hybridization between subspp. *vulgaris* and *commutata* (cf. Babcock, 1947*b*, p. 695).

Crepis foetida L. subsp. *foetida* (=subsp. *vulgaris* [Bisch.] Babc.). Two specimens—Iran: Bakhtiari, Chesmashirin, *Koelz 15286* (USNA); and Fars, Kazerun, *Koelz 14804* (USNA)—provide additional evidence that this subspecies occurs in Iran. These two stations, in western and southwestern Iran respectively, confirm my earlier report (Babcock, 1951, p. 384) on the eastward extension of the geographic area of this subspecies as compared with that originally reported (cf. Babcock, 1947*b*, p. 676, fig. 212).

Crepis frigida (Boiss.) Babc. One collection, Iran: Mazanderan, Kuhikakashan, 3,050 m., dry slope, July 18, 1940, *Koelz 16369* (USNA, UC). This collection comprises ten small plants. Because the type collection of *C. papposissima* was made on July 19, 1940, it may be assumed that Kuhikakashan is not far removed from Shah Kuh, which is about 300 kilometers southeast of the city of Asterabad. Thus another collection of the rare species *C. frigida* comes from northeastern Iran, in the eastern extension of the Elburs Mountains, and my earlier report (1951, p. 385) that the known geographic range of this species now extends about 1,800 kilometers to the east of the easternmost known stations in Turkey has been verified. Whether or not the species occurs in the intervening gap or still farther to the northeast is not known. But it must be recognized that *C. frigida* has now become another "tracer" species, indicating the migration route from north-central Asia that presumably was followed by the ancestors of the present species of *Crepis*. For the distributional areas of the five species in section 16, Lagoseris, and their relation to the two new stations for *C. frigida* (at the southeast corner of the Caspian Sea in the eastern end of the Elburs Mountains), see map in Babcock (1947*b*, p. 617, fig. 184).

Crepis Koelzii sp. nov. Herba perennis 2–3 dm. alta; caudex tenuis ligneus 2- vel 3-furcatus; folia caudicalia ephemera ca. 10 cm. longa 1 cm. lata obovata gradatim attenuata in petiolo longo; folia caulina infera similia, media sessilia pinnatifida, supera bracteiformia; caules erecti remote 2- vel 3-cephalis strictis; capitula erecta multiflora; involucra campanulata 13–14 mm. longa 6–8 mm. lata atroviridia dense pubescentia, squamis exterioribus 6–8 inaequalibus lanceolatis, interioribus 12 vel 13 lanceolatis acuminatis in ventrali pubescentibus in maturitate spongioso-incrassatis; receptaculum sparsim albociliatum; corolla 16 mm. longa, ligula 2 mm. lata, tubo 5 mm. longo pubescente; antherae 5 mm. longae; filamenta longa; rami styli 3 mm. longi flavi; achaenia rubida 6–7 mm. longa fusiformia ad apicem gradatim attenuata 10- ad 12-costata, costis glabris inaequalibus; pappus albus 7 mm. longus 3-seriatus persistens.

Perennial, 2–3 dm. high; caudex slender, woody, 2- or 3-furcate; caudical leaves ephemeral, *ca.* 10 cm. long, 1 cm. wide, oblanceolate or spatulate, the blade *ca.* ⅓ of the whole length, gradually attenuate into the narrowly winged petiole, broader at base, becoming scarious; lower cauline leaves similar, mostly acute and irregularly pinnately lobed, pale green, with narrow white midrib, lightly tomentulous and sparsely pubescent with pale setiform hairs, middle cauline leaves shortly petiolate or sessile, lanceolate, acuminate, pinnately lobed with close or remote narrow acute lateral segments; upper cauline leaves linear, acute or bractlike;

stems several, erect, terete, fistulose, striate, pale green, sparsely pubescent with fine dark glandless hairs, remotely 2- or 3-branched beginning near base, the branches pedunculate or 2-headed, strict, nearly as strong as the stem; peduncles slightly inflated near base of head, 1- or 2-bracteate; heads erect, medium, many-flowered; involucre campanulate, 13–14 mm. long, 6–8 mm. wide at middle in fruit, dark green, canescent-tomentulous, densely pubescent with fine dark setiform glandless hairs; outer bracts 6–8, unequal, the longest ½ as long as the inner ones, narrow, lanceolate, acute; inner bracts 12 or 13, lanceolate, acuminate, with darker median line, becoming spongy-thickened and paler near base in fruit, appressed-pubescent on inner face; receptacle fimbrillate, sparsely ciliate, cilia very fine, white; corolla 16 mm. long; ligule 2 mm. wide; teeth 0.3–0.7 mm. long; corolla tube 5 mm. long, pubescent with very short papilliform hairs and longer several-celled trichomes intermixed; anther tube 5 mm. long, 1.5 mm. wide when slit and opened out; appendages 0.7 mm. long, oblong, truncate, fringed; filaments short, extending beyond appendages less than 0.5 mm.; style branches 3 mm. long, 0.2 mm. wide, acute, yellow; achenes reddish brown, 6–7 mm. long, narrowly fusiform, gradually attenuate to the slightly expanded pappus disk, somewhat constricted above the yellow-calloused swollen base, 10- to 12-ribbed, ribs rounded, smooth, extending to the apex, sometimes unequal with 2 or 3 stronger ones; pappus white, 7 mm. long, 3-seriate, the setae nearly equally fine, stiff but pliable, persistent. Flowering July; flowers yellow. Pollen grains abundant, regular, 3-pored, 30–33μ in diameter. (Fig. 2.)

Type.—Afghanistan: Minjan Pass, elevation 3,965 m., July 27, 1937, *Walter Koelz 12765* (US: type, UC). Known only from the type collection. The material apparently consists of parts of a single plant which had a large, divided caudex. Through the kindness of Dr. S. F. Blake, I am informed by Mr. Mojadidi of the Afghanistan Embassy that Minjan (properly Menjan) Pass is in the Province of Badakhshan, in northeastern Afghanistan, on or near the 36th parallel, about due west of Chitral, near the source of the Kokcha River.

This distinctive species certainly belongs in subsection Strictae of section 10, Berinia (cf. Babcock, 1947*b*, p. 483). Its closest relative is *C. turcomanica* of southwestern Turkestan, from which species it differs in many characters, but especially in the pinnatifid leaves, smaller flower heads with shorter florets, much broader outer involucral bracts, the indumentum, and particularly in the reddish brown achenes with only ten to twelve ribs and the persistent pappus.

This species is probably an endemic relict, like many other members of this section. Its discovery extends the distribution of subsection Strictae one step nearer to the assumed region of origin for the genus in north-central Asia (cf. Babcock, 1947*b*, p. 419, fig. 99, and 1947*a*, p. 152, fig. 11).

Crepis multicaulis Ledeb. subsp. *multicaulis* (=subsp. *genuina* [Rgl.] Babc.). One collection, Iran: Mazanderan, Kuhikakashan, 3,050 m., dry slope, July 18, 1940, *Koelz 16410* (USNA, UC), verifies my earlier report (1951, p. 385) that this species occurs about 1,800 kilometers to the west of its previously known distributional area. The five plants in this collection are typical of subsp. *multicaulis*. On the day after their collection the collector was at Shah Kuh, southeast of the city of Asterabad. Since Rechinger's plants, cited in my earlier report (1951), were

collected to the east of Asterabad, the collection cited here extends the distribution of this species still farther westward (cf. Babcock, 1947*b*, p. 720, fig. 228).

Crepis oreades Schrenk is represented by one collection, Afghanistan: Nuristan (?) *Edelburg 1488* (C). Although the locality is given as dubious on the

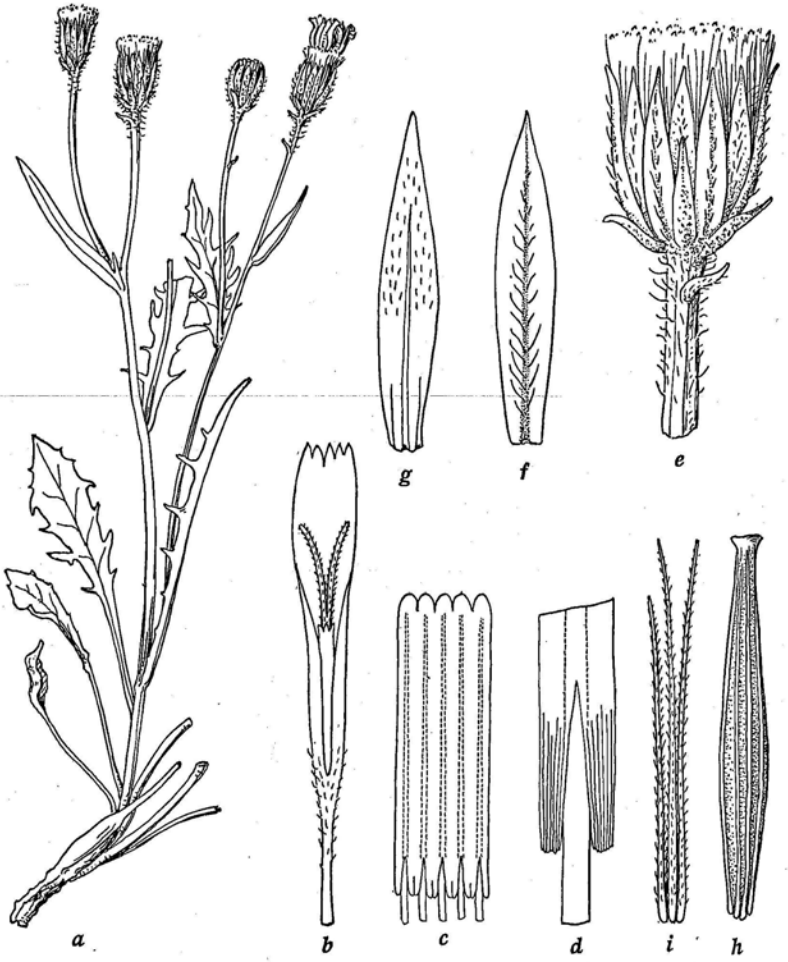

Fig. 2. *Crepis Koelzii*, from type specimen. *a*, part of a plant, × ½; *b*, floret lacking ovary, × 4; *c*, anther tube opened out, × 8; *d*, detail of appendages, × 32; *e*, mature head, × 2; *f* and *g*, inner involucral bract, outer and inner faces, × 4; *h* and *i*, achene and group of pappus setae, × 8. (Drawings by the author; inking by Miss Anna Hamilton.)

label, the map on the label indicates that this specimen was collected in the extreme northeastern part of the country. Thereby the known geographic range of the species is extended somewhat to the west. It is worth noting that, in this plant, the involucres are slightly larger than in specimens previously seen by me (cf. Babcock, 1947*b*, p. 500), being 11–13 mm. high. Otherwise, the resemblance to previously seen specimens is close. There are flowers but no fruits in this material.