

VAR. *VIRGATA* IN *PYRROCOMA* (ASTERACEAE: ASTEREAE): WHAT IT IS

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ABSTRACT

Pyrrocoma virgata (A. Gray) Nesom, **comb. et stat. nov.**, is a species of central Mono County alkaline meadows and flats at 6350-7000 feet, with two records from adjacent Nevada. Its eglandular vestiture, sparsely strigose to glabrate achenes, and geography suggest that it is part of the *P. apargioides* group.

The name "*Pyrrocoma racemosa* var. *virgata*" is sometimes encountered in identifications of plants especially from Nevada and California, apparently following annotations by Richard Mayes during his dissertation study. Hall (1928) had placed Gray's original *Haplopappus paniculatus* var. *virgatus* in synonymy with his *H. racemosus* subsp. *glomeratus* but Mayes (1976) took up the epithet "virgatus" at varietal rank (never validly published) within *P. racemosa* to cover a wide range of entities from a wide geographical range — he noted (p. 140) that "This is the most variable and perplexing variety of the *P. racemosa* complex." The type of var. *virgatus*, however, is from Bridgeport in Mono County, California, and is distantly associated (morphologically and presumably evolutionarily) with *P. racemosa* sensu stricto (Nesom 2025a) or any nomenclatural permutation based on the types of "paniculata" or "glomerata."

Two *Pyrrocoma* species grow in the close vicinity of Bridgeport — (a) *P. prionophylla* Greene (e.g., Hall 12128A, 12140, 12224; Mayes 87), which also occurs more widely in California and Nevada (Nesom 2025b), and (b) a species that corresponds to Gray's type of "var. *virgata*" (e.g., Alexander 3811, 4592; Bacigalupi 5518; Constance 2443; Hall 12128, 12129; Hardham 5082; Howell 19912, 14276A; Munz 24287; Rose 50148). The second has a distinct morphology, ploidy (diploid, vs. tetraploid), and geography and is formally recognized here at specific rank for the first time.

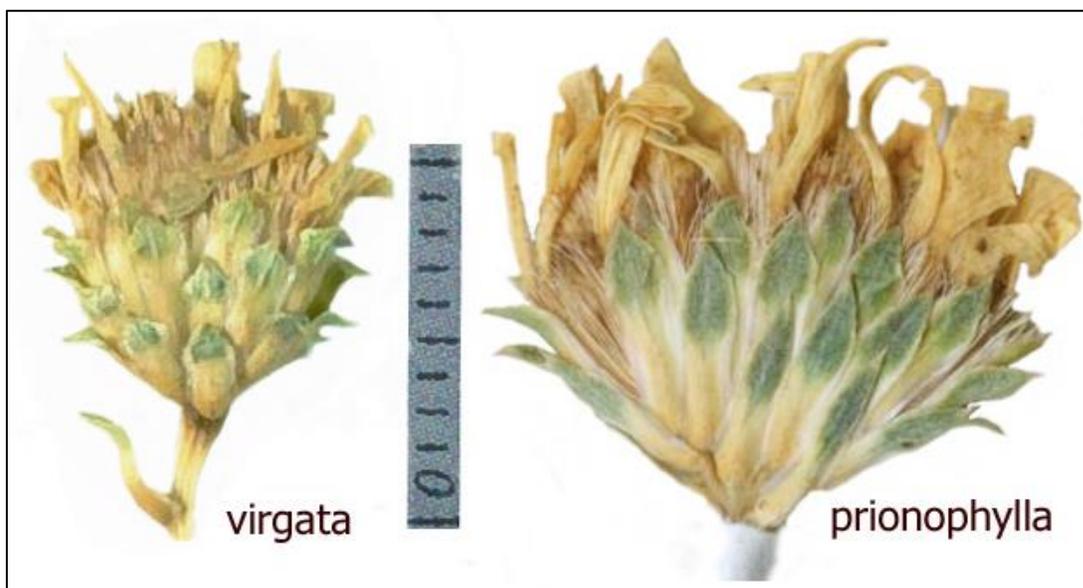
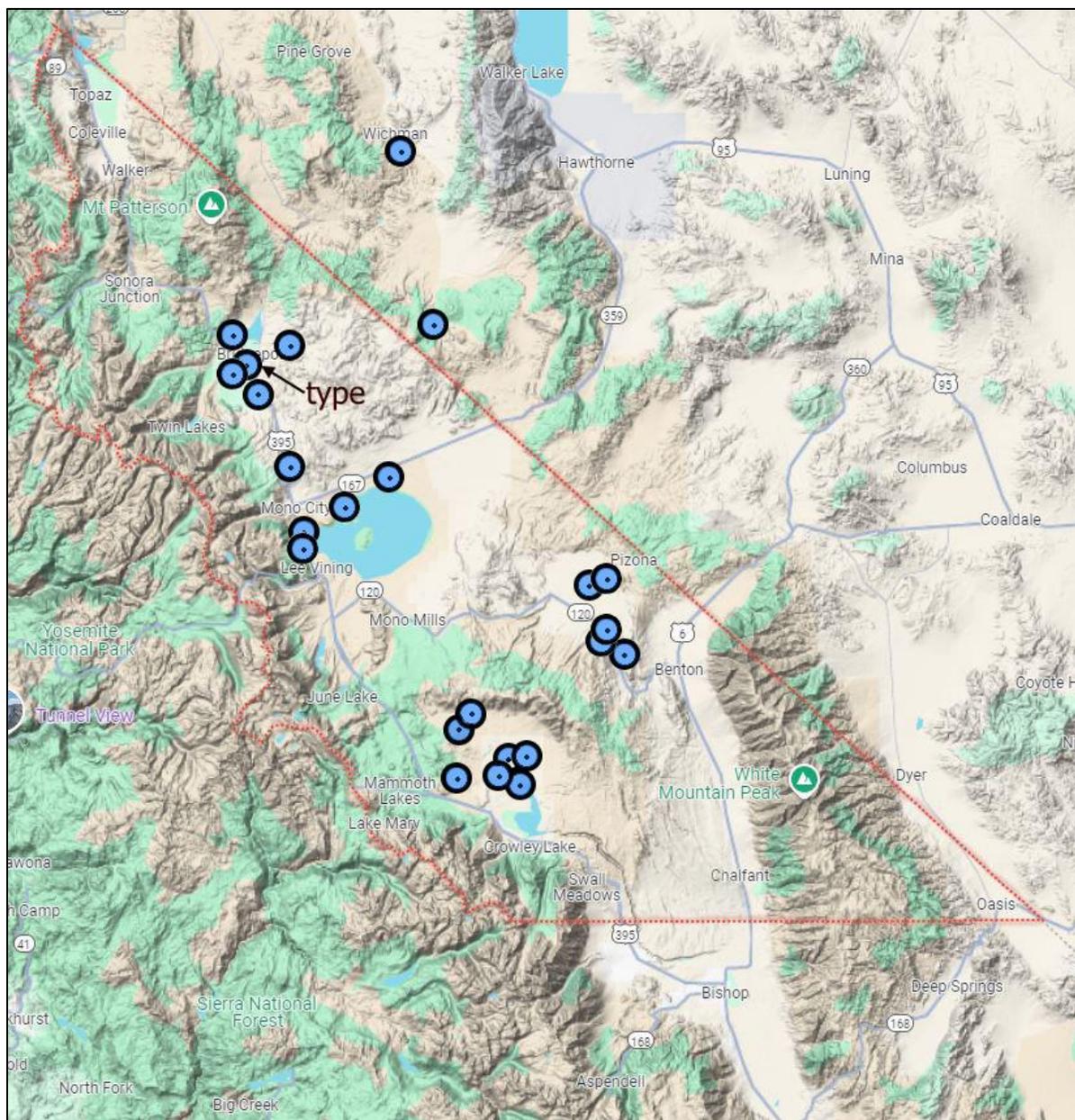


Figure 1. Representative heads of *Pyrrocoma virgata* and *Pyrrocoma prionophylla*.



Map 1. Distribution of *Pyrocoma virgata*. Mono Co., California, with outliers in Lyon and Mineral cos., Nevada.

PYRROCOMA VIRGATA (A. Gray) Nesom, **comb et stat. nov.** *Haplopappus paniculatus* var. *virgatus* A. Gray, Proc. Amer. Acad. Arts 7: 354. 1868. *Haplopappus racemososus* var. *virgatus* (A. Gray) A. Gray, Synopt. Fl. N. Amer. 1(2): 127. 1884. *Pyrocoma paniculata* var. *virgata* (A. Gray) Davidson & Moxley, Fl. S. Calif. 377. 1923. **Type. California.** [Mono Co.]: Bridgeport, E side of sierra, alkaline soil, 1866, *H.N. Bolander 6168* (holotype: GH; isotypes: K, YU). Figures 2, 3.

Stems ascending-erect, 25–40 cm, glabrous, eglandular. **Leaves:** basal persistent, narrowly elliptic-oblong to oblong-oblong, 8–14 cm long, gradually attenuate to an ill-defined petiolar region, fibrous remnants of petiole bases persistent, blades 5–10 mm wide, glabrous, margins entire to minutely apiculate, spinulose, or ciliolate proximally, cauline 6–10 up to the heads, narrowly

lanceolate, ascending, not appressed, proximal clasping-sheathing. **Heads** numerous, loosely racemoid to racemoid-paniculate or subcorymboid, sometimes sessile, without immediately subtending bracts. **Involucres** 8–10 mm wide (pressed); phyllaries in 3(–4) series of unequal length (strongly graduate), inner 5–6 mm long, erect (sometimes spreading-recurving at the apex), oblong to oblanceolate-oblong, green patch mostly confined to the deltate apex, eglandular, proximal margins (below the green apex) with a broad hyaline flange. **Ray florets** 12–17, fertile, corollas 8–11 mm long, 1–1.5 mm wide, coiling. **Disc corollas** 4–5 mm long. **Achenes** 3–3.5 mm long, sparsely and finely strigose to glabrate. **Chromosome number**, $2n=12$ (Mayes 81, 86). Figures 2-12.

Flowering (June) July-August (September). Alkaline meadows and flats, alkaline marshes, creek, lake, and pool edges, roadsides; 6350-7000 feet.

In early phases of *Pyrrocoma* study, I identified and annotated this species in some collections annotations as "P. monosolaris."

The inflorescence of *Pyrrocoma virgata* most commonly is racemoid or racemoid-corymboid, but with shortened peduncles and sessile to subsessile heads (population variants, e.g., Fig. 5), the spicate inflorescence has an appearance like *P. sessiliflora*. Features of involucre morphology are a further similarity. *Pyrrocoma sessiliflora*, however, has glandular phyllaries, occurs at lower elevations, and the two species are completely allopatric. In the interpretation here, the similarities are convergent.

Its eglandular vestiture, sparsely strigose to glabrate achenes, and geography suggest that *Pyrrocoma virgata* is part of the *P. apargioides* group (Nesom 2025b). Phyllary morphology is unusual for the group, as are the sparsely pubescent achenes, and it would not be surprising if the evolutionary origin of *P. virgata* involved species outside of that group.

Additional collections. California. Mono Co. (Long Valley): Along Little Hot Creek, ca. 7 mi E of jct with Hwy 395 at Mammoth Road in drainage along dirt road, 37.68987 N, 118.83497 W, 6947 ft, margin of alkali meadow, volcanic alluvium, sandy loam, with *Chrysothamnus viscidiflorus puberulus*, *Artemisia tridentata*, *Ericameria nauseosa oreophila*, *Muhlenbergia asperifolia*, occasional, 12 Jul 2012, Andre 21967 (RSA, UCR); E of Little Alkali Lake, SW of Big Alkali Lake, 6.7 road km N on Benton Crossing Road from Hwy 395, 1.16 air km SW of intersection of Benton Crossing Road and Pit Road, 0.57 air km W of Benton Crossing Road, 37.667715N, 118.787698 W, alkali meadow, 6885 ft, with *Carex*, *Festuca*, *Ivesia kingii* var. *kingii*, 27 Jul 2022, Carson 607 (SBBG); ca. 1 mi E of Whitman Hot Springs 37.639 N, 118.853 W, rather dry alkaline meadow, 24 Aug 1945, Ferris & Lorraine 11069 (CAS, DS, UC); N of Benton Crossing, recently dredged canal parallel to and E of Owens river, ca. 200 m NE from wood cattle corral, 37.718 N, 118.783 W, saltgrass meadow with crusty silty pumice soil, 6888 ft, with *Artemisia tridentata*, *Chrysothamnus nauseosus*, *Lupinus*, *Astragalus johannis-howellii*, 22 Aug 2001, Honer 1419 (UC); Benton Crossing Road near the Owens River, 37.698 N, 118.751 W, alkali flat, whitish alkaline-saline silty soil, 6835 ft with *Distichlis spicata*, *Ericameria nauseosa*, *Artemisia tridentata*, common, 15 Aug 2011, Howald 2792 (CAS, UCR); Hot Creek Gorge, ca. 2 mi downstream from Fish Hatchery, 37.65847 N, 118.83128 W, shallow water near S bank of Hot Creek, 7019 ft, with *Distichlis spicata*, *Urtica dioica holosericea*, *Eleocharis*, *Juncus mexicanus*, common, 9 Sep 2014, Howald 3306 (UCR); 0.7 mi N of Benton Crossing Road at Owens River, E side of river, 37.701 N, 118.767 W, alkali flat, 6840 ft, with *Distichlis spicata*, *Juncus balticus*, *Eriogonum ampullaceum*, silty gray alkaline clay, common, 23 July 2018, Howald 4717 (CAS, RENO); Little Alkali Lake, W side of Benton Crossing Road, ca. 4 mi NE of its intersection with Hwy 395, 37.662 N, 118.785 W, 6880 ft, 25 Jul 2018, Howald 4729 (CAS, RENO); Long Valley, 8 Aug 1938, Howell 14388 (CAS); N of Crowley Lake, Whitmore Hot Springs, saline flats, 7000 ft, 11 Aug 1981, Howell 54475 (CAS); ca. 5 mi E of Arcularius Ranch just N of Owens River Road, 37.746 N, 118.836 W, 6960 ft, with *Sisyrinchium*, *Spartina*, *Juncus*, *Carex*, 30 Jun 1984, Mark 29 (INF); just N of Owens River road, ca. 5 mi E of Arcularius Ranch, 37.7457839 N, 118.8364799 W, 6960 ft, with *Chrysothamnus nauseosus*, *Muhlenbergia asperifolia*, *Tanacetum potentilloides*, 13 Aug 1984, Mark 39 (INF, OBI); alkali lakes region just off Benton Crossing Road, ca. 4 mi from Hwy 395 at Green Church,

37.669 N, 118.782 W, alkali grassland, 6900 ft, with *Distichlis spicata*, 31 Aug 2007, *Matson 1744* (DAV); Big Alkali Lake, Whitmore Hot Springs Road, ca. 2 mi E of Hwy 395, 10 Aug 1981, *Orr 436* (UCSB); Hot Creek region, valleys between low hills, 6900 ft, 1 Aug 1937, *Peirson 12162* (JEPS, RSA); Whitmore Hot Springs, desert, 7000 ft, 20 Jul 1935, *Rose 35413* (CAS); along Hot Creek, S of Cashbough Ranch, alkaline meadow, sagebrush scrub, 6950 ft, 4 Aug 1971, *Thorne 41191* (RSA).

Mono Co.: Warm Springs, 2.8 mi SE of Bridgeport, in mud around edges of pools, 5 Jul 1944, *Alexander 3811* (JEPS, UC); Bridgeport Meadows, 6473 ft, common, 18 Aug 1945, *Alexander 4592* (CAS, UC); Mono Lake and vicinity, N of Lee Vining, 6400 ft, with *Scirpus nevadensis*, *Scirpus americanus*, *Triglochin concinna*, *Distichlis spicata*, *Puccinellia airoides*, *Puccinellia lemmonii*, *Juncus effusus*, *Muhlenbergia asperifolia*, 5 Aug 1976, *Burch 205* (CAS); near Mono Lake, 17 Aug 1898, *Congdon s.n.* (UC); Grae Ranch, Lundy & Bodie Road, 18 Aug 1898, *Congdon s.n.* (CAS, UC-2 sheets, WS); 1 mi S of Bridgeport (near East Walker River), dried margin of open fields, 6500 ft, 19 Aug 1938, *Constance 2443* (BRY, NY, WS); Black Lake, W of Benton Hot Springs (adjacent to Hwy 120), grazed meadow, 12 Aug 1957, *Ferris 13113* (CAS, JEPS, NY, WS); Benton Hot Springs, 14 Sep 1921, *Hall 11697* (CAS-2, UC); Bridgeport, 2 mi S of town, 12 Aug 1925, *Hall 12128* (UC 362328); just E of town Bridgeport, flat pastured alkaline meadow, 12 Aug 1925, *Hall 12129* (CAS, RSA, UC); Bridgeport 38.256 N, 119.23 W, roadside edges, 15 Jul 1959, *Hardham 5082* (CAS, SBBG); 3.2 mi E of Stage Station (NW of Mono Lake), 38.046 N, 119.082 W, 6450 ft, 18 Sep 1937, *Hendrix 630* (UC-2 sheets); W shore of Mono Lake, ca. 0.7 mi SSE of Cemetery Road, 38.003 N, 119.147 W, 6400 ft, saline-alkaline marshland on shoreline, with *Distichlis spicata*, *Suaeda calceoliformis*, *Bassia hyssopifolia*, *Melilotus albus*, common on moist sandy sites, 15 Aug 2017, *Howald 4408* (CAS, UCR); 4 mi E of US Hwy 395 on Whitmore Road, 18 Jul 1973, *Mayes 81*, voucher for diploid chromosome count, n=6 (CAS, DAV, SD, TEX); 2 mi S of Bridgeport on Hwy 395, 18 Jul 1973, *Mayes 86* (TEX); 1 mi SE of Bridgeport, alkaline flats near hot springs, 6700 ft, common, 28 Jul 1950, *Munz 15438* (RSA, US); Waford Spring along the Pole Line Road, 38.095° N, 119.008° W, 6850 ft, moist soil, with *Carex* spp., abundant, 11 Aug 1963, *Reveal 618* (OBI); Bridgeport, 6465 ft, 24 Jul 1950, *Rose 50148* (CAS, COLO, BRY, RSA, UC, US); along River Spring Road, 3.5 mi E of Hwy 120, almost to spring, 37.937 N, 118.616 W, 6483 ft, dry alkali soil, with *Ivesia kingii* var. *kingii*, *Crepis runcinata* subsp. *hallii*, *Stephanomeria exigua*, *Spartina gracilis*, *Cleomella parviflora*, 1 Jul 2017, *Winitzky 1131* (JEPS, RSA); southern part of River Spring Lakes Preserve, 1000 ft S of the dock at the main spring of River Springs, 37.928 N, 118.618 W, alkali meadow, 6495 ft, with *Nitrophila occidentalis*, *Cleomella parviflora*, *Sarcobatus vermiculatus*, *Ericameria nauseosa*, *Ivesia kingii* var. *kingii*, *Carex praegracilis*, *Distichlis spicata*, 15 Jul 2017, *Winitzky 1222* (RSA); N of Black Lake, S of spring, 1.3 mi N of where Hwy 120 and the dirt road leading to Black Lake intersect, grassland N of lake, 6333 ft, with *Ericameria nauseosa*, *Stutzia covillei*, *Eriogonum microthecum* subsp. *ambiguum*, *Caulanthus pilosus*, *Equisetum laevigatum*, 15 Jul 2017, *Winitzky 1260* (JEPS, RSA); Black Lake, 3/4 mi N of intersection of Black Lake Road and Hwy 120, along lakeshore, 37.82637 N, 118.58025 W, grassland, 6399 ft, with *Sarcobatus vermiculatus*, *Ericameria nauseosa*, *Lepidium montanum*, *Amphiscirpus nevadensis*, 25 Aug 2017, *Winitzky 1350* (JEPS, RSA).

Nevada. Lyon Co.: Vicinity of Wichman, sandy soil, 6000 ft, uncommon, 27 Jul 1937, *Moore & Franklin 880* (RENO). Mineral Co.: Near Bodie Creek, alkaline seepage on slope, 6300 ft, abundant, 12 Aug 1949, *Sharsmith 5786* (SJSU-2 sheets).

LITERATURE CITED

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- Nesom, G.L. 2025a. Taxonomy of the *Pyrrocoma racemosa* group (Asteraceae: Astereae). Phytoneuron 2025-08: 1–64.
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Figure 2. *Pyrocoma virgata*. Holotype of *Pyrocoma paniculata* var. *virgata*, Bolander 6168 (GH).



Figure 3. *Pyrrcoma virgata*. Detail from YU isotype.



Figure 4. *Pyrrcoma virgata*. Mono County. Howald 4408 (CAS).



Figure 5. *Pyrrcoma virgata*. Mono County. Howald 2792 (CAS).

Nesom: *Pyrocoma virgata*



Figure 6. *Pyrocoma virgata*. Mono County. *Mayes 81* (CAS).



Figure 7. *Pyrracoma virgata*. Mono County. Reveal 618 (OBI-INF).



Figure 8. *Pyrocoma virgata*. Mono County. Ferris & Lorraine 11069 (DS).



Figure 9. *Pyrocoma virgata*. Mono County. Ferris & Lorraine 11069 (CAS).



Figure 10. *Pyrocoma virgata*. Mono County. Alexander & Kellogg 4592 (DS).



Figure 11. *Pyrocoma virgata*. Mono County. Hardham 5082 (CAS).



Figure 12. *Pyrocoma virgata*. Mineral Co., Nevada. Sharsmith 5786 (SJSU).