leaf veins, conspicuously thickened and slightly recurved, each crenulation terminating in an antrorse mucronate tooth. Capitula numerous, united in a dense terminal glomerule, the latter (8) 15-25 mm wide, (5) 12-15 mm long, hardly surpassing the surrounding leaves; involucre cylindrical; phyllaries 6-8, externally clad in weak, cobwebby pubescence, internally glabrous, the outermost linear, usually entire, 10.5-11 mm long, 1-1.5 mm wide, at apex acute and strongly mucronate, the innermost linear-lanceolate, 11-11.5 mm long, 1.5-2 mm wide, 3-fid, the teeth strongly mucronate. Florets 3 per capitulum, white (?); corolla glabrous, bilabiate, 6.5-7.5 mm long, the tube 3-3.5 mm long, the internal lip $\frac{3}{4}$ the length of the external one; anthers ca 2.5 mm long; style 4.5-5 mm long; stigma less than 1 mm long. Achenes cylindrical, 3.5-4 mm long, 0.5 mm wide, glabrous, pale brown; pappus a persistent, laciniate-dentate, lustrous, chaffy, white sheath, 2-2.5 mm high, transversally pleated at the base, incompletely surrounding summit of the achene.

TYPE: CHILE. XII REGION. Última Esperanza: Cerro Donoso, Río de las Chinas valley, immediately to the NE of Estancia las Chinas in the E part of Chilean Patagonia (50°44'S, 72°31'W), on steep talus slopes in the high alpine (andean)

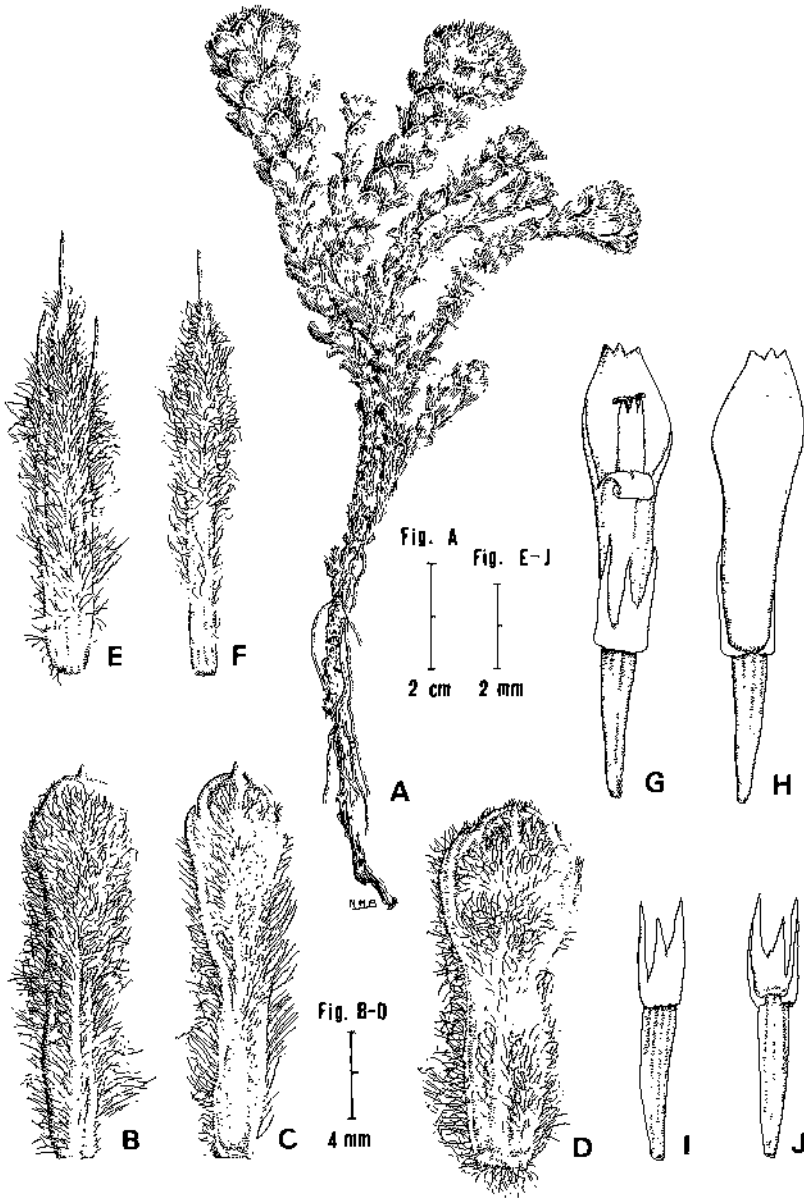


FIG. 1. *Nassauvia coronipappa*. A. Habit. B. Lower leaf surface. C and D. Upper leaf surface showing variation in blade width. E. Innermost phyllary (outer surface). F. Outermost phyllary (outer surface). G and H. Florets. I and J. Achene showing details of pappus.

zone, accompanying *Nassauvia pygmaea* Hook. f., *Hamadryas kingii* Hook. f., *Leucheria leontopodioides* (Kuntze) Schumann, *Menonvillea nordenskjöldii* (Dusén) Rollins, and *Poa alopecurus* (Gaud.) Kunth subsp. *alopecurus*, 900–1100 m, rarely as low as 800 m, 11 Feb 1987, *Mary T. Kalin Arroyo, C. Veloso & A. Peñaloza 87314* (HOLOTYPE: CONC; ISOTYPE: SI).

The herbaceous habit and glabrous achenes of *Nassauvia coronipappa* place it in subgenus *Nassauvia*; nevertheless, it exhibits many unique characteristics. In

all heretofore described species of subgenus *Nassauvia* the pappus is composed of free paleae that surround the summit of the achene—a coronate and incomplete pappus like that of *N. coronipappa* is unknown. Moreover, the free paleae, as in subgenus *Strongyloma*, exceed or at least equal the corolla tube. The innermost trifold involucre bracts seen in the new species are unknown in any species of subgenus *Nassauvia*, or for that matter in the genus *Nassauvia* as a whole.

Cabrera (1982) recognized four sections in subgenus *Nassauvia* that segregate into two well-defined groups: *Caloptilium* (Lag.) Benth. & Hook. and *Panargyrum* (Lag.) Weddell, in which the pappus is composed of ciliate or plumose bristles that persist until the achenes are dispersed; and *Nassauvia* and *Mastigophorus* (Cass.) DC., in which the pappus consists of flat, linear, caducous paleae. Although the pappus of *N. coronipappa* is persistent as in the first group, it probably arose through the ontogenetic fusion of three or four wide paleae of the type present in sections *Nassauvia* and *Mastigophorus*. In general, species of subgenus *Nassauvia* with caducous pappus inhabit higher elevations, mostly in high alpine and sub-nival habitats, than those with ciliate and plumose pappus, mostly found in subalpine and steppe habitats. In the more extreme alpine habitats, where vegetation cover is thin and consequently where dispersal directly into nurse sites provided by the parent plant gives the best assurance of seed germination, a caducous pappus might be highly adaptive. The very brief, transversally pleated, fused pappus-bristles of *N. coronipappa*, also occurring in the high alpine and subnival zone, could be seen to function as well as a caducous pappus in reducing achene dispersability.

The above considerations suggest that *N. coronipappa* probably represents an independent line of evolution, whose closest affinities, nevertheless, are clearly with sections *Nassauvia* and *Mastigophorus*. Because of its clustered capitulescence, the new species is provisionally referred to section *Nassauvia*.

Present knowledge suggests that *N. coronipappa* is narrowly endemic. It is absent in the Sierra de los Baguales, immediately to the east of Cerro Donoso, and from Cerros Diente and Agudo to the west. Nor has it appeared in the well explored cordilleras in adjacent Argentina. A number of endemic taxa are centered in the general region of Cerro Donoso and the Sierra de los Baguales (Arroyo et al., 1985). These high eastern outposts on the Chilean-Argentinian border, which were far less heavily glaciated than the high mountains to the west, seem to have provided important refugia for the high andean flora of Patagonia during the Pleistocene (Arroyo et al., 1985). *Nassauvia coronipappa* perhaps represents a relict line that declined in post-Pleistocene times due to relatively inefficient dispersal of the achenes.

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