

GEOGRAPHY OF *CHRYSELIUM* (ASTERACEAE, GNAPHALIEAE)

GUY L. NESOM

Research Associate

Academy of Natural Sciences of Drexel University

Philadelphia, Pennsylvania

guynesom@sbcglobal.net

ABSTRACT

Chryselium gnaphalioides occurs in Venezuela, Colombia, and Ecuador. Attributions of the species to Bolivia and Peru are interpreted as errors in identification. The locality given in the protologue is "prope pagum Ayavacae Peruvianorum," but with a clearer idea of the range of the species, the type collection by Humboldt and Bonpland probably was made in central or north-central Ecuador. An updated, documented distribution map is provided, based on collections at herbarium US, and a series of morphological variants is shown.

Chryselium gnaphalioides (Kunth) Urtubey & Freire is the single species of a recently described genus (Freire and Urtubey 2019). It is a low, fibrous-rooted perennial producing plantlet-bearing runners and an unbranched stem with a terminal cluster of white-bracted heads (Figs. 2a, 2b, 2c). Molecular data analyzed by Freire and Urtubey indicate that the species is closely related to *Cuatrecasasiella*, *Chevreulia*, *Antennaria* sensu stricto, and *Diaperia*.

The distribution of the species was mapped Freire and Urtubey based on collections cited from COL, F, MO, NY, S, UC, and US, but the geography is re-evaluated here, as some of their cited specimens are species other than *Chryselium gnaphalioides*. And as noted in Nesom (2024), their in situ photo from Prov. Napo, Ecuador, is of *Hypserion major* Nesom, not *Chryselium*.

The map here (Fig. 2) is constructed from records at US, as documented in Table 1. It has more data points but is similar to that of Freire and Urtubey, except that there are no records from Bolivia and southern Peru. *Chryselium gnaphalioides* occurs in Ecuador, Colombia, and Venezuela. All records cited from Peru are *Quasiantennaria*. All from Bolivia are *Hypserion*. Records cited by Freire and Urtubey that are identified differently are cited below — they are either *Quasiantennaria linearifolia* (Bayer and Dillon 209) or species of *Hypserion* (Nesom 2024).

Bolivia

Kelly 1059 (UC) = not seen, but probably *Hypserion bolivianum*, as the collection was made in Unduavi, where the species has been collected by others.

Steinbach 627 (S, UC) = *Hypserion bolivianum*, at US.

Peru

Barbour 3482 (F) Dpto. Amazonas in northern Peru. Not cited by Bayer & Dillon and not seen in this study, but since other records from Peru (north and south) are *Quasiantennaria*, it seems likely that this is also. Bayer & Dillon cited other collections from Amazonas.

Cano 3440 (F) = *Quasiantennaria*, fide Bayer & Dillon.

Cano 5125 (F) = *Quasiantennaria*, fide Bayer & Dillon.

Peyton & Peyton 711 (MO) = *Quasiantennaria*, fide Bayer & Dillon.

Woytkowski 565 (MO) = *Quasiantennaria*, fide Bayer & Dillon.

Colombia

Sneider 2751 (S) = *Hypserion major*, at US.

Ecuador

Cazalet & Pennington 5521 (UC) - *Hypserion major*, at US.

Madison 6915 (US) = *Hypserion minor*, at US.

The type locality as in the protologue is Peru, "prope pagum Ayavacae Peruvianorum, alt. 1410 hex." (= 8460 feet, 2500 meters) (see Fig. 1), but no other collections of *Chryselium gnaphalioides* have made from Peru and recorded elevations for other collections are higher (at 2900–4400 meters) than the protologue figure. The highest point in the mountains just west of the city of Ayabaca is about 9000 ft (2750 meters). Humboldt and Bonpland probably made the collection in central or north-central Ecuador, where they visited many high-elevation localities, e.g., Chimborazo, Pichincha, Tungurahua, around Quito (Sandwith 1926).

Plants of *Chryselium* with characteristic stolons are shown in Figures 2–4. Some collections are without stolons and include plants varying greatly in stature (Figs. 5–9). And as noted by Freire and Urtubey (2019), achenes sometimes are glabrous (thus lacking one of the diagnostic features of *Chryselium*), or sometimes the achenial trichomes are few and only near the apex. An unusual Venezuelan variant (lacking basal portions) with an elongate inflorescence is shown in Figure 10.



Figure 1. Distribution of *Chryselium gnaphalioides*, based on records at US. The type was collected near Ayabaca, fide the protologue (see text for comments).



Figure 2. *Chryselium gnaphalioides*, typical morphology with stolons. Venezuela, Riina et al. 691 (US).



Figure 3. *Chryselium gnaphalioides*, typical morphology with stolons. Ecuador, Ollgaard et al. 34078 (US).



Figure 4. *Chryselium gnaphalioides*, typical morphology with stolons. Ecuador, Eriksen 59047 (US).



Figure 5. *Chryselium gnaphalioides*, with and without stolons. Venezuela, Stergios 19862 (US).



Figure 6. *Chryselium gnaphalioides*, with and without stolons. Colombia, Cleef 7890 (US).



Figure 7. *Chryselium gnaphalioides*, without stolons. Venezuela, Aristeguieta 2620 (US).



Figure 8. *Chryselium gnaphalioides*, without stolons. Colombia, Pennell 9831 (US).



Figure 9. *Chryselium gnaphalioides*, without stolons. Colombia, Pennell 6934 (US).



Figure 10. Aff. *Chryselium gnaphalioides*, unusual variant with elongate inflorescence. Venezuela, Mérida, Páramo de La Laguna de Los Patos, Barclay & Juajibioy 9719-A (US).

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- Nesom, G.L. 2024. Two new genera of Gnaphalieae (Asteraceae). *Phytoneuron* 2024-37: 1–62.
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Table 1. Collections of *Chryselium gnaphalioides* at US. **COLOMBIA.** Santander, Páramo de Santurbán, 27 Aug 1948, *Araque & Barkley 18S706* (US); Cundinamarca, Cordillera de Usme, Páramo de Chisaca, *Barclay 6112* (US); Antioquia, Páramo Frontino, near Llano Grande, *Boeke 271* (US); Boyacá, Sierra Nevada del Cocuy, Alto Valle Lagunillas, morrena seca 200 m al NW de la Laguna Pintada, *Cleef 5500* (US); Cundinamarca, páramo entre Cogua y San Cayetano, Laguna Verde, 1.5 km al NW de al Laguna, *Cleef 6195* (US); Arauca, Sierra Nevada del Cocuy, cabeceras de la Quebrada El Playon, 2 km al ENE del Alto Cusiri, *Cleef 8928* (US); near Guachicono, Páramo de las Barbillas, 19 Jul 1944, *Core 974* (US); Caldas, páramos del Ruiz sobre La Laguna, *Cuatrecasas 9356* (US); Cauca, Páramo de Juntas (extension of Páramo de Guanacas, KM 53), *Cuatrecasas 26404* (US); Norte de Santander, Páramo de Tama, arriba de la Cueva, *Cuatrecasas 12643* (US); Cauca, E slopes of Páramo del Purace on Páramo de San Rafael, headwaters of Río San José, *Cuatrecasas 26268* (US); Cundinamarca, Páramo de Cruz Verde, *Cuatrecasas 10470* (US); Cundinamarca, Macizo de Bogota, Páramo de Chisaca, Laguna Negra, *Cuatrecasas 25879* (US); Boyacá, Páramo Pan de Azúcar (Valle), *Espinal 2438* (US); Norte de Santander, limites entre los Departamentos Norte de Santander y Cesar, *García-Barriga 20614* (US); Boyacá, Sierra Nevada del Cocuy, Valle de los Corallitos, *Grubb 193* (US); Tolima, Tolima range, *Hanbury-Tracy 605* (US); Magdalena, Sierra Nevada de Santa Marta, ca. 1.5 km W of Laguna Río Frio on camino from San Pedro de la Sierra via Pico Jose Hilario, *Kirkbride & Forero 1816* (US); Boyacá, Páramo de la Rusia ca. 18 km from Duitama on road to Charala, *Langenheim J3410* (US); Cauca, in lichten Buschwaldungen an den Westgehängen des Páramo de Ruiz, *Lehmann 3097* (US); no other locality data, *Lehmann 7999* (US); Tolima, Páramo de Ruiz, *Pennell 3008* (US); Cauca, "Llano de Paletara," bank in paramo, 15-17 Jun 1922, *Pennell 6934* (US); Caldas, Páramo del Quindio, open bank, 15-20 Aug 1922, *Pennell 9831* (US); Caldas, Páramo del Quindio, *Pennell 10011* (US); Caldas, Páramo del Quindio, *Pennell 10019* (US); Cauca, Páramo de Moras, between Mozoco and Pitayo, Tierra Adentro, *Pittier 1401* (US). **ECUADOR.** Carchi, Páramo del Angel, *Asplund 7107* (US); Pichincha, Páramo de Guamani, *Asplund 9648* (US); Napo, E of Río Milin to Ainchilibi, alrededores de La Cordillera de Los Llanganati Chihuila Sacha o Ainchilibi, *Barclay 9080* (US); Imbabura, Cordillera Oriental, near Laguna San Marcos, N of Volcán de Cayambe, *Drew E-435* (US); Carchi, Road between Tulcan and Maldonado, páramo S of Volcán Chiles, *Eriksen 59047* (US); Carchi, páramos 12 mi W of Tulcan, *Hitchcock 20926* (US); Carchi, Páramo El Angel, in the pass in road El Angel-Tulcan, *Holm-Nielsen 5425* (US); Carchi, base of Volcán Chiles, KM 34-36 on road Tulcán-Maldonado, páramo, meadow and small lake area in *Espeletia*-páramo, elfin forest on sheltered places, erect herb along road in páramo, 19 May 1973, *Holm-Nielsen 5899* (US); Pichincha, Atacastro in páramo, *Holmgren 600* (US); Napo, Laguna San Marcos, NE of Volcán Cayambe, *Øllgaard 34078* (US); Napo, Road Olmedo-Laguna San Marcos, E of the pass, *Øllgaard 34155* (US); Tungurahua, Patate Canton, Parque Nacional Llanganates, Laguna de Aucacocha-Cerro Pan de Azúcar, *Ronquillo 2877* (US); Pichincha, Nevado Cayambe, W side of the volcano, *Sklenár 65* (US); Pichincha, Nevado Cayambe, W side of the volcano, *Sklenár 66* (US); Chimborazo, El Altar, N side of the volcano, *Sklenár 96* (US). **VENEZUELA.** Mérida, Laguna Coromota-Laguna Verde, Oct 1956, *Aristeguieta 2620* (US); Trujillo, Guirigay hacia Laguna La Parida, *Aristeguieta 3563* (US); Mérida, Sierra de Sto. Domingo, Páramo de La Laguna de Los Patos, just above Laguna de Los Patos, above and S of Laguna Negra, W-facing E wall of cirque, rocky slope with much *Espeletia*, 23 Nov 1959, *Barclay & Juajibioy 9719-A* (US); "Locus: L," no other locality data, 1976, *Bernardi et al. 17130* (US); Tachira,

Páramo de Tama, *Cardona 318* (US); Mérida, Páramo El Batallón, *Charpin 13554* (US); Trujillo, Mpio. Boconó, Páramo de Guirigay, Monumento Natural Teta de Niquitao-Guirigay, sector Veguitas, 20-21 Aug 2002, *Dorr 9156B* (US); Mérida, Laguna de Mucubajf, Páramo Sto. Domingo, *Gines 1690* (US); Merida, Páramo de Mucuchies, Dec 1927, *Gutzwiller 9* (US); Mérida, Páramo de Mucuchies, *Humbert 26305* (US); Lara, Parque Nacional Dinira, ladera del Páramo de Jabon, vertiente hacia el Tocuyo, sector "Los Charquitos," *Riina 691* (US); Zulia, Campamento 'Monte Viruela,' Sierra de Perijá, de Serranía Valledupar, *Tillett 747-1222* (US).