

**SYSTEMATIC STUDY OF THE KOANOPHYLLON PALMERI  
COMPLEX (ASTERACEAE: EUPATORIEAE)**

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**ABSTRACT**

The *Koanophyllon palmeri* complex is treated as consisting of three taxa: *K. palmeri* (A. Gray) King & H. Rob. var. *palmeri*; *K. palmeri* var. **tonsa** (B.L. Rob.) B.L. Turner, **comb. nov.**; and **Koanophyllon pochutlana** B.L. Turner, **sp. nov.** A phototype of the latter is provided, along with distribution maps, and a key to the taxa concerned. *Phytologia* 94(2): 193-198 (August 1, 2012).

**KEY WORDS:** *Eupatorium*, *Koanophyllon*, *K. palmeri*, Asteraceae, Eupatorieae, Mexico

Routine identification of Mexican comps has occasioned the present paper.

In my seminal treatment of the tribe Eupatorieae for Mexico, I treated *Koanophyllon* within the broad fabric of *Eupatorium* (Turner 1997). I have subsequently come to accept the fragmentation of that genus, as espoused by King and Robinson (1987).

**Key to the Koanophyllon palmeri complex:**

- 1. Heads with 10-11 florets; inner bracts broadly ovate, ca twice as long as wide; Oax.....**K. pochutlana**
- 1. Heads with 4-6(7) florets; inner bracts narrowly ovate, ca 3 times as long as wide; Son to Gue.....**K. palmeri** (2)
- 2. Involucral bracts mostly 1-2 mm long; pappus bristles ca 1.5 mm long .....**var. tonsa**
- 2. Involucral bracts mostly 2.6-4.0 mm long; pappus bristles 2.5-3.5 mm long .....**var. palmeri**

**var. PALMERI** (A. Gray) King & H. Rob., *Phytologia* 22: 150. 1971.  
*Eupatorium palmeri* A. Gray, *Proc. Amer. Acad. Arts* 21: 383. 1886.

TYPE: **MEXICO. CHIHUAHUA: Mpio. Batopilas**, mountains above Batopilas, Aug-Nov 1885, *Palmer 144, 260* (Lectotype: *Palmer 144, GH!*)

Son, Chi, Sin, Dur, Jal, Col and closely adjacent USA, barrancas, in mostly pine-oak forests, 10-1700 m; Sep-Nov. **Fig. 2**

**Slender arching shrub or shrublets** 1-3 m high. **Stems** striate, puberulent. **Leaves** thin, opposite, 5-12 cm long, ca 2.5 cm wide; petioles 5-20 mm long; blades ovate-lanceolate, 3-nervate from or near the base, puberulent and glandular-punctate beneath, the margins crenulate to serrulate, the apices attenuate. **Capitulescence**, a terminal, congested corymbose-panicle, the ultimate peduncles mostly 0-1 mm long. **Heads**, 5-6 mm high; corollas, cream, whitish, yellowish or reddish-brown, ca 3.5 mm long. **Receptacles** ca 0.3 mm across, glabrous. **Involucres** mostly 3-4 mm high; inner bracts 3-4 mm long, ca 0.6 mm wide, mostly 3-nervate. **Florets**, 4-7 per head. **Achenes** 2.0-2.5 mm long, hispidulous; pappus of 40-50 bristles, 2.5-3.5 mm long.

McVaugh (1984) placed this taxon in synonymy under his broad concept of *Eupatorium solidaginifolium* A. Gray [= *Koanophyllon solidaginifolium* (A. Gray) King & H. Rob.], a decidedly different species of more eastern distribution. He also neglected to account for the var. *tonsa*.

**var. TONSA** (B.L. Rob.) B.L. Turner, **comb. nov.**

Based upon *Eupatorium palmeri* var. *tonsum* B.L. Rob., *Proc. Amer. Acad. Arts* 42: 43. 1906.

TYPE: **MEXICO. GUERRERO: "El Ocote,"** 300 m, 10 Nov 1998, *E. Langlasse 616* (Lectotype GH!, selected here; photolotype, TEX!)

Pacific slopes, s Sin, Nay, Jal, Col, Mic, Gue, tropical deciduous forests, 10-800 m; Oct-Dec. **Fig. 2**

**Suffruticose herbs or shrublets** 1-3 m high. **Stems** sparsely pubescent with upwardly appressed, white, hairs. **Leaves** 5-7 cm long, 2-5 cm wide, opposite throughout; petioles 1-2 cm long, pubescent like the stems; blades narrowly to broadly ovate, pubescent beneath, mainly along the ribs, the surfaces markedly glandular-punctate; margins weakly crenulate to entire. **Capitulescence** a pyramidal, corymbose, panicle ca 10 cm long, 4-6 cm wide, the ultimate peduncles 1-2 mm long. **Involucre**s composed of 5-7 lanceolate bracts, mostly 3-nervate, 1.5-2.0 mm long, ca 0.4 mm wide in 2-3 series, their apices sharply acute. **Receptacles** ca 0.2 mm across, glabrous. **Florets** 4-5 to a head; corollas glabrous, white, ca 1.5 mm long, the 5 lobes markedly beset with amber globules. **Style branches** clavate apically. **Anthers** included, ca 1 mm long, the appendages minute, ca as long as wide. **Achenes** hispid, 4-5 sided, ca 2 mm long; pappus of 20-30 persistent bristles ca 1.5 mm long.

This is a weakly differentiated taxon, largely distinguished from the typical variety by its smaller heads, smaller inner involucre bracts and shorter pappus. Most collections of var. *tonsa* have been gathered from relatively low elevations along the Pacific slopes; when occurring in close geographical proximity, the var. *palmeri* usually is found in more interior locations at higher sites. Intergradation appears to occur between the two taxa in regions of near contact.

### **KOANOPHYLLON POCHUTLANA** B.L. Turner, *sp. nov.* **Fig. 1**

Resembling *Koanophyllon palmeri* (A. Gray) King & Rob. but the florets more numerous (10-11 per head vs 4-7), involucre bracts shorter (ca 2 mm long vs 3-4 mm), smaller achenes (ca 1.5 mm long vs 2.5-3.5 mm) and the pappus shorter (ca 1.5 mm long vs 2.5-3.5 mm).

**TYPE: MEXICO. OAXACA: Mpio. San Miguel del Puerto**, "1.63 km (LR) 154 [degrees] de rancho Dioon. Arroyo Arena," ca 790 m, 15 58 33.7 N, 96 6.53 W, 18 Nov 2003, *Alfredo Saynes V. 4078* [con A. Nava et al.] (holotype: TEX).

Known only by the type collection. **Fig. 2**

**Scandent shrubs** to 3 m high. **Stems** densely to sparsely pubescent with short, mostly up-curved, hairs. **Leaves** opposite, 6-9 cm long, 3-4 cm wide; petioles 1.0-1.5 cm long; blades ovate, 3-nervate from or near the base or nearly so. **Capitulescence** a terminal cymose panicle ca 11 cm high, 8 cm wide, the ultimate peduncles ca 1 mm long. **Heads** ca 5 mm high, the inner bracts ovate, ca 2 mm long, 0.8 mm wide, the apices mostly broadly acute and mostly 1-nervate. **Florets** 10-11 per head; corollas white, ca 5 mm long, glabrous, the 5 lobes atomiferous-glandular. **Achenes** black, ca 1.5 mm long, moderately pubescent with short, appressed, hairs; pappus of 30-40 tawny-white bristles ca 1.5 mm long.

Named for the Distrito Pochutla, where first collected.

The novelty appears to stand somewhere between *Koanophyllon palmeri* var. *tonsa* and *K. solidaginifolia*, having the more numerous florets and apically broad inner bracts of the latter, but the smaller heads and achenes of the former.

#### ACKNOWLEDGEMENTS

Distribution maps are based upon specimens on file at LL-TEX, those cited by McVaugh (1987), and USDA records available on web sites.

#### LITERATURE CITED

- King, R.M. and H. Robinson. 1987. The genera of the Eupatorieae (Asteraceae). Monographs Syst. Bot. 22: 1-581.  
McVaugh, R. 1987. *Eupatorium*, in Fl. Nova-Galiciana 12: 340-424.  
Turner, B.L. 1997. *Koanophyllon* group of *Eupatorium*, in Comps of Mexico, Eupatorieae. Phytologia Memoirs 11: 110-111.



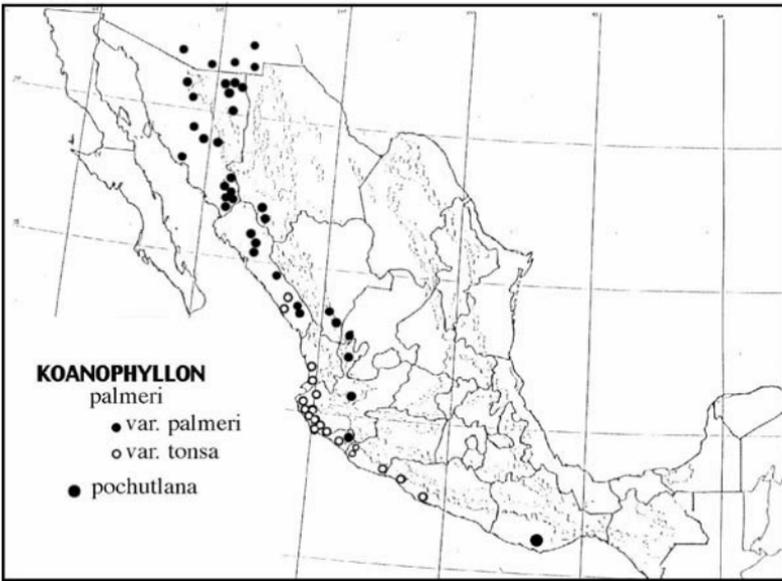


Fig. 2. Distribution of the *Koanophyllon palmeri* complex