

TAXONOMY OF *ACHYROCLINE* (ASTERACEAE: INULEAE) IN
MÉXICO AND CENTRAL AMERICA

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ABSTRACT

Three species of *Achyrocline* occur in México and Central America, *A. deflexa* B.L. Robins. & Greenm., *A. turneri* Nesom and *A. ventosa* Klatt, in contrast to previous studies that have recognized only one. The two more common species are partially sympatric and sharply differentiated, as outlined in a key.

KEY WORDS: *Achyrocline*, Asteraceae, Inuleae, México, Central America.

Achyrocline is similar to *Gnaphalium*, differing primarily by its very small, few flowered, cylindric heads with few series of phyllaries. It is a genus of 25-30 species primarily from South America (Giangualani 1976), tropical Africa and Madagascar.

Three species of *Achyrocline* occur in México and Central America, although one has been recognized in recent treatments. Standley & Steyermark (1940) correctly regarded *A. yunckeri* S.F. Blake as a synonym of *A. deflexa* B.L. Robinson & Greenm., and this treatment was followed in Guatemala by Nash (1976). Blake's observation that two species were present in Central America was correct, but his recognition of *A. yunckeri*, was based on a misperception of the identity of *A. deflexa*. The plants of "*A. deflexa*" that he contrasted with *A. yunckeri* were clearly what I recognize here as a distinctive but previously undescribed species.

Achyrocline (Less.) DC., *Prodr.* 6:219. 1838. Type species: *Achyrocline* (*Gnaphalium*) *satureoides* (Lam.) DC. *Gnaphalium* subg. *Achyrocline* Less., *Synops. Comp.* 332. 1832.

Perennial herbs with tomentose or closely woolly stems and leaves, sometimes glandular. Leaves alternate, sessile, entire, lanceolate to linear lanceolate, often bicolored, decurrent to a winged stem in some species. Heads disciform, heterogamous, fusiform-cylindric, sessile in dense, terminal, glomerules;

phyllaries in 2-4 graduated or equal series, yellow to cream, scarious, usually basally woolly; receptacles flat, usually ebracteate. Pistillate flowers peripheral, 3-6, the corollas filiform-tubular, sometimes with glandular apices; hermaphroditic flowers central, 1-3, with fertile ovaries, the corollas narrowly funnellform-tubular, often with glandular apices. Achenes oblong, glabrous; pappus of separate, basally caducous bristles. Base chromosome number, $x=14$.

KEY TO THE SPECIES

1. Plants 15-20 cm tall; leaves 2-3 cm long, decurrent; hermaphroditic corollas 2.5 mm long *A. ventosa*
- 1' Plants 50-120 cm tall; leaves 4-11 cm long, not decurrent; hermaphroditic corollas 3.0-3.5 mm long (2)
2. Leaves spatulate, the blades ovate-lanceolate, sharply attenuate to a petiolar base, woolly pubescent with hairs filiform to the very base, the surfaces eglandular; mature phyllaries whitish scarious, smoothly rounded to a minute but definite apiculum, eglandular; corollas filiform-tubular, eglandular, abruptly bulbous indurated at the very base *A. deflexa*
- 2' Leaves narrowly elliptic-lanceolate, gradually attenuate to the sessile base, woolly pubescent with hairs arising from vitreous, erect, thick bases, the surface also with scattered, minute, sessile, resin glands; mature phyllaries yellow scarious, slightly lacerate apically, not definitely apiculate, at least the inner gland dotted; corollas apically glandular when young, not basally inflated *A. turneri*

Achyrocline deflexa B.L. Robinson & Greenm., Amer. J. Sci. 50:153. 1895.
 TYPE: MÉXICO. Oaxaca: Sierra de San Felipe, 7000-8000 ft, Nov 1894,
C.G. Pringle 6054 (HOLOTYPE: GH; Isotype: F!).

Achyrocline yunckeri S.F. Blake, Field Mus. Nat. Hist., Bot. Ser. 17:399.
 1938. TYPE: HONDURAS. Dept. Comayagua: hills above the
 plains of Siguatapeque, wet cliff near El Achote, 1350 m, 15 Jul
 1936, *T.G. Yuncker, R.F. Dawson & H.R. House 5872* (HOLO-
 TYPE: US; Fragment: LL!).

Erect herbs 0.5-1.2 m tall. Leaves spatulate, the blades ovate-lanceolate, 4-8 cm long, 8-17 mm wide, sharply attenuate to a petiolar base, strongly discolorous, woolly pubescent with hairs filiform to the very base, the surfaces eglandular. Phyllaries 8-11, whitish scarious, with apices smoothly rounded to a minute but definite apiculum, eglandular, the innermost with a definite,

narrow, medial, herbaceous patch on the lower half. Corollas filiform-tubular, eglandular, abruptly bulbous indurated at the very base, pistillate corollas 4-5, 2.5-2.9 mm long, hermaphroditic corollas 1-2, 3.0-3.5 mm long, the lobes with minute, white, clavate hairs, eglandular.

México (Oaxaca, and probably adjacent Chiapas), Guatemala, Honduras, Nicaragua; moist, mixed woods, pine or pine-oak woods, less commonly in cloud forests; 900-2400 m; November-June.

Representative collections examined: GUATEMALA. Dept. Chimaltenango: Barranco de La Sierra, SE of Patzum, 31 Dec 1938, *Standley 61612* (F). Dept. El Progreso: between El Jute de Cobana and Finca Piamonte, 3 Feb 1942, *Steyermark 43365* (F). Dept. Huehuetenango: near crossing of Río San Juan Ixtlan, E of San Rafael Petzal, 9 Jan 1941, *Standley 83014* (F). Dept. Guatemala: 10 km S of San Raimundo, 18 Jan 1939, *Standley 62903* (F). Dept. Jalapa: mountains along the road between Jalapa and Paraiso, 14 Nov 1940, *Standley 77369* (F). Dept. Quezaltenango: Volcán Santa María, between Santa María de Jesús, Los Mojadas, and summit of volcano, 12 Jan 1940, *Steyermark 33918* (F). Dept. Quiché: forested barranca S of Chichicastenango, 11 Jan 1939, *Standley 62411* (F). Dept. Zacapa: upper slopes, along Río Repollal to summit of mountain, 12-13 Jan 1942, *Steyermark 42509* (F).

HONDURAS. Dept. Cortes: Montaña San Idalfonso entre Banaderos y Cusuco, bosque mixto y lluvioso, 1400 m, 26 Mar 1963, *Molina R. 11443* (F,LL). Dept. El Paraiso: along Manzaragua Road, 5 Jan 1947, *Williams & Molina 11505* (F). Dept. Morazan: Quebrada Valle Angeles, 1 km NE de Valle de Angeles, 12 Mar 1963, *Molina R. 11298* (F); slopes of Cerro de Uyuca, along trail between Hoya Grande and Valle Encantado, 2 Dec 1948, *Standley 15302* (F). Dept. Ocotepeque: along Agua Caliente river, vicinity of Honduras-Guatemala border, 25 Jan 1976, *Molina R. 31437* (F).

NICARAGUA. Dept. Jinotega: SE of Jinotega, along road to La Cantera and Los Pinos, 25 Jun 1947, *Standley 10131* (F). Dept. Matagalpa: Jinotega rock quarry, ca 5 km NW of Sta. María de Ostuma, 18 Jan 1965, *Williams, et al. 27955* (F).

Achyrocline turneri Nesom, *sp. nov.* TYPE: GUATEMALA. Dept. Baja Verapaz: Unión Barrios, in high forest on hill, 12 Mar 1972, *Contreras 11271* (HOLOTYPE: LL; Isotype: LL).

Achyrocline deflexae B.L. Robinson & Greenm. similis sed foliis elliptici-lanceolatis sessilibus, trichomatibus foliorum basibus crassis, phyllariis glandulosis non-apiculatis, corollis glandulosis ad apices differt.

Erect herbs 0.4-1.2 m tall. Leaves narrowly elliptic-lanceolate, 4-11 cm long, 6-14 mm wide, gradually attenuate to the sessile base, woolly pubescent

with hairs arising from vitreous, erect, thick bases, the surface also with scattered, minute, sessile, resin glands, sometimes more easily visible under the dense wool of the lower surface. Phyllaries 9-11, yellow scarious, not definitely apiculate, the inner with a lower-medial, broadly ovate, herbaceous portion with minute, easily deciduous, orange, sessile glands. Corollas filiform-tubular, not basally inflated, the pistillate corollas 4-5, 2.5-3.0 mm long, hermaphroditic corollas 1-2, mostly 3.5 mm long, the lobes sessile glandular at least when young, also with a few minute, white, clavate hairs.

Guatemala, Honduras and Nicaragua; pine-oak or mixed deciduous woods; (1000-)1300-2400 m; November-April.

Additional collections examined: HONDURAS. Dept. Olancho: along Río Olancho, on road between San Francisco de la Paz and Gualaco, 13.6 mi SW of Gualaco, in disturbed virgin forest on steep slope ca 1/2 mi E of main road, 1300 m, 6 Feb 1987, *Croat & Hannon 64237* (TEX). Dept. Morazan: Cerro de Uyuca, trail between Las Flores and La Labranza, 7 Apr 1949, *Standley 18924* (F).

NICARAGUA. Dept. Matagalpa: Camino al Sanatorio de Aranjuez, 21 Feb 1980, *Araquistain & Sandino 1426* (F); Fuente Pura, km 144 carretera a Jinotega, 20 Feb 1981, *Moreno 7073* (F).

Achyrocline turneri is named for Dr. B.L. Turner, whose initial curation of Mexican and Central American Inuleae has been of invaluable help in further studies, including this one. The species is less commonly collected and apparently not quite as widespread as *A. deflexa*. The two, however, are sympatric and have been collected in close proximity to one another. No intermediates have been observed.

Achyrocline ventosa Klatt, *Linnaea* 42:112. 1878. TYPE: MÉXICO. Locality not specified, but probably Hidalgo or Querétaro, no date, *Ehrenberg 577* (GH-fragment and drawings!).

Herbs 15-20 cm tall. Leaves lanceolate, petiolate, slightly decurrent but apparently not auriculate, 2-3 cm long, 2-4 mm wide, bicolored, white woolly beneath, glabrescent above, the hairs thin based or with a broadened, flattened, vitreous base, the surfaces apparently not glandular. Phyllaries 11, 4.5 mm long, narrowly triangular with an attenuate-apiculate apex, with minute resin glands near the base. Corollas filiform-tubular, basally expanded but not abruptly bulbous, the pistillate flowers 3, with corollas 2 mm long, the hermaphroditic flowers 1, with corollas 2.5 mm long, eglandular but with a few, minute hairs.

Known only from the type collection.

This diminutive species is similar to *Achyrocline turneri* in its lanceolate, petiolate leaves and glandular phyllaries, but in addition to the features noted in the key, it differs in its leaves without sessile glands and without prominent,

thick based hairs, its eglandular corollas and its phyllary morphology. In its small stature and short corollas, it is similar to *A. ramosissima* Rusby of the high Andean habitats in Bolivia and Perú. The possibility of a close relationship between these should be investigated, but *A. ramosissima* has sessile, nondecurent leaves, broader phyllaries with rounded, obtuse apices and appears to be specifically distinct.

ACKNOWLEDGMENTS

I thank Drs. Billie Turner and Michael Dillon for their review and comments on the manuscript and appreciate loans of specimens from F and GH.

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