

6, a. *Crepis pygmaea typica* subsp. nov. Folia lyrato-pinnatifida interdum simplicia; pedunculi plerumque 3–8 cm longi; involuera 10–15 mm longa; corolla 15–16 mm longa; achaenia 4–6.5 mm longa, costatis aequalis; pappus 7–8 mm longus.

Leaves lyrate-pinnatifid or sometimes simple; peduncles 0.5–11 (mostly 3–8) cm long; involucres campanulate or cupuliform, 10–15 mm high, 7–10 mm wide at middle in fruit; outer bracts 7–12; inner bracts 12–16, acuminate or acute; corolla 15–16 mm long; ligule about 2.5 mm wide; teeth 0.3–0.5 mm long; corolla tube about 5 mm long, very sparsely pubescent, with coarse acicular hairs up to 0.5 mm long; anther tube about  $5 \times 1.5$  mm dis.; appendages about 0.75 mm long, oblong, acute, or obtuse; filaments 0.75 mm longer; style branches 2–2.25 mm long, 0.2 mm wide, attenuate at tip, yellow; achenes light brown to dark reddish-brown, 4–6.5 mm long, 1–1.4 mm wide, somewhat obcompressed, slightly attenuate to both ends, or more definitely attenuate upward, the 20–25 ribs about equal, with occasionally a few weaker ones, not very prominent in fully mature fertile fruits; pappus 7–8 mm long, obscurely barbellulate. Flowering July–Sept. Chromosomes,  $2n = 12$ . See fig. 20.

*Leontodon dentatus* L., Mant. 1: 107. 1767.

*Hieracium pumilum* L., Mant. 2: 279. 1771.

*H. prunellaefolium* Gouan, Illustr. 57, t. 22, f. 3. 1773.

*H. pygmaeum* Lamk., Fl. Fr. 2: 100. 1778.

*Lepicome prunellaefolium* Lapeyr., Abr. Pyr. 481. 1813.

*Omalocline prunellaefolium* Cass., Dict. 48: 431. 1827; Monn., Essai Hierac. 78. 1829.

*Omalocline pygmaea* Rehb. f., Ic. Fl. Germ. Helv. 19: t. 104, f. II. 1858–1859.

*Hieraciodes pygmaeum* O. Kuntze, Gen. 1: 346. 1891.

N. Spain in the Cordillera Cantabrica; S. Spain, Granada, in the Sierra Nevada; N.E. Spain and S.W. France in the Pyrenees; E. France in Hautes Savoie, Hautes Alpes, Basses Alpes, and Alpes Maritimes; Switzerland in Hautes Savoie, Vaud, Valais, Grisons, and the Berner, Rhaetic, and Engadin Alps; N. Italy in the mountains of Piedmont and Lombardy, and E. central Italy in the Majella Mts. In the Brenta Alps of Trentino, Lombardy, acc. to Melchior (Fedde Rep. Beih. 100: 174. 1938) this species occurs at about 2500 m alt., on loose calcareous debris with *Papaver pyrenaicum*, *Linaria alpina*, *Leontodon montanus*, etc. It is suggested that such alpine types moved up to their present levels from lower glacial refugia during the warm, dry postglacial period.

The type, in the Linnaean Herbarium, London, is represented in Herb. UC by a photograph.

**Spain:** Cordillera Cantabrica, Leon, Mt. Espiguete, *Gandoger* in 1904 (Mo); Granada, Sagra Serra, in gravel, 2000–2400 m, *Porta et Rigo 571* (Bur); Catalonia, Pyrenees, Nuria, Noufonts, schist, 2800 m, *Sennen 1990* (Bur, UC); *ibid.*, Serra del Cadi, 2200 m, *Font Quer* in 1926 (Bar, UC); E. Pyrenees, Nou Creus, 2800 m, *Cuatrecasas* in 1922 (Bar, UC); Nuria, Coma d'Eyne, 2700 m, *Cuatrecasas* in 1922 (Bar, UC). **France:** Basse Pyrenees, Eaux Bonnes, *J. Ball* (US); *ibid.*, Pic du Midi, *Bouget* (UC); Hautes Pyrenees, Cirque de Gavarnie, *Bodère* in 1868–1869 (Bur, US) and *Lomax* in 1888 (UC); Isère, La Salette, 1900 m, *Luny* in 1911 (UC); Drome, Mt. Ventoux, *Delacour* in 1876 (K) and *Pellat* in 1860 (Grenoble); Hautes Alpes, Lautaret, near La Grare, 1400 m, *Mathouret* in 1861 (Bur); *ibid.*, Mt. Durouze, 2200 m, *Faure* in 1900 (UC); Basses Alpes, Bougolières, *Proal 900* (Ms); Alpes de Provence, *Clarion* (DC) as *H. prunellaefolium*. **Switzerland:** Valais, Salanfe, col du Jorat, *Burnat et al.* in 1917 (Bur); Canton Wallis, Zaufleuron, 2350 m, *Fries* in 1909 (UC). **Italy:** Alpes Pedemont (PD) as *Berinea pygmaea* Tausch in herb.; Venezia, Friaul, Mt. Corno, *Martelli* (Po); Abruzzi, Canella Valley, 2000–2200 m, *Huet 375* (Bur); Abruzzi, Majella Mts., *Groves* in 1877 (K, UC); *ibid.*, 2000–2800 m, *Rigo* in 1905 (Po, UC).

6, b. *Crepis pygmaea anachoretica* subsp. nov. Folia simplices spathulata vel interdum lyrato-pinnatifida, segmentibus lateralibus 2–4 parvibus; pedunculi 4–20

cm longi; involucria in anthesi cupuliformia in fructu late cylindrico-campanulata et tum 16-19 mm longa ad medium circa 10 mm lata, squamis exterioribus 9-14, interioribus 12-14 acutis; corolla circa 20 mm longa, ligula 3-3.5 mm lata, tubo 6-7 mm longo minute pubescenti; antherae circa 5 mm longae flavae; rami styli 3 mm longi 0.2 mm lati flavi; achaenia (non valde matura) straminea 9 mm longa 1.5 mm lata circa 20-costata, costis alternis latis et tenuis; pappus albus 10 mm longus dense barbellulatus persistens.

Leaves simple, spatulate, or sometimes lyrate-pinnatifid, with 2-4 small lateral lobes; peduncles 4-20 cm long; involucria cupuliform in anthesis, broadly cylindric-campanulate in fruit, and then 16-19 mm long, about 10 wide at middle; outer bracts 9-14; inner bracts 12-14, acute; corolla about 20 mm long; ligule 3-3.5 mm wide; teeth 0.3-1 mm long; corolla tube 6-7 mm long, beset with very short papilliform or acicular trichomes; anther tube 5.25 x 1.5 mm dis.; appendages 0.75 mm long, oblong, obliquely acute; filaments 0.5-0.75 mm longer; style branches 3 mm long, more than 0.2 mm wide, yellow; achenes (not fully mature) stramineous, 9 mm long, 1.5 mm wide, about 20-ribbed, *the ribs alternately wide and narrow*; pappus 10 mm long, densely barbellulate. Flowering July; flowers yellow, the marginal florets reddish-purple on outer face of ligule and suffused with red in sic. The name, *anachoretica*, connotes the primitive nature of this subspecies, as indicated by its habit, leaf shape, and involucria, and particularly by the alternately wide and narrow ribs on the achenes which resemble those of *Youngia depressa* as well as those of *C. sibirica*. See fig. 21.

Known only from the type region.

**Spain:** Jaen, Sierra Magina, El Almaden, 1800 m, *Cuatrecasas* in 1926 (UC 639611, Bar), type, isotype; Jaen; Magina, western part, 2050 m, *Cuatrecasas* in 1926 (Bar, UC); Sierra Magina, Carceles, 1900 m, *Cuatrecasas* in 1926 (UC, Bar).

#### Relationship

*Crepis pygmaea* is outstanding in its morphological resemblances to several species in other sections and even in different genera. In its low, tufted habit and spreading rhizomes it resembles *C. terglouensis*; its thick, prominently ribbed achenes are somewhat like those of the primitive species *C. kashmirica* and *C. terglouensis*; the resemblance of the ribbing of the achenes to that of *Y. depressa* and *C. sibirica* was noted above. A remarkable similarity has been noted also between the leaves, in all stages of ontogeny, of *C. pygmaea* and those of *Youngia depressa* (cf. B. and S., 484: 16, 35), which in turn shows relationship with the more primitive genera, *Dubyaea* and *Sorozeris* (cf. Stebbins, 71-75). The low, tufted habit of *C. pygmaea* is also reminiscent of *Y. depressa* and the *Sorozeris* species. This morphological evidence of a genetic connection between *C. pygmaea* and 3 other genera of S. Asia is very significant in connection with other evidence on origin and distribution of the genus derived from the study of chromosomes and geographic distribution.