

## NOTES ON *HETEROTHECA MARCBAKERI* (ASTEREAE: ASTEREAE)

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### ABSTRACT

*Heterotheca marcbakeri* was described in 2020 from a single collection made in the Apache Creek Wilderness Area of Yavapai Co., Arizona. Additional collections made in 2021 are reported here, with habitat observations and photos (in situ) of plants. Plants of *H. marcbakeri* in the area of the type locality are abundant and relatively consistent in morphology, close to that originally described for the species.

The Apache Creek Wilderness Area is in the Santa Maria Mountains of northwestern Yavapai Co., Arizona, within Prescott National Forest. I collected there in 1991 and among the specimens was a goldenaster that proved to be undescribed — *Heterotheca marcbakeri* Nesom (2020). A return trip in 2021 allowed further observations and photographs of its habitat and plant details, reported here.

*Heterotheca marcbakeri* is distinctive in its woody taproot and short, scale-leaved basal offsets, minutely glandular stems and leaves, congested and relatively even-sized, elliptic-oblong, sessile cauline leaves, heads mostly in short-pedunculate clusters, without immediately subtending capitular bracts, and evenly strigose, eglandular phyllaries. Given its geographical proximity to the range of *H. fulciens*, a close relationship seems plausible --- but *H. marcbakeri* differs most prominently in its lack of elongate rhizomes, larger heads with more rays, lack of capitular bracts, and eciliate phyllaries.

Individuals of *Heterotheca marcbakeri* are still known from a limited range of ca. 200 hectares, although additional surveys are needed. Habitat is restricted to crevices or bases of granite boulders, in partial shade or full sun. Although one collection indicated that the individuals were abundant within visual range, the entire known population of the species apparently includes only a few hundred individuals. The species has not been encountered elsewhere.

**HETEROTHECA MARCBAKERI** Nesom, Phytoneuron 2020-68: 329. 2020. **TYPE: Arizona.** Yavapai Co.: [Apache Creek Wilderness Area], Apache Creek, 4.5 km W of Bald Mountain [Round Hill], granite boulders along creek, with *Juniperus deppeana*, *Agave parryi*, *Juglans major*, *Rhamnus crocea*, *Arctostaphylos pungens*, *Cercocarpus montanus*, *Echinocereus coccineus*, *Opuntia engelmannii*, *Vitis arizonica*, *Artemisia ludoviciana*, *Eriogonum wrightii*, *Glandularia gooddingii*, *Hedeoma oblongifolia*, *Rosa woodsii*, and *Schoenocrambe linearifolia*, N38 61 050 E3 26 250; T17N R6W NE1/4 NW1/4 section 9, 5490 ft elev, perennial herb with several dark green shoots rooted in cracks of boulders, 27 Aug 1992, M.A. Baker 10080 (holotype: ASU; isotypes: NHI, OBI-2 sheets).

**Additional collections. Arizona.** Yavapai Co.: Santa Maria Mountains: 1 km NW of Dead Steer Basin, 600 m SW of Hyde Creek Seep, 5 km ENE of the summit of Hyde Creek Mountain, 51 km NW of Prescott, *Pinus monophylla* woodland with *Agave palmeri*, *Arctostaphylos pungens*, *Bouteloua gracilis*, *Cercocarpus montanus*, *Echinocereus coccineus*, *Garrya wrightii*, *Muhlebergia emersleyi*, *Opuntia chlorotica*, *Pellaea truncata*, *Phoradendron coryae*, *Solidago velutina*, *Quercus emoryi*, and *Quercus turbinella*, 12° 03' 28" N, 38° 59' N, 34.86071° N, 112.87393° W, 1736 m (5692 ft) elev., ca. 50 individuals of *H. marcbakeri* rooted in crevices of small granite boulder outcroppings, 7 Oct 2021, Baker 20748 with F. Baker (ASU, NY, TEX, US); Apache Wilderness Area, N side of

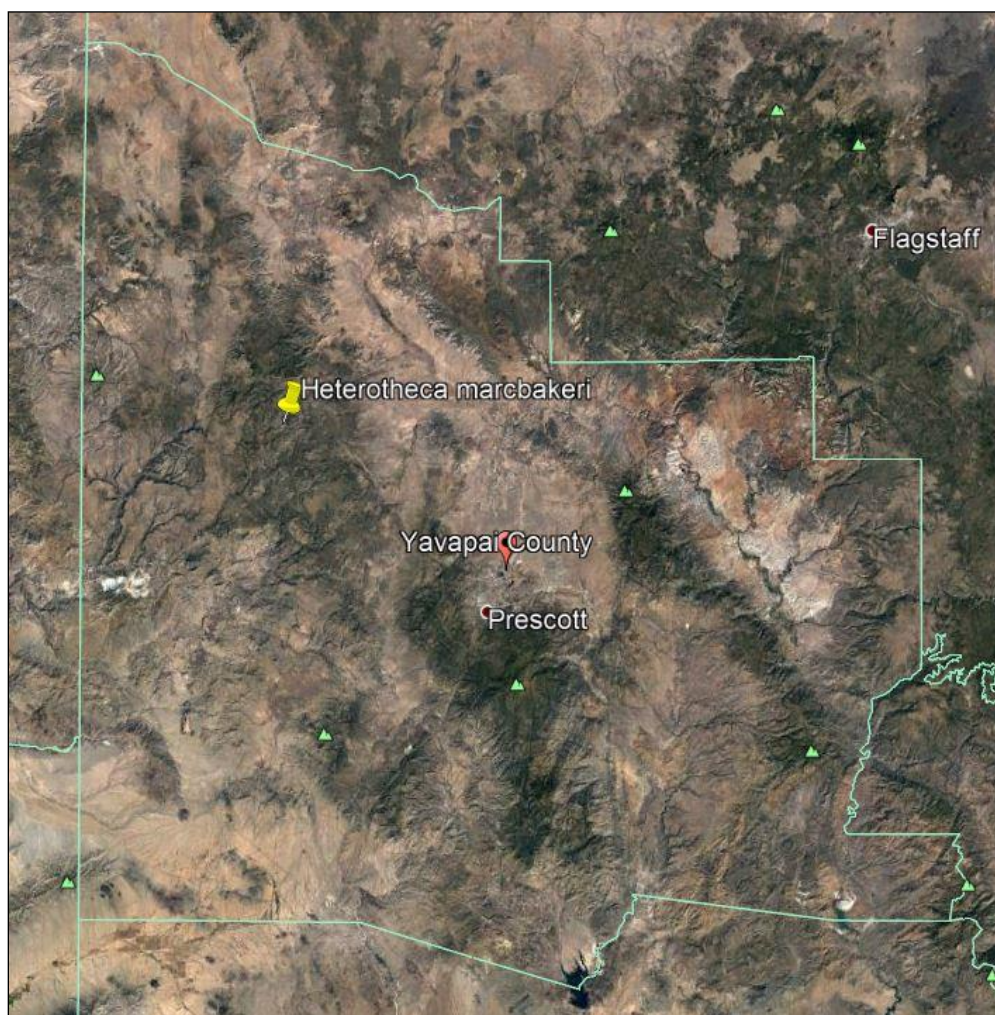
Apache Creek at type locality, 4.7 km W of the summit of Bald Mountain, 54 km NW of Prescott, *Pinus ponderosa*, *P. monophylla* woodland with *Arctostaphylos pungens*, *Bouteloua gracilis*, *Cercocarpus montanus*, *Garrya wrightii*, *Hoffmannseggia drepanocarpa*, *Juniperus deppeana*, *Quercus emoryi*, *Quercus turbinella*, *Tragia ramosa*, and *Yucca baccata*, 12° 03' 26" N, 38° 61' W, 34.87889° N, 112.90119° W, 1685 m (5527 ft) elev., several individuals of *H. marcbakeri* on small granite boulder outcropping, 7 Oct 2021, *Baker 20750* with F. Baker (ASU, NY, TEX, US); 1.3 km NNE of Upper Hyde Spring, 3.7 km NNE of the summit of Hyde Mountain, 51 km NW of Prescott, 12° 03' 27" N, 38° 59' W, 34.86029° N, 112.89130° W, 1755 m (5762 ft) elev., S-facing slope of extensive granite boulder outcroppings, with *Bouteloua curtipendula*, *Cercocarpus montanus*, *Echinocereus coccineus*, *Eriogonum wrightii*, *Garrya wrightii*, *Leptochloa dubia*, *Pinus monophylla*, and *Yucca baccata*, *H. marcbakeri* abundant over large area, 7 Oct 2021, *Baker 20751* with F. Baker (ASU, NY, TEX, US). Vouchers in process.

### ACKNOWLEDGEMENTS

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### LITERATURE CITED

Nesom, G.L. 2020. Taxonomic summary of *Heterotheca* (Asteraceae: Astereae): Sect. *Chrysanth.* *Phytoneuron* 2020-68: 1–359 [in 5 parts].



Map 1. Yavapai County, with locality of *Heterotheca marcbakeri*.

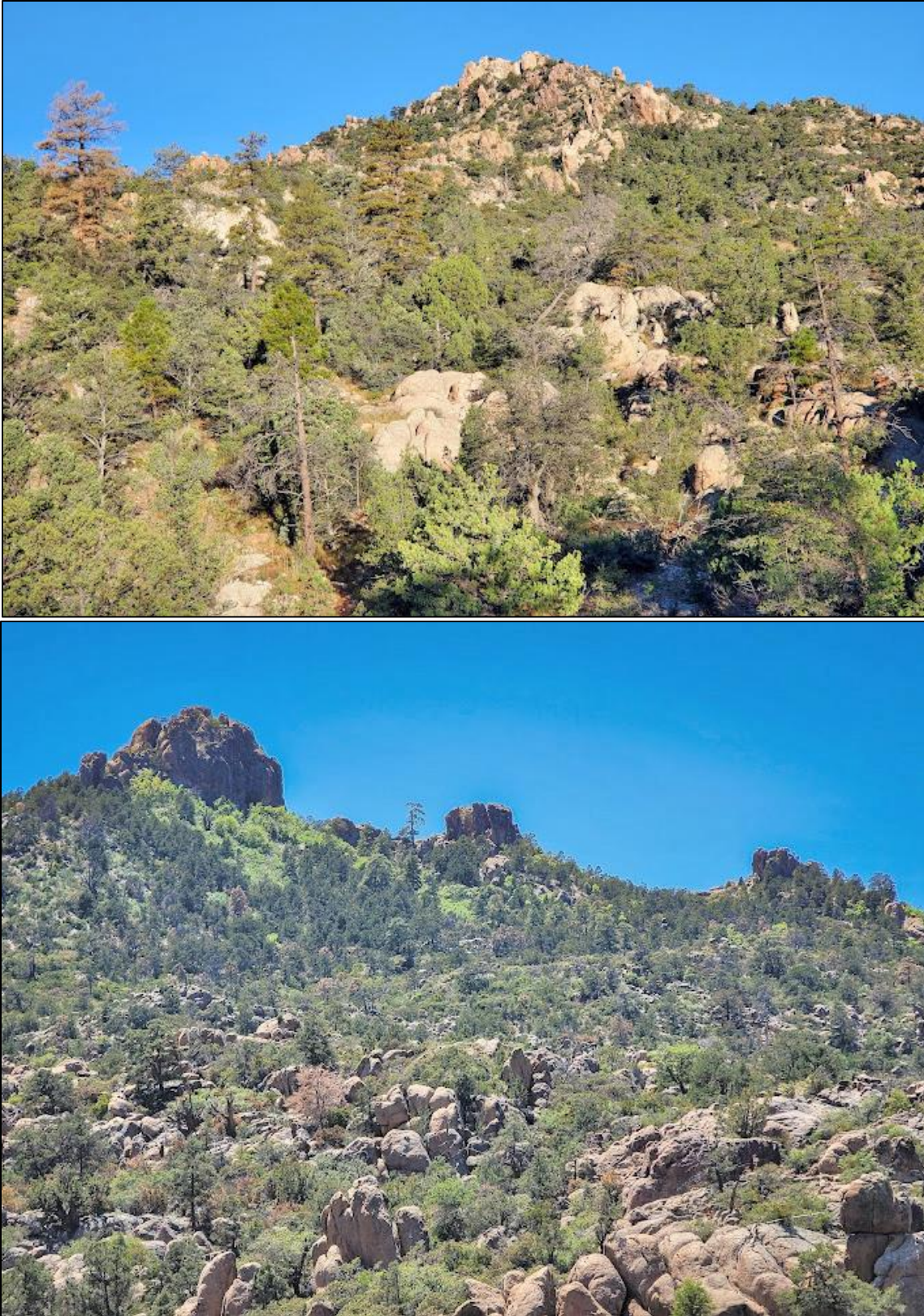


Figure 1. Apache Creek Wilderness Area, an area over granite with pinyon-juniper, scattered ponderosa pine, and riparian areas. Elevations range from 5200 to 6900 feet. Photos by David Dieterle (above) and Benjamin Nash (below).



Figure 2. *Heterotheca marcbakeri* in cracks of granite outcrops, Apache Creek Wilderness Area. Photos by M. Baker, 7 Oct 2021.



Figure 3. *Heterotheca marcbakeri* — detail of Figure 2.



Figure 4. *Heterotheca marcbakeri* in crack of granite outcrop, Apache Creek Wilderness Area. Photo by M. Baker, 7 Oct 2021.



Figure 5. *Heterotheca marcbakeri*. Apache Creek Wilderness Area. Photo by M. Baker, 7 Oct 2021.



Figure 6. *Heterotheca marcbakeri*. Apache Creek Wilderness Area. iNaturalist photo by "ethan-k" (Ethan), 17 Aug 2023.



Figure 7. *Heterotheca marcbakeri* roots. Apache Creek Wilderness Area. Photo by M. Baker, 7 Oct 2021.



Figure 8. *Heterotheca marcbakeri*. Apache Creek Wilderness Area. Photo by M. Baker, 7 Oct 2021.



Figure 9. *Heterotheca marcbakeri* involucre. Apache Creek Wilderness Area. Photo by M. Baker, 7 Oct 2021.



Figure 10. *Heterotheca marcbakeri*. Bud from greenhouse-grown plant from the type locality.



Figure 11. *Heterotheca marcbakeri*. Apache Creek Wilderness Area. iNaturalist photo by "ethan-k" (Ethan), 17 Aug 2023.



Figure 12. *Heterotheca marcbakeri*. Rays ca. 16-18. Apache Creek Wilderness Area. Photo by M. Baker, 7 Oct 2021.



Figure 13. *Heterotheca marcbakeri*. Rays 29. Head from greenhouse-grown plant from the type locality.



Figure 14. *Heterotheca marcbakeri*. Baker 10080, holotype (ASU).



Figure 15. *Heterotheca marcobakeri*. Baker 10080, isotype (OBI 53793).



Figure 16. *Heterotheca marcakeri*. Baker 10080, isotype (OBI 50969).



Figure 17. *Heterotheca marcbakeri*. Left, isotype (OBI 53793). Right, holotype (ASU).