

non Dene.; *Crepis depressa* Hook. f. et Thoms., Fl. Brit. Ind. 3:397, 1882.)

Eastern Himalaya Mountains, Sikkim and Tibet, 4500 to 5000 m alt. Type collection at Kew, cotypes at Berlin and in Herb. De Lessert.

SIKKIM: 4500 to 5000 m alt., *J. D. Hooker* in September, October, 1849 (K, B, DL); Sebu Valley, 4646 m alt., *Gammie* in 1892 (K). TIBET: Yatung, 27°51'N., 88°35'E., *Hobson* in 1897 (K); Chumbi, *Dr. King's collector 404* (K).

#### RELATIONSHIP

Although the strongly congested flower-heads are reminiscent of *Crepis nana* and the leaves resemble those of *C. Umbrella*, yet the compressed or angular, unequally ribbed achenes indicate closest affinity with *Youngia*. But this species is not closely related to the other tufted species of this genus (cf. p. 33). The longer, coarsely beaked achenes with alternate wide and narrow ribs and the coarse, yellowish pappus suggest affinity with *Dubycea hispida*, a primitive cichoriaceous species.

#### 2. *Youngia parva* sp. nov. (Fig. 3)

Herba perennis, valde humilis; caudex rectus, ligneus, foliosus; folia parva, oblanceolata; cauliculus brevissimus, dense tomentosus, canus, breviter ramosus, rami cum 1-2 capitulis; capitula pauca, 15-flora; involucre viridissimum; squamæ externæ longæ; receptaculum glabratum; germina fusca, ad apicem constricta, cum costis inæqualibus; corolla circa 17 mm longa, flava; antheræ 5 mm longæ, virides; pappus 7 mm longus, crassiusculus, mollis.

Perennial, low, tufted, up to 4 cm high, 5 cm wide; caudex vertical, woody, up to 2 cm long, 3 mm wide, prolonged into a strong taproot, leafy at crown; caudical leaves ascending, up to 3.5 cm long, 9 mm wide, oblanceolate, obtuse or acute, sinuately to runcinately dentate or pinnatifid, attenuate into a winged petiole equal to or shorter than blade, bright green above, purple at the retrorsely revolute margin, pale beneath, canescent-tomentose or glabrescent; stem 1 to 1.5 cm high, erect, densely canescent-tomentose, paniculately branched, branches very short, 1- to 2-headed; peduncles up to 1 cm long, densely canescent-tomentose; heads 4 to 7, erect, medium, about 15-flowered; involucre cylindric-campanulate, 10 to 11 mm high, 4 to 5 mm wide before anthesis, very dark green; outer involucre bracts 6 to 8, unequal, longest  $\frac{1}{3}$  to  $\frac{1}{2}$  or even  $\frac{2}{3}$  as long as inner bracts, lanceolate, acute, white ciliate at tip, glabrous on both sides; inner bracts about 10, lanceolate, acute or obtuse, white- or yellow-ciliate at tip, densely pubescent on inner face with appressed shining hairs, glabrous dorsally, with a median nerve, brownish near base in anthesis; receptacle areolate, naked; ovary brown, 1 mm long, constricted at summit, with slightly expanded pappus-disk, unequally ribbed; corolla 15 to 17 mm long, ligule about 2.5 mm wide; teeth 0.5 to 0.75 mm long, conspicuously gland-crested, hooded; corolla-tube 3.5 mm long, stout, pubescent with strong brown acicular hairs up to 0.18 mm long; anther-tube  $5 \times 1.25$  mm dis.; filaments long, extending beyond appendages 1.75 mm; appendages 0.6 mm long, oblong, obliquely acute, united; style-branches 2.5 mm long, 0.15 mm wide, slightly attenuate to the

rounded tip, yellow; achenes lacking; pappus white, 7 mm long, 2-seriate, united at base, coming away in clumps, rather coarse, soft, barbellulate. Flowers yellow, anthers yellow and greenish at summit *in sic.*, style yellow.

Known only from the type locality. Collected August 10, 1922, with flowers but no fruits.

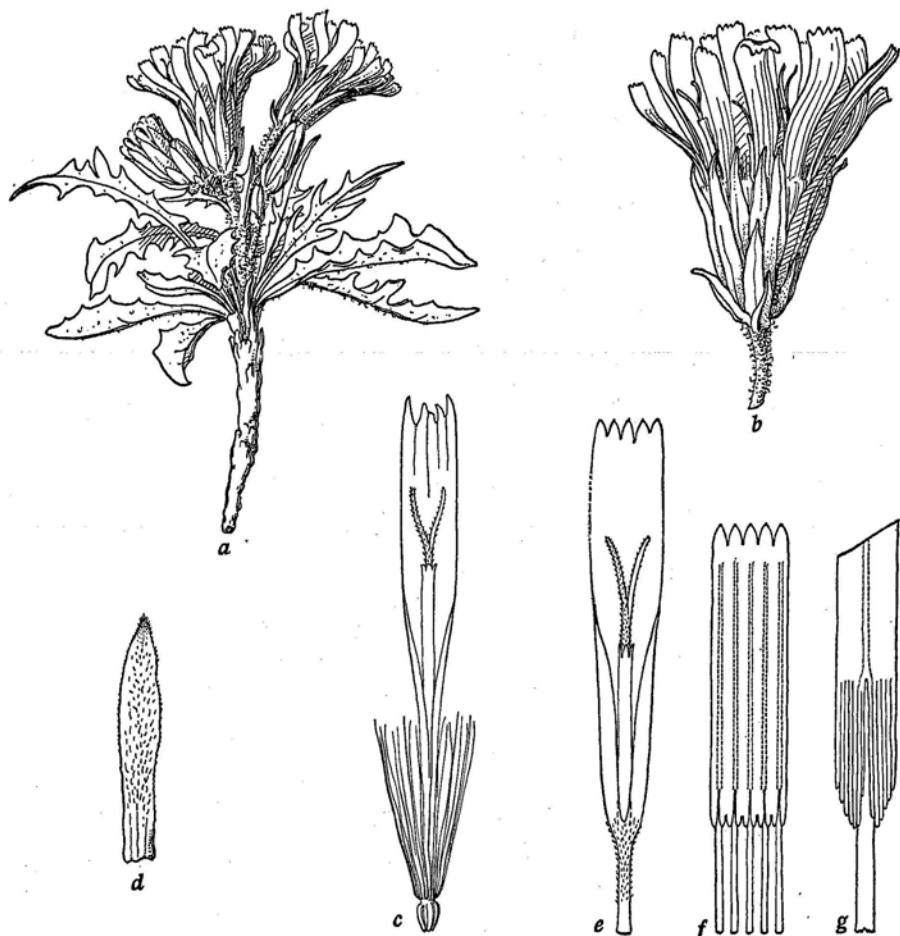


FIG. 3—*Youngia parva*, from type (Upsala): a, plant,  $\times 1$ ; b, flowering head,  $\times 2$ ; c, floret,  $\times 4$ ; d, inner involucre bract, inner face,  $\times 4$ ; e, floret lacking ovary,  $\times 4$ ; f, anther-tube,  $\times 8$ ; g, detail of appendages,  $\times 32$ .

CHINA: northern Szechwan, Sanchá-trü, precipice, 4300 to 4500 m alt., Harry Smith 3218 (Upsala).

#### RELATIONSHIP

Although achenes are lacking in the type collection, there can be no doubt that this distinct species is related to the other tufted perennial species of *Youngia*. It is probably near *Y. gracilipes* or *Y. simulatrix*, but it differs in the heavy tomentum on stem and peduncles, the very

unequal outer involueral bracts, the dense pubescence on inner face of inner involueral bracts, the type of pubescence on the short stout corollatube, the peculiar anther-appendages, and in other details. In some of these features *Y. parva* also shows affinity with *Y. conjunctiva*.

### 3. *Youngia conjunctiva* sp. nov. (Fig. 4)

Herba perennis, 10–15 cm alta; caudex rectus, ligneus, foliosus; folia caudicalia brevia, angusta, oblanceolata, tomentulosa; folia caulina acuminata vel linearia; caulis fistulosus, multiramosus, paniculatus, in formam corymbi, rami cum 1 vel 2 capitulis; pedunculi dense tomentosi; capitula media, 13–18-flora; involucre viridissimum, glabratum; squamæ externæ longæ; receptaculum glabratum; corolla circa 16 mm longa, flava; antheræ 5 mm longæ, virides; achænia parva, fusca, forte attenuata, paululum compressa, cum costis inæqualibus; pappus albus, inæqualis, persistens.

Perennial, 8 to 12 cm high; caudex vertical, woody, brown with bases of old leaves, up to 15 mm long, 6 mm wide, prolonged into a very slender taproot, leafy at crown; caudical leaves ascending, up to 6 cm long, 1.2 cm wide, oblanceolate, obtuse or acute, sinuately dentate or runcinate-pinnatifid, attenuate into a short, broadly winged petiole, margin narrowly retrorsely revolute, sparsely canescent-tomentulose on both sides with long many-celled piliform trichomes; cauline leaves similar but acuminate, lateral segments narrow, salient, acuminate, uppermost linear or bractlike; stem stramineous, erect, terete, striate, fistulose, canescent-tomentulose, paniculately branched from base to summit, lower branches elongate,  $\frac{1}{2}$  as long as stem or sometimes lacking, upper branches shorter, the uppermost 4 or 5 in a corymbiform cluster, pedunculate or rarely 2-headed; peduncles densely canescent- or fuscous-tomentulose near head with many-celled trichomes as on leaves; heads erect, medium, 13- to 18-flowered; involucre cylindric-campanulate, 10 to 11 mm long, 4 mm wide at middle in anthesis, very dark green; outer involueral bracts 6 to 8, unequal, longest  $\frac{1}{3}$  to  $\frac{1}{2}$  as long as inner bracts, lanceolate, acute, white-ciliate at tip, glabrous on both sides; inner bracts 10 to 12, lanceolate, acute, white- or yellow-ciliate at tip, densely pubescent on inner face with appressed yellow shining hairs, dorsally glabrous with darker median nerve, becoming brown at base and slightly carinate in young fruiting heads; receptacle areolate, naked; corolla about 16 mm long; ligule 1.5 mm wide; teeth 0.4 to 0.6 mm long, conspicuously gland-crested, hooded with small apical anterior protuberance; corolla-tube about 5 mm long, glabrous except a few stout nearly cylindric hyaline hairs up to 0.15 mm long; anther-tube  $5 \times 1.3$  mm dis.; filaments extend beyond appendages 1 mm; appendages about 0.75 mm long, oblong, acute, united; style-branches 2.25 mm long, 0.15 mm wide, semicylindric, obtuse, yellow; achenes (immature) dark brown, about 2 mm long, 0.75 mm wide, compressed, fusiform, strongly attenuate to the narrow (0.3 mm wide) summit, with expanded pappus-disk, constricted at the calloused hollow base, 12-ribbed, ribs unequal, 3 to 5 stronger, finely spiculate; pappus white, brownish at base, about 7 mm long, 2-seriate, united at base, coming away in clumps, unequal in length and coarseness, some