

## CARIBBEAN SPECIES OF *PSEUDOGNAPHALIUM* (ASTERACEAE: GNAPHALIEAE): TAXONOMIC SUMMARY

GUY L. NESOM

Research Associate

Academy of Natural Sciences of Drexel University

Philadelphia, Pennsylvania 19103

guynesom@sbcglobal.net

### ABSTRACT

Nine species of *Pseudognaphalium* are recognized from the Caribbean islands: *P. albescens*, *P. attenuatum*, *P. domingense*, *P. eggersii* (including *Gnaphalium rosillense*), *P. elegans*, *P. luteoalbum*, *P. selleanum*, *P. tortuanum*, and a previously undescribed species from Hispaniola: ***Pseudognaphalium scythiophyllum* Nesom, sp. nov.**, from Haiti and the Dominican Republic (earlier identified as *P. viscosum*). *Pseudognaphalium luteoalbum* (Jamaica) is widespread globally, *P. attenuatum* (Cuba, Jamaica, Puerto Rico) and *P. elegans* (Jamaica, Puerto Rico) have primary ranges in Mexico, Central America, and South America. *Pseudognaphalium domingense* (with one exception), *P. eggersii*, *P. scythiophyllum*, *P. selleanum*, and *P. tortuanum* occur only on Hispaniola; *P. domingense*, *P. eggersii*, *P. selleanum*, *P. scythiophyllum* and *P. tortuanum* occur in Haiti and the Dominican Republic; *P. domingense* occurs through Hispaniola and is known from Cuba (Trinidad Mountains) by only two collections. *Pseudognaphalium albescens* is endemic to Jamaica. Each of the nine species is mapped to show its distribution overall and in the Caribbean, and the distribution of *P. viscosum* is mapped to contrast with that of *P. scythiophyllum*. Photos of representative herbarium collections are provided for the six Caribbean endemics. Lectotypes are designated for *Gnaphalium eggersii*, *G. portoricense*, *G. selleanum*, and *G. tortuanum*.

Species of *Pseudognaphalium* in the Greater Antilles have been included in relatively recent floristic treatments (e.g., Jamaica–Adams 1972; Cuba–Liogier 1962; Hispaniola–Liogier 1996; Puerto Rico–Liogier 1997; summarized in Acevedo & Strong 2007). Only *P. domingense* and *P. luteoalbum* have been identified in the Lesser Antilles (Howard 1989, and see Acevedo-Rodríguez et al. 1996 for St. John, Nicolson 1991 for Dominica), none from the Bahamas (Correll & Correll 1982). The study here provides clarifications of species definitions, morphology, nomenclature and synonymy, and geographic distribution for the Caribbean species.

### Key to *Pseudognaphalium* species of the Caribbean islands

1. Leaves persistently tomentose on both surfaces, often glabrescent adaxially.
  2. Leaves linear-oblong, margins distinctly revolute, apex of corollas reddish; achene surface papillate with short, myxogenic hairs ..... **Psgn. luteoalbum**
  2. Leaves narrowly oblanceolate, margins not revolute, apex of corollas yellowish; achene surface smooth, glabrous.
    3. Stems 15–40 cm tall, stems and leaves often tawny; leaves mostly 0.5–2.5 cm long, hairs of at least adaxial leaf tomentum arising from a persistent but thin, non-viscid base ..... **Psgn. eggersii**
    3. Stems (20–)40–150 cm tall, stems and leaves whitish to gray; leaves mostly 2–5(–7) cm long, hairs of at least adaxial leaf tomentum arising from a persistent, thickened, slightly viscid base.
      4. Leaves sessile, not subclasping or ampliate ..... **Psgn. albescens**
      4. Leaves subclasping, sometimes slightly basally ampliate ..... **Psgn. domingense**
1. Leaves green and glabrous/glabrate or glandular adaxially, persistently tomentose abaxially,

5. Leaves eglandular adaxially, sessile, not clasping, subclasping, or decurrent ..... **Psgn. attenuatum**

5. Leaves stipitate-glandular adaxially, subclasping, clasping, and/or decurrent.

6. Stems 75–200 cm tall; leaves (8–)10–20 mm wide; involucre 5–6 mm high; pistillate florets 60–95, bisexual florets (5–)10–18 ..... **Psgn. elegans**

6. Stems 30–100 cm tall; leaves 2–6 mm wide; involucre 3.5–5 mm high; pistillate florets 21–58, bisexual florets 5–12.

7. Internodes mostly 4–18 mm long; leaves (1–)2–4 cm long with an abruptly attenuate apex, not decurrent, margins wavy; involucre tawny ..... **Psgn. selleanum**

7. Internodes mostly 10–25 mm long; leaves 3–8 cm long with an attenuate-acute apex, often short-decurrent, margins straight or wavy; involucre white.

8. Stems stipitate-glandular, without eglandular hairs; involucre ca. 5 mm high

..... **Psgn. scythiophyllum**

8. Stems eglandular, glabrescent but lightly and persistently gray-tomentose; involucre ca. 3.5–4 mm high ..... **Psgn. tortuanum**

### Distribution by island/country

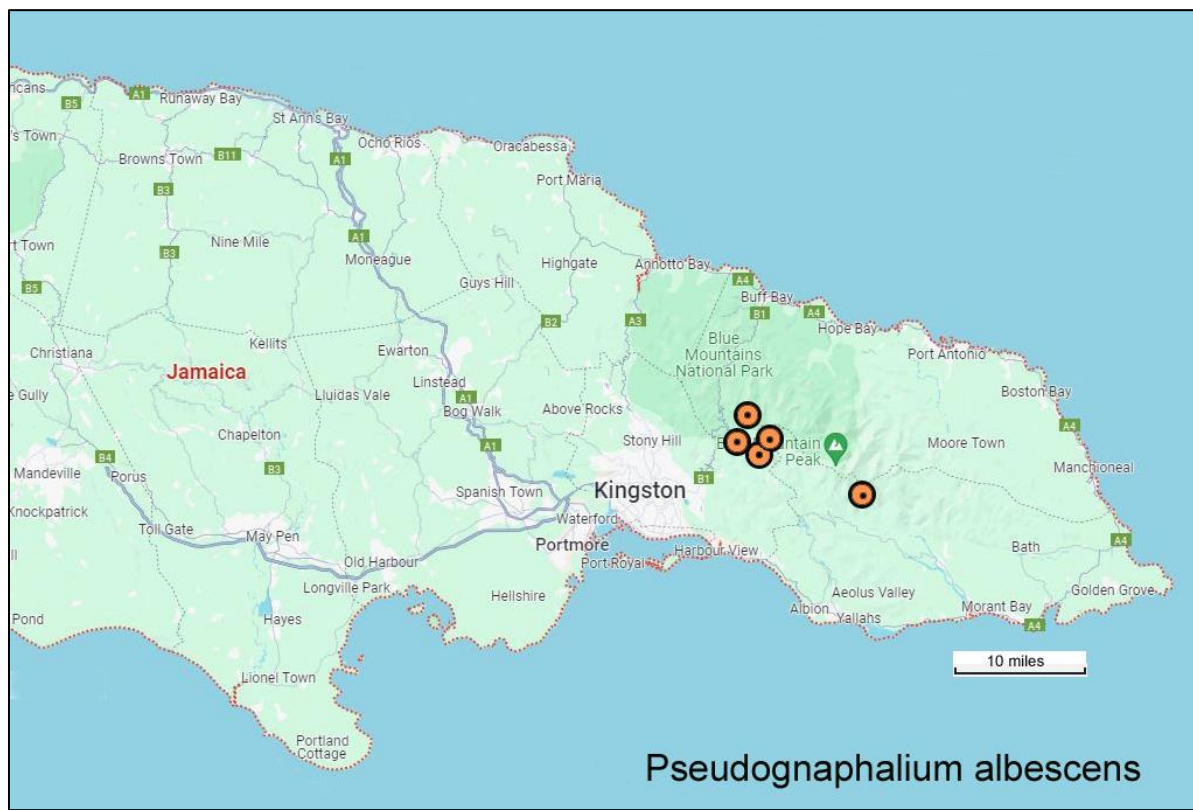
**CUBA** — *P. attenuatum*, *P. domingense*

**DOMINICAN REPUBLIC** — *P. domingense*, *P. eggersii*, *P. selleanum*, *P. scythiophyllum*, *tortuanum*

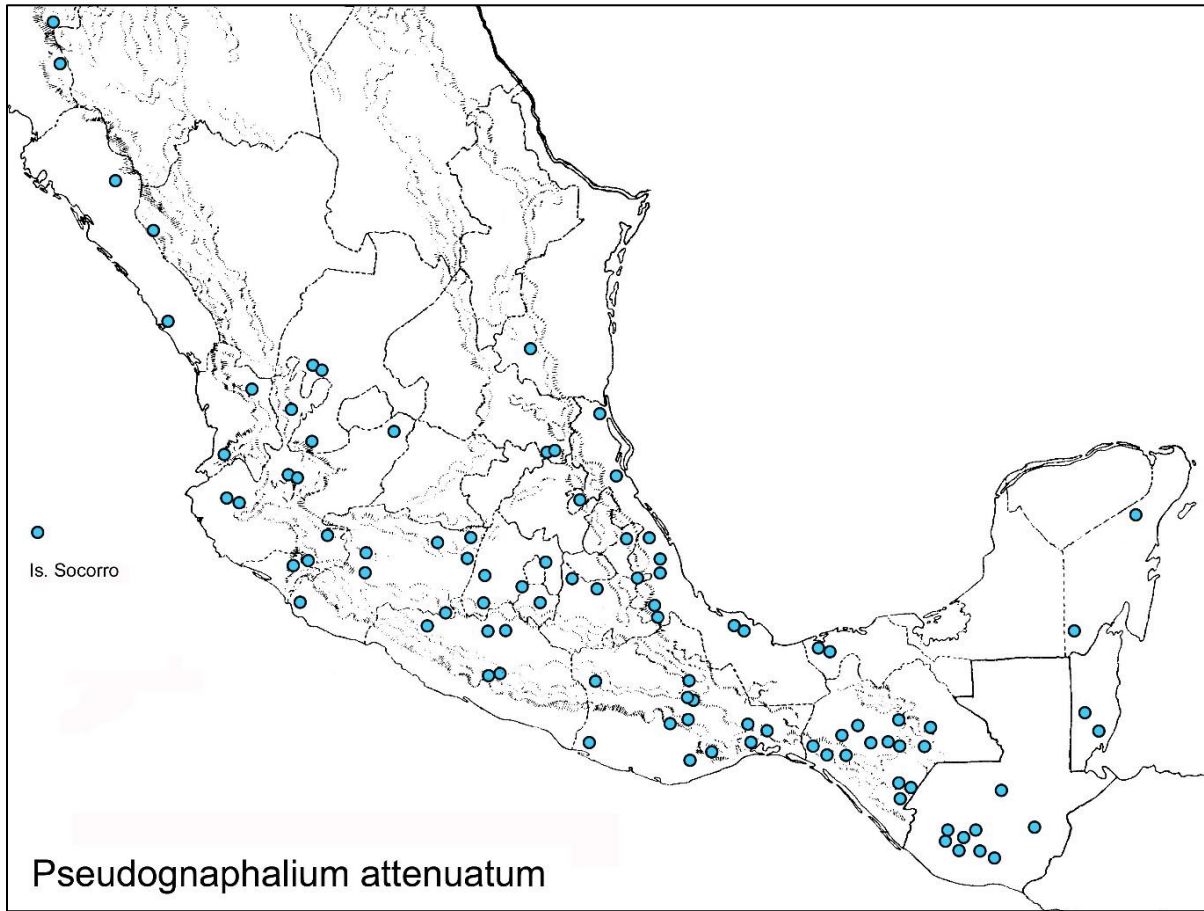
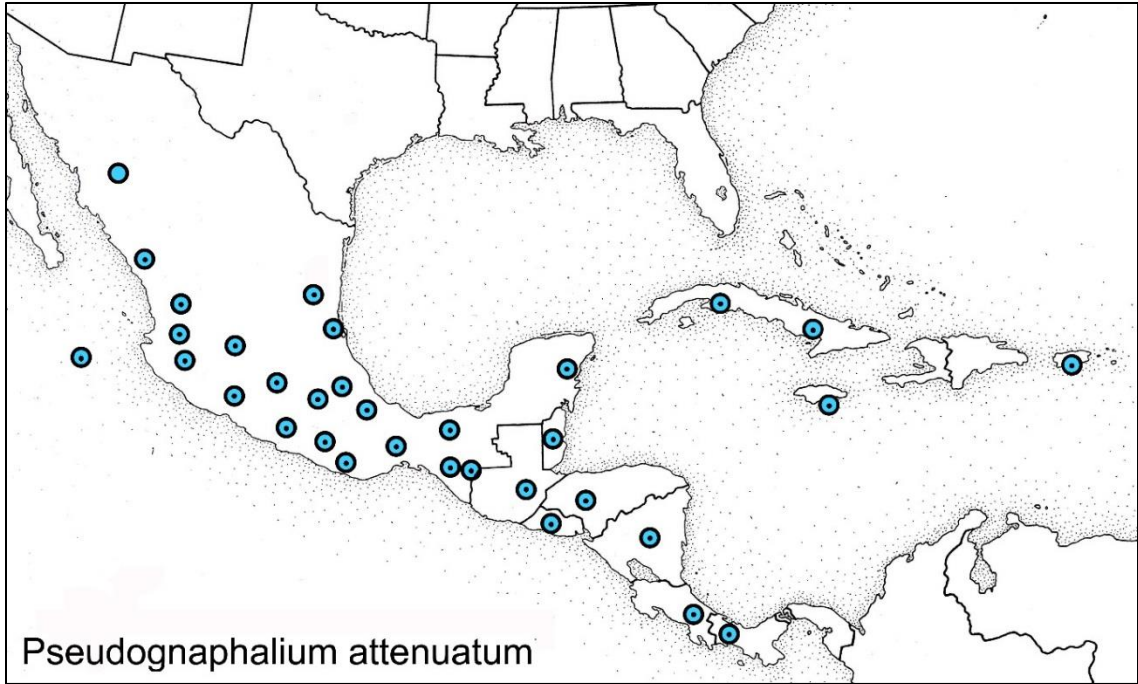
**HAITI** — *P. domingense*, *P. eggersii*, *P. selleanum*, *P. scythiophyllum*, *P. tortuanum*

**JAMAICA** — *P. albescens*, *P. attenuatum*, *P. elegans*, *P. luteoalbum*

**PUERTO RICO** — *P. attenuatum*, *P. elegans*



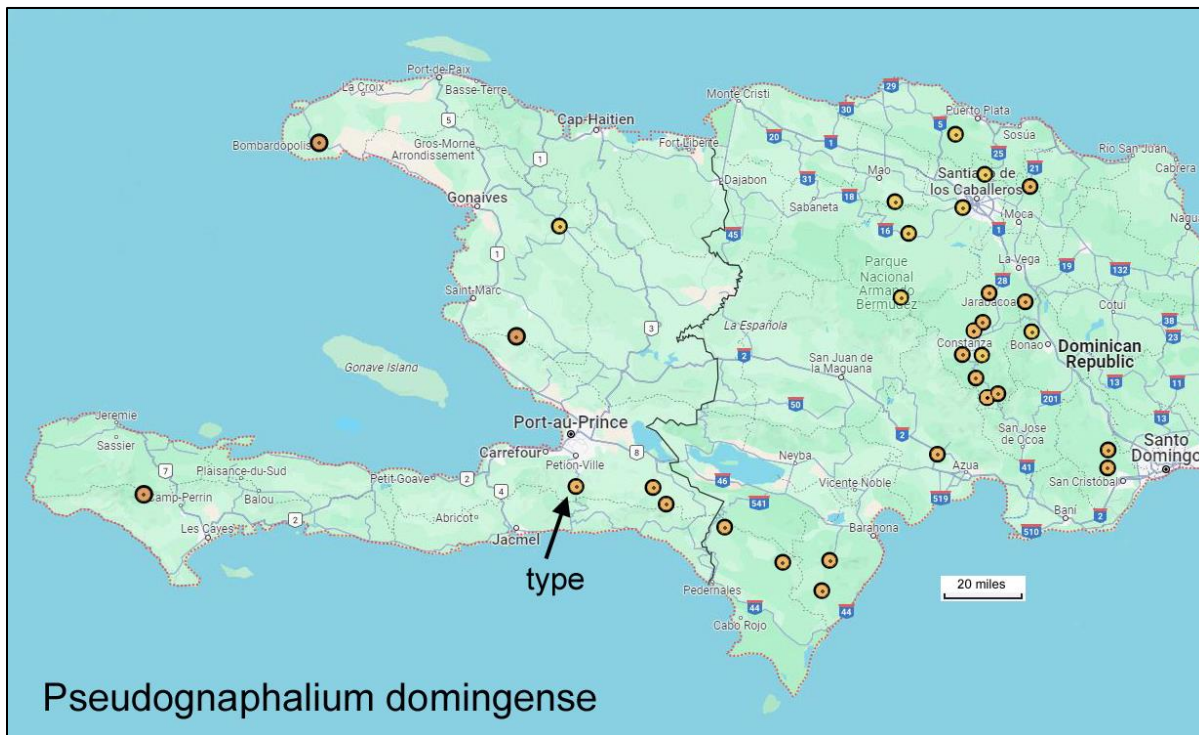
Map 1. Distribution of *Pseudognaphalium albescens*. Jamaica, endemic to the Blue Mountains.



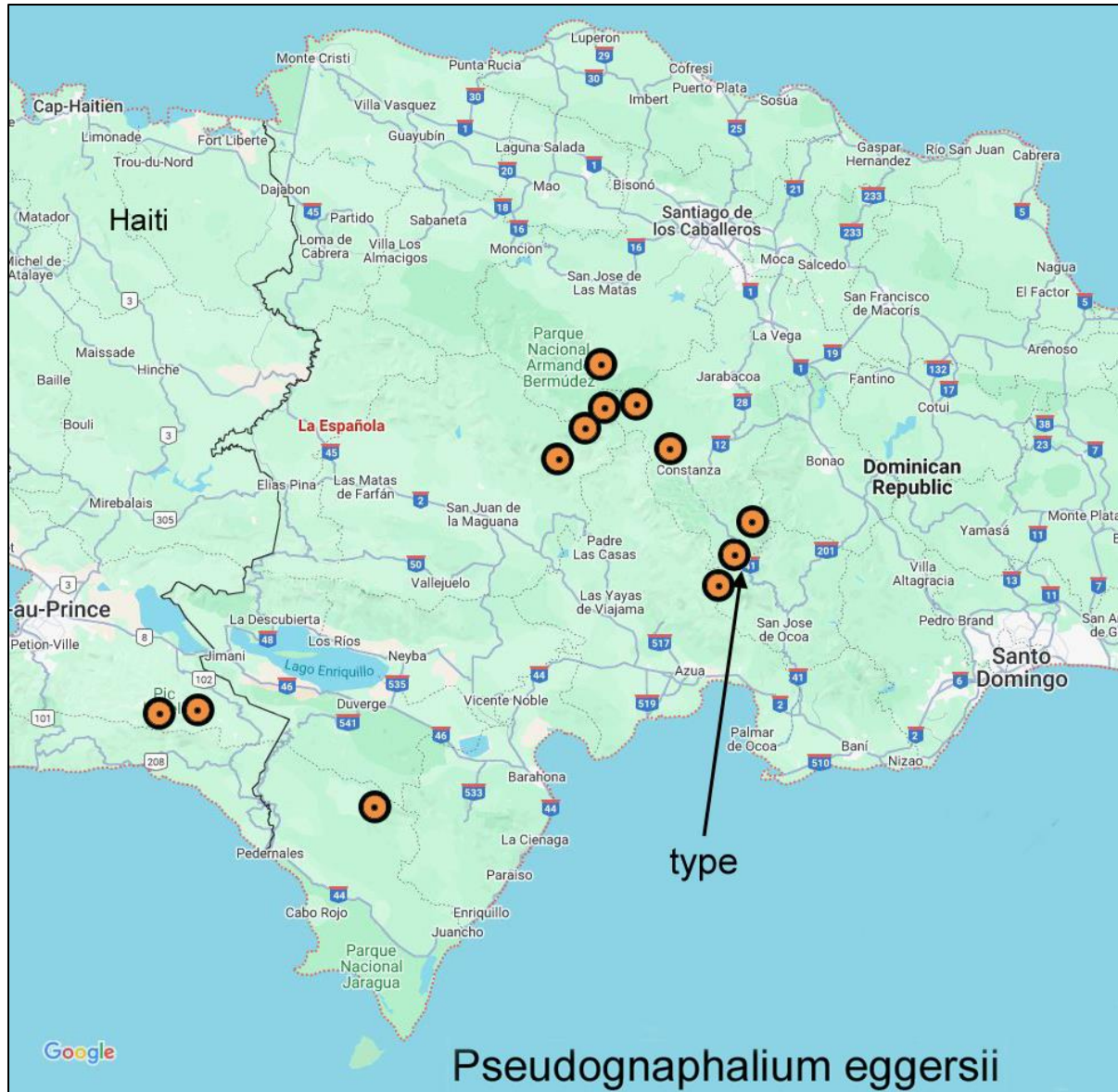
Map 2. Distribution of *Pseudognathalium attenuatum*. Above (all, Cuba, Jamaica, Puerto Rico). Its absence on Hispaniola is curious but I have seen no collection from there. Below Mexico, Guatemala, and Belize.



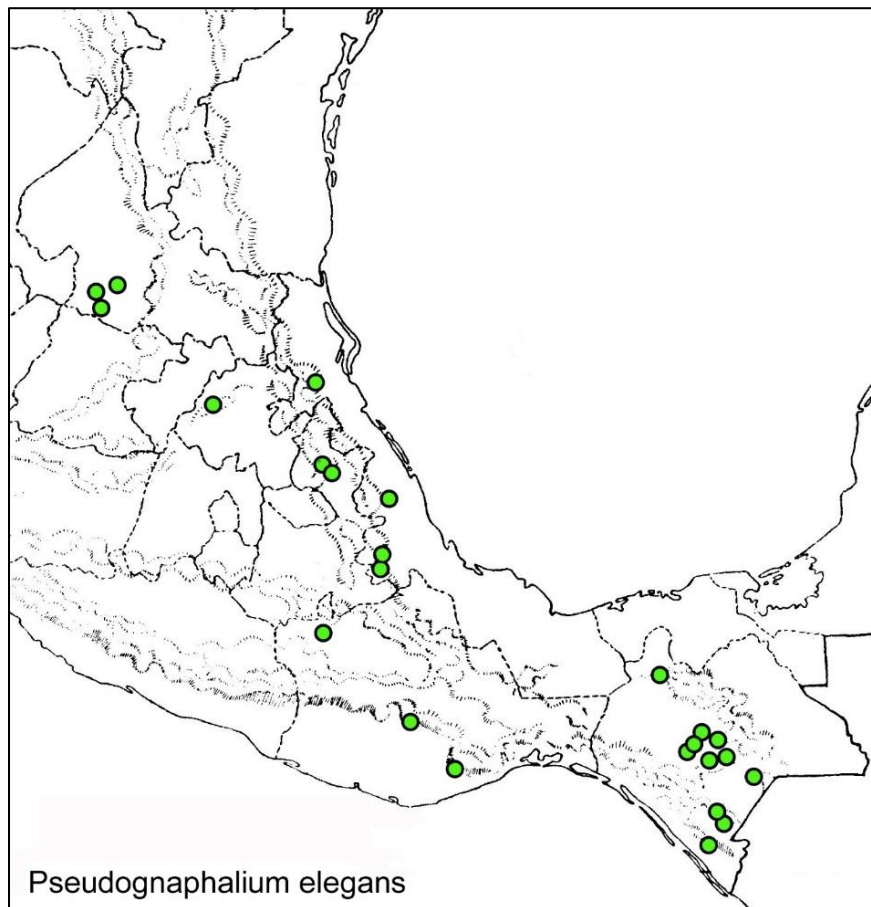
Map 3a. Distribution of *Pseudognaphalium domingense*. Endemic to Hispaniola except for two localities in Cuba (Trinidad Mountains near Santa Clara).



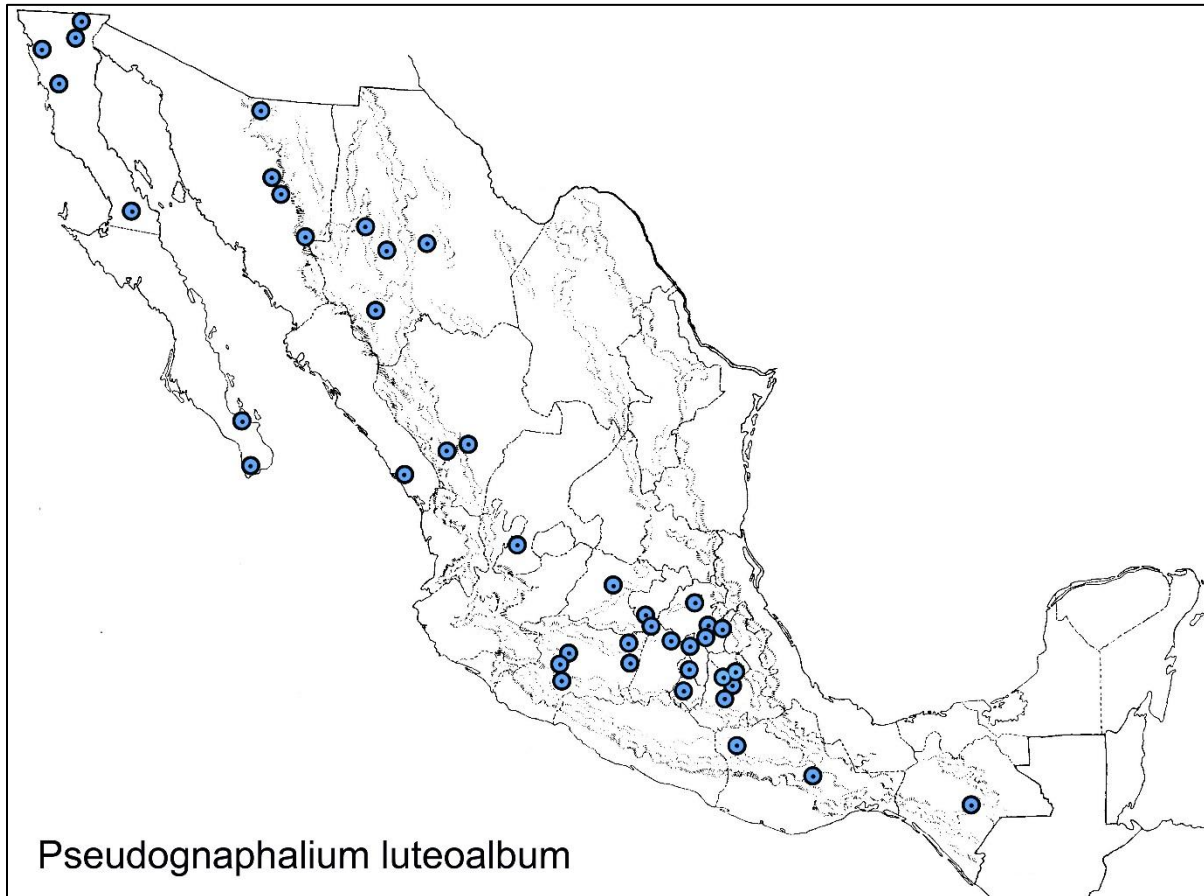
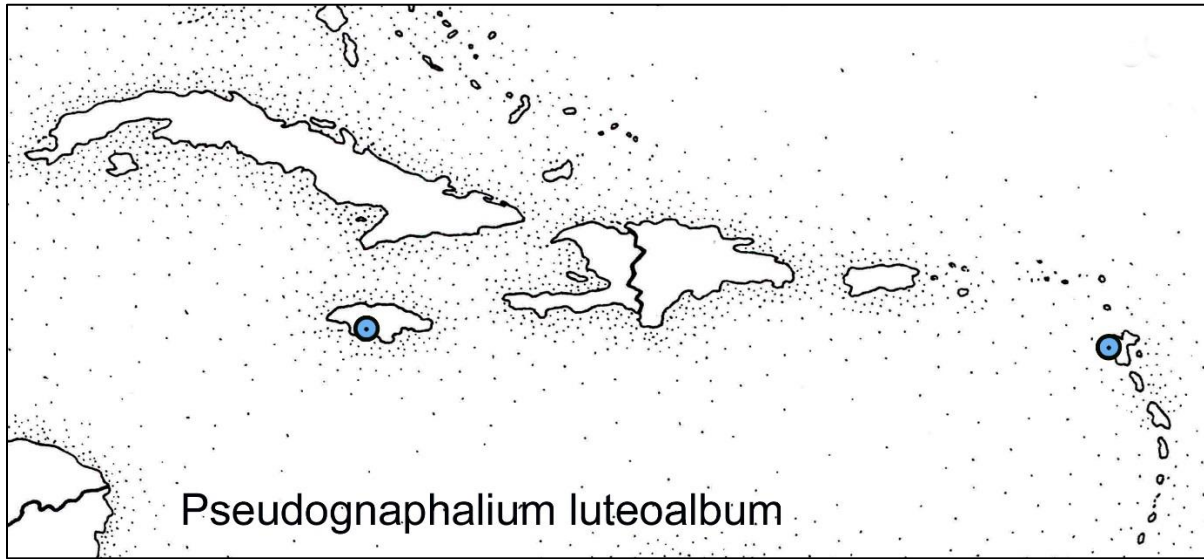
Map 3b. Distribution of *Pseudognaphalium domingense*. Haiti and Dominican Republic. The type locality (fide protologue) is "vicinity of Port-au-Prince."



Map 4. Distribution of *Pseudognathalium eggersii*.



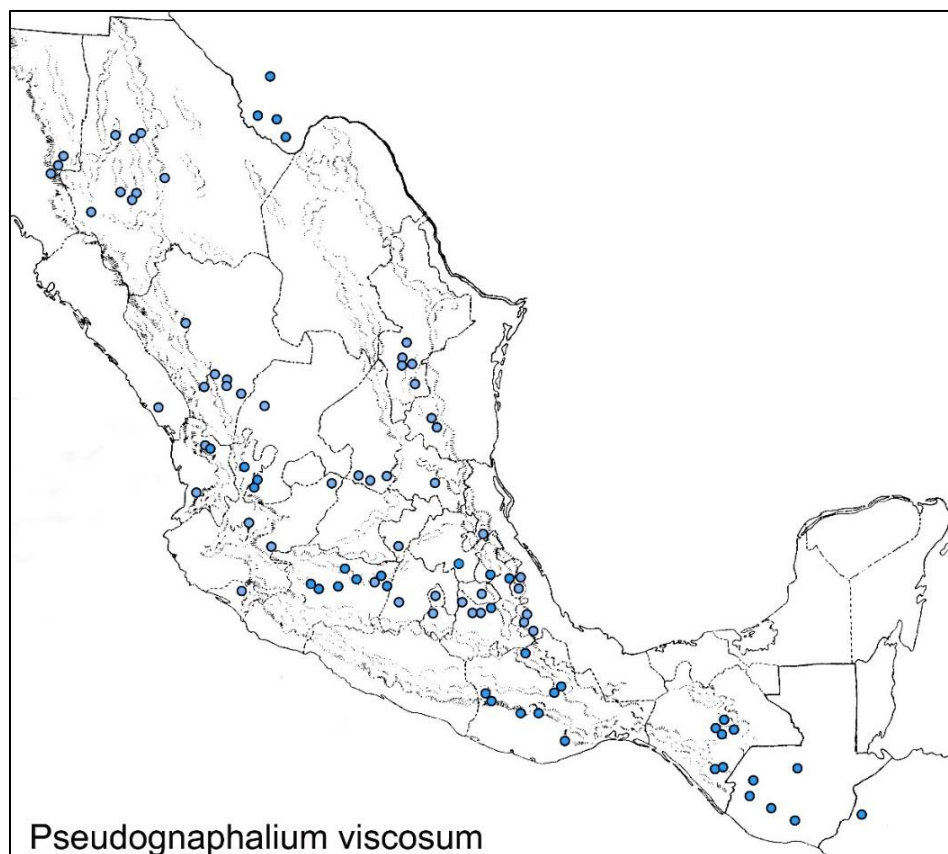
Map 5. Distribution of *Pseudognathalium elegans*. Above: all, Jamaica, Puerto Rico. Below: Mexico.



Map 6. Distribution of *Pseudognaphalium luteoalbum* in Mexico. Above: Caribbean localities (Jamaica, Guadeloupe). Below: Mexico. Widespread in the USA. No records seen from Central America (and see Pruski 2018). Sporadic in South America (Peru, Ecuador, Chile, Brazil, Argentina). Probably native to Eurasia and known also from Africa, Australia, New Zealand, and Pacific Islands.

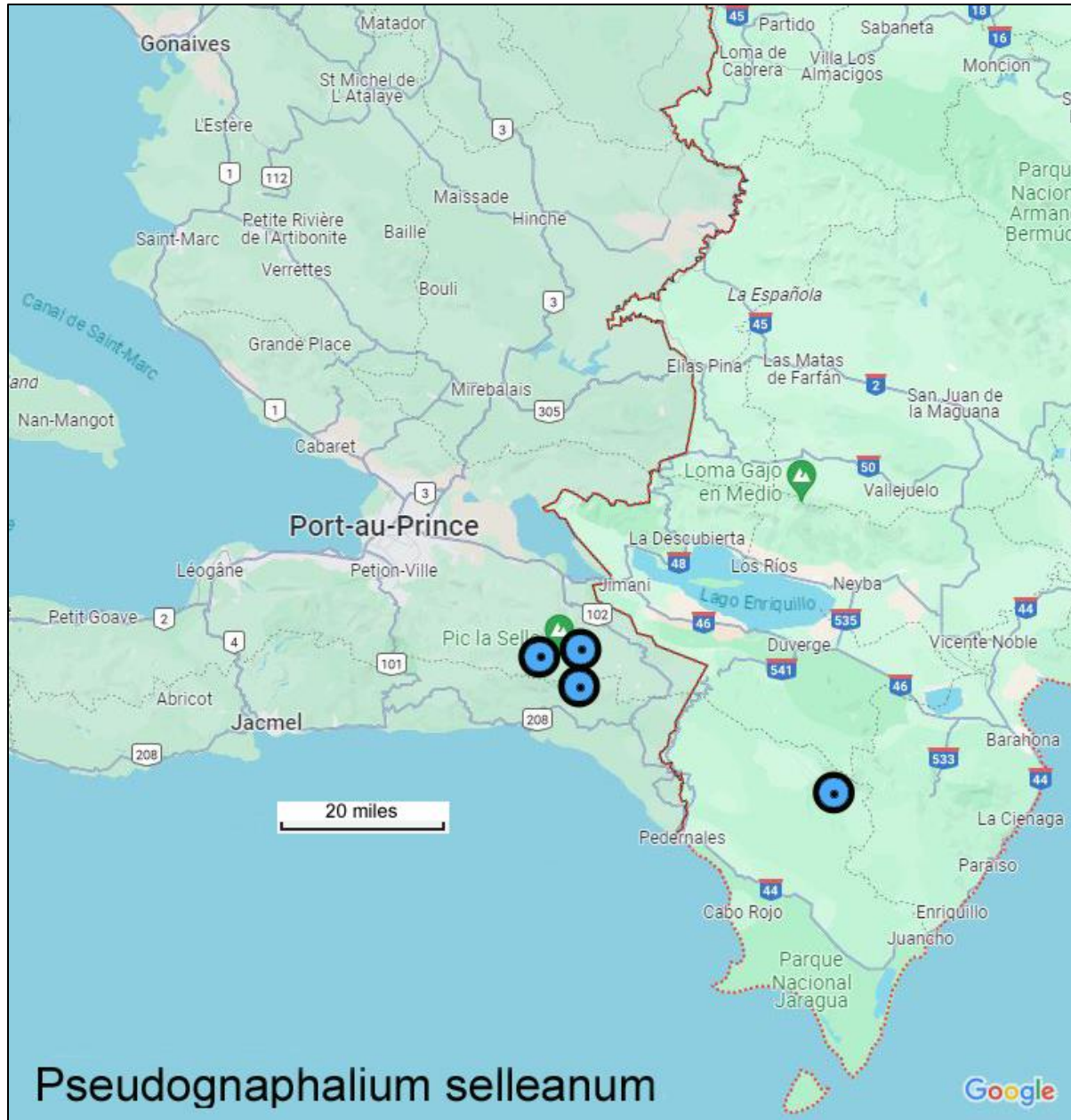


Map 7. Distribution of *Pseudognaphalium tortuanum* and *Pseudognaphalium scythiphyllum*.



Map 8. Distribution of *Pseudognaphalium viscosum*. The southeasternmost locality is in Dpto. Ocotepeque, Honduras. Texas records are in Brewster, Jeff Davis, and Presidio counties. Plants of the Caribbean *Pseudognaphalium scythiphyllum* have previously been identified as *P. viscosum*.





Map 9. Distribution of *Pseudognaphalium selleanum* (vicinity of Pic la Selle, Haiti, and Loma del Toro in the Sierra de Bahoruco, Dominican Republic).

1. **PSEUDOGNAPHALIUM ALBESCENS** (Sw.) Anderb., Opera Bot. 104: 147. 1991. *Gnaphalium albescens* Sw., Prodr. 112. 1788 [Oct]. **TYPE: JAMAICA.** 1784, *O. Swartz s.n.* (holotype: S 5-30312).

Short-lived **perennial herbs** from a woody taproot. **Stems** 20–100 cm tall, branched from the base and then near the heads, persistently white-tomentose, eglandular. **Leaves** narrowly oblanceolate, mostly 4–8 cm long, 3–7 mm wide, margins straight, apex acute, base sessile, not clasping or decurrent, slightly bicolor but persistently tomentose on both surfaces, adaxially slightly lighter and glabrescent, hairs from a persistent, thickened, viscid base. **Heads** in corymboid clusters; phyllaries in 3–4 series,

shiny white-opaque, oblong-ovate, apex rounded, inner mostly 4 mm long. **Pistillate florets** 25. **Bisexual florets** 6 (*Hart 661*). **Achene surface** smooth, longitudinally ridged. Figures 1-4.

Flowering September-April. Rocky and gravelly slopes, mesic habitats, roadsides; 900-1400 meters. Map 1.

**Additional collections.** JAMAICA. Blue Mountains, New Castle, 29 Sep 1908, *Britton 3835* (NY); Saint Andrew, Bellevue, roadside, hillside, mesic, 3500 ft, 29 Dec 1964, *Cornman s.n.* (MWCF, not seen); Catherines Peak, 3000 ft, 23 Jan 1888, *Eggers 3541* (US); no other data but probably from vicinity of Chinchona, *Hart s.n.* (NY); no other data but probably from vicinity of Chinchona, 1886, *Hart 661/513* (US); Saint Thomas, vicinity of Abbey Green, steep gravel slope (old landslide), ca. 4000 ft, 18 Dec 1954, *Proctor 9647* (GH); vicinity of Chinchona, slopes above St. Helen's Gap, 19 Apr 1909, *Taylor 4260* (NY). Adams (1972) also cited *Adams 5845* and *Wm. Harris 6691*.

*Pseudognaphalium albescens* is endemic to a relatively small area of the Blue Mountains, in Portland, St. Andrew, and St. Thomas parishes, at elevations of about 3000-4000 feet. It is very similar to *P. domingense* but differences in phyllary morphology and leaf insertion are consistent — phyllaries and shorter and more oblong and leaves are strictly sessile (like those of *P. attenuatum*).

2. **PSEUDOGNAPHALIUM ATTENUATUM** (DC.) Anderb., Opera Bot. 104: 147. 1991. *Gnaphalium attenuatum* DC., Prodr. 6: 228. 1838. **TYPE: MEXICO. Tamaulipas.** Tampico, 1827, *J.L. Berlandier 70* (holotype: G-DC 00312671; isotypes: G-00301179, P).

*Gnaphalium albescens* var. *cubense* Griseb., Pl. Wright. (Grisebach) 1: 514. 1860. **TYPE: CUBA.** Cuba orientale, open mountains, Santa La Madelina, 1856-57, *C. Wright 322* (holotype: GOET? not located; isotypes: GH, K, NY, US, YU).

Short-lived **perennial herbs** from a woody taproot. **Stems** 30–100 cm tall, lightly but persistently whitish-tomentose, eglandular. **Leaves** narrowly oblanceolate, 3–12 cm long, 3–10 mm wide, margins straight, apex acute, base sessile, not clasping/subclasping or decurrent, strongly bicolor, adaxially glabrescent and usually becoming glabrous, epidermis often shiny, abaxially persistently tawny-tomentose, eglandular. **Heads** in a corymboid cluster; phyllaries in 3–4 series, whitish to tawny, hyaline, narrowly ovate, apex acute, inner mostly 4 mm long. **Pistillate florets** 30–53. **Bisexual florets** 3–10 (Caribbean plants). **Achene surface** smooth longitudinally ridged. Figures 5-12.

Flowering December-April. Pine woods, roadsides; 350-900 meters. Map 2.

These plants apparently were first identified as *Gnaphalium attenuatum* by Urban (1915), who noted that *G. albescens* var. *cubense* was the same as the Mexican species *G. attenuatum*.

**Additional collections.** CUBA. Pinar del Rio, Sierra de Rangel, Taes-Taes, Jan 1931, *Acuña 5389* (NY); Pinar del Rio, Rio Guao, Microcycas arroyo, 17 Mar 1911, *Britton et al. 10103* (NY, US); Oriente, vicinity of Daiquiri, bank, 350 m, 14-16 Mar 1912, *Britton & Cowell 12645* (NY); Isle of Pines, La Cañada, arroyo, 16 Feb 1916, *Britton et al. 14409* (NY); Sierra de Nipe, Salto del Sojo, 20 Apr 1940, *Carabia 3722* (NY); ad San Antonis in fruticitis, Feb 1889, *Eggers 4752* (NY, US-2 sheets); Santa Clara, Las Vegas de Mataquá, Buenos Aires, 1900-2000 ft, 7 Apr 1928, *Jack 6493* (US); Santa Clara, Buenos Aires, Trinidad Hills, 2500-3500 ft, 11 Mar 1930, *Jack 7769* (NY, US); Oriente, Sierra Maestra, bordes de caminos en la Cordillera de la Gran Piedra, 23 Mar 1952, *López F. 424* (US); Oriente, Nipe Mts, dry red soil, 2000 ft, 1 Mar 1928, *Mitchell 6* (US); Pinar del Rio, mountains near El Guama, pine mountain, 9 Mar 1900, *Palmer & Riley 204* (US); Santiago, vicinity of El Cobre, 21-24 Feb 1902, *Pollard & Palmer 383* (US); Sierra Cubitas to Santa Rosa, Camaguey, 21 Feb 1909, *Shafer 540* (NY); Oriente, Sierra Nipe, near Woodfred, open pine woods, 500-650 m, 27 Dec 1909, *Shafer 3295* (NY, US-2 sheets); Santa Clara, vicinity of Sancti Spiritus, roadside, 15-24 Feb 1912, *Shafer 12141* (NY, US). JAMAICA. Maryland, rocky bank, 1 Mar 1908,

*Britton & Hollick 1763* (NY); St. Ann Parish, E of McKoy, 4.2 km SW of B3 junction at Cave Valley, farmland edge, 770 m, 13 Feb 2015, *Franck 3767* (USF). **PUERTO RICO.** On the Adjuntas road 8 mi from Ponce, 4 Dec 1902, *Heller 6201* (US); Utuado, ad los Angeles, 17 Jan 1887, *Sintenis 5919* (US).

**3. PSEUDOGNAPHALIUM DOMINGENSE** (Lam.) Anderb., *Opera Bot.* 104: 147. 1991. *Gnaphalium domingense* Lam., *Encycl.* 2(2): 743. 1788 [Apr]. **TYPE: HAITI.** Vicinity of Port-au-Prince, ca. 1779, *N.J. Thiéry s.n.* (P, herbarium of A. Thouin).

Protologue: "Gnaphalium fruticosum foliis lanceolatis versus basim angustatis semi-amplexicaulibus, floribus lateralibus & terminalibus, calycibus congestis" ... "Cette plante, que nous avons vue dans l'Herbier de M. Thouin, a été trouvée à Saint-Domingue par M. Thierry. h. (v.s.)." No specimen identified as *Gnaphalium domingense* in the Lamarck herbarium and none of the 83 total collections there, including the 8 unidentified, can be identified as *G. domingense* (pers. observ. via microfiche). A neotype may be required to formally ground the species definition, but it seems likely that type material may yet be found at P.

*Pseudognaphalium acutiusculum* (Urb. & Ekman) Anderb., *Opera Bot.* 104: 146. 1991. *Gnaphalium acutiusculum* Urb. & Ekman, *Ark. Bot.* 23A(11): 78. 1931. **TYPE: HAITI.** Massif de la Selle, Morne del la Selle, slopes of Morne Emérillon, ca. 1800 m, 2 Feb 1925, *E.L. Ekman 3180* (holotype: S; isotype: US). Identified by Liogier (1996) as *Gnaphalium "acutissimum."*

Short-lived **perennial herbs** from a woody taproot. **Stems** mostly 40–150 cm tall, often woody at base, sometimes branching at the base, then unbranched until near the inflorescence, persistently white-tomentose, eglandular. **Leaves** narrowly oblanceolate, 2–5(–7) cm long, 2–5(–10) mm wide, margins straight, apex acute, base subclasping, sometimes slightly ampliate, not decurrent, slightly bicolor but persistently tomentose on both surfaces, adaxially slightly lighter and glabrescent, hairs from a persistent, thickened, viscid base, or distinctly bicolor in Haiti with adaxial surface green-glabrescent. **Heads** in corymboid clusters; phyllaries in 3–4 series, shiny white-opaque, ovate, apex obtuse to rounded, inner mostly 4–5 mm long. **Pistillate florets** 29–44. **Bisexual florets** 5–10. **Achene surface** smooth, longitudinally ridged. Figures 13-19.

Flowering (June-) November-March. Pine land, often disturbed, roadsides; 200-1600 (-2700 at La Rucilla) meters. Map 3.

**Additional collections.** **CUBA.** Prov. Santa Clara [Las Villas]: Trinidad Mountains, Arroyo Grande, grassy hill, 650-750 m, 11-12 Mar 1910, *Britton & Wilson 5439* (NY, US); Trinidad Hills, Buenos Aires, 2500-3500 ft, 11 Mar 1930, *Jack 7769* (NY). **DOMINICAN REPUBLIC.** Barahona, Polo, Loma la Haut, 26 Feb-12 Mar 1922, *Abbott 1864* (US) and *1865* (NY); Pedernales, Sierra de Baoruco, El Aceitillar (Station 1, Substation 1), 14 Jun 2003, *Acevedo-Rodríguez 12957* (US); Santiago, vicinity of Santiago, near Military Barracks, La Cumbre, N of Santiago, 11 Jun 1946, *Allard 14561* (NY, US); La Vega, Vicinity of Jarabacoa, along hwy near Jimenoa Falls, 25 Jan 1946, *Allard 14861* (US); La Vega, Vicinity of Constanza, road from Constanza to Valley Nuevo, 4 Dec 1947, *Allard 17391* (US); La Vega, Vicinity of Constanza, road between Constanza and Valley Nuevo, 4 Dec 1947, *Allard 17439* (US); La Vega, Cordillera Central, Constanza, 26 Oct 1929, *Ekman 13931* (US); Barahona, hohe Berge, Oct 1910, *Fuertes 627* (NY); Barahona, trail between Pedernales and Aceitillar, 8-12 Aug 1946, *Howard 8126* (NY); Santiago, El Buzo, 14 Jun 1945, *Jiménez 303* (US); Barahona, Los Montones, 31 May 1942, *Jiménez 418* (US); Santiago, La Cumbre, en los límites de las Prov. de Santiago y Puerto Plata, 11 Jan 1946, *Jiménez 989* (US); La Vega, Nevera, 16 Feb 1963, *Bro. BA Lavastre 651* (NY); La Vega, Constanza, 28 Nov 1963, *Bro. BA Lavastre 1095* (NY); Guácara valley, tributary to Bao river, S of Mata Grande, La Guácara Arriba, 5-9 Nov 1969, *Liogier 13443* (NY, US), Puerto Plata, Sierra de Yaroa, 28-29 Jan 1969, *Liogier 13560* (US); Santiago, Cañada de Caimito to ca. 2 miles NW of San José de las Matas, pine forest on sandstone, 600 m, 7 May 1969, *Liogier 15121* (NY, US); Pedernales, Near Canote, about 5 miles W of Aceitillar, Baoruco Mts, 9 Nov 1969, *Liogier 16860* (NY, US); [San

Cristóbal], Cabirma de la Loma, 28 Nov 1970, *Liogier 17727* (NY, US); Bonaó, Alto Casabito, 18 Dec 1971, *Liogier 18304* (NY); La Horma Arriba, 10 Nov 1973, *Liogier 20695* (NY); La Vega, cerca del Salto de Constanza, 19-20 Jan 1974, *Liogier 21069* (NY); La Vega, cerca del Salto de Constanza, 7 Dec 1974, *Liogier 21941* (NY); La Vega, Las Aguas Blancas, Constanza, 19 Jan 1975, *Liogier 22289* (NY); Pedernales, Aceitilla, 30 Mar 1961, *Marcano 4468* (NY); Santiago, La Rucilla, 26 Mar 1964, *Marcano 4911* (US); Santiago, Loma del Valle de Bao, San Jose de las Matas, 31 Dec 1969, *Marcano 5759* (NY); La Vega, Constanza, Feb 1910, *von Türckheim 2907* (NY, US); Santiago, Jicomé, 26 Dec 1929, *Valeur 320* (NY, US); Pedernales, "Isla," W of the Hoyo de Pelempito, NE of Cabo Rojo, 11 Feb 1981, *Zanoni 10908* (NY, US); La Vega, 6 km W del pueblo rural de la Culata (de Constanza), 28 Apr 1982, *Zanoni 20259* (NY).

**HAITI.** Massif des Matheux, Mirebalais, N slope of Montagne Terrible, limestone, 600 m, 7 Feb 1926, *Ekman 5514* (S); Massif de la Hotte, western group, Torbec, S slope of Morne Formon, pineland, 2000 m, 31 Dec 1926, *Ekman 7471* (S); vicinity of St. Michel de l'Atalaye, north side of Mt. La Cidre, steep grassy slopes, 350 m, 16 Dec 1925, *Leonard 8054* (GH); vicinity of Bombardopolis, dry mountain slope S of town, 610 m, 21-26 Feb 1929, *Leonard 13538* (NY).

Acevedo et al. (1996) cited a collection of *Pseudognaphalium domingense* from St. John (Caneel Bay, W673, as a "rare coastal weed") but I have not seen the specimen. The geographic distribution of *P. domingense* has been overestimated (summary by Acevedo-Rodríguez & Strong 2007, citing Adams 1972, although Adams not include *P. luteoalbum*) because of a mistakenly broad interpretation of its identity — except for the apparently rare occurrence in Cuba, it is restricted to Hispaniola. Liogier (1962) did not record the presence of *P. domingense* in Cuba. Plants identified by D'Arcy (1975) as *P. domingense* in Panama are *P. elegans* -- *P. domingense* was not included by Pruski (2018) for Flora Mesoamericana.

Allard made 3 collections of *Pseudognaphalium* near the Military Barracks at La Cumbre, north of Santiago. *Allard 14561* is typical *P. domingense*; *14576* and *14604* are similar but with greatly reduced vestiture (adaxial leaf surfaces are green, not tomentose, but expanded trichome bases are present and dense). I have identified both of the latter as *P. domingense*, with the caveat that the two forms at this locality appear to be genetically isolated.

Prov. Santiago, vicinity of Santiago, bank near Military Barracks at la Cumbre, 200-500 m, 11 Jan 1946, *Allard 14561* (US) — typical *P. domingense*; *Allard 14576* (US) and *14604* (US) — atypical variant.

**4. PSEUDOGNAPHALIUM EGGERSII** (Urb.) Anderb., Opera Bot. 104: 147. 1991. *Gnaphalium eggersii* Urb., Symb. Antill. 3(3): 410. 1903. **LECTOTYPE** (designated here): **DOMINICAN REPUBLIC.** Valle Nuevo, 2270 m, 29 May 1887, *H.F.A. von Eggers 2263* (K: isolectotype: KFTA).

Urban cited two collections: *Eggers 2231* (not seen) and *Eggers 2263*. According to Urban (1900), collections by Eggers from the Dominican Republic and Haiti (his numbers 1500-2861) were distributed to B, BREM, CORD, G-DC, G-Delessert, GOET, HAL, HBG, K, L, LE, M, NY, US-J.D. Smith, W, and WRSL.

*Gnaphalium rosillense* Urb., Repert. Spec. Nov. Regni Veg. 13: 481. 1915. *Pseudognaphalium rosillense* (Urb.) Anderb., Opera Bot. 104: 148. 1991. **TYPE: DOMINICAN REPUBLIC.** Prov. de la Vega, Loma Rosilla, 2700 m, Jul 1912, *M.D. Fuertes-L. 1733* (not located).

In the *Gnaphalium rosillense* protologue, Urban compared it to *G. domingense*, without reference to *G. eggersii*. Liogier (1996) included *G. rosillense* among the Dominican Republic species, but I have seen no collection that might represent a species other than the five treated here for Hispaniola. Moscoso (1943, p. 668) included the species as "Gnaphalium rucillense."

I have not seen the type of *Gnaphalium rosillense*, but the protologue description does not fit *G. scythiophyllum* and nothing excludes it from *G. eggersii*, which is common in the area. The synonymy here seems justified but is tentative until the type collection might be found.

From the type locality of *P. rosillense*, (Loma La Rucilla, just northeast of Pico Duarte), I have seen collections of each of three different species:

*P. domingense* – La Rusilla, 2702 m, 26 Mar 1964, *Marcano 4911* (US).

*P. eggersii* – Pic de la Rusilla, 3000 m, 1 Jan 1951, *S. Bueno 2249* (US). Another collection of *P. eggersii* was made at what appears to be a different locality by the same name: Ciénaga de Manabao, Jarabacoa, La Rucilla, pine barrens in exposed places, 2100 m, 10 Dec 1969, *Liogier 17222* (US, identified by Liogier as *G. rosillense*).

*P. scythiophyllum* – La Rusilla, 2702 m, 26 Mar 1964, *Marcano 4907* (US).

Annual to short-lived **perennial herbs** from a woody taproot. **Stems** mostly 15–40 cm high, simple or sometimes branched above the middle, persistently villous-tomentose, eglandular. **Leaves** oblong to oblong-ob lanceolate or narrowly lanceolate, mostly 0.5–2.5 cm long, 2–6 mm wide, margins straight or wavy, base subclasping to clasping, slightly ampliate, not decurrent, concolor or slightly bicolor, both surfaces persistently tomentose, hairs from a thin, non-viscid base, eglandular. **Heads** in small clusters, closely subtended by tomentose bracts; phyllaries in 3–4 series, triangular to narrowly ovate-triangular, tawny to tawny-white, hyaline, shiny, inner 4 mm long. **Pistillate** florets 26–38. **Bisexual florets** 5–10. **Achene surface** smooth, longitudinally ridged. Figures 20–25.

Flowering July–January. Open pine land, often in rocky habitats; 1650–3200 meters. Map 4.

**Additional collections. DOMINICAN REPUBLIC.** Baoruco, Sierra de Neiba, Sabana del Silencio (disturbed valley, covered with *Danthonia*, area apparently was once a pine forest), 18° 39' 07" N, 71° 33' 26" W, hillsides covered with broad-leaved forest, 2201 m, 21 Jun 2003, *Acevedo-Rdgz. 13172* (NY, US); Pié de la Rusilla, 3000 m, 1 Jan 1951, *S. Bueno 2249* (US); Valle Nuevo above Constanza, 2250 m, 16 Sep 1937, *Chardon 01* (NY); Barahua, Cordillera de Bahoruco, Sierra de los Comisarios, in pinelands, common above ca. 2000 m, 30 Aug 1926, *Ekman 6819* (NY); de Azua, Cordillera Central, San Juan, Lomas de la Mediania, in pinelands, ca. [9600 ft], 15 Sep 1929, *Ekman 13550* (US); San Juan, Pico Duarte, among rocks at summit, 3175 m, 19 Jul 1967, *Gastony et al. 353* (NY-2 sheets, US); La Vega, vicinity of La Lagunita (Lagüita), very open pine forest, bunch grass ground cover, area often in clouds, 2800–2900 m, 19 Jul 1967, *Gastony et al. 305* (NY-1711891, US-mixed with a species of Senecioneae) — NY-1719886 has only a branch of Senecioneae; San Juan, Cordillera Central N of Rio Arriba del Norte, Sabana Nueva, open hillside, 6500 feet, 17–20 Sep 1946, *Howard 9131* (GH, NY); Valle Nuevo, 2200 m, muy común por todas partes, 19 Oct 1947, *Jiménez 1576* (TAES, US); La Vega, Valle Nuevo, common in pine land, 2200 m, *Jiménez 3549* (US); El Valle, headwaters of Bao river, Cordillera Central, common on rocks in exposed situation, 1650 m, 1–7 Oct 1968, *Liogier 12784* (NY, US); Ciénaga de Manabao, Jarabacoa, La Rucilla, pine barrens in exposed places, 2100 m, 10 Dec 1969, *Liogier 17222* (US); Valle Nuevo, en lugar herboso, 2200 m, 6 Apr 1974, *Liogier 21546* (NY); San José de Ocoa, La Nevera [ca. 18° 42' 00" N, 70° 36' 00" W], en zona descubierta, 2100 m, 19 Jan 1975, *Liogier 22310* (NY); Valle Nuevo, Station 9085, 9 Jun 1978, *Liogier 9085-14* (NY); prope Constanza in Valle Nuevo, in pineto, 2200 m, Aug 1910, *von Türckheim 3546* (GH, NY, US). **HAITI.** Massif de la Selle, Pétionville, Morne La Visite, open pine forest, ca. 2000 m, 12 Aug 1924, *Ekman 1458* (US); Massif de la Selle, ridges to the W and SW of Pic La Selle, open forest of *Pinus occidentalis* with *Agave antillarum*, 2300 m, common herb, 21 May 1984, *Judd 4933* (FLAS); Plateau Pistache, E slope of Massif de la Selle, pine forest, in clearings, ca. 6300 ft, 15 Sep 1955, *Proctor 10749* (US).

*Pseudognaphalium eggersii* is distinctive in its short stature, small leaves, gray to tawny stems, and concolor to only slightly bicolor leaves subclasping to clasping, but not decurrent, at the base.

- 5. PSEUDOGNAPHALIUM ELEGANS** (Kunth) Kartesz, Synth. N. Amer. Fl., Nomencl. Innov. 28. 1999. *Gnaphalium elegans* Kunth Nov. Gen. Sp. 4(15): 81 (ed. fol.). 1818. Protologue: Crescit locis apricis Regni Quitensis prope Chillo et Cachambamba, alt. 1340 hex. ♀ Floret Junio." **TYPE**: **ECUADOR**. Pichincha, 2450 m, Jun 1802, *Humboldt & Bonpland 3001* (holotype: P-HBK 00322306; isotypes: P 00704547, P 00704548).

Freire et al. (2018) designated , HBK 00322306 as the lectotype. Among the 3 sheets of type material at P, it is the only one with a handwritten label as "Gnaphalium elegans, n. 3001" — it is labeled "TYPE" by annotation of herbarium P and justifiably considered the holotype. The other 2 sheets at P are identified as *Gnaphalium elegans* on a printed label specifying "N. Gen. IV, 81."

- Gnaphalium poeppigianum* DC., Prodr. 6: 227. 1837 [1838]. **TYPE**: **PERU**. Dpto. Huánuco, Cuchero, Sep 1829, *E.F. Poeppig pl. exs. n. 34 diar. 1368* (holotype: G-DC; isotypes: F, F-fragment, B† photo F0BN-015138, GH, GH-fragment, HAL, NY, P-2 sheets).

Freire et al. (2018) designated the G-DC specimen as "lectotype" — it is the only one of 1368 at G-DC, it has an unambiguous label, it has the red herbarium annotation label as "TYPUS," and is justifiably considered the holotype.

- Gnaphalium portoricense* Urb., Symb. Antill. 3(3): 409. 1903. **LECTOTYPE** (designated here): **PUERTO RICO**. Maricao in monte, Montoso, Nov 1884, *P. Sintenis 205* (NY-855166; isolectotypes: NY-855165, P-4 sheets, US). Protologue: "Hab. in Portorico in declivibus umbrosis ad Eneas, prope Utuado in montibus scopulosis ad Los Angeles, prope Peñuelas in declivibus montis Jagua, prope Maricao in monte Montoso, m. Jan. flor.: *Sintenis 205, 205<sup>b</sup>, 4590, 5836, 5919.*"

NY-855166 is shown via JSTOR Global Plants as "Type" of the species, the US sheet as "Isotype."

- Gnaphalium jamaicense* Urb., Repert. Spec. Nov. Regni Veg. 13: 481. 1915. **TYPE**: **JAMAICA**. St. Andrews Mountains, 4000 ft, Apr 1858, *Mr. Wilson 373* (holotype: GOET).

**Annual herbs** from a woody taproot. **Stems** 75–200 cm tall, persistently white-tomentose, eglandular. **Leaves** narrowly elliptic-lanceolate to oblanceolate, 3–8(–14) cm long, 5–20 mm wide, margins straight or wavy, apex acute, base clasping, not decurrent, strongly bicolor, green adaxially and densely stipitate-glandular, white-tomentose abaxially. **Heads** in a corymboid array; phyllaries in 4–5 series, white-opaque, ovate, apex acute to obtuse, inner 5–6 mm long. **Pistillate florets** 60–95. **Bisexual florets** (5–)10–18. **Achene surface** smooth, longitudinally ridged. Figures 26–32.

**Representative collections.** **JAMAICA**. Chinchona, 5000 ft, 18 Feb 1900, *Clute 203* (US); Chinchona, no date, *Hart s.n.* (US); Chinchona, shrubby open bank, 1500 m 21 Jun 1904, *Maxon 2600* (US). **PUERTO RICO**. Adjuntas road 8 mi from Ponce, 4 Dec 1902, *Heller 6201* (US); Utuado, rocky banks, 27 Dec 1937, *Sargent B120* (US); Peñuelas, in declivibus montis, 10 Jun 1886, *Sintenis 4590* (US); Los Angeles, 17 Jan 1887, *Sintenis 5919* (US). **ST. JOHN**. Caneel Bay, 01/11 1983, *Woodbury s.n.* (US-photo). Map 5.

*Pseudognaphalium elegans* is distinctive in its tall stature, large heads with white involucre, and large, strongly bicolor leaves adaxially green and stipitate-glandular. Liogier (1997) identified *P. domingense* in Puerto Rico, with *Gnaphalium portoricense* as a synonym — the ID was corrected by Axelrod (2011). All collections seen in this study from Puerto Rico have oblong leaves (as in the type of *Gnaphalium portoricense*) — those of continental plants vary from broadly oblanceolate (as also in Jamaica, e.g., Fig. 26) to narrowly oblong.

Plants in Jamaica identified by Adams (1972) as *Pseudognaphalium domingense* are *P. elegans* (his key and description — phyllaries up to 5.5 mm long, leaves sinuate-undulate margined, strongly discolor and glandular). He noted this: "Very local (St. Thomas) on exposed pathside banks; 7200-7400 feet; fl. and fr. Jan Apr. Adams 10675, Asprey UCWI 1037, Weaver!).

**6. PSEUDOGNAPHALIUM LUTEOALBUM** (L.) Hilliard & Burt, Bot. J. Linn. Soc. 82: 206. 1981. *Gnaphalium luteoalbum* L., Sp. Pl. 2: 851. 1753. *Helichrysum luteoalbum* (L.) Rchb., Handb. Gewächsk., ed. 2, 2: 1460. 1829. *Filaginella luteoalba* (L.) Opiz, Seznam: 44. 1852. *Laphangium luteoalbum* (L.) Tzvelev, Byull. Moskovsk. Obsch. Isp. Prir., Otd. Biol. 98: 105. 1993. **TYPE**: "Habitat in Helvetia, G. Narbonensi, Hispania, Lusitania," *Van Royen s.n.* (lectotype, designated as "TYPE" by Hilliard & Burt [1981: 206]: LINN 900.286-294, see LINN 989.45, Fig. 33, as shown in The Linnean Collections <[https://linnean-online.org/linnaean\\_herbarium.html](https://linnean-online.org/linnaean_herbarium.html)>).

Other synonymous names, fide Freire et al. (2022), and also see Koster (1941):

*Gnaphalium trifidum* Thunb., Prodr. Pl. Cap. 2: 150. 1800. **TYPE**: South Africa.

*Gnaphalium multiceps* Wall., Numer. List [Wallich] n. 2949. 1831. **TYPE**: Nepal.

*Gnaphalium luteofuscum* Webb, Niger Fl. [W.J. Hooker]: 143. 1849. **SYNTYPES**: Cape Verde Islands.

**Annual herbs** from a lignescent taproot. **Stems** 15–40(–70) cm tall, often branched from the base, lightly but persistently whitish-tomentose, eglandular. **Leaves** narrowly oblong to linear-obovate, 2–8 cm long, 3–8 mm wide, margins straight, apex obtuse, base subclasping, often slightly ampliate, sometimes decurrent 1–4 mm, concolor, persistently gray-green-tomentose on both surfaces, eglandular. **Heads** few in a clusters, corymboid array; phyllaries in 3–4 series, tawny, hyaline, elliptic-ovate, apex obtuse to rounded, inner 2.5–3.5 mm long. **Pistillate florets** 110–180, style branch apex red. **Bisexual florets** 5–15, corolla apex red. **Achene surface** conspicuously papillate (lens). Map 6.

**Caribbean records. JAMAICA.** Present, fide Acevedo-Rodríguez & Strong (2007). **GUADELOUPE.** No other data, 1895, *Père Duss 3664* (US).

*Pseudognaphalium luteoalbum* is distinctive in its low stature, narrow, concolor, eglandular leaves, numerous pistillate florets, red-tipped corollas, and its papillate achenes. It is the only species in America where achenes surfaces are papillate with short, oblong, duplex, myxogenic trichomes.

In delimiting *Pseudognaphalium* subg. *Laphangium* Hilliard & Burt (1981; *Gnaphalium luteoalbum*, the type), the authors emphasized its distinction from typical *Pseudognaphalium* in the more woolly vestiture, urceolate heads, and cymosely (vs. corymbosely) arranged heads, characterizing the achenes as "glabrous or hairy." They included two additional species, *P. marranum* (Philipson) Hilliard and *P. melanosphaerum* (A. Rich.) Hilliard, both of Africa, and noted that *Gnaphalium sandwicensium* Gaud., *G. gracile* Kunth (= *P. viscosum* (Kunth) Anderb.), and *G. luteoalbum* subsp. *affine* (D. Don) Hilliard & Burt also show "the same general characters." The New Zealand endemic *G. luteoalbum* var. *compactum* Kirk has been treated as specific rank, as *Pseudognaphalium ephemerum* de Lange (2010). Freire et al. (2022) noted that the American *P. stramineum* (Kunth) Anderb. also has similarities to *P. luteoalbum*.

*Laphangium* (Hilliard & Burt) Tzvelev has been recognized as a genus (e.g., Greuter 2003) but only one other species has formally been transferred to it beyond the original two of Tzelev in 1994. Galbany-Casals et al. (2014) and Smissen et al. (2020) have explicitly maintained these species within *Pseudognaphalium*.

Molecular data (e.g., Nie et al. 2016; Acosta & Galbany Casals 2018; Smissen et al. 2020, 2023; summarized in Nesom 2023) indicate that *Gnaphalium luteoalbum* and similar species are closely related to South American *Pseudognaphalium* (but not to the North American species). Considerable diversity exists within *P. luteoalbum* and the taxonomy of the whole group remains to be resolved, but it seems likely that *Laphangium* at generic rank may ultimately be accepted.

**7. PSEUDOGNAPHALIUM SCYTHIPHYLLUM** Nesom, **sp. nov.** **TYPE: HAITI.** Vicinity of Mission, Fonds Varettes, ca. 1000 m and above, 17 Apr-4 May 1920, *E.C. Leonard 3827* (holotype: US; isotype: NY).

Distinctive in its greenish, stipitate-glandular stems, narrow, short-decurrent, strongly bicolor leaves adaxially stipitate-glandular, and relatively small heads with white involucre. Different from *Pseudognaphalium viscosum* in its smaller involucre, many fewer florets, achenes with a smooth surface (vs. papillate), and its Caribbean geography.

Short-lived **perennial herbs** from a woody taproot. **Stems** 30–100 cm tall, herbaceous at base, usually branching only near the heads, greenish and stipitate-glandular, without eglandular hairs. **Leaves** linear-lanceolate to narrowly lanceolate, 3–8 cm long, 2–6 mm wide, margins straight or usually wavy, narrowly revolute, apex attenuate-acute, base decurrent 2–4 mm, not ampliate, strongly bicolor, persistently white-tomentose abaxially, green and densely stipitate-glandular adaxially. **Heads** in a corymboid cluster; phyllaries in 3–4 series, white to tawny-white, hyaline, shiny, narrowly ovate, apex acute, inner mostly 5 mm long. **Pistillate florets** 38–58. **Bisexual florets** 6–12. **Achene surface** smooth, longitudinally ridged. Figures 34–39.

Flowering August-May. Pine woods, open slopes, roadsides; 700-2700(-3100) meters. Map 7.

**Additional collections. DOMINICAN REPUBLIC.** La Vega, vicinity of Constanza, along road from Constanza to Valle Nuevo, open ground on bank, 1000-1600 m, 4 Dec 1947, *Allard 17428* (US); La Vega, along road from Constanza to Valle Nuevo, steep slope in pine forest, 1000-1600 m, 4 Dec 1947, *Allard 17446* (US); La Vega, Cordillera Central, top of Sabana Alta, moist pine forest, 2935 m, common, 16 Oct 1929, *Ekman 13803* (GH); Azua, El Pico de Yacque, 3125 m, 3 Jan 1944, *Jiménez* [F. Mera] 230 (US) and 231 (US); La Vega, El Montazo, cerca de Constanza, 1900 m, 18 Oct 1947, *Jiménez 1566* (US); vicinity of Furey, ca. 1300 m, 26 May-15 Jun 1920, *Leonard 4395* (US); Guácara valley, La Guácara Arriba, tributary to Bao River, burned-out area, former pine forest on slope, 1250-1400 m, 5-9 Nov 1968, *Liogier 13446* (US); Baoruco Mts, near Canote, ca. 5 mi W of Aceitillar, open pine forest on limestone and bauxite, 1400 m, up to 75 cm high, 9 Nov 1969, *Liogier 16863* (US, USF); Santiago, La Rusilla, 2702 m, 26 Mar 1964, *Marcano 4907* (US); disturbed pinelands 14-15 km S of Constanza in the Cordillera Central, 6475 ft, host plant for *Vanessa virginiensis*, 24 Nov 1988, *Minno s.n.* (PIHG, US); Pedernales, 9.7 km NE of Los Arroyos, pine woodland, 2070 m, 16 Jul 1990, *Thompson 7308* (CM); Santiago, Jicomé, San Jose de las Matas, open pines, 700 m, 26 Dec 1929, *Valeur 321* (NY, US); La Vega, vicinity of La Lagunita (Lagüita), ca. 18° 58' 59" N, 71° 01' 12" W, very open pine forest, bunch grass ground cover, area often in clouds, 2800-2900 m [9200-9500 ft], 19 Jul 1967, *Gastony et al. 305* (NY-1711891, US-mixed with a species of Senecioneae, probably *Elekmania*). The only plant on *Gastony 305*, NY-1719886, is the Senecioneae species. **HAITI.** Massif de la Selle, Marigos, jardins bois-pin, ca. 1800 m, 25 Aug 1924, *Ekman 1631* (US); Morne la Selle, open pine forest, 1750 m, common, up to 1 m tall, 20 Dec 1943, *Holdridge 1877* (NY, US); Massif de la Hotte, Parc National Pic Macaya, along ridge and N slope of Morne Formon, N of Ville Formon, cloud forest of *Pinus occidentalis*, 1650-1800 m, open weedy areas, common herb, 26 Jan 1984, *Judd 3771* (US).

*Pseudognaphalium scythiphyllum* is distinctive in its greenish, stipitate-glandular stems, narrow, short-decurrent, bicolor leaves adaxially stipitate-glandular, and heads with white involucre.



These plants have long been identified as the primarily Mexican species *P. viscosum* (Kunth) Anderb. (see Map 8), which is similar in its narrow, stipitate-glandular leaves and white-shiny involucre, but the latter has non-decurrent leaves usually in a more congested arrangement, larger involucre, about 200–400 pistillate florets and 15–30 bisexual florets, and achenes with a distinctively papillate surface (overlapping epidermal cells).

- 8. PSEUDOGNAPHALIUM SELLEANUM** (Urb. & Ekman) Anderb., Opera Bot. 104: 148. 1991. *Gnaphalium selleanum* Urb. & Ekman, Ark. Bot. 23A(11): 78. 1931. **LECTOTYPE**: (designated here): **HAITI**. Massif de la Selle, top of Morne, Cabaio, 2350 m, 24 Aug 1924, *E.L. Ekman 1606* (S 11-15991; isoelectotype: S-R-2432). S 11-15991 is fuller specimen, though both are fully diagnostic

Short-lived **perennial herbs** from a thick woody taproot. **Stems** 30–60 cm tall, base woody, branching near the base and all along the stem, persistently and closely white-tomentose, eglandular, internodes mostly 4–18 mm long. **Leaves** narrowly oblong, strongly bicolor, persistently white-tomentose abaxially, green and densely stipitate-glandular adaxially, (1–)2–4 cm long, 2–4(–6) mm wide, margins wavy and often slightly revolute, apex acute, base subclasping, slightly ampliate, not decurrent. **Heads** in a paniculiform cluster; phyllaries in 3–4 series, tawny-white, shiny, hyaline, narrowly ovate, inner 3–4 mm long. **Pistillate florets** ca. 21. **Bisexual florets** 5. **Achene surface** smooth, longitudinally ridged. Figures 40-43.

Flowering August-January. Cloud forest, pine forest with *Agave*, pine barrens; 2100-2550 meters. Map 9.

**Additional collections. DOMINICAN REPUBLIC.** [Pedernales], Loma del Toro, pine barrens on limestone rocks, 2100 m, 18 Feb 1969, *Liogier 140012* (US). **HAITI.** Parc National Morne la Visite, Massif de la Selle, peak of Morne Cabaio, disturbed cloud forest (diverse mixed hardwoods), 2282 m, common herb in open areas, 5 Dec 1984, *Judd 4550* (FLAS, GH); Massif de la Selle, ridges to the W and SW of Pic La Selle, open forest of *Pinus occidentalis* with *Agave antillarum*, 2300-2550 m, common herb, 21 May 1984, *Judd 4934* (FLAS).

*Pseudognaphalium selleanum* is distinctive in its narrow, bicolor, subclasping, non-decurrent, bicolor leaves adaxially stipitate-glandular and its small, few-flowered heads. Similar to *P. elegans* in its strongly bicolor, adaxially glandular leaves but different in its shorter stature, smaller leaves, and much smaller heads.

- 8. PSEUDOGNAPHALIUM TORTUANUM** (Urb.) Anderb., Opera Bot. 104: 148. 1991. *Gnaphalium tortuanum* Urb., Ark. Bot. 23A(11): 77. 1931. **LECTOTYPE** (designated here): **HAITI**. Ile La Tortue, Mare-Rouge, top of hill, edge of clearing, 310 m, 25 Mar 1928, *E.L. Ekman 9800* (S-R-2433; isoelectotypes: GH, S-11-15003). Both sheets at S are annotated as "Typus."

Short-lived **perennial herbs**. **Stems** ca. 50–80 cm tall, branching at least from midstem, thinly but persistently gray-tomentose, eglandular, internodes mostly 10–25 mm long. **Leaves** narrowly oblong-ob lanceolate, bicolor, green and sparsely short-glandular to eglandular adaxially, persistently grayish-tomentose abaxially, 3–7 cm long, 3–6 mm wide, margins straight, not revolute, apex attenuate-acute, base subclasping, slightly ampliate, decurrent 1–4 mm. **Heads** in a cluster; phyllaries in 3–4 series, silvery-white, shiny, hyaline, narrowly ovate-triangular, inner 3.5–4 mm long. **Florets** not counted but apparently few, judging from the small size of the heads. **Achene surface** smooth, longitudinally ridged. Figures 44-48.

**Additional collections.** HAITI. Massif du Nord, near Le Borgne, Morne Darras, southeastern top, grassy slope, 1100 m, 3 Sep 1925, *Ekman 4763* (S, as cited by Urban); Dept. l'Artibonite, Section Dessalines, vicinity of Kalacroix, steep grassy slope, ca. 700 m, 10 Dec 1925, *Leonard 7874* (US). **Dominican Republic.** Santiago, ca. 2 mi NW of San José de las Matas, Cañada de Caimito, pine forest on sandstone, grassy hillside, 600 m, uncommon, 7 May 1969, *Liogier 15121* (US). Map 7.

*Pseudognaphalium tortuanum* is distinct in its stems branching from midstem, resulting in a paniculiform inflorescence, greenish but eglandular stems, short-decurrent, bicolor leaves with essentially eglandular adaxial surfaces, and small heads with silvery-white involucre. If glands are present, they are few and inconspicuous and mostly sessile.

*Pseudognaphalium tortuanum* is closely similar to *P. scythiophyllum* but has eglandular stems and smaller heads — the two almost certainly are sister species. A similar situation exists in the eastern USA with *P. obtusifolium* (eglandular) and the closely similar *P. helleri* and *P. micradenium* (glandular).

### ACKNOWLEDGEMENTS

I am grateful to the herbarium and library staff at US during recent visits there and to the library at MO for help with literature.

### LITERATURE CITED

- Acevedo-Rodríguez, P. and collaborators. 1996. Flora of St. John, U.S. Virgin Islands. Mem. New York Bot. Gard. 78: 1–581.
- Acevedo-Rodríguez, P. and M.T. Strong. 2007. Flora of the West Indies. Catalogue of the seed plants of the West Indies Website. National Museum of Natural History, Smithsonian Institution, Washington, DC. <<https://naturalhistory2.si.edu/botany/WestIndies/>>
- Acosto-Maindo, A. and M. Galbany-Casals. 2018. *Pseudognaphalium aldunateoides* back in *Gnaphalium* (Compositae: Gnaphalieae). Collectanea Bot. 37: e012 <<http://doi.org/10.3989/collectbot.2018.v37.012>>
- Adams, C.D. 1972. Flowering Plants of Jamaica. Univ. of the West Indies, Mona, Jamaica.
- Axelrod, F.S. 2011. A Systematic Vademecum to the Vascular Plants of Puerto Rico. Sida, Bot. Miscell. 34: 1–428.
- Correll, D.S. and H.B. Correll. 1982. Flora of the Bahama Archipelago. J. Cramer, Vaduz, Germany.
- D'Arcy, W.G. 1975. Flora of Panama, Part IX. Compositae. Ann. Missouri Bot. Gard. 62: 835–1322.
- de Lange, P., P. Heenan, D. Norton, J. Rolfe and J. Sawyer. 2010. Threatened Plants of New Zealand. Canterbury Univ. Press, Christchurch 8140, New Zealand.
- Freire, S.E., C. Monti, N.D. Bayón, and M.A. Migoya. 2018. Taxonomic studies in *Pseudognaphalium* Kirp. (Asteraceae, Gnaphalieae) from Peru. Syst. Bot. 43: 325–343.
- Freire, S.E., J.L. Villaseñor, C. Monti, N.D. Bayón, and M.A. Migoya. 2022. Taxonomic revision of *Pseudognaphalium* (Asteraceae, Gnaphalieae) from North America. Ann. Missouri Bot. Gard. 107: 314–404.
- Galbany Casals, M., M. Unwin, N. Garcia-Jacas, R. Smissen, A. Susanna, and R. Bayer. 2014. Phylogenetic relationships in *Helichrysum* (Compositae, Gnaphalieae) and related genera: Incongruence between nuclear and plastid phylogenies, biogeographic and morphological patterns, and implications for generic delimitation. Taxon 63: 608–624.
- Greuter, W. 2003. The Euro+Med treatment of Gnaphalieae and Inuleae (Compositae) – generic concepts and required new names. Willdenowia 33: 239–244.
- Howard, R.A. 1989. Flora of the Lesser Antilles. Vol. 6. Dicotyledoneae-Part 3. Arnold Arboretum of Harvard University, Jamaica Plain, Massachusetts.

- Liogier, A.H. 1962. Flora de Cuba. Vol. 5: Rubiales, Valerianales, Cucurbitales, Campanulales, Asterales. Río Piedras, Puerto Rico.
- Liogier, A.H. 1996. La Flora de la Española, Vol 8. Compositae. Univ. Central de Este, San Pedro de Macoris, República Dominicana.
- Liogier, A.H. 1997. Descriptive Flora of Puerto Rico and Adjacent Islands. Spermatophyta. Vol. 5. Acanthaceae to Compositae. Editorial de la Univ. de Puerto Rico, Río Piedras.
- Moscoso, R.M. 1943. Catalogus Florae Domingensis. Universidad de Santo Domingo, Cd. Trujillo.
- Nesom, G.L. 2023. New species of American *Pseudognaphalium* (Asteraceae: Gnaphalieae). I. Species with an inverted ratio of bisexual to pistillate florets. *Phytoneuron* 2023-51: 1–48.
- Nicolson, D.H. and associates. 1991. Flora of Dominica, Part 2: Dicotyledoneae. *Smithsonian Contr. Bot.* 77.
- Nie, Z.-L., V.A. Funk, Y. Meng, T. Deng, H. Sun, and J. Wen. 2016. Recent assembly of the global herbaceous flora: Evidence from the paper daisies (Asteraceae: Gnaphalieae). *New Phytol.* 209: 1794–1806.
- Pruski, J.F. 2018. Flora Mesoamericana. Volumen 5, Parte 2. Asteraceae. Univ. Nacional Autónoma de México, Missouri Botanical Garden, and The Natural History Museum (London).
- Smitsen, R.D., R.J. Bayer, N.G. Bergh, I. Breitwieser, S.E. Freire, M. Galbany-Casals, A.N. Schmidt-Lebuhn, and J.M. Ward. 2020. A revised subtribal classification of Gnaphalieae (Asteraceae). *Taxon* 69: 778–806.
- Smitsen, R.D., I. Breitwieser, and P.J. De Lange. 2023. *Pseudognaphalium* (Asteraceae, Gnaphalieae) diversity in New Zealand revealed by DNA sequences with notes on the phylogenetic relationships of Hawaiian Islands plants referred to *Pseudognaphalium sandwicenseum*. *New Zealand J. Bot.* 61: 304–331.
- Urban, I. 1900. Notae biographicae peregrinatorum Indiae occidentalis botanicorum [Eggers]. *Symb. Antill.* 3: 40-43.
- Urban, I. 1915. XCIX. Sertum antillarum. II. *Repert. Spec. Nov. Regni Veg.* 13: 465–484.



Figure 1. *Pseudognaphalium albescens*. Jamaica, Swartz s.n. (S), holotype.



Figure 2. *Pseudognaphalium albescens*. Jamaica, detail from the holotype (Fig. 1).



Figure 3. *Pseudognaphalium albescens*. Jamaica, Hart 661 (US).



Figure 4. *Pseudognaphalium albescens*. Jamaica, Britton 3835 (NY).



Figure 5. *Pseudognaphalium attenuatum*. Jamaica, Britton & Hollick 1763 (NY).



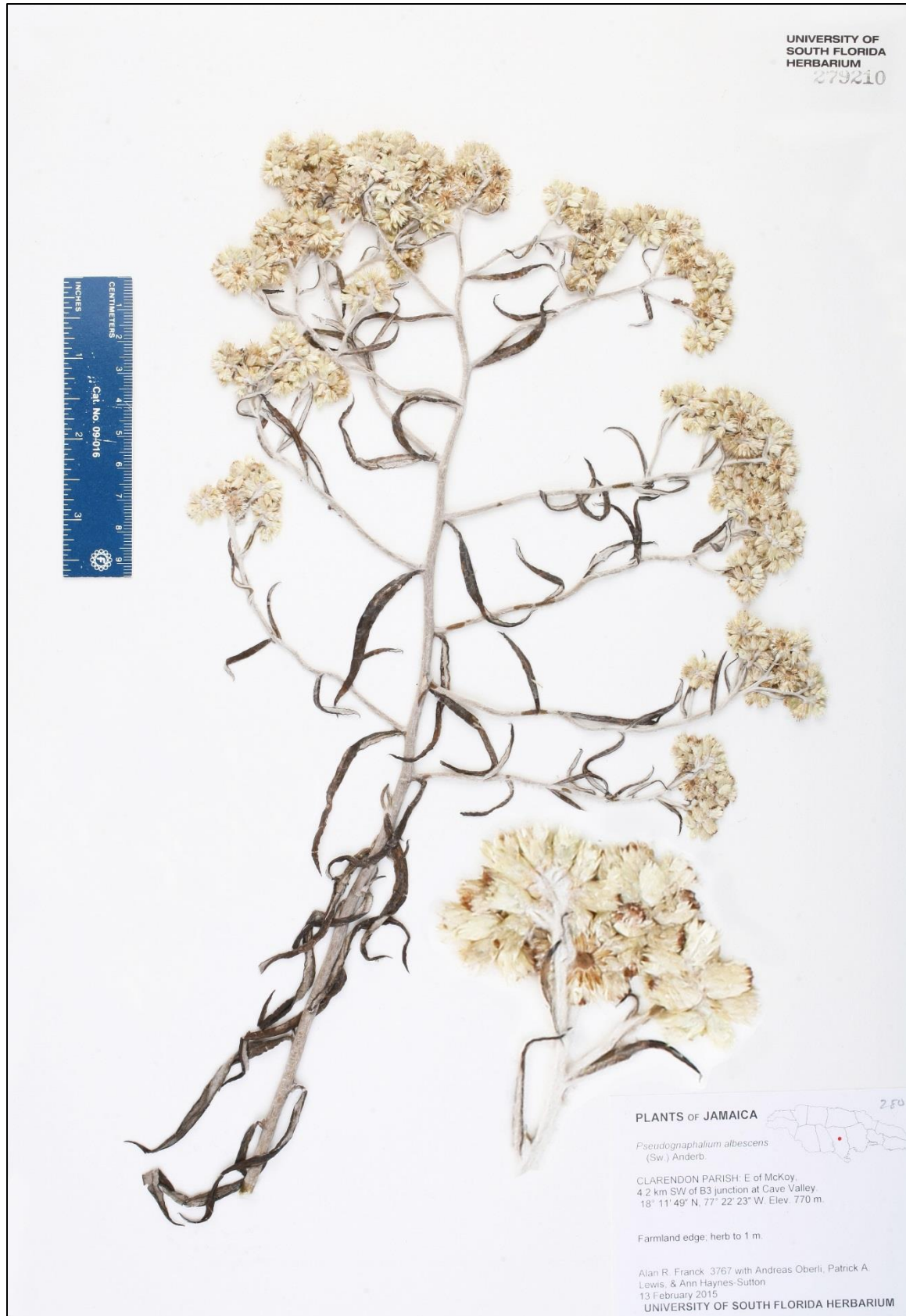


Figure 6. *Pseudognaphalium attenuatum*. Jamaica. Franck 3767 (USF).



Figure 7. *Pseudognaphalium attenuatum*. Jamaica, Clarendon Parish, local road south of Cave Valley, 18.196944, -77.373056, iNaturalist photo by Alan Franck, 13 Feb 2013.



Figure 8. *Pseudognaphalium attenuatum*. Jamaica. Details from iNaturalist observation, Alan Franck, 13 Feb 2013, See Figure 7.



Figure 9. *Pseudognaphalium attenuatum*. Cuba, Britton et al. 14409 (NY).



Figure 10. *Pseudognaphalium attenuatum*. Cuba, Carabia 3722 (NY).



Figure 11. *Pseudognaphalium attenuatum*. Cuba, Wright 322 (NY 126653). Isotype of *Gnaphalium albescens* var. *cubense*.



Figure 12. *Pseudognaphalium attenuatum*. Cuba, Wright 322 (NY 1719835). Isotype of *Gnaphalium albescens* var. *cubense*.

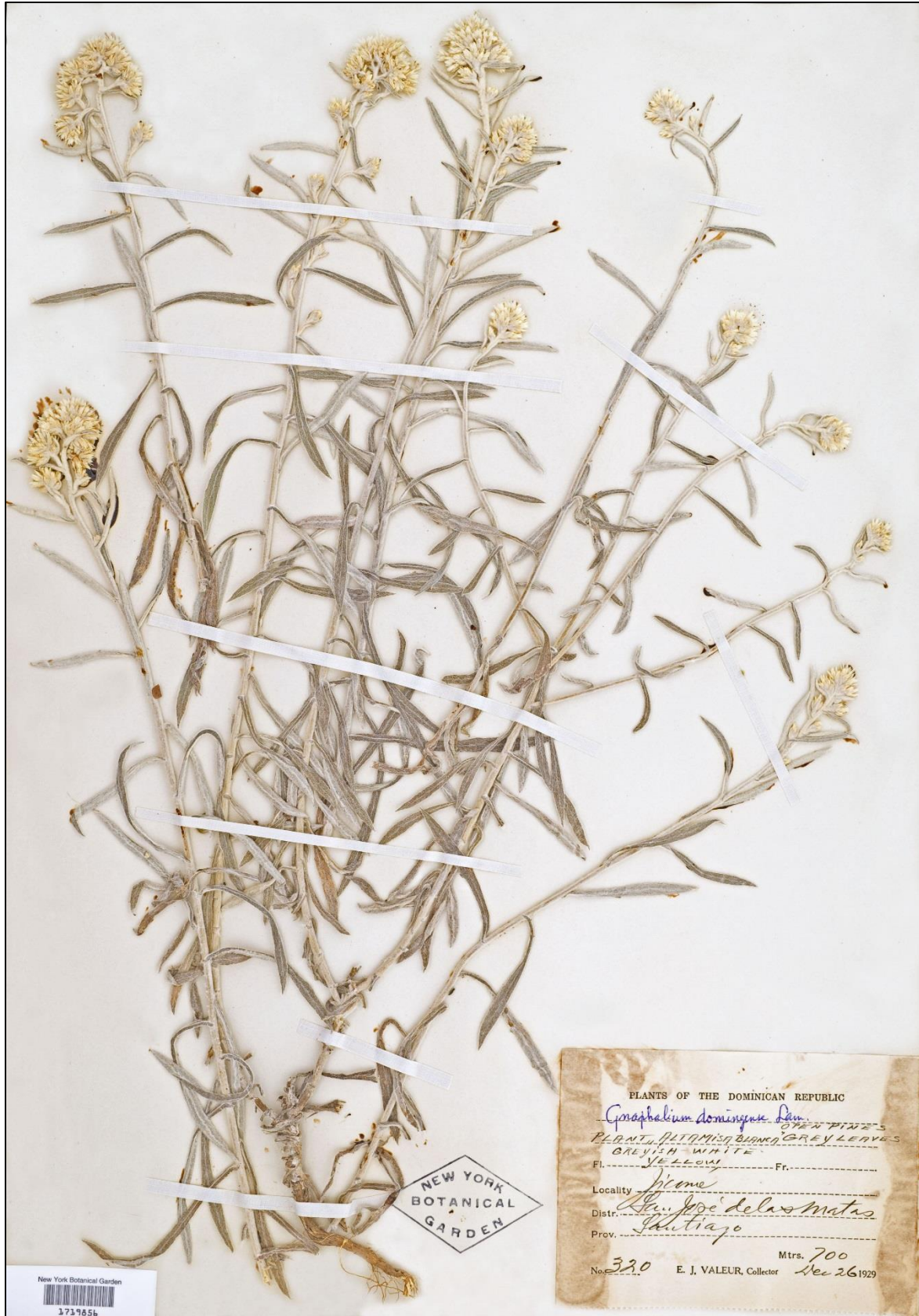


Figure 13. *Pseudognaphalium domingense*. Dominican Republic, Valeur 320 (NY).





Figure 14. *Pseudognaphalium domingense*. Dominican Republic, Liogier 22289 (NY).



Figure 15. *Pseudognaphalium domingense*. Haiti, Holdridge 881 (NY).



Figure 16. *Pseudognaphalium domingense*. Haiti, vicinity of Bombardopolis, Leonard 13538 (NY).



Figure 17. *Pseudognaphalium domingense*. Dominican Republic, Prov. Pedernales, iNaturalist photo by Yolanda M. Leon, 2 Dec 2022.



Figure 18. *Pseudognaphalium domingense*. Dominican Republic, Prov. Pedernales, iNaturalist photo by Yolanda M. Leon, 2 Dec 2022.



Figure 19. *Pseudognaphalium domingense*. Dominican Republic, Prov. Pedernales, iNaturalist photo by Porlanaturaleza, 21 Nov 2023.



Figure 20. *Pseudognaphalium eggersii*. Dominican Republic, Gastony 305 (NY).



Figure 21. *Pseudognaphalium eggersii*. Dominican Republic, Gastony 353 (NY).





Figure 22. *Pseudognaphalium eggersii*. Dominican Republic, Liogier 17222 (US).



Figure 23. *Pseudognaphalium eggersii*. Dominican Republic, Acevedo-Rodríguez 13172 (NY).



Figure 24. *Pseudognaphalium eggersii*. Dominican Republic, Liogier 12784 (NY).



Figure 25. *Pseudognaphalium eggersii*. Dominican Republic, from Gastony 305 (NY).



Figure 26. *Pseudognaphalium elegans*. Jamaica, "uncommon, Cinchona." M 1272 (NY).



Figure 27. *Pseudognaphalium elegans*. Puerto Rico, Sintenis 205 (NY 126656).



Figure 28. *Pseudognaphalium elegans*. Puerto Rico, Sintenis 205 (NY 855166).



Figure 29. *Pseudognaphalium elegans*. Puerto Rico, Hess 4862A (NY).





Figure 30. *Pseudognaphalium elegans*. Puerto Rico, Heller 6201 (NY).

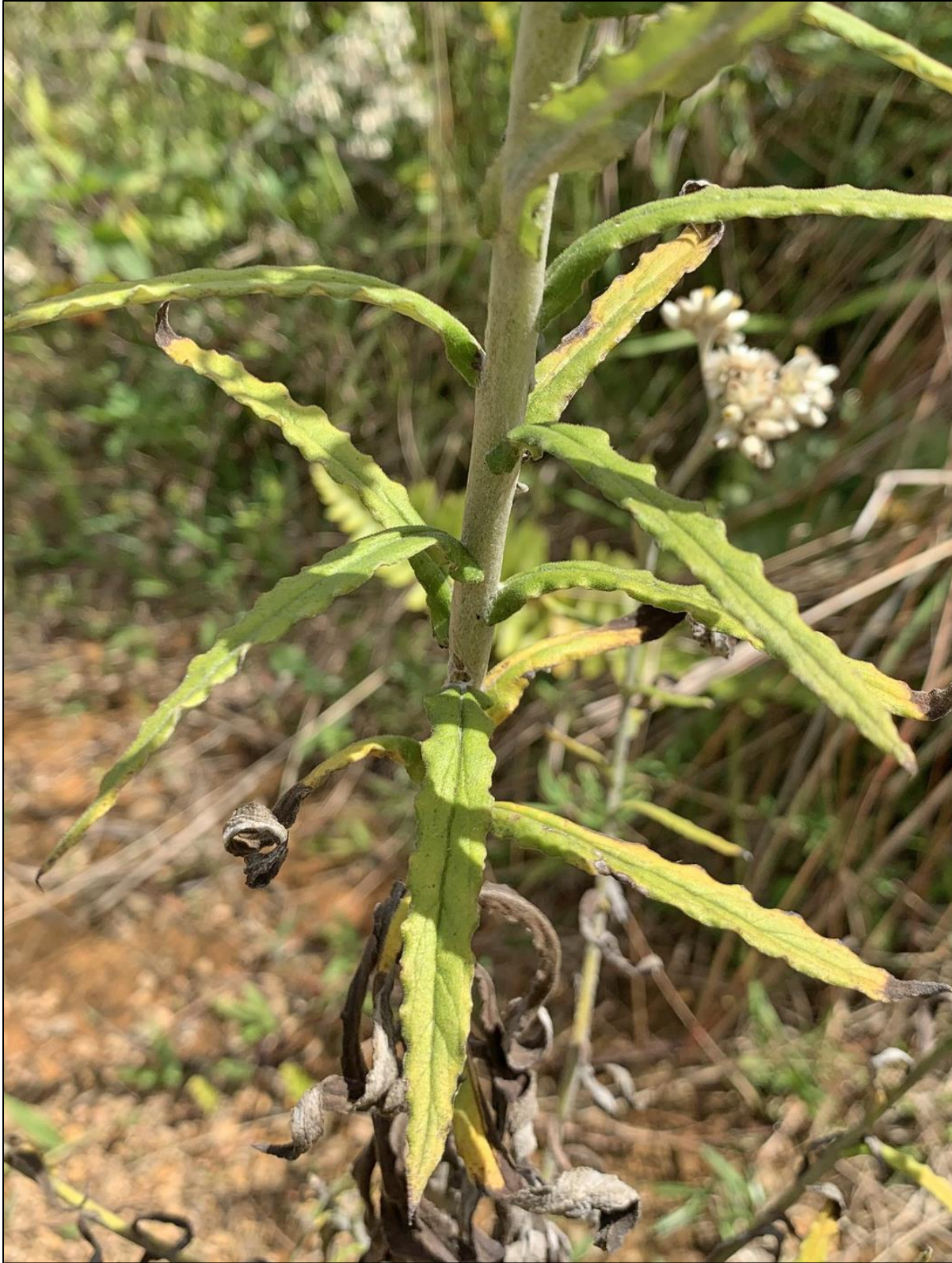


Figure 31. *Pseudognaphalium elegans*. Puerto Rico, just east of the Arecibo Observatory, iNaturalist photo by Octavio Rivera Hernández, Feb 2013.



Figure 32. *Pseudognaphalium elegans*. Puerto Rico, just east of the Arecibo Observatory, iNaturalist photo by Octavio Rivera Hernández, Feb 2013.



Figure 33. *Pseudognaphalium luteoalbum*. LINN 989.45, the type.

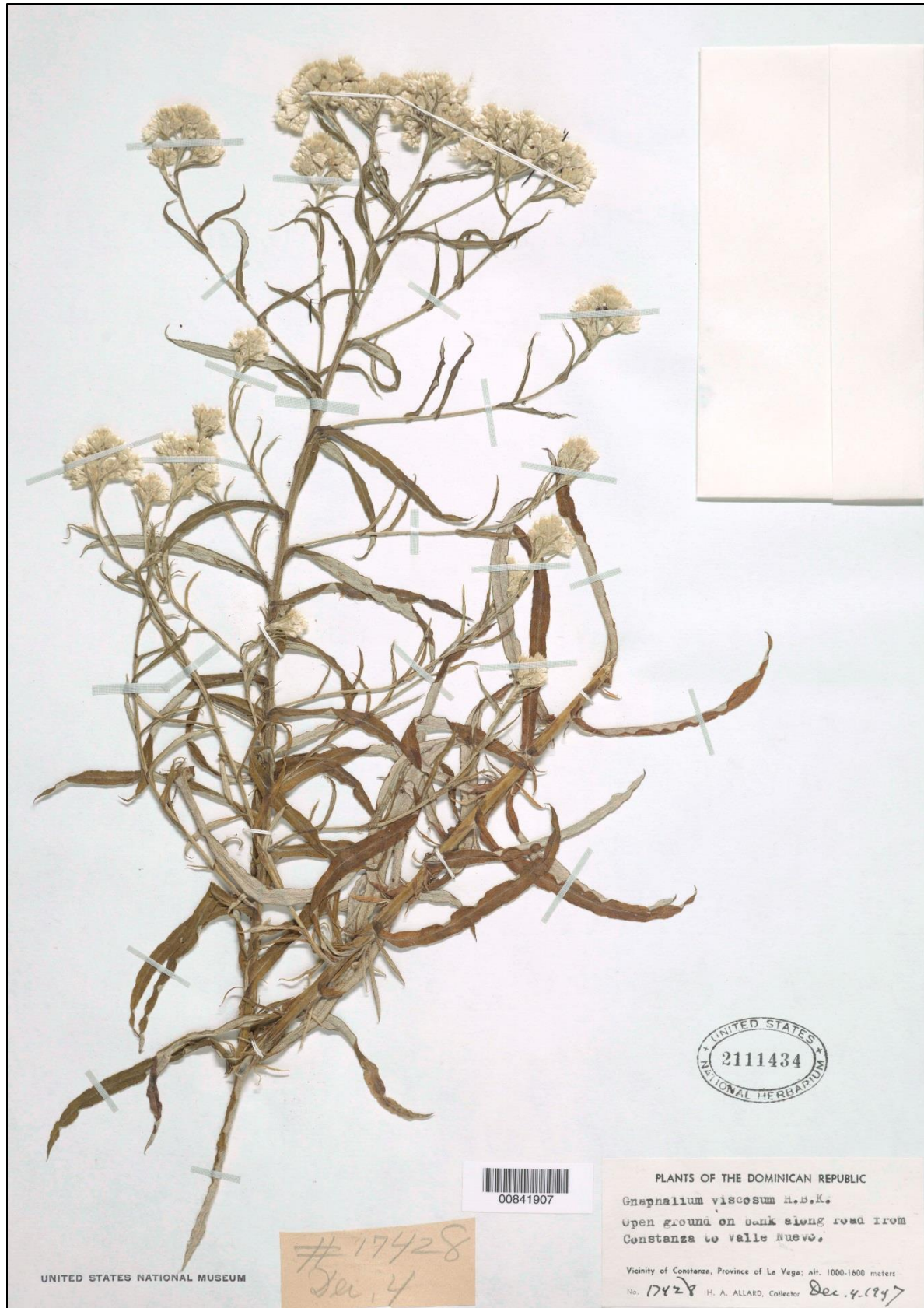


Figure 34. *Pseudognaphalium scythiophyllum*. Dominican Republic, Allard 17428 (US).



Figure 35. *Pseudognaphalium scythiophyllum*. Dominican Republic, Leonard 3827 (NY).



Figure 36. *Pseudognaphalium scythiophyllum*. Dominican Republic, Holdridge 1877 (US).



Figure 37. *Pseudognaphalium scythiophyllum*. Dominican Republic, Holdridge 1877 (NY).





Figure 38. *Pseudognaphalium scythiophyllum*. Dominican Republic, Liogier 15121 (NY).



Figure 39. *Pseudognaphalium scythiophyllum*. Dominican Republic, Valeur 321 (NY).



Figure 40. *Pseudognaphalium selleanum*. Haiti, Ekman 1606 (S), holotype.



Figure 41. *Pseudognaphalium selleanum*. Haiti, detail from holotype (Fig. 40).



Figure 42. *Pseudognaphalium selleanum*. Haiti, Judd 4550 (FLAS).



Figure 43. *Pseudognaphalium selleanum*. Haiti, Judd 4934 (FLAS).



Figure 44. *Pseudognaphalium tortuanum*. Haiti, Ekman 9800 (S), holotype.



Figure 45. *Pseudognaphalium tortuanum*. Haiti, Ekman 9800 (GH), isotype.





Figure 46. *Pseudognaphalium tortuanum*. Haiti, detail from the holotype (Fig. 44).



Figure 47. *Pseudognaphalium tortuanum*. Haiti, detail from the holotype (Fig. 44).



Figure 48. *Pseudognaphalium tortuanum*. Haiti, detail from the holotype (Fig. 44).