

GAMOCHAETA SIMPLICICAULIS (ASTERACEAE:
GNAPHALIEAE) IN FOUR SOUTHEASTERN
STATES AND NEW FOR NORTH AMERICA

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ABSTRACT

The presence of the South American native *Gamochaeta simplicicaulis* (Willd. ex Spreng.) Cabrera is documented for North Carolina, South Carolina, Florida, and Alabama, based on specimens in NCU and US. It has not previously been included in accounts of the North American flora. The species apparently is abundant on the coastal plain of the Carolinas, where first collected in 1957, and may be expected to occur with frequency in other regions of the Atlantic and Gulf Coastal plain. A morphological description, illustration, and specimen citations are provided.

RESUMEN

Se documenta la presencia de la planta nativa de Sur América *Gamochaeta simplicicaulis* (Willd. ex Spreng.) Cabrera en Carolina del Norte, Carolina del Sur, Florida, y Alabama, basada en especímenes depositados en NCU y US. No había sido incluida previamente en los informes de la flora norteamericana. La especie es aparentemente abundante en la llanura costera de las Carolinas, donde fue colectada por primera vez en 1957, y puede que se dé con frecuencia en otras regiones de la llanura costera del Atlántico y del Golfo. Se ofrecen una descripción morfológica, una ilustración y citas especímenes.

The South American native *Gamochaeta simplicicaulis* (Willd. ex Spreng.) Cabrera was noted to occur in Florida by Pruski (1997) in his account of the Asteraceae of the Venezuelan Guayana. The distribution of this species, otherwise unreported for North America, is further documented here for North Carolina, South Carolina, and Alabama, based on specimens housed in NCU. It was not included in accounts of *Gamochaeta* (Nesom 1990) for the United States or the southeastern United States (Godfrey 1958; Arriagada 1997). *Gamochaeta simplicicaulis* apparently is relatively widespread on the coastal plain of the Carolinas, where it is known from five coastal and near-coastal counties of North Carolina and every South Carolina county adjacent to the Atlantic Ocean, except one. The localities in Walton Co., Florida (eastern panhandle), and Mobile Co., Alabama, are immediately adjacent to the Gulf coast.

The first collections of *Gamochaeta simplicicaulis* from the United States

apparently were made in 1957 from six South Carolina counties in connection with preparation of the Flora of the Carolinas. Judging from the already relatively abundant distribution of the species by the mid 1960s, at least in the Carolinas, it is probable that its current distribution is broader than the present report indicates. The species almost certainly occurs in Georgia and should be sought in Mississippi and Louisiana. It has been collected from one county nearly contiguous with southeastern Virginia (Pasquotank Co., NC).

The native range of *Gamochaeta simplicicaulis* is South America, where it is known from Argentina, Chile, Bolivia, Uruguay, Paraguay, Brazil, Guyana, Venezuela, and Colombia (Cabrera 1961, 1963; Pruski 1997). It also has become naturalized in New Zealand (Drury 1971; Webb 1988).

Gamochaeta simplicicaulis in NCU collections has been identified as *Gamochaeta purpurea* (L.) Cabrera and *Gamochaeta americana* (P. Mill.) Wedd. but is consistently distinguished from both, as in the following key.

1. Upper surface of leaves loosely and lightly but persistently tomentose, dull; involucre bracts lightly villous-tomentose on the lower third; biennial. *G. purpurea*
1. Upper surface of leaves completely glabrous, shiny; involucre bracts glabrous from base to apex; annual or biennial. 2
2. Plants (30–)50–85 cm tall, usually basally and strictly erect; basal and lower cauline leaves on elongate internodes, commonly withered and deciduous at flowering, relatively even-sized to above midstem, the upper cauline linear-lanceolate to linear-oblongate and apically long-acute, clusters of small leaves produced in the cauline axils; capitula in small glomerules in an elongate, interrupted capitulescence, sometimes with well-developed lateral branches, the glomerules usually subtended by linear, spreading bracts longer than the glomerules; outer involucre bracts ovate, apically acute-acuminate, hyaline, without color; annual or biennial, flowering mostly July–August. *G. simplicicaulis*
2. Plants 15–35(–50) cm tall, basally decumbent-ascending; basal leaves in a rosette, persistent at flowering, the cauline leaves quickly reduced in size above the basal, the upper mostly oblongate and apically rounded, axillary clusters of small leaves absent; capitula in a narrow, elongate, generally compact but sometimes interrupted capitulescence, the bracts few and shorter than the glomerules; outer involucre bracts elliptic-ovate, apically obtuse to rounded, often slightly purplish; biennial, flowering mostly April–June. *G. americana*

Gamochaeta simplicicaulis (Willd. ex Spreng.) Cabrera, Bol. Soc. Argent. Bot. 9:379. 1961. (Figs. 1, 2) *Gnaphalium simplicicaule* Willd. ex Spreng., Syst. Veg. 3:481. 1826. *Gnaphalium purpureum* var. *simplicicaule* (Willd. ex Spreng.) Klatt, Linnaea 42:140. 1878. TYPE: [Venezuela. Edo. Sucre.] Cumaná, *Humboldt* 343 (B-Willdenow fiche 15493!, photo-US!).

Annuals or biennials, strictly erect, (30–)50–85 cm tall, fibrous-rooted, the stems commonly simple, strictly erect, and single from the base or with

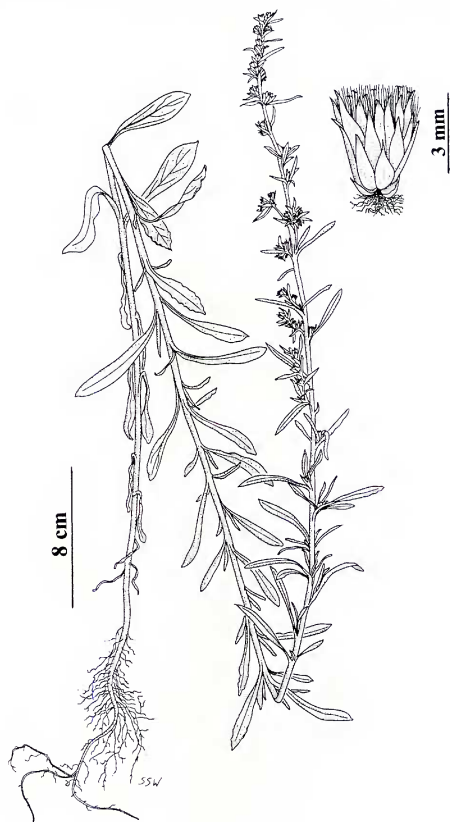


FIG. 1. Habit and involucre of *Gamochaeta simplicicaulis* (Ables 32138).

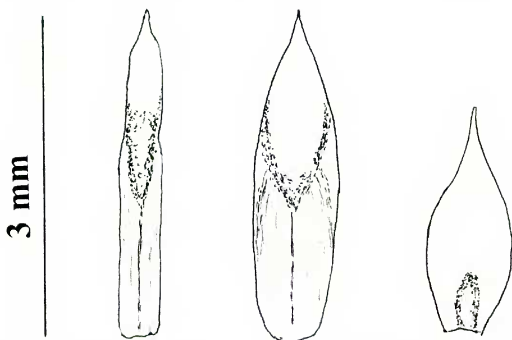


FIG. 2. Involucral bracts of *Gamochaeta simplicicaulis* (Ables 30684) inner, middle, and outer (from left to right).

2–5 basally ascending stems, densely and closely white-tomentose. Leaves densely and closely white-felty-matted beneath, completely glabrous and shiny above at maturity, flat, the midrib not depressed, with margins closely undulate and appearing nearly crenulate, the basal and lower cauline leaves oblanceolate to oblanceolate-spatulate, 5–9 cm long, 0.6–1.8 cm wide, on somewhat elongated internodes (not in a rosette), the basal leaves usually withered and deciduous by flowering, gradually becoming smaller above mid-stem, the upper cauline leaves linear-lanceolate to linear-oblanceolate and apically long-acute; clusters of small leaves produced in the axils of mid and upper cauline leaves. Capitula in small glomerules in a narrow, elongate, interrupted capirulescence (8–)16–30 cm long, sometimes with well-developed, ascending, lateral branches, the glomerules usually subtended by linear bracts longer than the glomerules and usually spreading at right angles; involucre cylindrical-campanulate, 3–3.5 mm high, the involucral bracts ovate to oblong, scarious and brownish to tan, without red or purple pigments, glabrous from base to tip, apically acuminate-apiculate. Achenes 0.5–0.6 mm long. Flowering (June–)July–August(–October).

Gamochaeta simplicicaulis apparently grows in open sites, as the habitats are described from the southeastern US, but they otherwise are variable (roadsides, fields, open woodlands, dunes), except that a sandy substrate may be constant. Pruski (1997) noted that habitats for the species in the Venezuelan

Guayana are "savannas, roadsides, forest borders, tepui meadows, rock outcrops, 800–2100 m." The late summer to fall flowering of *G. simplicicaulis* also distinguishes it from all other eastern North American *Gamochaeta*, which flower primarily in the spring.

Collections examined. UNITED STATES. ALABAMA. Mobile Co.: Dauphin Island, Beauregard St., near Apalache Ave., sunny roadside, 15 July 1965, R. *Deramus* D576 (NCU). FLORIDA. Walton Co.: edge of pine woods along Laird Drive, 4 mi S of Freeport, 5 Jul 1971, H.A. *Davis* 15917 (US fide John Pruski). NORTH CAROLINA. Brunswick Co.: along railroad tracks 1/2 mi S of US routes 74 and 76, 25 Jul 1965, M.N. *Sears* 1914 (NCU). New Hanover Co.: raised land in brackish marsh, causeway to Wrightsville Beach, 29 Jun 1963, H.E. *Ables* 58631 (NCU); dredge island on Wrightsville Causeway, sand, 29 Jun 1963, A. *McCrary* 405 (NCU). Pasquotank Co.: vicinity of Weeksville on NC 170, disturbed swamp border, 25 Jun 1958, H.E. *Ables* 44345 (NCU). Pender Co.: ca 5 mi N of jct Hwy 210 and Hwy 17 in Hampstead, on Hwy 17 at St. Jude's church, sand field with scattered pines, 19 July 1999, G. *Nesom* NC997-5 (BRIT, FLAS, GA, GH, LSU, MISS, NCU, TEX, US, USCH, WILLI – to be distributed). Wayne Co.: Cliffs of the Neuse State Park, open area through woodland, 10 Jul 1965, H.E. *Ables* 59659 (NCU). SOUTH CAROLINA. Berkeley Co.: 3.5 mi S of jct SC 6 and 311 on dirt road (W of Moncks Corner), thickets, 5 Jul 1957, H.E. *Ables* 30684 (NCU-2 sheets); ca 2 mi W of Honey Hill on SC 45, sandy roadside, 15 Jul 1959, H.E. *Ables* 52983 (NCU); waste ground around the Santree Wool Combing Mill, Jamestown on SC Rte. 45, 11 Jul 1960, H.E. *Ables* 53783 (NCU). Charleston Co.: 3.3 mi from Warrens Cross Roads on county road, 21 Jul 1957, H.E. *Ables* 32138 (NCU). Dorchester Co.: 1.5 mi ESE of Bamberg-Dorchester Co. line on County 11, 20 Jul 1957, H.E. *Ables* 31825 (NCU). Georgetown Co.: Retreat Beach, Sand Flat, 22 Aug 1957, A.E. *Radford* 28509 (NCU); Du Bordieu Island, inner sand dunes, 22 Jul 1961, H.E. *Ables* 54865 (NCU). Horry Co.: SSE of Conway at jct 4.3 mi ESE of PeeDee Crossroads, low woods and pinelands, 19 Oct 1957, C.R. *Bell* 10930 (NCU). Jasper Co.: Savannah, N.W. Refuge, 28 Aug 1959, E.O. *Mellinger* s.n. (NCU). Orangeburg Co.: ca 2 mi W of Orangeburg-Dorchester county line on US 178 and 2.3 mi SW of dirt road, sandy upland woods, 19 Jul 1957, H.E. *Ables* 31807 (NCU). Williamsburg Co.: 5.6 mi S of Heminway on SC 41, sandy roadside, 15 Jul 1959, H.E. *Ables* 52984 (NCU).

The NCU collections were variously annotated in 1997 as *Gamochaeta purpurea* and *G. americana* by Dr. J.E. Arriagada, as part of the complete NCU collection of southeastern US Inuleae (*sensu lato*) studied for the Generic Flora of the Southeastern United States (Arriagada 1997). His annotations for the entire set, however, without exception, merely repeat the most recent previous identification, except to update the generic name or replace putative synonyms. A discussion of unresolved taxonomic and nomenclatural complexities regarding *G. purpurea* and *G. americana*, as well as other previously unreported species of *Gamochaeta* for the North American flora, is forthcoming (Nesom in prep.).

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REFERENCES

- ARRIAGADA, J.E. 1997. The genera of Inuleae (Compositae; Asteraceae) in the southeastern United States. *Harvard Pap. Bot.* 3:1-48.
- CABRERA, A.L. 1961. Observaciones sobre las Inuleae - Gnaphalinae (Compositae) de América del Sur. *Bol. Soc. Argent. Bot.* 9:359-386.
- CABRERA, A.L. 1963. Flora de la Provincia de Buenos Aires. Parte VI. Compuestas. Colección Científica del I.N.T.A. Buenos Aires, Argentina.
- DRURY, D.G. 1971. The American spicate cudweeds adventive to New Zealand: (*Gnaphalium* section *Gamochaeta*-Compositae). *New Zealand J. Bot.* 9:157-185.
- GODFREY, R.K. 1958. A synopsis of *Gnaphalium* (Compositae) in the southeastern United States. *Quart. J. Florida Acad. Sci.* 21:177-184.
- NESOM, G.L. 1990. The taxonomic status of *Gamochaeta* (Asteraceae: Inuleae) and the species of the United States. *Phytologia* 68:186-198.
- PRUSKI, J.F. 1997. Asteraceae. Flora of the Venezuelan Guayana 3:177-393.
- WEBB, C.J. 1988. *Gnaphalium*. Flora of New Zealand 4:234-249.