

HYMENOXYIS AMBIGENS VAR. *WAGNERI*
(ASTERACEAE: HELENIEAE: TETRANEURINAE), A NEW VARIETY
IN *HYMENOXYIS* SUBGENUS *PLUMMERA* FROM ARIZONA

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Abstract: *Hymenoxys ambigens* var. *wagneri* is a new variety endemic to the Dragoon Mountains of Cochise County, Arizona.

Keywords: Asteraceae, Helenieae, Tetraneurinae, *Hymenoxys*, *Plummera*, *Hymenoxys* subg. *Plummera*, *Hymenoxys ambigens*.

When Wagner et al. (1999) revisited *Hymenoxys* Cass. subg. *Plummera* (A. Gray) Bierner, they mentioned a collection (*Reichenbacher 1545*) from Upper East Stronghold Canyon in the Dragoon Mountains of Cochise County, Arizona. They felt that it was allied to *H. ambigens* (S. F. Blake) Bierner var. *floribunda* (A. Gray) W. L. Wagner, but noted that it differed from the three known varieties of *H. ambigens* (vars. *ambigens*, *floribunda*, and *neomexicana* W. L. Wagner) in that it had considerably larger heads, inner involucre bracts that greatly exceeded the outer series of 5 bracts, a greater number of disc florets (18–20), and “extremely wide” pappus scales. They suggested that the collection might represent an undescribed species.

Examination of the Reichenbacher collection and plants in situ (east side of the Dragoon Mountains, Cochise County, Arizona – *Bierner 2005-1* and *Bierner 2005-2*) lead me to concur with Wagner et al. (1999) that these plants are worthy of recognition as a distinct taxon, albeit at the varietal level within *Hymenoxys ambigens* rather than at the specific level.

A comparison of characters of plants from the east side of the Dragoon Mountains with the varieties of *Hymenoxys ambigens* is shown in Table 1. In accordance with observations by Wagner et al. (1999), I agree that the Dragoon Mountain plants when

compared to the previously described varieties of *Hymenoxys ambigens* 1) tend to have larger heads, 2) have inner phyllaries that distinctly exceed the outer phyllaries (the Dragoon Mountain plants tend to have shorter outer phyllaries and longer inner phyllaries, which explains this observation), 3) have considerably more disc florets, and 4) have considerably wider pappus scales (compared to those of var. *floribunda* and especially var. *neomexicana*). They also have outer phyllaries that are fused to a lesser extent than those of var. *floribunda* and var. *neomexicana*, greater numbers of outer phyllaries, inner phyllaries, and ray florets than var. *ambigens* and var. *floribunda*, outer and inner phyllaries of usually different morphology, longer and generally wider ray corollas, cypselae hairs that are distinctly different in shape from those of var. *floribunda* and var. *neomexicana*, a greater number of pappus scales, especially compared to var. *floribunda* and var. *neomexicana*, and pappus scales of usually different morphology.

I have on occasion found functionally bisexual disc florets in the Dragoon Mountain plants. One of the major criteria for recognizing *Hymenoxys* subgenus *Plummera* (= *Plummera* A. Gray) has been the presence of functionally staminate disc florets compared to bisexual disc florets in other *Hymenoxys* taxa (e.g., Rydberg, 1915; Kear-

ney and Peebles, 1942; Bierner, 2006). Blake (1929), when describing *Plummera ambigens*, stated, "The presence of a well developed pappus in *P. ambigens* and the tendency toward fertility of the disc flowers ... not only sharply differentiate the new plant from *P. floribunda* but tend to break down the gap between the section of *Actinea* often separated as a distinct genus *Hymenoxys* and the hitherto well distinguished genus *Plummera*." During a recent re-examination of *P. ambigens* var. *ambigens* specimens at ARIZ, I could find no bisexual disc florets in any of the mature heads, but I do not doubt that they occur infrequently. Therefore, I believe it would be best to use a phrase such as "disc florets usually functionally staminate" when distinguishing subgenus *Plummera* from the other subgenera of *Hymenoxys*, although subgenus *Plummera* is well separated by receptacle shape (flat compared to hemispheric to globoid, ovoid, or conic in the other subgenera) and the number of disc florets per head – 6–20 in subgenus *Plummera* (with var. *wagneri* included) compared to 25–400+ in the other subgenera of *Hymenoxys* (Bierner, 2006).

Despite the occasional bisexual disc floret, the Dragoon Mountain plants are, in my opinion, distinctly part of the subgenus *Plummera* clade; taxa in the other *Hymenoxys* subgenera invariably have very high percentages of bisexual disc florets. Within subgenus *Plummera*, the Dragoon Mountain plants fall within my concept of *Hymenoxys ambigens* given similarities including branching pattern, degree of leaf division, number of heads per plant, involucre shape, receptacle shape, and degree of pubescence and glandularity. Within *Hymenoxys ambigens*, the Dragoon Mountain plants have a unique geographic distribution (Fig. 1) and are consistently and substantially different from plants assigned to *Hymenoxys ambigens* vars. *ambigens*, *floribunda*, and *neomexicana* (Table 1).

In honor of Warren L. Wagner, the leading expert on *Hymenoxys* subg. *Plummera* and the person who brought attention to the unusual Reichenbacher collection, I

am pleased to describe *Hymenoxys ambigens* var. *wagneri*.

TAXONOMIC TREATMENT

Hymenoxys ambigens (S. F. Blake) Bierner var. ***wagneri*** Bierner, var. nov.

TYPE here designated: **UNITED STATES. ARIZONA. Cochise Co.:** Uncommon and widely scattered along trail and ravine bottom on granite. Oak woodland; Upper East Stronghold Canyon along trail to West Stronghold Canyon. SW 1/4 of NW 1/4 of S35 T17S R23E. Dragoon Mountains, elevation 5900 feet, 10 Sep 1983, *Reichenbacher 1545* (HOLOTYPE: ARIZ!).

A *Hymenoxys ambigens* (S.F. Blake) Bierner var. *floribunda* (A. Gray) W.L. Wagner bracteis involucri albis externis 5; bracteis involucri albis internis 5, 4–5 mm longis; floribus radii 5; floribus disci 16–20; et squamis pappi 5 differt.

PERENNIAL HERBS, 20–70 cm (polycarpic with sparingly branched woody caudices). STEMS 1–10, green throughout to purple-red-tinted proximally and green distally, branched distally, sparsely to moderately pubescent, sparsely to moderately dotted with sessile glands. LEAVES: blades simple or pinnately or bipinnately lobed (lobes 3–17), glabrous or sparsely pubescent, moderately to densely dotted with impressed glands; basal leaves in a rosette, bases expanded and clasping stems, blades lobed (lobes 3–17); proximal cauline leaves lobed (lobes 5–15); mid leaves lobed (lobes 5–13); distal leaves simple or lobed (lobes 3–5). HEADS 50–300+ per plant, 5.5–8×3.5–5 mm, in paniculiform to corymbiform arrays. PEDUNCLES 1–2.5 cm, expanded apically, glabrous or sparsely pubescent, eglandular or sparsely dotted with sessile glands. INVOLUCRES campanulate. PHYLLARIES in 2 morphologic series: outer phyllaries 5, basally connate 1/2–2/3 their lengths, green to yellow-green proximally and green distally, sometimes purple-red tinted on the margins, lanceolate to oblanceolate, 3.5–4.5×1.7–2 mm, strong-

TABLE 1. Comparison of plants from the east side of the Dragon Mountains with the varieties of *Hymenoxyis ambigens*.

	Dragon Mts	var. <i>ambigens</i>	var. <i>floribunda</i>	var. <i>neomexicana</i>
Head size (H × D mm)	5.5-8×3.5-5	5-7.5×2.2-3.5	5-7×2.5-4	5-7×3-4.5
Outer phyllary number	5	4	3-4	5
Outer phyllary fusion	1/2-2/3	1/2-2/3	3/4	2/3-3/4
Outer phyllary size (L × W mm)	3.5-4.5×1.7-2	4-5×1.5-2.2	4-6×1.2-3	4-4.5×1.3-2
Outer phyllary apices	Acute to acuminate	Obtuse to acute	Rounded to usually obtuse, sometimes acute	Obtuse to acute to acuminate
Inner phyllary number	5	4	3-4	5
Inner phyllary size (L × W mm)	4-5×1.5-2	3.2-4.5×1.1-2	3.2-4×1.1-2	2.5-3×1-1.2
Inner phyllary apices	Acuminate to usually mucronate	Acuminate to mucronate	Rounded to obtuse to weakly acute or mucronate	Rounded to obtuse to weakly acute or mucronate
Ray floret number	5	4	3-4	4-5
Ray corolla size (L × W mm)	5-7.5×2-4	4-5.5×2.3-4	4.5-6×2-2.5	3.4-4.2×1.7-2.2
Disc floret number	16-20	7-11	6-13	8-15
Disc floret fertility	Occasionally bisexual	Functionally staminate	Functionally staminate	Functionally staminate
Cypselae hairs	Straight	Straight to slightly wavy	Strongly wavy	Moderately wavy
Pappus scale number	5	3-6	0 or 2-4	2-4
Pappus scale size (L × W mm)	1-1.7×0.5-1	sometimes 0 on disc florets 1.2-2.5×0.8-1	1-2×0.3-0.6	sometimes 0 on disc florets 1.2-2×0.2-0.3
Pappus scale shape	Obovate or ovate to lanceolate	Lanceolate to narrowly lanceolate	Narrowly lanceolate	Narrowly lanceolate
Pappus scale apices	Rounded to obtuse to acute to acuminate	Acute to acuminate	Acute to acuminate	Obtuse to acute to acuminate

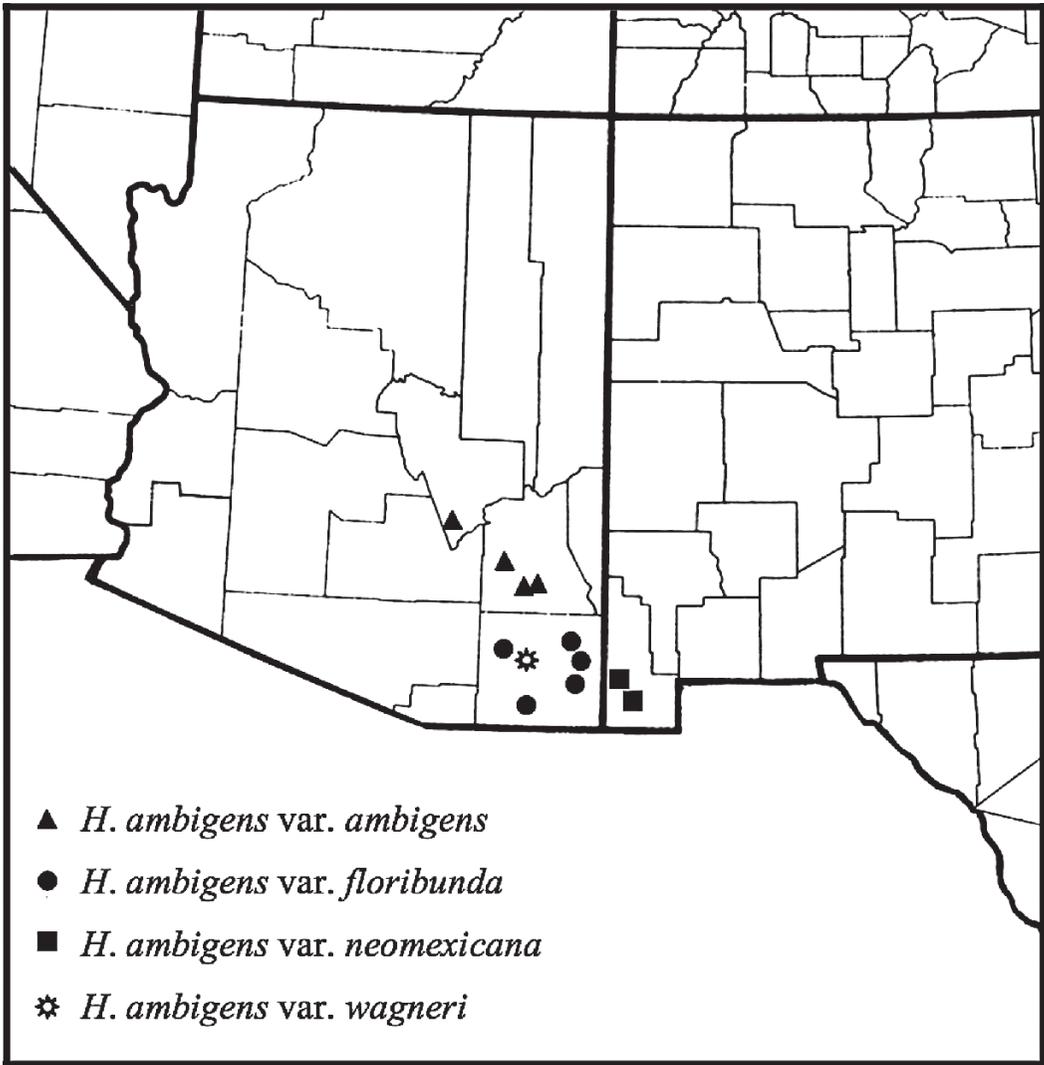


FIG. 1. Distribution of *Hymenoxys ambigens* varieties.

ly keeled, apices acute to acuminate, abaxial faces glabrous or sparsely pubescent, sparsely to densely dotted with sessile and impressed glands, adaxial faces glabrous and eglandular; inner phyllaries 5, free, body yellow to yellow-green and scale-like, yellow to yellow-green to green distally, obovate to oblanceolate, 4–5×1.5–2 mm, distinctly surpassing the outer, weakly keeled, apices acuminate to usually mucronate, glabrous, eglandular. RAY FLORETS 5, pistillate, fertile; corollas yellow, 5–7.5×2–4 mm, lobes 3,

abaxial faces glabrous, sparsely to moderately dotted with sessile glands, adaxial faces glabrous and eglandular. DISC FLORETS 16–20, usually functionally staminate, occasionally bisexual; corollas differentiated proximally into a yellow-brown tube 1/5–1/4 the total length, yellow distally, throats cylindrical to cylindrical campanulate, 2.8–3.3×0.4–0.6 mm, lobes 5, sparsely to moderately pubescent, sparsely to moderately dotted with sessile glands. RECEPTACLES flat; paleae none. RAY CYPSELAE ovoid, 2.3–2.5×1.2–

1.6 mm, moderately to densely pubescent with straight, antrorse hairs, eglandular or sparsely dotted with sessile glands; pappi of 5 obovate or ovate to lanceolate scales 1.4–1.7×0.5–0.6 mm, apices rounded to obtuse to acute. DISC CYPSELAE narrowly obpyramidal if undeveloped, 1.7–1.8×0.5–0.6 mm, ovoid if developed, 2.2–2.3×1.0–1.1 mm, moderately to densely pubescent with straight, antrorse hairs, eglandular or sparsely to moderately dotted with sessile glands; pappi of 5 obovate or ovate to lanceolate scales 1–1.7×0.5–1 mm, apices rounded to obtuse to acute to acuminate.

CHROMOSOME NUMBER: Unknown.

DISTRIBUTION (Fig. 1) AND HABITAT: Endemic to the Dragoon Mountains of southeastern Arizona in Cochise County. Growing in open areas and at edges of oak-juniper woodlands, ca 1800 m.

FLOWERING AND FRUITING: Collected only in September.

ACKNOWLEDGMENTS

I thank Warren Wagner and John Strother for their help with the manuscript in general.

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