

THE ERIGERONS (COMPOSITAE: ASTEREAE) OF BASASEACHIC NATIONAL PARK CHIHUAHUA, MÉXICO, INCLUDING A NEW SPECIES

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ABSTRACT

Ten species of *Erigeron* have been found in the Parque Nacional de Basaseachic in southwestern Chihuahua, México. One of these, *E. fundus* which occurs only in the barranca, is proposed in this paper as new. Two other species, *E. podophyllus* Nesom and *E. basaseachensis* Nesom, also are apparently endemic to the park. A key is presented to all ten species plus two others that are common in the surrounding area of southwestern Chihuahua.

KEY WORDS: *Erigeron*, Asteraceae, México, taxonomy.

El Parque Nacional de Basaseachic in southwestern Chihuahua includes a plateau area primarily of pine and pine-oak woods at about 2000-2200 meters elevation as well as riparian habitats and vegetation along the Río Durazno and Río Candameña, which meet there and drop precipitously into a huge barranca 330 meters below. Within this small area are ten species of *Erigeron* (Spellenberg *et al.* unpubl. mss.). Three of these apparently are endemic to the park, one of the endemics is proposed as new to science in the text below; the other two belong to a section of the genus treated in a separate paper (Nesom 1989). A key for the identification of all the *Erigeron* species in the park, as well as two others that occur in the closely surrounding areas is presented.

***Erigeron fundus* Nesom, sp. nov.** TYPE: MÉXICO. Chihuahua: Mpio. Ocampo, ca 16 km (air) ENE of Ocampo, ca 2.5 km S of village of Basaseachic, base of Cascada de Basaseachic, in deep barranca, 28° 02' N, 107° 55' W, 27 Apr 1986, G. Nesom 5437 with Spellenberg *et al.* (holotype: TEX!; isotypes: ARIZ!, COLO!, GH!, MEXU!, MO!, NY!).

Erigeron flagellari A. Gray similis sed foliis basalibus spathulatis laminis obovati-orbicularibus, caulibus pubescentia patenti-deflexa, flosculis radii paucioribus, corollis disci longioribus, et setis pappi numerosioribus.

Short-lived perennials from fibrous roots, producing slender rhizomes and forming mats from filiform, flexuous runners up to 50 cm long, these often with plantlets at the tips. Erect stems 1 per rosette, unbranched, 13-18 cm tall, sparsely to moderately pubescent with spreading to slightly deflexed hairs 0.5-1.0 mm long, sparsely stipitate-glandular at least on the upper third, often densely so immediately below the heads. Leaves sparsely pubescent to glabrous above, fewer hairs beneath, the margins ciliate; basal leaves in a rosette, 15-50(-80) mm long, spatulate, the blades broadly obovate to nearly orbicular, 7-22 mm wide, sharply attenuate basally to a narrow petiolar region $1/2$ - $3/5$ as long as the leaf, the margins with 2-3 pairs of serrations, sinuations, or shallow lobes, sometimes simply mucronulate or nearly entire, the apex rounded; cauline leaves (on erect stems and runners) sharply differentiated from the basal, oblong-obovate, entire with a pair of minute teeth, sessile, non-clasping, relatively uniform in size and evenly spaced, 5-12 mm long, 2-5 mm wide. Heads solitary, shallowly hemispheric, 7-10 mm wide (pressed); phyllaries in 2-3(-4) subequal series, the inner 4.0-4.5 mm long, all thin-herbaceous, sparsely spreading-pubescent as well as stipitate-glandular, lanceolate to oblanceolate with short-acuminate tips, usually fused into a basal ring, the margins scarious-lacerate and sometimes purplish. Ray flowers 32-50 in 1(-2) series, the corollas white, drying white or sometimes with a faint, purple midstripe beneath, 8.0-10.5 mm long, the ligules 0.5-1.5 mm wide, 3-4(-5) veined, the tube sparsely pubescent with biseriate trichomes. Disc corollas tubular-funnelform, not inflated or indurated, 3.0-4.5 mm long; style branches 0.5-0.7 mm long, including the deltate to shallowly triangular collecting appendages 0.1-0.2 mm long. Achenes sparsely strigose, oblong, compressed, ca 1 mm long, fully mature not observed, with 2 thin, orange-brown ribs; pappus of 16-25 bristles 2.1-3.8 mm long, outer series of a few, minute setae ca 0.1 mm high.

Apparently endemic to the area at the base of La Cascada de Basaseachic in southwestern Chihuahua; along the river below the falls, N-facing slope, mostly on banks of relatively bare soil with few other herbaceous flowering species but often densely covered by bryophytes, inside woods of *Cupressus*, *Pseudotsuga*, *Acer*, *Tilia* and *Frazinus* that grade into pine-oak in some areas; 1700-1750 m; flowering Mar-April(-June).

Additional collections examined: MÉXICO, Chihuahua: [Type locality]: 16 May 1985, *Lavin et al.* 5410 (TEX); 18 Aug 1984 (past fruit), *Nesom* 5106 with Lewis (ENCB,MEXU,NY,TEX,US); 26 Apr 1985, *Spellenberg et al.* 8012 (MEXU,NMC,NY,TEX,US).

The straight ligules (vs coiling or reflexing), nodding buds, and small achenes with persistent pappus place *Erigeron fundus* in sect. *Oligotrichium* Nutt. of which *E. flagellaris* A. Gray and *E. divergens* Torr. & Gray are members. The new species is very similar in habit to *E. flagellaris* in its

slender, herbaceous, leafy stolons and solitary heads on erect, unbranched stems. The latter, however, has appressed stem pubescence, mostly elliptic (vs orbicular) basal leaf blades, more ray corollas (50-125 vs 32-50), shorter disc corollas (2.5-3.5 vs 3.0-4.5 mm long), and fewer pappus bristles (10-15 vs 16-25). Also, the basal fusion of phyllaries that occurs in *E. fundus* can be seen in various species in the genus but never in *E. flagellaris*.

Artificial key to the *Erigeron* species
of El Parque Nacional de Basaseachic

1. Achenes with a coroniform pappus less than 0.2 mm high, without bristles (2)
1. Achenes with a pappus of bristles as long as the disc corollas (4)
 2. Plants perennial; stem pubescence ascending to spreading or deflexed; cauline leaves coarsely toothed to pinnatifid; rays reflexing at the tube-ligule junction, not coiling; Chihuahua and adjacent Sonora *E. wislizeni* (A. Gray) E. Greene*
 2. Plants annual or perennial; stem pubescence appressed; cauline leaves entire or nearly so, never coarsely toothed; rays straight or coiling at the tips, not reflexing (3)
3. Plants annual, without basal offsets; cauline leaves clasping to subclasping; heads 7-12 mm wide; ray flowers 80-200, the corollas (6.0-)8.5-16.0 mm long; Chihuahua and adjacent Sonora .. *E. strigosus* E. Greene
3. Plants perennial, producing basal offsets or short rhizomes; cauline leaves not at all clasping; heads 5-7(-9) mm wide; ray flowers (18-)24-80, the corollas 5.4-9.5 mm long; Chihuahua to central Durango *E. fraternus* E. Greene
 4. Plants producing long, leafy, herbaceous stolons. (5)
 4. Plants sometimes producing rhizomes but not leafy, herbaceous stolons (6)
5. Basal leaves with elliptic blades; rays 50-125; pappus bristles 10-15; western United States to central México *E. flagellaris* A. Gray
5. Basal leaves with obovate-orbicular blades; rays 32-50; pappus bristles 16-25; Basaseachic endemic *E. fundus* Nesom
 6. Plants annual; heads 2-3 mm wide; phyllaries 2.0-3.3 mm long; Chihuahua and Sonora to Colima and Michoacán *E. velutipes* Hook. & Arn.
 6. Plants perennial; heads 6-20 mm wide; phyllaries 3.3-11.5 mm long (7)

7. Basal leaves absent; rays usually purplish, the ligules 1.4-2.4 mm wide, not reflexing or coiling; disc corollas 4.8-6.0 mm long; pappus bristles 34-50, persistent; Chihuahua to northern Durango *E. lepidopodus* (B. Rob. & Fern.) Nesom*
7. Basal leaves present or absent; rays white, the ligules 0.8-1.8 mm wide, reflexing at the tube-ligule junction; disc corollas 2.0-4.5 mm long; pappus bristles (8-)10-12(-17), basally caducous, breaking off at the slightest touch (8)
 8. Cauline leaves apically toothed, not pinnatifid or bracteate; ray flowers mostly 85-120; pappus bristles 11-17; Basaseachic endemic *E. podophyllus* Nesom
 8. Cauline leaves pinnatifid (or bracteate in *E. eruptens*); ray flowers 26-150; pappus bristles (8-)10-12 (9)
9. Plants mostly 10-30 cm tall, with rhizomes or rhizome-like caudex branches; basal rosette present at flowering; stems usually unbranched, sometimes with 1-2 simple branches; ray flowers 26-72 (10)
9. Plants mostly 25-90 cm tall, without rhizomes; basal rosette absent at flowering; stems usually with 2-20 primary branches, these with secondary and tertiary branches; ray flowers 70-150 (11)
 10. Plants with thick, ascending, sometimes rhizome-like caudex branches; stems essentially scapose, spreading-pubescent; stems and phyllaries minutely granular-glandular; heads 8-15 mm wide; central to southern Chihuahua *E. eruptens* Nesom
 10. Plants with slender, brittle, lateral rhizomes; stems with reduced cauline leaves but not essentially scapose, appressed-pubescent; stems and phyllaries eglandular; heads 6-9 mm wide; Basaseachic endemic *E. basaseachensis* Nesom
11. Stems, leaves and phyllaries very sparsely hispid-pilose with trichomes averaging 1.0 mm long, at least the peduncles and phyllaries densely stipitate-glandular; Arizona, New Mexico, Chihuahua, Sonora *E. oreophilus* Greenm.
11. Stems, leaves and phyllaries moderately to densely appressed-strigose to hirsute with trichomes averaging 0.4 mm long, eglandular or sometimes minutely granular-glandular on the peduncles and phyllaries; Arizona, New Mexico, Chihuahua, Sonora *E. neomexicanus* A. Gray

* *Erigeron wislizeni* has been collected in the town of Basaseachic (Nesom 5117 - NMC,TEX) and numerous other close localities; *E. lepidopodus* is known slightly to the east of the park: 18 mi SW of Basaseachic (Nesom 5420 - MEXU,NMC,TEX); ca 12 mi SE

of Basaseachic (*Spellenberg 8061* - NMC); Mojarachic (*Knobloch 6013* - TEX). Neither species is known from within the park boundaries.

ACKNOWLEDGMENTS

I thank Billie Turner and Rich Spellenberg for their comments and criticisms of this manuscript.

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