

**PARAPATRIC SPECIES,
PYRROCOMMA INSECTICRURIS AND P. BENNETTENSIS, SP. NOV.
(ASTERACEAE: ASTEREAE)**

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ABSTRACT

An updated morphological description and detailed distribution map for *Pyrrocomma insecticruris* are provided. Significant variation in stem height, heads per inflorescence, and ray number occurs within and among populations. The hexaploid chromosome number suggests that more than one species may have been involved in its origin. A population system in the Bennett Hills of Gooding County and immediately adjacent Camas County is recognized here as *Pyrrocomma bennettensis* Nesom, **sp. nov.** — these plants are essentially parapatric with *P. insecticruris* and distinct in morphology and apparently in habitat, but their relationship may be closer to other species of the *P. carthamoides* group.

Pyrrocomma insecticruris (Henderson) Heller has usually been identified correctly — it has a relatively narrow geographic range and is sympatric with *P. sericea*, which apparently does not hybridize with it. Hall (1928) treated it at subspecific rank within *P. integrifolia* (along with *P. liatrifolmis* and *P. scaberula*), emphasizing the similarity in large involucre without immediately subtending bracts and in long disc corollas, but *P. integrifolia* differs from all three in its fertile rays and glabrous achenes (Nesom 2025b). Mayes (1976), then Bogler (2006), followed Cronquist (1955) in recognizing *P. insecticruris* at specific rank.

Many collections of *Pyrrocomma insecticruris* were made in the 1990s, particularly by Carol Blackburn and Steve Popovich. The current account provides an updated description of morphology and ecology as well as a detailed distribution map.

PYRROCOMMA INSECTICRURIS (Henderson) A. Heller, *Muhlenbergia* 1: 7. 1900. *Aplopappus insecticruris* L.F. Henderson, *Bull. Torrey Bot. Club* 27: 346. 1900. *Haplopappus integrifolius* subsp. *insecticruris* (Henderson) Hall, *Publ. Carnegie Inst. Wash.* 389: 111. 1928. **TYPE:** Idaho. Blaine Co.: Southwest corner of Big Camas Prairie, dry field, 5000 ft, 14 Jul 1895, *L.F. Henderson 3013* (holotype: US; isotypes: GH, ID, NY, UC).

Pyrrocomma pratensis Greene, *Leafl. Bot. Observ. Crit.* 2: 19. 1909. **TYPE:** Idaho. Blaine Co.: Southwest corner of Big Camas Prairie, dry field, 5000 ft, 14 Jul 1895, *L.F. Henderson 3013* (holotype: US; isotypes: GH, ID, NY, UC). Homotypic with *P. insecticruris*. Greene cited "3113" but the sheet he referred to is *Henderson 3013*.

Plants from a simple or multicapital caudex. **Stems** erect to ascending-erect, (10–)25–70(–90) cm tall, glabrous or sparsely puberulent distally, eglandular. **Leaves:** basal oblanceolate to spatulate-elliptic, 10–30 cm long, blades (10–)15–50 mm wide, eglandular, petioles and midribs glabrous or villous-ciliate, without fibrous remnants of petiole bases, margins serrate to undulate or entire, cauline reduced in size distally, bases usually distinctly subclasping. **Heads** 1 and terminal, 2–3 and subcorymboid, or usually 3–5(–10) and loosely racemiform, rarely spicate, without subtending bracts, peduncles 1–8 cm long. **Involucres** mostly 20–25 mm wide (pressed), without immediately subtending bracts (rarely with). **Phyllaries** in 2–3 series unequal to subequal in length or sometimes the outer longer than the inner, inner 9–14 mm long, loosely appressed, oblong-lanceolate, green-herbaceous except for the proximal 1/4–1/3 or the outer sometimes completely herbaceous, eglandular, proximally

villous, margins entire. **Ray florets** (10–)14–30(–35), sterile, corollas 8–15 mm long, 1.5–2(–3) mm wide. **Disc corollas** 7–10 mm long. **Achenes** 4–6 mm long, sericeous-strigose. **Chromosome number**, $2n = 36$, hexaploid; Anderson et al. (1974)–Camas Co., *Anderson 3612*, KSC as cited; Elmore Co., *Anderson 3610*, KSC as cited; Mayes (1976)–Camas Co., *Mayes 171, 172, 173*, TEX. Figures 1–14.

Flowering mid June–August. Deep soil, rocky swales and slopes, under aspen into sagebrush, valley bottoms and toeslopes, drainage bottoms, meadows along drainage, seasonally wet meadows, camas meadows, sometimes grazed, roadside and irrigation ditches, roadsides and fence lines, cemeteries, in and around corrals; 4900–6700(–7450) feet. Endemic to Elmore, Camas, Blaine, and Butte cos. (Map 1) in the region of the Big Camas Prairie.

Additional collections examined. **Blaine Co.:** Blackburn 19, 21, 113; Christ 15822; Henderson 3017; Macbride 3829; Mancuso 3390; Means 230–56; Pollock 44; Popovich 4003, 4004, 4010, 4013, 4015, 4017, 5083, 6211, 6213, 6214, 6221, 6222, 6223, 6246, 7746, 7752. **Camas Co.:** Blackburn 8, 9, 16, 17, 47; Caicco 576; Christ 16054, 16055; Davis 2811; Ertter 23093 Lee 85802, 85803, 85804, 85805; McClain 97–089; Popovich 4001, 4007, 4008, 4011, 4012, 4013, 4014, 7745, 7748, 7751; Rosentreter 4922, 23072. **Elmore Co.:** Baker 10398; Blackburn 25, 52, 55; Ertter 23873; Lee 85806; Owen 93009; Popovich 4005, 4006. **Butte Co.:** Guenther s.n.

Geographic outliers (Map 1).

Blaine Co.: Sawtooth Natl Recreation Area, along Hwy 75, between headquarters and Easley Hot Springs, E and W sides of Phantom Hill, mostly on N side of hwy (MilePost 140), 43.792° N, 114.477° W, gravelly wash with *Wyethia*, *Aster*, *Eriogonum*, and *Artemisia arbuscula*, 1961 m, 1 Aug 1993, *Blackburn 21* (RM, Fig. 14); Hwy 75, MilePost 140.6 at culvert SE of Phantom Hill, 43.782781° N, 114.48426° W, drainages both E and W of Phantom Hill, 6480 ft, with *Carex*, *Eriogonum umbellatum*, *Achillea millefolium*, *Aster* sp., 76 individuals, with "Individuals approaching characteristics of *Haplopappus insecticruris* in this area," 17 Aug 1985, *Lee 85801* (ID); Sawtooth Natl Rec. Area, Boulder Mtns, Big Wood River valley bottom, Phantom Hill, along N sides of Hwy 75, 50 ft N of Phantom Hill sign near MilePost 140, 43° 47' 07" N, 114° 29' 42" W, wettest swath of weak ephemeral drainage, 6490 ft, with native bunchgrasses, *Artemisia arbuscula*, *Aster*, *Poa*, *Eriogonum*, *Wyethia amplexicaulis*, *Achillea*, areas heavily grazed historically, currently sheep trailway ["Compare with *Popovich 4017A*, representing drier microsite, smaller plants; *Blackburn 21* from same population but 200–400 yds further ENE"], ca 15 plants, flowers bright yellow, [heads] mostly 2–3/stem, sometimes solitary; rays 18–22(24), 2.5–3.5 mm wide x 6–15 mm long, disc corollas 10 mm long, 21 Aug 1993, *Popovich 4017A* (SRP) and *4017B* (CIC).

The Phantom Hill locality is within the geographic range of the EASTERN "aff. *cusickii*" variant and Barbara Ertter has pointed out that there is reason to suspect that the population system includes intergrades. *Blackburn 21* and *Popovich 4017* were identified by the collectors as *P. insecticruris*, but comments on the *Blackburn 21* label (as above) point to intermediacy. The label of *Lee 85801* (identified as *P. lanceolata*) also observes variation in *P. insecticruris* from that area.

Butte Co.: "Big Lost" [River], NAD83 Z12N [mapped at 43.86° N, 113.49° W], 14 Aug 2011, *Guenther s.n.* (IFBLM782, Fig. 13).

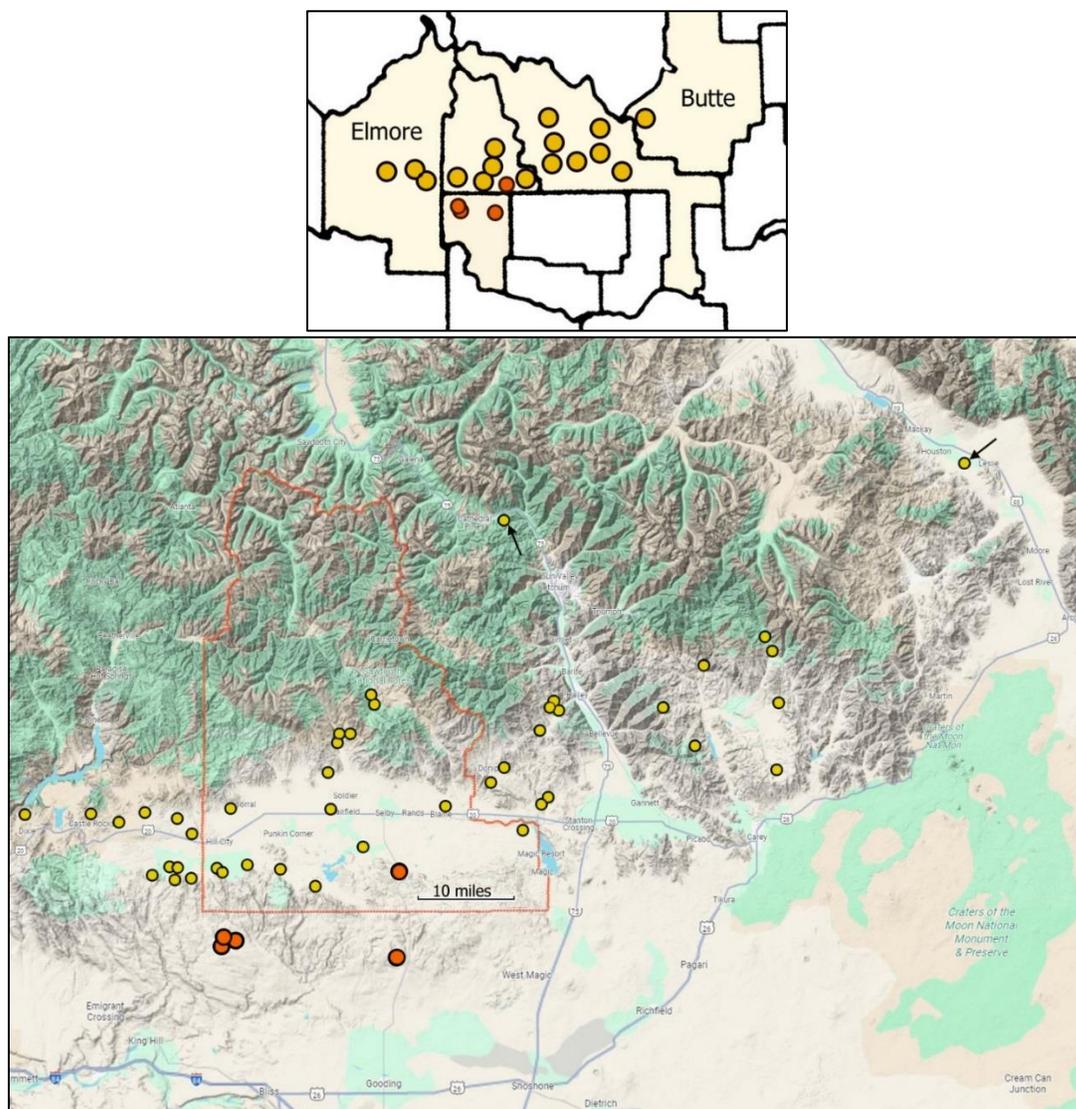
Variability and the hexaploid chromosome number suggest that more than one species may have been involved in its origin of *Pyrrocoma insecticruris*. Variation in stem height, heads per inflorescence, and ray number occurs within and among populations. Within-population variation has been described in label data (e.g.):

- stem height (e.g., 10–35 cm, up to 60 cm, 17–70 cm, up to 90 cm)
- heads/inflorescence (e.g., mostly 1, (1–)2–3, 3–50)
- ray floret number (e.g., 10–20, 14–16, 15–22, 20–35)

Pyrrocoma insecticruris is similar to species of the *P. carthamoides* group (Erter 2025) especially in its lack of fibrous remnants of petiole bases, sterile ray florets with short corollas,

relatively long disc corollas and achenes, and Pacific Northwest geography. It is distinct from them in its lack of subtending capitular bracts and strigose achenes. In these features, including the latter two, *P. insecticruris* is similar to *P. scaberula* and *P. liatrifomis* (Nesom 2025a), particularly the latter, which also is hexaploid. *Pyrocoma scaberula* and *P. liatrifomis* both are distinct from *P. insecticruris* in their production of glands.

Phyllaries of *Pyrocoma insecticruris* are much like those of *P. cusickii* in shape. Plants of *P. carthamoides*, *P. cusickii*, and the WESTERN and EASTERN "aff. *cusickii*" variants differ from *P. insecticruris* in their heads with closely subtending, leaf-like bracts, but heads of the more peripherally related *P. radiata* and *P. subsquarrosa* often lack these bracts or have bracts reduced in size. Subtending bracts are absent in *P. insecticruris* but sometimes the outermost phyllaries are longer than the inner and nearly completely herbaceous, approaching the appearance of subtending bracts (e.g., Figs. 2, 7, 10).



Map 1. Distribution of *Pyrocoma insecticruris* (gold) and *P. bennettensis* (orange). Above: Generalized, showing counties (left to right, Elmore, Camas and Gooding, Blaine, Butte). Below: Detailed, with Camas County boundary outlined in red. Localities from records through imaged herbarium databases (Pacific NW, Intermountain, US). Arrows point to outliers, cited above: Blaine Co. (Blackburn 21, Lee 85801, Popovich 4017) and Butte Co. (Guenther s.n.).

Plants in several populations from the Bennett Hills of northern Gooding County and immediately adjacent Camas County, essentially parapatric with *Pyrocoma insecticruris* (Map 1), are recognized here as a distinct species, *P. bennettensis*. They are similar in aspect to *P. insecticruris* but have been identified as *P. carthamoides* var. *cusickii*, presumably because of their involucre with immediately subtending bracts, more inconspicuous ray corollas, and glabrous achenes — differences are outlined in the couplet below. *Pyrocoma insecticruris* and the new species clearly are closely related to the *carthamoides* group.

The close geography of *Pyrocoma bennettensis* suggests that its genome may be involved in the hexaploid constitution of *P. insecticruris*. The pubescent achenes and lack of subtending involucre bracts of the latter, however, are features from outside of the *carthamoides* group.

1. Cauline leaves clasping or subclasping; involucre 20–25 mm wide, usually without immediately subtending bracts; phyllary margins entire; ray corollas distinctly longer than the involucre; achenes sericeous-strigose; $2n = 36$ **Pyrocoma insecticruris**
1. Cauline leaves not clasping or subclasping; involucre (14–)17–20 mm wide, with immediately subtending bracts; bract and phyllary margins spinulose to apiculate; ray corollas slightly shorter to slightly longer than the involucre; achenes glabrous; $2n = ?$ **Pyrocoma bennettensis**

PYROCOMA BENNETTENSIS Nesom, **sp. nov.** TYPE. Idaho. Gooding Co.: Mount Bennett Hills, ca. 16 air km NE of King Hill, E of road and stock pond to Indian Writing Waterhole, S of Dempsey Meadows Rd, 43.148° N, 115.038° W, ephemerally wet rock drainage, mostly in cracks of rocks, 5395 ft, with *Artemisia arbuscula*, *A. ludoviciana*, *Purshia tridentata*, *Eriogonum*, *Zygadenus*, *Lomatium*, *Penstemon*, *Camassia*, *Gayophytum*, *Navarretia*, *Cirsium*, *Xanthium*, *Festuca idahoensis*, other bunchgrasses; "rays conspicuous, 18/head, ... plants nearest rim are twice size as those up drainage," 17 Jul 1998, S. Popovich & C. Blackburn 6217 (holotype: SRP 33412; isotypes: CIC-SHO, IDS, SRP-33410). Figures 15-17. Same population as *Blackburn 142* and *143*.

Similar to *Pyrocoma insecticruris* in its geography and sterile ray flowers with reduced corollas; different in habitat and its non-clasping cauline leaves, tendency for a spicate inflorescence, smaller involucre, bracts immediately subtending the heads, shorter and less conspicuous ray corollas, spinulose to apiculate phyllary margins, and glabrous achenes.

Plants from a most simple caudex. **Stems** erect to ascending-erect, 10–30 cm tall, glabrous, eglandular. **Leaves:** basal 14–26 cm long, blades elliptic to oblanceolate, 5–13 mm wide, narrowed to a petiole ca. 1/2–3/5 the leaf length, eglandular, petioles and midribs glabrous, without fibrous remnants of petiole bases, margins apiculate to shallowly serrate with 5–12 pairs of teeth, cauline mostly 4–6, narrowly oblong to narrowly oblanceolate, reduced in size distally, bases not clasping or subclasping. **Heads** 1 and terminal, or 2–3 and nearly spicate, usually with 1–3 closely subtending, phyllary-like bracts as long as or slightly longer than the involucre, peduncles 0.5–2 cm long if not spicate. **Involucre** (14–)17–20 mm wide (pressed). **Phyllaries** in 2(–3) series equal to subequal in length, inner (10–)12–15 mm long, loosely appressed, oblong-lanceolate, green herbaceous except for the proximal 1/4–1/3 or the outer sometimes completely herbaceous, glabrous, eglandular, margins shallowly spinulose to apiculate. **Ray florets** 16–18, sterile, corollas 6–12(–15) mm long (slightly shorter than to slightly longer than the involucre), 1.5–2 mm wide. **Disc corollas** 8–9 mm long. **Achenes** 5–6 mm long, glabrous. **Chromosome number** not reported. Figures 15-20.

Flowering June-July (August). Rock crevices in ephemerally wet drainage, rocky soil in moist meadows, loose soil mounds in low sage/bunchgrass community; 5070-5400 feet.

Additional collections. Idaho. **Camas Co.:** S edge Camas Prairie ca. 7 air mi SE of Fairfield, 43.263° N, 114.683° W, toe slopes of Mt. Bennett Hills, 5070 ft, 18 Jul 1994, *Popovich 4022* (SRP). **Gooding Co.:** Bennett Hills, S of Dempsey Meadows Rd, drainage below stock pond on road toward Indian

Writing Waterhole, 43.148° N, 115.038° W, rocky to coarse-gravelly, low sage/bunchgrass community, 5390-5430 ft, 30 Jul 1998, *Blackburn 142* (SRP); Bennett Hills, S of Dempsey Meadows Rd, drainage above Indian Writing Water hole, 43.148° N, 115.038° W, aspect SSW, soil surface very rocky, 5390-5430 ft, largest plants in crevices between rocks, low sage/bunchgrass community, 30 Jul 1998, *Blackburn 143* (SRP); plateau on E side of Little City of Rocks, 43.134° N, 114.684° W, loose soil mounds, 5100 ft, 16 Jun 1976, *Ertter 76-151* (CIC, SRP, UTC).

The Bennett Hills plants are similar to those of the EASTERN aff. *cusickii* variants, but *P. insecticruris* is interposed between them in geography. Compared to *P. bennettensis*, the EASTERN variants have stems sparsely hirsutulous (vs. glabrous), basal leaf blades (7–)10–25 mm wide (vs. 5–13 cm wide), and ray corollas slightly but conspicuously longer than the involucre (vs. about the same length as the involucre). The differences are subtle and the decision here to recognize *P. bennettensis* gives weight to geography.

ACKNOWLEDGEMENTS

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Figure 1. *Pyrocoma insecticruris*. Henderson 3013 (US), holotype of *Aplopappus insecticruris* and holotype of *Pyrocoma pratensis*.



Figure 2. *Pyrocoma insecticuri*. Detail from Henderson 3013 (GH, isotype).



Figure 3. *Pyrocoma insecticruris*. Camas Co., Caicco 576 (NY).



Figure 4. *Pyrocoma insecticruris*. Detail from *Caicco* 576 (Fig. 3).



Figure 5. *Pyrocoma insecticruris*. Detail from various collections.

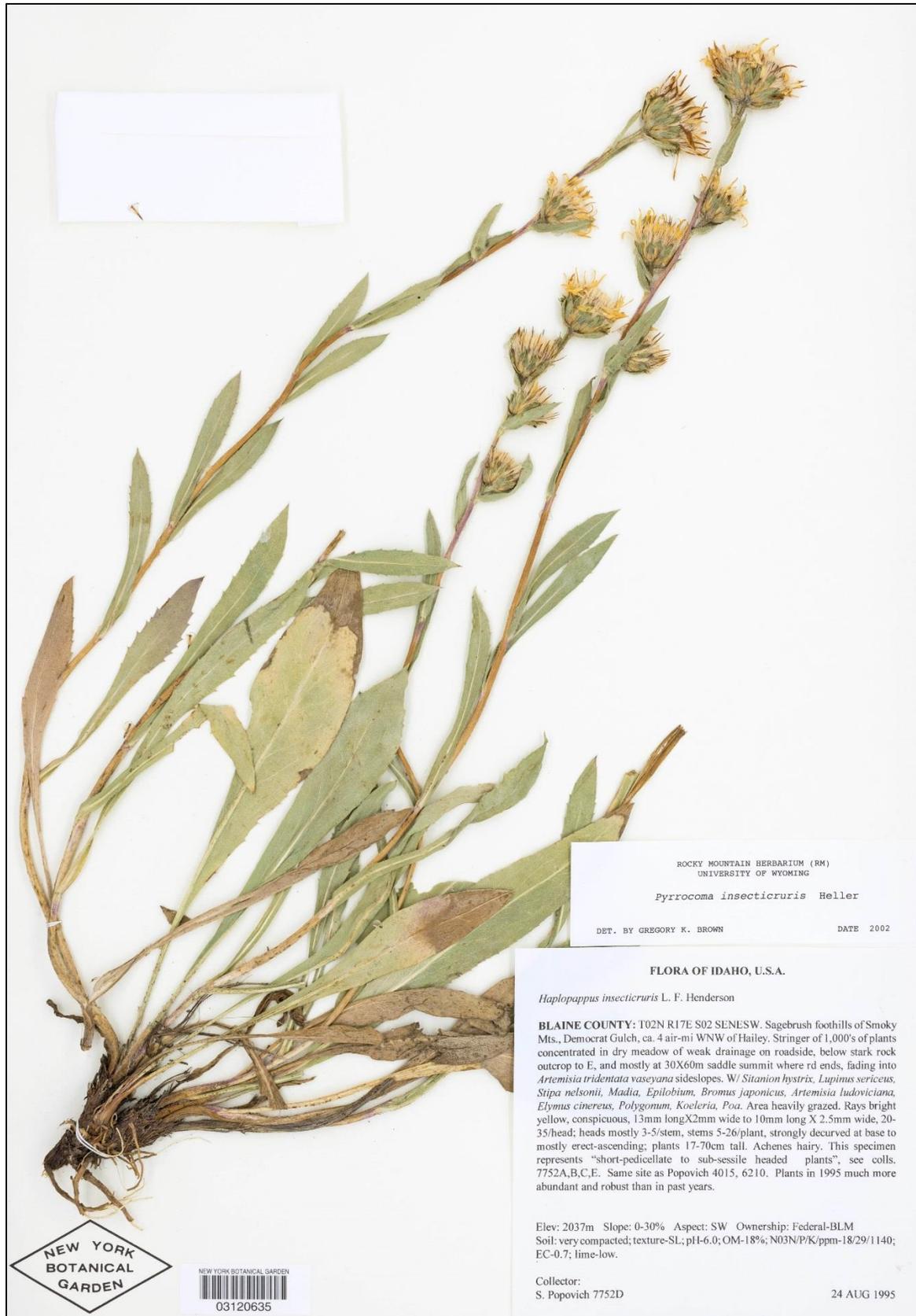


Figure 6. *Pyrocoma insecticruris*. Blaine Co., Popovich 7752D (NY).



Figure 7. *Pyrocoma insecticuris*. Blaine Co., Macbride & Payson 3829 (US).



Figure 8. *Pyrocoma insecticruris*. Blaine Co., Popovich 7752A (NY).



Figure 9. *Pyrocoma insecticruris*. Blaine Co., Popovich 4003 (NY).



Figure 10. *Pyrocoma insecticuris*. Camas Co., Blackburn 17 (CIC).



Figure 11. *Pyrocoma insecticruris*. Camas Co., Popovich 4013 (SRP).



Figure 12. *Pyrocoma insecticuris*. Camas Co., Popovich 4014 (CIC).



Figure 13. *Pyrocoma insecticruris*. Butte Co., Guenther s.n. (IFBLM782).

Figure 14. *Pyrocoma insecticuris*. Blaine Co., Blackburn 21 (RM).



Figure 15. *Pyrocoma bennettensis*. Gooding Co., Popovich 6217 (SRP 33412). Holotype.



Figure 16. *Pyrocoma bennettensis*. Gooding Co., Popovich 6217 (SRP 33410).



Figure 17. *Pyrocoma bennettensis*. Gooding Co., Popovich 6217 (CIC-SHO).



Figure 18. *Pyrocoma bennettensis*. Gooding Co., Ertter 76-151 (CIC).



Figure 19. *Pyrocoma bennettensis*. Gooding Co., Blackburn 143 (SRP).



Figure 20. *Pyrocoma bennettensis*. Detail from *Blackburn 143* (Fig. 19).