Nesom, G.L. 2025. Glandular species of *Pyrrocoma* (Asteraceae: Astereae) from Nevada, California, and Oregon.
Phytoneuron 2025-15: 1–54. Published 30 April 2025. ISSN 2153 733X

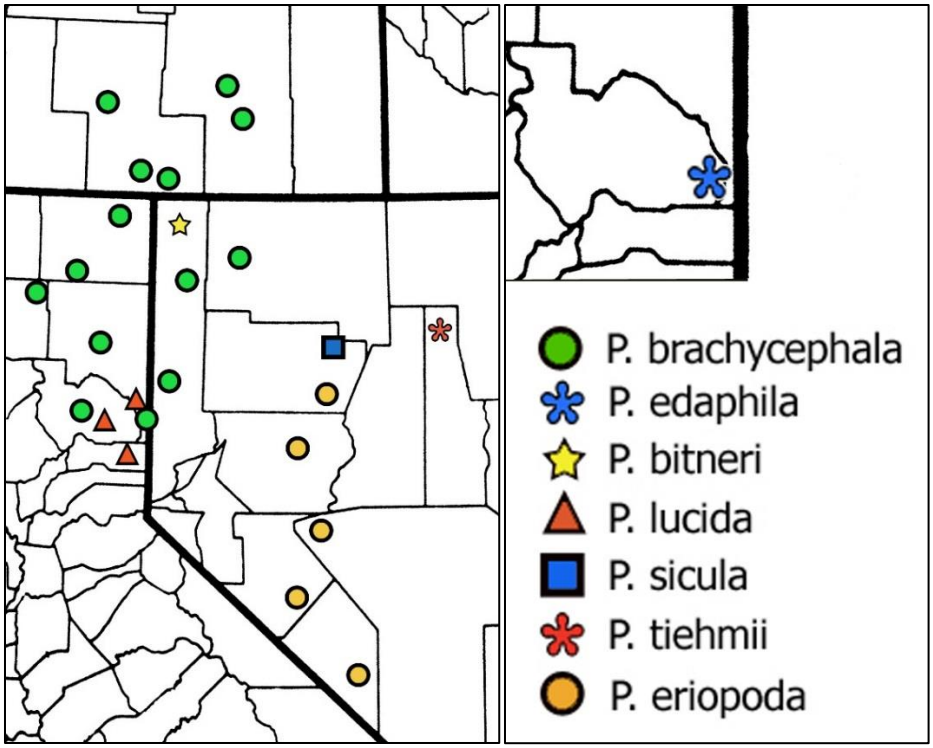
GLANDULAR SPECIES OF *PYRROCOMA* (ASTERACEAE: ASTEREAE) FROM NEVADA, CALIFORNIA, AND OREGON

GUY L. NESOM
Research Associate
Academy of Natural Sciences of Drexel University
Philadelphia, Pennsylvania
guynesom@sbcglobal.net

ABSTRACT

The taxonomy of eight species with glandular vestiture is presented, including five described here:
(1) **Pyrrocoma bitneri** Nesom, **sp. nov.** (Washoe Co., Nevada) — *P. subviscosa* perhaps is sister to *P. bitneri*, but it is reviewed in a separate manuscript,
(2) *Pyrrocoma eriopoda* Greene (Churchill, Esmeralda, Mineral, Nye, and Pershing cos., Nevada),
(3) **Pyrrocoma sicula** Nesom, **sp. nov.** (Churchill Co., Nevada),
(4) **Pyrrocoma tiehmii** Nesom, **sp. nov.** (Eureka Co., Nevada),
(5) *Pyrrocoma lucida* (Keck) Kartesz & Gandhi (Lassen, Plumas, Sierra, and Yuba cos., California),
(6) **Pyrrocoma isabellae** Nesom, **sp. nov.** (Kern Co., California),
(7) *Pyrrocoma brachycephala* A. Nels. (Lake and Harney, Lassen, Shasta, and Modoc, and Washoe and Humboldt cos. — Oregon, California, and Nevada), and
(8) **Pyrrocoma edaphila** Nesom, **sp. nov.** (Plumas Co., California).

This study includes a set of *Pyrrocoma* species from western Nevada, northeastern California, and adjacent Oregon in which glands are prominent at least on the phyllaries. Possible relationships exist among *P. eriopoda*, *P. sicula*, *P. tiehmi*, *P. lucida*, and *P. isabellae* and between *P. brachycephala* and *P. edaphila*.



Map 1. Distribution of species included in this study. *Pyrrocoma isabellae* is south of the map (Kern Co., California). Inset shows *P. edaphila* in Plumas County.

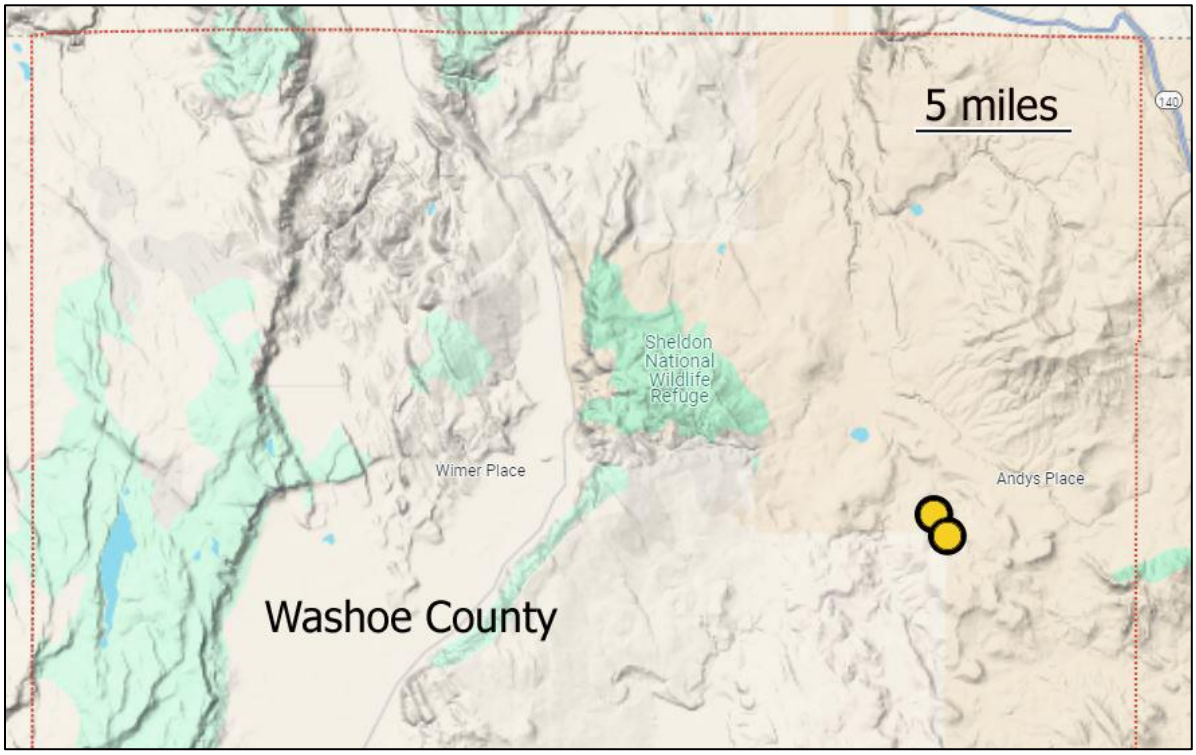
1. PYRROCOMA BITNERI Nesom, **sp. nov.** **TYPE**: **Nevada.** Washoe Co.: Along Badger Creek near Bitner Ranch, T44N, R22E, Sec 14 [41.73368 N, 119.47182 W], meadows, 5700 ft, 22 Jul 1998, *G. Schoolcraft 2777* (holotype: RENO). Figure 1.

Distinct in its tall stature with stipitate-glandular stems and large, stipitate-glandular leaves, few, large heads in a corymb, and stipitate-glandular involucres. Different from *Pyrrocoma subviscosa* in its broader basal leaves and larger heads in a distinctly corymboid inflorescence.

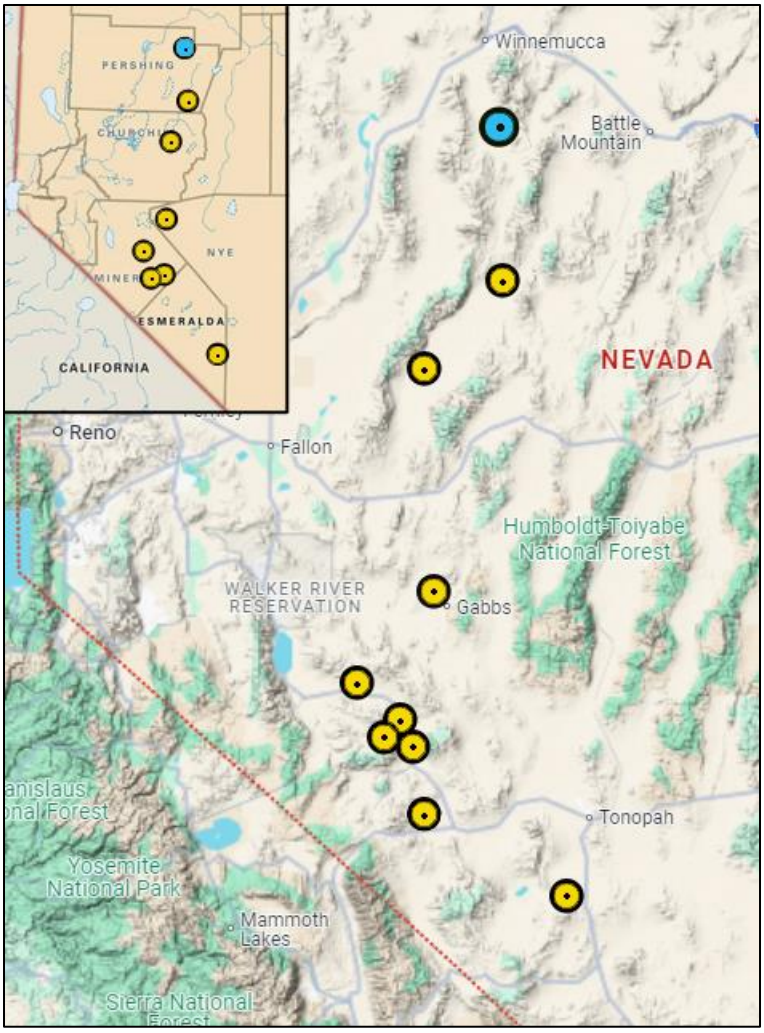
Stems erect to ascending-erect, 35–50 cm, evenly and minutely (0.1 mm high) stipitate-glandular. **Leaves**: basal oblanceolate, 12–25 cm long, attenuate to a petiolar region 1/4–1/3 the leaf length, fibrous remants of petiole bases persistent, blades 12–30 mm wide, slightly viscid with minuute stipitate or subsessile glands, without other vestiture, margins shallowly dentate-serrate with 8–12 pairs of spinulose teeth, cauline 4–6, diminishing in size distally, subclasping, bract-like in the inflorescence. **Heads** 3–5 in a loose corymb, on distal branches mostly 4–8 cm long, witthout immediately subtending bracts. **Involucres** 15–20 mm wide (pressed); phyllaries linear to narrowly oblong-triangular with a gradually acute apex, in 2–3 series subequal (*Schoolcraft 2777*) to unequal (*Schoolcraft 2680*) in length, inner 8–9 mm long, outer nearly completely herbaceous with minute, stipitate or subsessile glands, inner indurate on the proximal half. **Ray florets** 18–28, fertile, corollas 8–10 mm long, 1–1.5 mm wide. **Disc corollas** 5–6 mm long. **Achenes** 4 mm long, sericeous-strigose.

Additional collection. Washoe Co.: Ca. 50 mi NE of Cedarville, N of Bitner Ranch, T44N, R22E, Sec 11 [41.74816 N, 119.47182 W], dry meadow, 5740 ft, 12 Aug 1997, *Schoolcraft 2680* (RENO). Figure 2.

The distinctive stipitate-glandular vestiture of *Pyrrocoma bitneri* also is characteristic of *P. subviscosa* (Nesom 2025a), and the two plausibly are sister species.



Map 2. Distribution of *Pyrrocoma bitneri*. Northern part of Washoe Co., Nevada.



Map 3. Distribution of *Pyrrocoma eriopoda* (gold) and *P. sicula* (blue).

2. PYRROCOMA ERIOPODA Greene, Proc. Acad. Nat. Sci. Philadelphia 47[1895]: 549. 1896. *Haplopappus eriopodus* (Greene) Blake, Contr. US Natl. Herb. 25: 544. 1925. **TYPE**. **Nevada**. [Mineral Co.:] Soda Springs, Jul 1888, *W.H. Shockley 541* (holotype: GH; isotypes: GH, NDG, US-2). The ghost town of Sodaville (Soda Springs) is on Hwy 95 about 3 miles south of Mina, at 38° 20 '29.72" N, 118° 6' 10.79" W.

Stems erect to ascending-erect, 22–55 (–140, fide *Baker 19153*, *Tiehm 5509*) cm, glabrous, eglandular. **Leaves**: basal spatulate, 8–18 cm long, with a dense tuft of white tomentum at the petiole insertion, blades oblong to oblong-ovate or lanceolate, thickened and with raised-reticulate venation, resinous, gland-dotted (imbedded glands, usually just the distal), 18–30 mm wide, cuneate to nearly truncate basally to a petiole 4–4.5 cm long, margins serrate with apiculate, sometimes rounded teeth, fibrous remnants of petiole bases persistent, cauline ovate to ovate-lanceolate, relatively even-sized, distinctly clasping (proximal to distal). **Heads** in sessile in non-overlapping intervals (except the distal-most) in a spike, solitary or (distally) in glomerules of 2–3, each head in the axil of a well-developed cauline leaf (leaf-like bract), inflorescence 5–25 cm long. **Involucres** 12–15 mm wide (pressed); phyllaries narrowly triangular with a long attenuate apex, gland-dotted, in 3–4 series of unequal length, inner 9–10 mm long, often loose and somewhat spreading, margins of inner with a scarious flange. **Ray florets** 8–13, corollas 8–12 mm long, ca. 1 mm wide, not coiling **Disc corollas** 4–5 mm long, viscid. **Achenes** ca. 2.5 mm long, sericeous-strigose.

Flowering (June–) July–September. Meadows, floodplains, pool edges, spring outflow, seepage areas; 3400–5000(–5750) feet

Pyrrocoma eriopoda is recognized by it tall stature, glandular leaves and involucres, clasping cauline leaves, spicate inflorescence of heads subtended by well-developed, clasping cauline leaves, and narrowly triangular phyllaries with a long-attenuate, sharp-pointed apex.

Additional collections. **Nevada**. Churchill Co.: Dixie Valley, 23.5 km NE of the summit of Job Peak, 70 km ENE of Fallon, 39.7089° N, 118.0137° W, small pool, 3410 ft, with *Carex praegracilis*, *Distichlis spicata*, *Elaeagnus angustifolia*, *Eleocharis palustris*, *Juncus mexicanus*, *Nitrophila occidentalis*, *Polypogon monspeliensis*, *Typha angustifolia*, *Zannichellia palustris*, *Zeltnera exaltata*, common herb to 1.3 m tall, 17 Jul 2017, *Baker 19153* (ASC, ASU, RENO). Esmeralda Co.: "The Gap," Jul 1886, S*hockley 534* (US); 10 air mi NW of Goldfield, Montezuma Valley, Alkali Springs, T1S, R41E, S26, near the runoff from the springs, 5000 ft, 11 Sep 1983, *Tiehm 8340* (BRY, COLO, NEB, NY). Mineral Co.: Milepost 13 along Hwy 95 between Tonapah and Hawthorne, saline spring forming a densely vegetated travertine mound ca. 5 acres in size, with wirerush, tule, saltgrass, Russian olive, 20 Aug 1986, *Neese 17643* (BRY, NY); Soda Springs Valley, springs by Sodaville along Rte 95, 38.348425° N, 118.106313° W, 4650 ft, 30 Jul 1984, *Pinzl 6319* (NY); Sodaville, 38.34104° N, 118.1029° W, vicinity of the seepage from the cool spring, 4650 ft, very abundant, 18 Aug 1977, *Williams 77-82-5* (NSMC, NY, RENO-2, UNLV). Nye Co.: 4 air mi SW of Mt. Annie, Cold Springs area on the E side of Alkali Flat, near seepages which were wet early in the year, with *Sarcobatus*, 4150 ft, 18 Aug 1984, *Tiehm 9251* (BRY, COLO, DES, NEB, NMSC, NY, RENO). Pershing Co.: N end of Dixie Valley, Hyder Hot Springs, 40.0064° N, 117.7109° W, common with *Juncus* along the seepage areas, 3586 ft, plants to 14 dm tall, 6 Sep 1979, *Tiehm 5509* (MO, NY, RENO).

3. PYRROCOMA SICULA Nesom, **sp. nov. TYPE: Nevada.** Pershing Co.: Grass Valley, Leach Hot Springs, 40.6044° N, 117.6514° W, along the seepage from the hot springs, 4660 ft, with *Distichlis*, 4 Sep 1979, *A. Tiehm 5490* (holotype: NY; isotype: RENO).

Similar to *Pyrrocoma eriopoda* in its clasping (proximal), oblong-lanceolate cauline leaves and phyllaries with an imbedded-glandular green patch and acute apex; different in its eglandular leaves with raised-reticulate venation, open inflorescence with smaller, pedunculate heads, and phyllaries with an indurate-apiculate apex.

Stems decumbent-ascending, 15–55 cm, glabrous. **Leaves**: basal oblanceolate, 3–5 cm long, gradually attenuate to a petiolar region ca. 1/3 the leaf length, thickened and with prominently raised-reticulate venation, 5-10 mm wide, faces glabrous, margins evenly shallowly serrate to denticulate, without white tufts at the base, fibrous remants of petiole bases persistent, cauline oblong-lanceolate, gradually or abruptly reduced in size from the basal, proximal clasping, distal non-clasping. **Heads** in a loosely racemoid-paniculate inflorescence, on long branches (up to 10 cm) or much shorter (5–10 mm). **Involucres** 11–12 mm wide (pressed), without immediately subtending bracts; phyllaries oblong with a triangular-acuminate, indurate-spinulose apex, in 3–4 series of unequal length, inner 8–9 mm long, green area in the distal 1/3–1/2, gland-dotted (imbedded-glandular). **Ray florets** 12–15, fertile, corollas 8–10 mm long, 1–1.5 mm wide, apparently not coiling. **Disc corollas** 3.5–4 mm long. **Achenes** not seen.

Additional collection. **Nevada**. Pershing Co.: Grass Valley, Leach Hot Springs, 4660 ft, 23 Jul 1984, *Pinzl 6153* (NSMC).

Pyrrocoma spicula is distinctive in low stature, open inflorescence, glandular phyllaries, vestiture, and leaf and involucral morphology. Glandularity, sharp-pointed phyllary apices, and geography suggest that it may be closely related to *P. eriopoda* and *P. tiehmii*. The low stature and open inflorescence distinguish it among putative relatives.

4. PYRROCOMA TIEHMII Nesom, **sp. nov. TYPE**: **Nevada**. Eureka Co.: Crescent Valley, 5.1 road mi SSW of RR crossing in Beowawe on Hwy 306, then 1.0 road mi S on dirt road, 40.516096° N, 116.512826° W, edge of saline seepage areas, 4730 ft, 20 Aug 2003, *A. Tiehm 14347* (holotype: RENO; isotypes: BRY, COLO, ID, IDS, NY, OSC, UNLV, UTC, WTU-2 sheets).

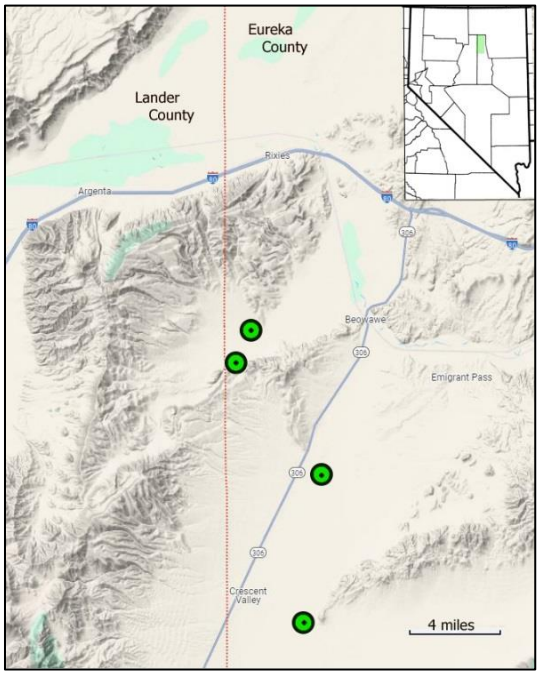
Hightly distinct in its long, narrow basal leaves, interrupted spike of heads in glomerules, long phyllaries with an attenuate-acute apex, the green apical portion resinous from imbedded glands.

Stems erect, 60–70 cm, glabrous. **Leaves**: basal narrowly oblanceolate, 20–33 cm long, attenuate to a petiolar region, blades 7–12 mm wide, glabrous, margins entire to serrate with 2–5 pairs of shallow teeth above the middle, fibrous remnants of petiole bases apparently persistent, cauline 8–10, diminishing in size distally to just under the heads, narrowly lanceolate to linearlanceolate, not subclasping or sheathing at the insertion. **Heads** in an interrupted spike, sessile to subsessile in glomerules of 2–4 (rarely solitary) at distal nodes, each glomerule subtended by a lanceolate bract longer than the cluster of heads. **Involucres** 5–6 mm wide (pressed); phyllaries narrowly oblong-lanceolate with an attenuate-acute apex, conspicuously resinous from imbedded glands, in 2–3(–4) series of unequal length, inner 10–13 mm long. **Ray florets** ca. 8–10, fertile, corollas ca. 10 mm long, 1.5 mm wide, not coiling. **Disc corollas** ca. 6 mm long. **Achenes** 3 mm long, sericeous-strigose.

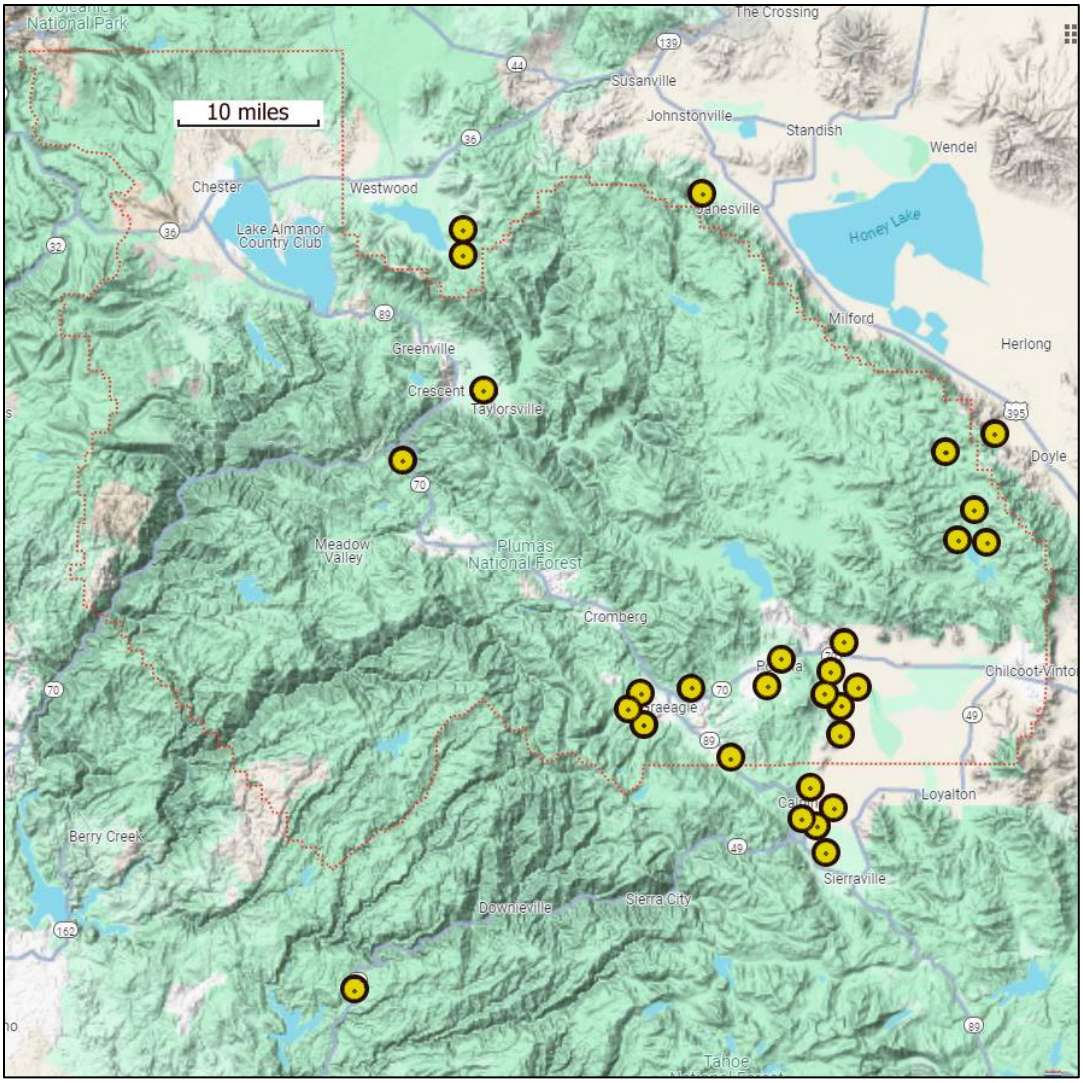
Flowering July-August. Alkaline areas, around hot springs, saline seeps; 4700-4850 feet. Known only from the collections in northern Eureka County.

For Arnold (Jerry) Tiehm, Curator at RENO, whose collections from every part of Nevada now underlie any taxonomic study in any group of plants represented in that state. The species is unmistakably identified by its tall stature, columnar inflorescence, very small, few-flowered heads, and phyllaries with an attenuate-acute apex.

Additional collections. **Nevada**. Eureka Co.: SW end of Whirlwind Valley, vicinity of Beowawe Geysers, 40.559619 N, 116.586544 W, hot spring area, alkaline, 4800 ft, 4 Aug 1980, *Pinzl 3572* (NSMC, NY); pond at Hot Springs Point, 40.405799 N, 116.517177 W, saline seep area, 4740 ft, common, 29 Jul 1977, *Tiehm 3748* (NY, RENO); N of Beowawe Geysers, 40.5753 N, 116.6058 W, seepage area, 4840 ft, 29 Jul 1977, *Tiehm 3756* (NY, RENO).



Map 4. Distribution of *Pyrrocoma tiehmii*. Inset shows location within Eureka Co., Nevada.



Map 5. Distribution of *Pyrrocoma lucida*. Lassen, Plumas, Sierra, and Yuba cos., California. Yuba Co.: Near Camptonville, near hwy, 2500 ft, 24 May 1935, *Smith 2778* (DS). The Plumas County boundary is outlined in red.

5. PYRROCOMA LUCIDA (Keck) Kartesz & Gandhi, Phytologia 71: 60. 1991. *Haplopappus racemosus* subsp. *lucidus* Keck, Madrono 5: 167. 1940. *Haplopappus lucidus* (Keck) Keck, Aliso 4: 105. 1958. **TYPE**: **California**. Plumas Co.: 1 mi W of Portola, alkaline grassy flat, 1480 m, 9 Aug 1938, *D.D. Keck 4897* (holotype: CAS 123568; isotype: CAS 123567).

Stems erect, mostly 25–50(–75) cm, viscid with imbedded glands, without other vestiture. **Leaves**: basal narrowly to broadly oblanceolate, 5–20(–25) cm long, without persistent fibrous petiole bases, gradually attenuate to a petiolar region, blades 7–30 mm wide, gland-dotted, margins usually entire but sometimes serrate, cauline reduced in size distally or continuing little reduced up to the inflorescence, 7–30 mm wide, usually not clasping but sometimes even subauriculate. **Heads** in a congested spike or sometime on peduncles 1–6 mm long, without an immediately subtending bract. **Involucres** 9–11 mm wide (pressed); phyllaries linear-oblong with an acute apex, in 2–3 subequal to graduate series, inner 10–12 mm long, viscid with imbedded glands. **Ray florets** 9–20, sterile (without style/stigma), corollas 9 mm long, 1 mm wide. **Disc corollas** 5–6 mm long. **Achenes** 3.5–5 mm long,

densely sericeous-strigose. **Chromosome number**, tetraploid, n=24 (*Mayes 177*, *178*, *179*, *180*, from Plumas Co.; reported in Mayes 1976).

Flowering (June-) July-September. Dry meadows, grassland with vernal pools or swales, alkaline flats, glades in pine forest, around vernal pools, river terraces, sagebrush scrub, shores of dry lake beds; (3500–)4250–6700 feet.

Pyrrocoma lucida is recognized by its tall stature, resinous aspect (and touch) from imbedded glands (gland-dotted) on the stems, leaves, and involucres, leaves usually with entire margins, heads in a congested spike, involucres of nearly linear phyllaries in 2–3 series, and sterile rays. Two collections completely lack ray florets: *Howell 30879* (Plumas Co., Indian Valley) and *Howell 36869* (Sierra Co., near Calpine). Plants are conspicuous and sometimes found in large populations — collections from the Sierra Valley have been made by numerous botanists.

The most common expression of *Pyrrocoma lucida* has oblanceolate leaves with entire margins, the cauline prominently reduced distallyand narrowed at the base to a petiolar region and not at all clasping or subclasping. Plants with serrate leaves occur sporadically as do plants with broad cauline leaves little reduced in size and with a subauriculate, clasping base. Both expressions occur in the population system of the Sierra Valley, from around Graeagle to the Beckwourth area. The tetraploidy of *P. lucida* suggest that two genomes are in play, with the serrate margins and clasping base a reflection of one of them.

6. PYRROCOMA ISABELLAE Nesom, **sp. nov.** **TYPE**: **California**. Kern Co.: Tehachapi-Kernville Region, Scovern Hot Springs (Isabella alkali flats), broad valley in oak woodland-digger pine association, moist subalkaline soil, 2500 ft, common, 16 Sep 1964, *E.C Twisselmann 10169* (holotype: CAS-362314; isotypes: CAS-362313, JEPS, RSA).

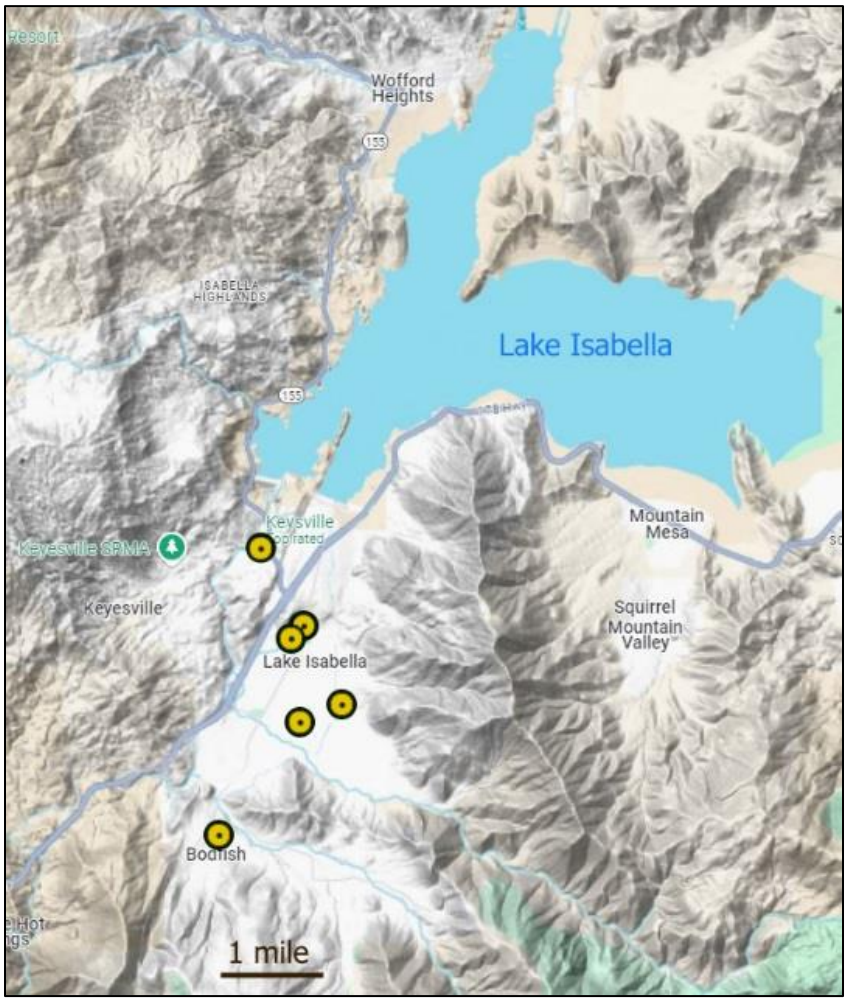
Distinct in its tall, strictly erect stature, closely appressed and clasping cauline leaves, spicate to subracemoid inflorescence, and gland-dotted phyllaries. Known only from the alkali flats on the southwest side of Lake Isabella.

Stems erect, 35–65 cm, glabrous. **Leaves**: basal subspatulate, 5–10 cm long, blades obovate, 10–22 mm wide, attenuate to a short petiolar region, somewhat fleshy-thickened, completely glabrous, not resinous, margins entire or with low, indurate denticles or minute spines, fibrous remnants of petiole bases persistent, cauline numerous up to the inflorescence, quickly reduced in size from the basal, mostly closely appressed to the stem, subclasping to distinctly clasping, often serrate (in contrast to the basal). **Heads** in a spike or sometimes on peduncles 1–6 mm long, congested and overlapping distally. **Involucres** 8–10 mm wide (pressed); phyllaries oblong with a triangular apex, in 3–4 series of unequal length, inner 8–10 mm long, green patch gland-dotted and resinous from the imbedded glands. **Ray florets** 15–20, fertile, corollas 10–12 mm long, 1 mm wide. **Disc corollas** 5 mm long. **Achenes** 3 mm long, sparsely short-strigose. Figures 24-28.

Chromosome count of n=12 (tetraploid) from progeny, made by P.H. Raven, 16 Jan 1965, as annotated on *Twisselman 10169* (CAS 362313) — reported as "Haplopappus racemosus subsp. glomeratus" in Solbrig et al. (1969). The tetraploid number contrasts with the diploid number of *P. ciliolata* (aka *P. sessiliflora*, Nesom in prep.) (3 counts from Inyo Co., made by Mayes and reported in his dissertation — *Mayes 78*, *79*, *80*).

Additional collections. **California**. Kern Co.: Bodfish, wet meadow, 4 Sep 1957, *Hardham 2570* (CAS, SBBG, TEX); Isabella, alkaline flats, 2500 ft, 9 Jul 1962, *Howell 38347* (CAS, MO, TEX); town of Lake Isabella, Lake Isabella Road, drier upper end of marshy area below dam, shoots from deep taproots, 18 Aug 1990, *Semple 9364* (MO-2, MT, NCU, UC, WAT — as cited on the UC label); just S of Isabella, moist saline soil, broad Upper Sonoran valley, 2550 ft, extensive colony, 19 Sep 1957, *Twisselmann 4049*

(CAS, MO); Isabella alkali flats, broad valley in Douglas oak-digger pine woodland, wet subalkaline soil, 2500 ft, common, 20 Aug 1964, *Twisselmann 10069* (CAS, JEPS).



Map 6. Distribution of *Pyrrocoma isabellae*. Kern Co., California.

The phyllary shape and imbedded glands of *Pyrrocoma isabellae* set it apart from of *P. ciliolata* (Fig. 28). The rosette of large basal leaves and numerous, appressed, clasping cauline leaves are distinctive, as is the tetraploid chromosome number. The species is geographically distant from *P. eriopoda* and putative relatives, but morphological similarities suggest a close relationship.

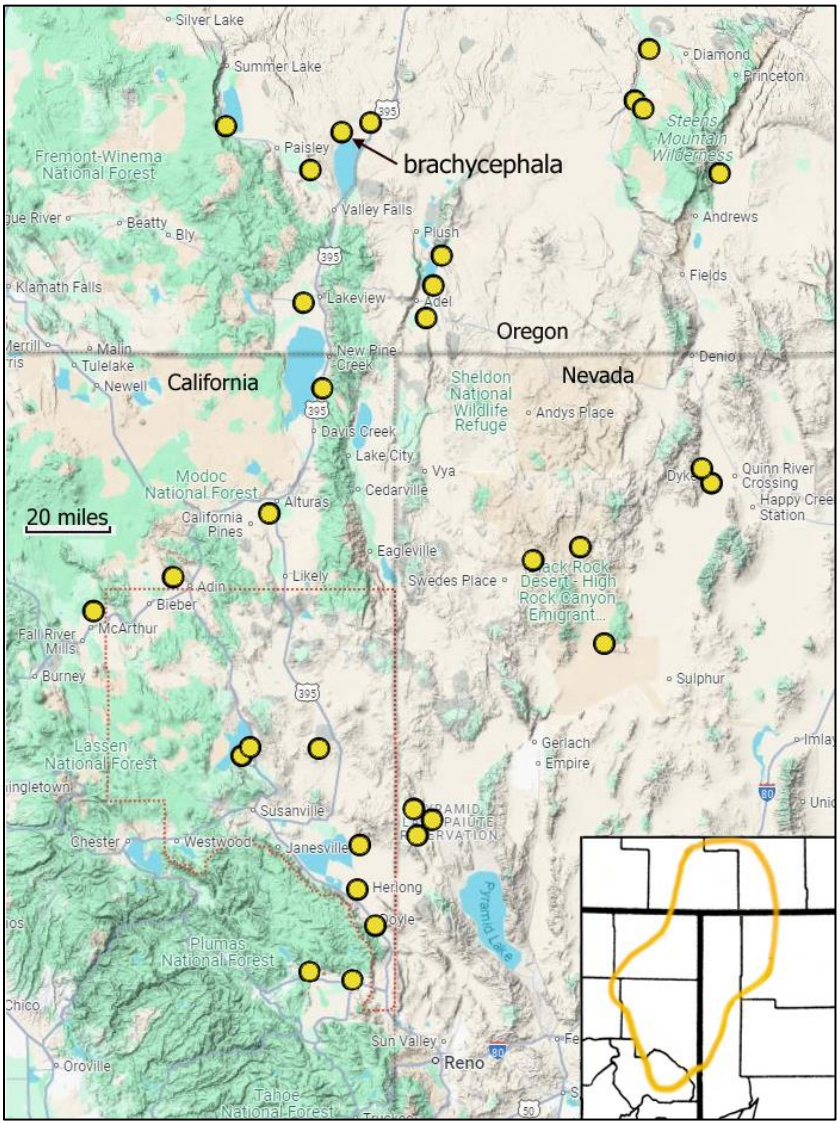
A collection of typical *Pyrrocoma ciliolata* was made in the Lake Isabella area, apparently closely sympatric with *P. isabella*: Isabella alkali flats at Scovern Hot Springs, moist light alkaline soil, 2250 ft, extensive colony, 20 Sep 1962, *Twisselmann 7872* (CAS-Fig. 27, TEX).

7. PYRROCOMA BRACHYCEPHALA A. Nels., Bot. Gaz. 37: 265. 1904. *Haplopappus lanceolatus* var. *brachycephalus* (A. Nels.) Piper, Bot. Gaz. 37: 265. 1904. *Haplopappus racemosus* subsp. *brachycephalus* (A. Nels.) Hall, Publ. Carnegie Inst. Wash. 389: 134. 1928. *Haplopappus racemosus* var. *brachycephalus* (A. Nels.) Peck, Man. Pl. Oregon, 713. 1941. **TYPE**: **Oregon**. Lake Co.: Abert Valley, dry alkaline soil, 24 Aug 1901, *W.C. Cusick 2778* (holotype: RM; isotypes: E, DOV, F, GH, MIN, MO, NY, OSC-2, POM, UC, US, VT, WS).

Nelson's protologue noted that Piper had used the herbarium name "Haplopappus lanceolatus var. brachycephalus."

Stems erect to ascending-erect, 40–60 cm, glabrous. **Leaves**: basal ovate-lanceolate to lanceolate or oblanceolate, 6–18 cm long, basally attenuate to a petiolar region 1/5–1/4 the leaf length or sometimes not clearly distinct, blades 12–18 mm wide, glabrous, eglandular, without cottony tufts basally, fibrous remnants of petiole bases persistent, margins coarsely spinulose-serrate to serrulate or denticulate along the whole length or only distally, less commonly entire, eciliate, cauline gradually or abruptly smaller than the basal, proximal to midstem often completely clasping-sheathing (not basally ampliate), sometimes with 1–2 opposite pairs, glabrous except for cobwebby-ciliate margins near the insertion. **Heads** sessile or on peduncles 5–20 mm long, usually with closely subtending bract, 1 or 2–3 in glomerules in a columnar panicle (5–)20–35 cm long, rarely more open (e.g. *Taylor 5138*). **Involucres** 8–11 mm wide (pressed); phyllaries oblong-acute with an triangular-ovate apex, in 3–4 series of unequal length, inner 6–8 mm long, margins scarious green patch in the distal 1/3–1/2, viscid from imbedded glands. **Ray florets** 14–24(–30), fertile, corollas 6–7 mm long, 1–1.5 mm wide, tardily coiling. **Disc corollas** 4.5–5 mm long. **Achenes** 3 mm long, sparsely finely sericeous. Figures 29-38.

Flowering (July-) August-September. Lake margins, creek drainages and floodplains, alkaline soil in grassy fields, saltgrass fields, wet meadows, and seepage from springs; 3300-4800 feet.



Map 7. Disribution of *Pyrrocoma brachycephala*. Type locality shown by the arrow. The Lassen County boundary is outlined in red. Inset shows county boundaries.

Pyrrocoma brachycephala is recognized by its tall, erect, stems, relatively long, narrow basal leaves, proximal to mid cauline leaves often nearly completely clasping-sheathing, columnar panicle of sessile to short-pedunculate heads (variants noted below), phyllaries in 3-4 series of unequal length, the green patch with imbedded glands and sometimes viscid, and short, narrow, fertile rays.

The inflorescence in typical, columnar form of *Pyrrocoma brachycephala* occurs throughout the range. Occasionally it is shortened and terminal (e.g., Figs. 33, 3,5 37), and sometimes the peduncles are elongated and the columnar form is hardly evident (e.g., Fig. 34.). In these, however, the phyllaries are glandular and the distinctive clasping-sheathing leaf bases (proximal cauline) are evident, and the coherent geography is evidence that all are within a single species. Because of the glandular involucre, *P. brachycephala* sometimes has been identified as *P. subviscosa*, but the latter occurs in northeastern Nevada and adjacent Utah and Idaho (Nesom 2025a).

Additional collections. **California**. Lassen Co.: Willow Creek Wildlife Area, ca. 250 yards E of the sign-in station along Hwy 139, N side of the dirt road, Willow Creek is on the S side of the road, 40.580083 N, 120.639769 W, dry soil in the grassy field, ca. 4800 ft, normal size plants, common, 13 Sep 1999, *Ahart 8231* (CHSC, UTEP); Willow Creek, 3 Aug [1896 or 1897], *Austin 1373* (US); Wendel Road, 40.35940 N, 120.25747 W [N of Honey Lake], wet area from a hot spring, 4040 ft, 1 Aug 1993, C*lifton 29710* (ELH); vicinity of Doyle Station, 4232 ft, 3 Sep 1911, *Eggleston 7699* (NY, US); Honey Lake Valley, Amedee [Hot Springs], [40° 20' 17" N, 120° 6' 25" W], small colony in alkaline white soil with *Distichlis*, *Iva axillaris*, *Chrysothamnus nauseosus consimilis*, 31 Aug 1925, *Hall 12214* (CAS-2 sheets, UC); Honey Lake Valley, near Herlong, 40.187464 N, 120.249665 W, 4200 ft, 20 Aug 1951, *Howell 28227* (CAS, NY, RSA); 43 mi S of Alturas on Hwy 395, 23 Jul 1973, *Mayes 89* (DAV, SD, TEX); upper end of Stoney Creek, 40.59 N, 120.28 W, along creek in drainage bottom, 4800 ft, 13 Sep 1990, *Schoolcraft 2129* (ELH-OBI, NY). Modoc Co.: 3.14 air mi W of Adin, Big Valley, NW of Patterson Homestead, E of Elkins Lane, 1.0 air mi S of Co. Rd 87, S edge of Ash Creek floodplain, 41° 11' 38.76" N, 121° 00' 15.02" W, dry meadow on dry gray soil, along the north-south fence, 4160 ft, uncommon, 25 Jul 2013, *Ahart 18959* (CHSC, JEPS, TEX, US); Goose Lake, shores of lake, Aug 1886, *Austin s.n.* (UC); ca. 1 mi S of Alturas, dense growth in moist *Juncus* meadow, 30 Aug 1925, *Hall 12211* (UC); N edge of Likely, 19 mi S of Alturas (W side of road), wet meadows at RR crossing, with *Distichlis*, *Elymus condensatus*, *Chrysothamnus nauseosus consimilis*, not a large area, 30 Aug 1925, *Hall 12212* (UC, US). Plumas Co.: SW corner of jct of Hwy 70 and road to Loyalton, in Vinton, sagebrush scrub, with *Aster chilensis medius*, *Medicago sativa*, *Bromus*, 4900 ft, 27 Aug 1982, *MS Taylor 5044* (CAS, CHSC, DAV, MO); ca. 1 mi W of Beckwourth, Ramelli Ranch near Calpine Rd (109) bridge over Feather River, S side of the river, 4880 ft, 13 Sep 1982, *MS Taylor 5138* (MO). Shasta Co.: 3 mi N of McArthur, western edge of Modoc Plateau, Ahjumawi Lava Springs State Park, W shore of Big Lake, thin grassy meadow and lava-based roadbed, 3315 ft, 14 Aug 2004, *Fischer & Marr 0384* (CHSC, RSA). **Nevada**. Humboldt Co.: NW part of the Black Rock Desert, Mud Meadows, 41.336819 N, 119.168745 W, saline soil near "hot" stream, 13 Sep 1983, *Danley 2179* (RENO); 30 airline mi S of Denio, E side of Pine Forest Range, Dyke Hot Spring, 41.5765 N, 118.571 W, common on dry crusty hillside, 4100 ft, 24 Jul 1970, *Holmgren 4585* (NY); Calico Mts, 2.6 road mi SW of Soldier Meadows road on High Rock Lake road, T40N R24E S26 [41.34493 N, 119.22009 W], along seepages from springs, 4500 ft, 4 Aug 1983 *Tiehm 8274* (IDS; other dups of 8274 are *Solidago spectabilis*); Dyke Hot Springs on the SE end of the Pine Forest Range, ca. 6 air mi W of Quinn River Crossing, near the seepages, with *Distichlis*, 4200 ft, 4 Aug 1987, *Tiehm 11500* (BRIT, BRY, COLO, DES, ID, MO, NMSC, NY, OSC-2 sheets, TEX, UNLV, VDB, WS); Black Rock Desert, Black Rock Springs just NW of Black Rock Point, near the outflow from the springs, with *Juncus*, *Distichlis*, 3950 ft, 14 Aug 2002, *Tiehm 14055* (BRY, COLO, ID, NY, OSC, RENO, UNLV, UT, WTU). Washoe Co.: Smoke Creek Meadow near road, alkaline meadow, 19 Aug 1985, *Schoolcraft 1510* (ELH); W side of Smoke Creek Desert, W of Smoke Creek, moist alkaline site with greasewood and saltgrass, 3880 ft, 9 Sep 1994, *Schoolcraft 2434* (ELH-3 sheets, RENO); Smoke Creek, 2.3 road mi E of the state line on the Smoke Creek road from Hwy 395, edge of meadow areas with *Sarcobatus*, 4200 ft, 19 Aug 1985, *Tiehm 10197* (BRY, COLO, ID, IDS, NMSC, NY, TEX, UNLV). **Oregon**. Harney Co.: 2.9 mi ENE of Frenchglen, Malheur Natl Wildlife Refuge, S end of refuge, between Krumbo Lane and Frenchglen, 42.841304° N, 118.858388° W, seasonally wet meadow,

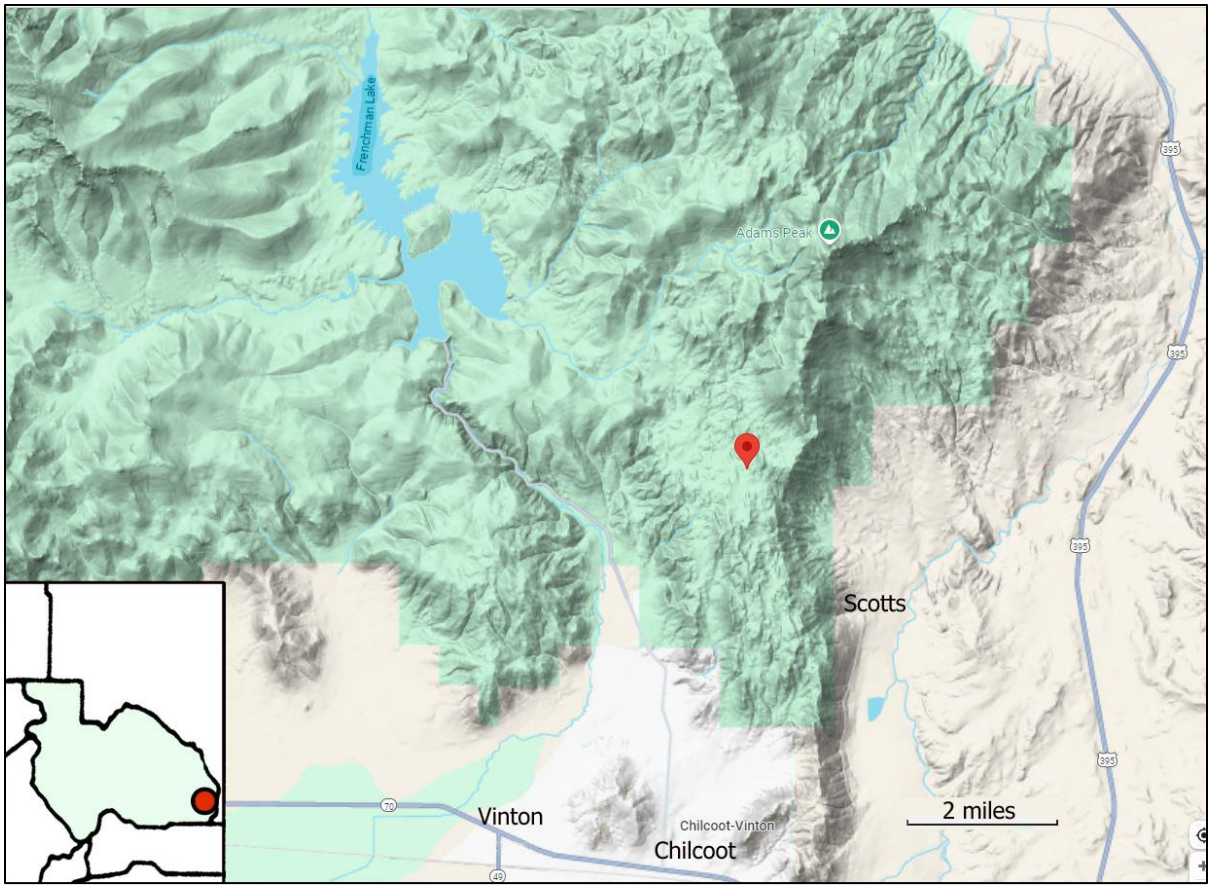
with *Juncus balticus*, *Carex praegracilis*, *Leymus triticoides*, *Suaeda calceoliformis*, 4191 ft, 18 Jul 2012, *Christy 10504* (HPSU); Malheur Natl Wildlife Refuge, S end of Refuge, between Krumbo Lane and Frenchglen, 1.3 mi E of P Ranch Headquarters, 42.827745° N, 118.859207° W, seasonally wet meadow, with *Poa secunda* ssp. *juncifolia*, *Puccinellia lemmonii*, *Juncus balticus*, *Distichlis spicata*, *Zeltnera exaltata*, 4203 ft, 18 Jul 2012, *Christy 10514* (HPSU); Malheur Natl Wildlife Refuge, Diamond Lane, ca. 1 km from jct with Hwy 205, 43° 2.7' N, 118° 50.5' W, canal and adjacent bank, canal water depth to 1.5 meters, in dry roadside soil, not sticky, 4160 ft, 22 Jul 2007, *Giblin 1065* (CIC, SRP, WTU); E base Steens Mts, Alvord Ranch, 1 mi E of ranch house, clay soil with *Agropyron* and other grasses and *Juncus*, 26 Aug 1925, *Hall 12196* (UC, US). Lake Co.: (1) open desert between Lake and Paisley, and (2) Summer Lake, 20 Jun 1928, *Constance 9452* (OSC); Crump Lake, E side ca. 1¼ mi N of Cox Hot Springs, 42.30332° N, 119.77949° W, alkali meadow, with *Sesuvium verrucosum*, *Heliotropium curassavicum*, *Distichlis stricta*, 9 Aug 1977, *Crosby 1747A* (OSC); Warner Valley NW side of Pelican Lake, 3 mi N of Adel on the Adel-Plush Road, 1/4 mi E of road, 42.212 N, 119.878 W, saltgrass meadow, with *Sarcobatus vermiculatus*, *Centaurium exaltatum*, 27 Jun 1980, *Crosby 2470* (OSC); Warner Valley, 29 Aug 1925, *Hall 12205* (UC, as cited by Hall); Abert Valley, N end of Abert Lake, along moist grassy borders, moist and half-moist sod of *Distichlis* and *Triglochin*, *Juncus*, sometimes with *Crepis runcinata*, around bogs of tule, 4500 ft, 29 Aug 1925, *Hall 12206* (US); 20 km S of Paisley, wet meadow, *Hall 12207* (UC, as cited by Hall 1928); 2 mi N of Abert Lake on Hwy 395, 25 Jul 1973, *Mayes 91* (NY, TEX); Lakeview, about Hot Springs, 30 Jun 1927, *Peck 15348* (WILLU, WTU).

8. PYRROCOMA EDAPHILA Nesom, sp. nov. TYPE: California. Plumas Co.: Diamond Mountains, Snow Lake (ca. 2 air mi E of Frenchman Lake), edge of Forest Rd 24N44 just SE of the lake, 39.87051° N, 120.11964° W, *Juncus balticus*-dominated meadow bordered by *Pinus jeffreyi-Artemisia tridentata-Purshia tridentata* community, sandy soil derived from granitics, 6100 ft, 20 Jul 2001, *D.W. Taylor 17845* (holotype: JEPS; isotype: MO). Map 8. Figures 39-42.

Similar to *Pyrrocoma brachycephala* in its glandular-viscid stems, leaves, and involucres, clasping cauline leaves, raised leaf venation, and involucre of strongly graduate phyllaries, distinct in its caespitose habit, short stems, and smaller heads.

Plants caespitose from a multicipital caudex. **Stems** ascending-erect, 10–12 cm, completely glabrous, viscid. **Leaves**: basal densely clustered and persistent, narrowly oblanceolate, 4–8 cm long, gradually attenuate to a petiolar region 1/3–1/2 the leaf length, blades 4–6 mm wide, minutely imbedded-glandular and viscid otherwise glabrous, venation slightly raised, margins serrulate with 2–6 pairs of spinulose teeth, also evenly and minutely ciliolate, fibrous remnants of basal leaf vascular bundles persistent, cauline mostly linear, the proximal clasping, not basally ampliate. **Heads** 2–4 in a spike 3–5 cm long, sessile or on peduncles 1–3 mm long, without immediately subtending bracts. **Involucres** 10–12 mm wide (pressed); phyllaries oblong with a triangular-ovate apex, in 3 series of unequal length, inner 7(–8) mm long, green patch on the distal 1/3–1/4, imbedded-glandular and viscid, white-indurate proximally, margins below the apex with a narrow scarious rim. **Ray florets** 12–16, fertile, corollas 10–11 mm long, 1–1.5 mm wide. **Disc corollas** 4.5–5 mm long. **Achenes** [immature], strigose.

Plants of *Pyrrocoma* occasionally may have the caudex divided into two short axes (e.g., *P. cusickii*), but the caespitose habit of this collection is remarkable in the whole genus. The MO specimen aparently is a single plant — with 4 or 5 caudex branches, each branch with multiple apical meristems. The JEPS plant apparently was divided for ease of specimen preparation — it has at least 4 caudex branches, each also multicipital. Each of these plants would have been seen as a dense mass of basal leaves about 15 cm in diameter.



Map 8. Distribution of *Pyrrocoma edaphila*, Plumas Co., California, at the southern end of the Diamond Mountains. Inset shows the outline of Plumas County.

ACKNOWLEDGEMENTS

Thanks to George Baumgardner at the Nevada State Museum for an image of *Pinzl 6153* at NSMC.

LITERATURE CITED

Mayes, R.A. 1976. A cytotaxonomic and chemosystematic study of the genus Pyrrocoma (Asteraceae: Astereae). Ph.D. dissertation, Univ. of Texas, Austin.

Nesom, G.L. 2025a. Definition of *Pyrrocoma subviscosa* (Asteraceae: Astereae). Phytoneuron 2025-13: 1–22.

Nesom, G.L. 2025b. *Pyrrocoma* (Asteraceae: Astereae) from Oregon collected by Nuttall in 1834. Phytoneuron 2025-06: 1–24.

Solbrig, O.T., L.C. Anderson, D.W. Kyhos, and P.H. Raven. 1969. Chromosome numbers in Compositae. VII. Astereae III. Amer. J. Bot. 56: 348–353.

Figure 1. *Pyrrocoma bitneri*. *Schoolcraft 2777* (RENO), holotype.

Figure 2. *Pyrrocoma bitneri*. *Schoolcraft 2680* (RENO).

Figure 3. *Pyrrocoma bitneri*. Heads from *Schoolcraft 2777*.

Figure 4. *Pyrrocoma eriopoda*. Churchill Co., Nevada, *Baker 19153* (ASU).

Figure 5. *Pyrrocoma eriopoda*. Churchill Co., Nevada, *Baker 19153* (ASC).

Figure 6. *Pyrrocoma eriopoda*. Churchill Co., Nevada, *Baker 19153* (RENO).

Figure 7. *Pyrrocoma eriopoda*. Mineral Co., Nevada, *Neese 17643* (BRY).

Figure 8. *Pyrrocoma eriopoda*. Mineral Co., Nevada, *Pinzl 6319* (NY).

Figure 9. *Pyrrocoma sicula*. *Tiehm 5490*, holotype (NY).

Figure 10. *Pyrrocoma sicula*. *Tiehm 5490* (RENO), isotype.

Figure 11. *Pyrrocoma tiehmii*. *Tiehm 14347* (RENO), holotype.

Figure 12. *Pyrrocoma tiehmii*. *Tiehm 14347* (NY), isotype.

Figure 13. *Pyrrocoma tiehmii*. Detail from *Tiehm 14347* (NY).

Figure 14. *Pyrrocoma tiehmii*. *Tiehm 14347* (BRY), isotype.

Figure 15. *Pyrrocoma tiehmii*. *Tiehm 3748* (NY).

Figure 16. *Pyrrocoma tiehmii*. *Tiehm 3756* (NY).

Figure 17. *Pyrrocoma lucida*. Plumas Co., California, *Howell 36809* (CAS).

Figure 18. *Pyrrocoma lucida*. Plumas Co., California, *Howell 350007* (CAS).

Figure 19. *Pyrrocoma lucida*. Lassen Co., California, *Janeway 8512* (CHSC).

Figure 20. *Pyrrocoma lucida*. Plumas Co., California, *Keck 4897* (DS).

Figure 21. *Pyrrocoma lucida*. Plumas Co., California, *Taylor 17833* (RENO).

Figure 22. *Pyrrocoma lucida*. Plumas Co., California, *Dittes 2003-82* (SHSC).

Figure 23. *Pyrrocoma lucida*. Plumas Co., California, *Howell 30865* (CAS).

Figure 24. *Pyrrocoma isabellae*. Kern Co., California, *Twisselman 10169* (DS).

Figure 25. *Pyrrocoma isabellae*. Kern Co., California, *Twisselman 10169* (CAS).

Figure 26. *Pyrrocoma isabellae*. Kern Co., California, *Hardham 2570* (CAS).

Figure 27. *Pyrrocoma ciliolata*. (syn = *P. sessiliflora*). Isabella Lake area, Kern Co., California, *Twisselman 7872* (CAS).

Figure 28. *Pyrrocoma ciliolata* (left, *Twisselman 7872*) and *P. isabellae* (right, *Twisselman 10169*). Comparison of involucral morphology.

Figure 29. *Pyrrocoma brachycephala*. Lake Co., Oregon, *Cusick 2778* (MINN), isotype.

Figure 30. *Pyrrocoma brachycephala*. Washoe Co., Nevada, *Schoolcraft 2434* (RENO).

Figure 31. *Pyrrocoma brachycephala*. Washoe Co., Nevada, *Tiehm 10197* (OSC).

Figure 32. *Pyrrocoma brachycephala*. Washoe Co., Nevada, *Tiehm 10197* (BRY).

Figure 33. *Pyrrocoma brachycephala*. Lassen Co., California, *Hall 12214* (DS).

Figure 34. *Pyrrocoma brachycephala*. Lassen Co., California, *Mayes 89* (DAV).

Figure 35. *Pyrrocoma brachycephala*. Modoc Co., California, *Ahart 18959* (CHSC).

Figure 36. *Pyrrocoma brachycephala*. Lake Co., Oregon, *Crosby 1747A* (OSC).

Figure 37. *Pyrrocoma brachycephala*. Modoc Co., California, *Hall 12212* (US).

Figure 38. *Pyrrocoma brachycephala*. Shasta Co., California, *Fischer & Marr 384* (CHSC).

Figure 39. *Pyrrocoma edaphila*. Plumas Co., California, *Taylor 17845* (JEPS), holotype.

Figure 40. *Pyrrocoma edaphila*. Heads from isotype (MO).

Figure 41. *Pyrrocoma edaphila*. Caudex and root from holotype (JEPS).

Figure 42. *Pyrrocoma edaphila*. Caudex and root from isotype (MO).