

# SUPPLEMENTARY NOTES ON CREPIS VI: SOME SPECIES OF IRAN AND AFGHANISTAN

BY  
ERNEST B. BABCOCK

SINCE PUBLICATION of the fourth in this series of supplementary notes (Babcock, 1951) a paper on some species of tropical and South Africa has been completed (Babcock, 1952). Through the courtesy of K. F. Rechinger I have been permitted to examine a number of specimens from Iran and Afghanistan, some of which are new species whereas others are of interest because they provide additional data on variation and geographic distribution. In this paper the following herbaria are cited: Botanical Museum of the University of Copenhagen (C); Herbarium of the National Arboretum, Beltsville, Maryland (USNA); Herbarium of the University of California, Berkeley (UC).

*Crepis Aitchisoni* Boiss. One collection of this little-known species from Afghanistan (Nuristan), and, so far as I know, only the second collection to be reported, *Edelberg 944* (C, UC), consists of three similar plants, two of which are in the Botanical Museum, University of Copenhagen, and the other in the Herbarium, University of California. These plants agree closely with my description of the type specimen (Babcock, 1947b, p. 916). It is unfortunate that in these plants, as in the type collection, there are no achenes. Until material of this species having mature fruiting heads with achenes present becomes available, its classification in *Crepis* must remain in doubt.

*Crepis crocea* (Lamk.) Babc. One collection, Afghanistan: Nozi, elevation 3,050 m., limestone rock, June 22, 1937, *Koelz 12000* (USNA, UC), is the first proof of the occurrence of this species as far west as Afghanistan, where its area of distribution approaches or possibly coincides with a southwestern extension of the range of *C. oreades* (cf. Babcock, 1947b, p. 492, fig. 131). The location of "Nozi" is unknown to me, but it is known that, one month after this collection was made, Koelz was at Sanglech, or Sanglich, in the extreme northeastern part of Afghanistan.

*Crepis flexuosa* (DC.) Benth. et Hooker f. One collection, Afghanistan: Sanglech, 3,508 m., stream bed, July 24, 1937, *Koelz 12621* (USNA, UC), is the first to be reported from Afghanistan for this species and extends its known geographic area somewhat to the west. Sanglech, or Sanglich, is south of Zebak, or Sebak, in the extreme northeastern part of Afghanistan near the border of Kashmir.

*Crepis foetida* L. subsp. *afghanistanica* subsp. nov. A subsp. *commutata* differt receptaculis non paleaceis; a subsp. *vulgaris* et *rhoeadifolia* differt caulibus numerosis, foliis caulinis non laciniatis, indumento intermedio, antheris brevibus, achaeniis marginalibus longioribus rostro tenui.

Annual, with strong woody taproot, 1.8–6 dm. high, hispidulous with yellow setiform glandless or glandular hairs and pubescent with short yellow gland-hairs; caudical leaves 4–9 cm. long, 0.5–1.5 cm. wide, oblanceolate, acute, denticulate or sinuately coarsely dentate, shortly petiolate; cauline leaves up to 12 cm. long, 2 cm. wide, lanceolate, acute or acuminate, sessile, subamplexicaul, dentate to entire, acutely auriculate; stems 3 or 4, erect, remotely cymose-dichotomously

branched from below the middle, the branches elongated, simple or 1-furcate; peduncles 8–25 cm. long, striate or sulcate and somewhat inflated near the fruiting head, 1- or 2-bracteate; heads erect before anthesis, many-flowered; involucre

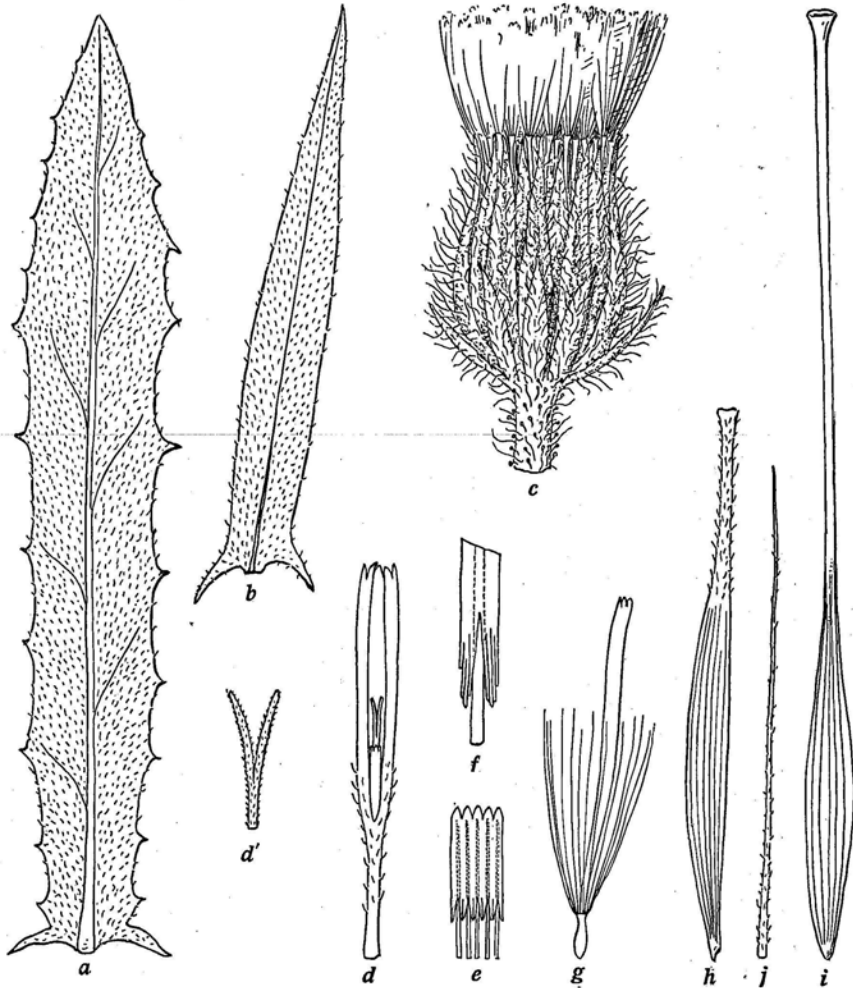


Fig. 1. *Crepis foetida* subsp. *afghanistanica*, from type specimen. *a* and *b*, two cauline leaves,  $\times 1$ ; *c*, fruiting head,  $\times 2$ ; *d*, floret lacking ovary,  $\times 4$ ; *d'*, detail of style branches,  $\times 8$ ; *e*, anther tube opened out,  $\times 8$ ; *f*, detail of appendages,  $\times 32$ ; *g*, ovary with pappus and corolla,  $\times 4$ ; *h-j*, marginal and inner achenes and a pappus seta,  $\times 8$ . (Drawings by the author; inking by Miss Anna Hamilton.)

campanulate in anthesis, turbinate in fruit, densely pubescent with long and short pale yellow hairs; outer involucre bracts 10, lanceolate,  $\frac{1}{2}$  as long as inner ones, becoming scarious and lax; inner bracts *ca.* 16, lanceolate, acuminate, carinate in fruit, enclosing the marginal achenes and then the glabrous apex dark green, the carina yellow, spongy-thickened, pubescent on inner face with white shining hairs; receptacle alveolate, the fimbrillae white-ciliate; corolla 12–14 mm. long; corolla tube 4–5 mm. long, pubescent with minute papilliform and short (up to 0.4 mm.)

acicular hairs, rarely with a few several-celled trichomes, ligule 1.2 mm. wide; teeth 0.1–0.3 mm. long; anther tube 2–2.5 mm. long, 0.8 mm. wide when slit and opened out; appendages 0.4 mm. long, acute; filaments extending 0.6 mm. beyond the appendages; style branches 1.3–1.5 mm. long, 0.1 mm. wide, yellow; achenes biform, resembling those of subsp. *vulgaris* but the marginal 8–11 mm. long and more finely beaked, the inner 12–16 mm. long; pappus white, 7–8 mm. long. Flowers yellow, the ligules purple on outer face. (Fig. 1.)

*Type*.—Afghanistan: Kandahar, near city of Kandahar, Pirzada, *Köie 2136* (C: type); Nuristan (?), *Edelberg 1609* (C). Kandahar Province is in south-central Afghanistan near the western edge of the mountainous area. The altitude

TABLE 1

COMPARISON OF *CREPIS FOETIDA* SUBSP. *AFGHANISTANICA* WITH SUBSP. *VULGARIS* AND *RHOEADIFOLIA* IN RESPECT TO CERTAIN CHARACTERS

Character	<i>C. f. vulgaris</i>	<i>C. f. afghanistanica</i>	<i>C. f. rhoeadifolia</i>
Stems	Usually 1	3 or 4	Usually 1
Caudical leaves	Lacinate	Not lacinate	Lacinate
Outer involucrel bracts	Shorter, narrower	Intermediate	Longer, wider
Indumentum	Pilose, glandular	Intermediate	Setose, not glandular
Anther tube	3 mm. long	2–2.5 mm. long	4 mm. long
Marginal achenes	7–9 mm. long, coarsely beaked	8–11 mm. long, finely beaked	5–7 mm. long, coarsely beaked

of the city of Kandahar is about 1,000 meters. The locality of the other specimen cited is dubious, but on the small map on the label of this specimen it is indicated as in the mountainous northeastern region. If this is correct, then this subspecies would appear to be widely distributed in Afghanistan.

It must be recognized that the distributional area of this subspecies, as known at present, is disjunct from that of the remainder of the species, being about 1,200 kilometers to the east of the easternmost stations known for subsp. *rhoeadifolia*. It is possible, however, that this new subspecies occurs in similar habitats to the northwest as well as to the northeast.

The characteristics which distinguish this subspecies from both subsp. *vulgaris* and *rhoeadifolia* (it shows less resemblance to subsp. *commutata*) are shown in table 1. The fact that it combines certain features of subsp. *vulgaris* and subsp. *rhoeadifolia*, together with its more nearly entire leaves and its strong, woody root, suggests the possibility that this is a more generalized type and that, therefore, it may be looked upon as ancestral to the others. This conception favors the hypothesis that subsp. *rhoeadifolia* developed as a distinct entity in the Caucasus region and later became merged with subsp. *vulgaris* and *commutata* through hybridization, rather than the hypothesis that subsp. *rhoeadifolia* originated through

hybridization between subspp. *vulgaris* and *commutata* (cf. Babcock, 1947b, 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, 1947b, 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 (1947b, 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; involucria campanulata 13–14 mm. longa 6–8 mm. lata atro-viridia 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 fusi-formia 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.  $\frac{1}{3}$  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;