

***ERYTHRANTHE PLOTOCALYX* (PHRYMACEAE),
A NEW SPECIES FROM ARIZONA AND NEW MEXICO**

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ABSTRACT

Plants from southern Arizona and southwestern New Mexico are described as ***Erythranthe plotocalyx*** Nesom, **sp. nov.**, of sect. *Mimulosma*. They have been identified as *E. floribunda*, which occurs in the same area, but are distinct in their combination of erect habit (not procumbent and rooting at nodes), epetiolate leaves, long, ascending-erect peduncles, inflated calyces, and cleistogamous flowers with small corollas.

A revision of *Erythranthe* sect. *Mimulosma* (Nesom 2012) documented populations in southern Arizona and southwestern New Mexico that are distinct from apparently closely related *E. floribunda* but which appeared to intergrade. Continued examination *E. floribunda* over its wide range in the USA and Mexico has emphasized the morphological distinction of these variants and their restricted geography, and it is not clear that apparent intermediates actually represent gene flow involving *E. floribunda*. Previous tentative identifications of these collections and populations as *M. floribundus*, *M. "probably floribundus,"* *M. latidens*, *M. primuloides*, *M. pulsiferae*, and *M. rubellus* further emphasize their distinction and they are formally described here at specific rank.

Erythranthe plotocalyx Nesom, **sp. nov.** **TYPE:** New Mexico. Hidalgo Co.: Peloncillo Mts., Clanton Draw, 3.0 mi E of the [Coronado] National Forest, E side property line, 5480 ft, annual in mud at edge of stream, 9 May 2004, *R.D. Worthington 32511* (holotype: ASU; isotypes: NMC, SRSC, UNM, UTEP). Figures 3, 4, and 5.

Similar to *Erythranthe floribunda* (sect. *Mimulosma*) in its annual duration, glandular vestiture, and small flowers but distinct in the combination of erect habit (not procumbent and rooting at nodes), more elongate and sessile to subsessile (epetiolate) leaves with attenuate bases and palmately 3–5-nerved venation, long, ascending-erect pedicels, inflated calyces, and flowers with small corollas.

Annual, fibrous-rooted. **Stems** (3–)6–30 cm, erect to ascending-erect. **Stems, pedicels, and calyces** villous-glandular with gland-tipped hairs. **Leaves** cauline, basal mostly deciduous by flowering, oblanceolate to elliptic or elliptic-lanceolate, basally attenuate to sessile or subsessile, epetiolate, 11–27 mm x 3–10 mm, primarily palmately 3–5-nerved, sometimes with an additional 1–2 smaller lateral pairs, margins entire to shallowly serrate or dentate with 1–3 pairs of teeth. **Fruiting pedicels** 20–45 mm long. **Fruiting calyces** distinctly inflated, suburceolate, 5–8 mm long, greenish or purplish, not red-dotted, villous-glandular, lobes subequal, triangular-acuminate. **Corollas** yellow with floor of tube red-dotted, exerted 2–4 mm beyond the calyx, tube-throats funnelform-cylindric, 5–6 mm long, limbs essentially radially symmetric, expanded 3–4 mm across (pressed), lobes broadly oblong-obovate, apically notched. **Style** and **stigma** exerted 1–2 mm beyond calyx margin. Figures 1–9.

Flowering April–July. Around grassland cienegas and seasonal drainages, wet meadows, along sandy washes, wet soil in marshes, pond and creek edges; 3000–5500 ft.

Additional collections examined. **Arizona.** Cochise Co.: Riggs Settlement, ca. 45 km (by air) ESE of Wilcox, Sulphur Springs Valley, 31° 00.387' N, 109° 26.396' W, desert grassland, small cienega formed along Pine Creek from gravel extraction, 4960 ft, 18 Jun 2019, *Roll RS0023* (ARIZ). Coconino Co.: Williams, wet meadow, 6 Jul 1889, *Greene s.n.* (NDG-2 sheets). Pima Co.: S end of Baboquivari Mts., in

sand along edge of Presumido Wash near Buenos Aires, ca. 3000 ft, 3 Apr 1966, *Mason 2559* (ARIZ). Santa Cruz Co.: Meadow Hills Country Club, 4.5 mi N of Nogales, wet soil in marsh, [ca. 3900 ft], 5 May 1966, *Crutchfield 1460* (LL); Santa Rita Mts., 4500 ft, 17 Apr 1903, *Thornber 505* (UC). **New Mexico.** Hidalgo Co.: 30 mi S of Animas, edges of ponds near and sandy banks of Animas Creek, 5000 ft, 19 Jun 1973, *Todsen s.n.* (NMC).

1. Plants erect to ascending-erect; cauline leaves basally attenuate to sessile or subsessile, epetiolate, blades oblanceolate to elliptic or elliptic-lanceolate, primarily palmately 3–5-nerved, sometimes with an additional 1–2 smaller lateral pairs; fruiting pedicels 20–45 mm; corolla tube-throats 5–6 mm; fruiting calyces 5–8 mm long ***Erythranthe plotocalyx***
1. Plants laxly erect to decumbent, sprawling, or procumbent; cauline leaves abruptly and distinctly petiolate, blades generally ovate with a rounded to truncate or cordate base; mostly pinnately to subpalmately veined; fruiting pedicels 5–15(–26) mm; corolla tube-throats (4–)5–10 mm, fruiting calyces 4–7 mm long ***Erythranthe floribunda***

LITERATURE CITED

Nesom, G.L. 2012. Taxonomy of *Erythranthe* sect. *Mimulosma* (Phrymaceae). *Phytoneuron* 2012-41: 1–36.



Figure 1. *Erythranthe plotocalyx*. Santa Cruz Co., Arizona, west edge of Grosvenor Hills. Photo by Sue Carnahan, 2 April 2019, documenting *Carnahan 3656* (ARIZ).



Figure 2. *Erythranthe plotocalyx*. Santa Cruz Co., Arizona. Photo by Sue Carnahan, as in Fig. 1.



Figure 3. *Erythranthe plotocalyx*. Hidalgo Co., New Mexico. One of several plants from Worthington 32511 (SRSC isotype).

Nesom: *Erythranthe plotocalyx*, sp. nov.



Figure 4. *Erythranthe plotocalyx*. Hidalgo Co., New Mexico. Worthington 32511 (ASU, holotype).



Figure 6. *Erythranthe plotocalyx*. Hidalgo Co., New Mexico. Todsen s.n. (NMC).



Figure 7. *Erythranthe plotocalyx*. Cochise Co., Arizona. Roll RS0023 (ARIZ).

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Figure 8. *Erythranthe plotocalyx*. Coconino Co., Arizona. Greene s.n. ND-G).

Figure 9. *Erythranthe plotocalyx*. Coconino Co., Arizona. Greene s.n. (ND-G).