

pubescent and black-setulose; heads erect, rather large, many-flowered; involucre campanulate, about 15 mm long, 6–8 mm wide at base in fruit, canescent-tomentose, densely gland-pubescent with short pale hairs and longer black setules; outer bracts 8, with 2 or 3 subtending ones, unequal, longest $\frac{1}{2}$ – $\frac{2}{3}$ as long as inner bracts, lanceolate, obtuse, ciliate at tip, appressed-pubescent on inner face; inner bracts 12–16, innermost broadly membranous-margined, mediodorsally nerved, the nerve becoming indurate but little changed at maturity, ultimately reflexed, and then obviously pubescent on inner face with appressed white hairs; receptacle convex, 5–6 mm wide, areolate, glabrous; corolla 13 mm long; ligule 1.75 mm wide; teeth 0.2–0.3 mm long; corolla tube 3.5 mm long, stout, sparsely beset with clumps of 2-celled trichomes 0.1 mm long, the basal cell broad, greenish, the apical cell acicular, hyaline, also, at summit of tube *within*, pubescent with slender tortuous several-celled hairs up to 1.5 mm long; anther tube about 3.5×1 mm dis.; appendages unequal, 0.6–1 mm long, mostly 0.8 mm, lanceolate, acuminate; filaments unequal, 0.4–1 mm longer; style branches 1.1 mm long, 0.1 mm wide, rounded at apex, yellow; achenes chestnut brown, 9.5–10.5 mm long, 0.75 mm wide, subterete, gradually attenuate upward or coarsely beaked, summit 0.25–0.3 mm wide, with pale pappus disk about 0.5 mm wide, constricted above the oblique hollow pale-calloused base, 10-ribbed, ribs nearly equal, rounded, densely and finely spiculate from base to apex; pappus yellowish-white, about 6 mm long, 2-seriate, unequal in coarseness and length, rather fine, soft, persistent. Flowering Sept.; flowers deep yellow. Chromosomes, $2n = 8$.

Known only from the type locality, where it was reported by the collector as not common; hence, apparently, an extremely local endemic.

Monomorphic.

Tanganyika Terr.: Arusha Prov., Mt. Meru, sandy lava scree, 3787 m, *B. D. Burtt 4060*, Sept. 9, 1932 (K) type; cultivated from seed from type, hort. genet. Calif. 34.3281 (UC).

Relationship

Crepis suffruticosa is certainly related to *C. kilimandscharica* and its close allies, but is very distinct from them in the low stature, and from all except *C. kilimandscharica* and *C. caudicalis* in the suffruticose habit; also, in the glandular pubescence, smaller florets, and anther tubes which have narrow, unequal appendages, in the appressed hairs on inner face of the involucre bracts, in the naked receptacle, and in the shape of the achenes. The long hairs at the summit of the corolla tube, although more obscure than in *C. kilimandscharica*, also indicate relationship with that species; and the 2 species have closely similar karyotypes. At the same time, the habit, stature, and scapellike stems, with few large heads, in this relic species, are all reminiscent of *C. alpestris* and suggest a common origin for these African and Eurasian species. Although the karyotype of *C. suffruticosa* does not correspond as closely with that of *C. alpestris* as does that of *C. hypochaeridea*, yet there is a general similarity which is consistent with the hypothesis of a common origin.

34. *Crepis iringensis* sp. nov.

(Fig. 61.)

Herba perennis 3–6 dm alta; caudex rectus 2 cm latus ligneus superne foliatus; folia caudicalia numerosa suberecta ad 26 cm longa 3.5 cm lata lanceolata vel oblanceolata acuta vel acuminata retrorse denticulata petiolata superne glabra subter eglanduloso-setulosa; folia caulina plerumque parva ad basim dilatato-laciniata; caulis erectus robustus setulosus; inflorescentia aggregata cymoso-corymbiformia, ramis paucis oligocephalis; capitula magniuscula multiflora; involucre campan-

ulata 11–13 mm longa tomentulosa eglanduloso-setulosa; squamae exteriores circa 10 inaequales lineares, interiores 14–18 lanceolatae acutae ad maturitatem valde carinatae et ad basim spongioso-incrassatae; receptaculum alveolatum ciliatum; corolla circa 18 mm longa, ligula 13 mm longa 2.25 mm lata flava, tubo pubescenti, pilis acicularibus; antherae 5 mm longae; rami styli 2.25 mm longi flavi; achenia fusca 6–7 mm longa 0.75 mm lata gradatim attenuata circa 12-costata; pappus pallido-flavidus 6–8 mm longus 2-seriatus persistens.

Perennial, 3–6 dm high; root vertical, woody, elongated; caudex at least 5 cm long, 2 cm wide, woody, covered with black bases of old leaves, simple, leafy at crown, 1–2-stemmed; caudical leaves numerous, ascending, up to 26 cm long, 3.5 cm wide, lanceolate or oblanceolate, acute or acuminate, retrorsely dentate, gradually attenuate into a winged petiole, with broader clasping base, glabrous on upper face, setulose on lower face, especially on midvein, with yellow glandless setules; lowest cauline leaf similar to caudical ones, the others all reduced, linear, with broader rounded laciniate base, or bractlike; stem rather stout, up to 5 mm wide near base, erect or sinuate, terete, sulcate or striate, sparsely setulose with yellow setules near base and black ones above, \pm fistulose, at least above, 1-branched from near base, this branch elongated, strict, few-headed, or branched only above, aggregate inflorescence cymose-corymbiform; peduncles 0.5–4 cm long, rather stout, arcuate, bracteate, tomentulose, setulose; heads erect, rather large, many-flowered; involucre campanulate, 11–13 mm long, 7–10 mm wide at base, tomentulose, setulose, with black or brown glandless setules; outer bracts about 10, often with 3–4 subtending ones, unequal, longest $\frac{1}{2}$ as long as inner bracts, 0.4–0.7 mm wide at base, linear, glabrescent, brown, scarios, becoming lax; inner bracts 14–18, lanceolate, acute, white-ciliate at apex, membranous-margined, ventrally glabrous, mediodorsally nerved, becoming carinate and somewhat but not conspicuously spongy-thickened at base in mature fruiting heads; receptacle alveolate, fimbriellae low, membranous, finely ciliate; corolla about 18 mm long; ligule 2.25 mm wide; teeth 0.4–0.7 mm long; corolla tube 5 mm long, pubescent from base to lower part of ligule with minute (0.05–0.2 mm long) acicular hairs; anther tube about 5×1.25 mm dis.; appendages 0.8 mm long, oblong, obtuse, truncate or notched; filaments 1 mm longer; style branches 2.25 mm long, 0.15 mm wide, attenuate, yellow; achenes brown, 6–7 mm long, 0.75 mm wide, laterally compressed, gradually attenuate to summit, which is about $\frac{1}{2}$ as wide as body and notably pale just below the slightly expanded pappus disk, constricted above the pale-calloused hollow base, about 12-ribbed, ribs nearly equal, rounded, finely muriculate or obscurely spiculate toward apex; pappus pale yellowish-white, 6–8 mm long, 2-seriate, unequal in length, rather fine, soft, persistent. Flowering Aug.–Mar.; flowers bright yellow.

E. Africa, Tanganyika Terr., Iringa Prov., Rungwe reg., W. Mporotos Mts., 1875–2300 m alt., in grassland associations, on black volcanic soil, especially on roadside banks; frequent to common.

Monomorphic.

Mt. Rungwe Dist.: in *Smithia-Polygala-Hyparrhenia* grassland, 2121 m, *Greenway 3543* (UC 513247) type; *ibid.*, *Greenway 3543a* (UC). Mt. Mbeya Dist.: above Mporoto sawmill, N. slope, E. W. de H. 926 (K).

Relationship

Although *Crepis iringensis* is obviously related to *C. kilimandscharica* and its close allies, this species is distinct from all the other members of this group in the carinate and spongy-thickened inner involucreal bracts and the shorter, less attenuate achenes, also in the finely ciliate fimbriellae of the receptacle and the densely

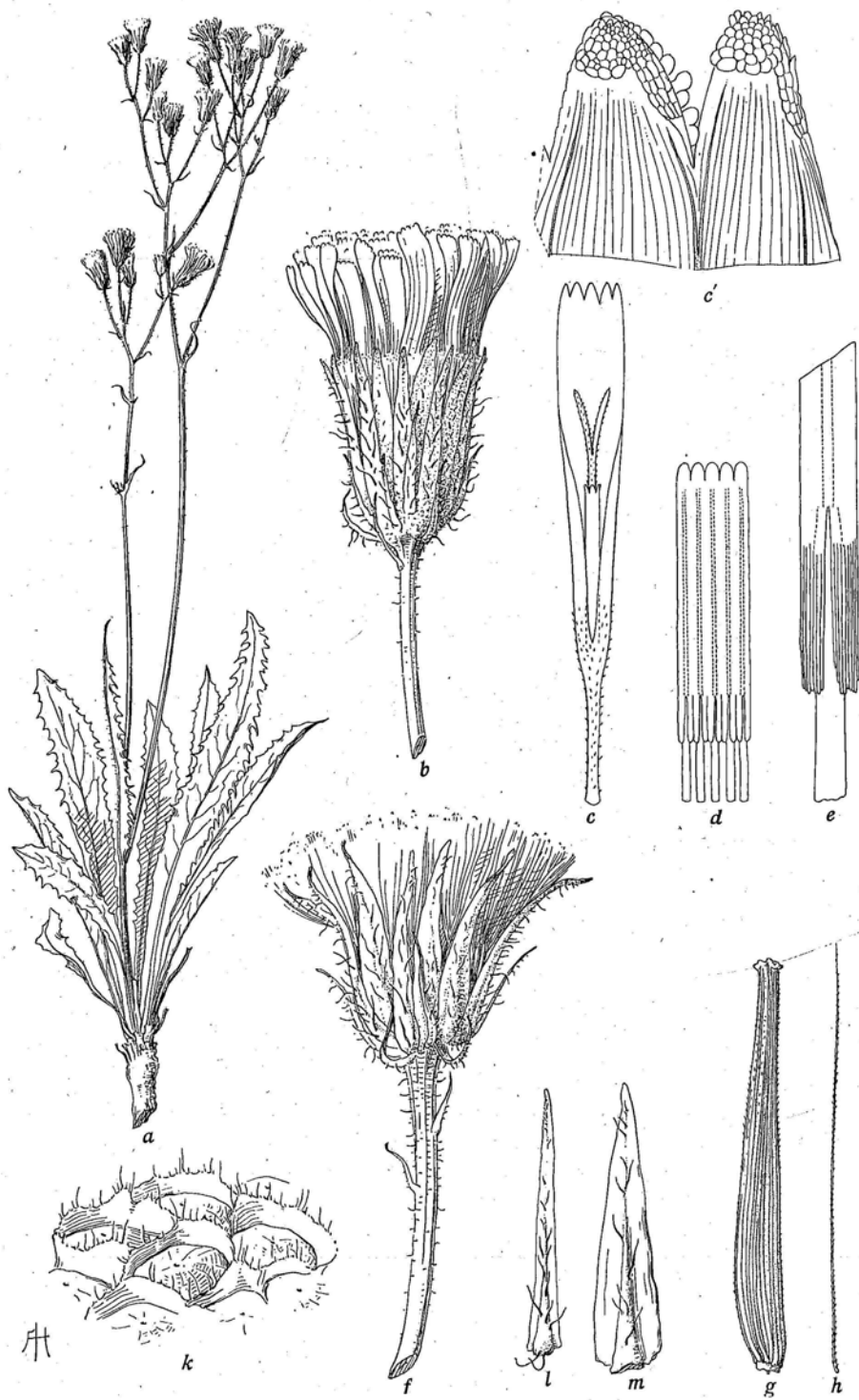


Fig. 61. *Crepis iringensis*, a-h, from type (UC 513247); k-m, from isotype (UC 513245): a, plant, $\times \frac{1}{4}$; b, flowering head, $\times 2$; c, floret lacking ovary, $\times 4$; c', detail of ligule teeth, $\times 50$; d, anther tube, $\times 8$; e, detail of appendages, $\times 32$; f, fruiting head, $\times 2$; g, h, achene and pappus seta, $\times 8$; k, detail of receptacle, $\times 25$; l, m, 2 inner involucre bracts, outer face, $\times 4$.

pubescent corolla tube. The spongy-thickened involucre is generally a characteristic of more advanced species. But, even in the more primitive African species of *Crepis*, this character appears in a few instances. This group of closely related species shows nearest affinity with *C. hypochaeridea* and *C. Newii* and their relatives. They are less close to *C. scaposa*, *C. carbonaria*, and the other low-growing or otherwise reduced African species.

35. *Crepis meruensis* comb. nov.

(Fig. 62.)

Herba perennis 2-6 dm alta; radix recta tenua lignea; caudex 1-4 cm longus inflatus superne foliatus; folia caudicalia numerosissima erecta ad 25 cm longa 2 cm lata anguste oblanceolata obtusa acuta vel acuminata apiculata dentata vel denticulata glabra in petiolum alatum gradatim attenuata; folia caulina pauca remota similia vel linearia; caules 1-3 erecti fistulosi glabri superne ramosi, ramis paucis remotis elongatis 1-3-cephalis; inflorescentia aggregata cymoso-corymbiformia; capitula magna multiflora; involucrea cylindrico-campanulata ad 15 mm longa ad basim 5 mm lata in fructu; squamae exteriores 8-10 inaequales lanceolato-lineares, interiores 12-15 lanceolatae obtusae ventraliter glabrae in fructu non incrassatae; receptaculum areolatum; corolla ad 18 mm longa, ligula circa 13 mm longa 2 mm lata flava satura, tubo glabro; antherae circa 4.75 mm longae; rami styli 1.75 mm longi valde exserti flavi; achaenia fusca 7-9 mm longa 0.75 mm lata leviter compressa valde attenuata 10-costata; pappus pallido-flavidus 7 mm longus 2-seriatus persistens.

Perennial, 2-6 dm high; root vertical, slender, woody; caudex 1-4 cm long, \pm swollen, covered with brown bases of old leaves below, leafy above; caudical leaves very numerous, erect, up to 25 cm long, 2 cm wide, narrowly oblanceolate, obtuse, acute or acuminate, apiculate, sinuate-denticulate or dentate, teeth often retrorse, gradually attenuate into a broad or narrow winged petiole, with broader clasping base, glabrous on both sides, midvein dark, rather prominent; cauline leaves few, remote, similar to caudical leaves or linear, sessile, uppermost bractlike; stems 1-3, erect, slender or rather stout, terete, fistulose, striate, glabrous, branched usually above middle, branches few, remote, elongated, 1-3-headed, aggregate inflorescence cymose-corymbiform; peduncles erect, stout, bracteate, slightly thickened near head in fruit, fuscous-tomentose, pubescent with short black gland hairs; heads erect, large, many-flowered; involucre cylindric-campanulate, up to 15 mm long, 5 mm wide near base in fruit; outer bracts 8-10, unequal, longest $\frac{1}{3}$ - $\frac{1}{2}$ as long as inner bracts, lance-linear, like inner bracts tomentose and \pm pilose with long black glandless hairs; inner bracts 12-15, lanceolate, obtuse, ciliate at tip, glabrous on inner face, not much changed in fruit, ultimately reflexed; receptacle areolate-fimbriate, areoles 0.5-1 mm wide, elevated with central depression, fimbriae low, membranous; corolla in marginal florets about 18 mm long; ligule 2 mm wide; ligule teeth 0.2-0.4 mm long, obtuse; corolla tube 4.5 mm long, wholly glabrous; anther tube about 4.75×1 mm dis.; appendages 0.5 mm long, oblong, obtuse; filaments 1.25-2 mm longer; style branches 1.75 mm long, 0.15 mm wide, attenuate, well extruded in anthesis, yellow; achenes brown, 7-9 mm long, 0.75 mm wide, lightly compressed, oblong, strongly attenuate upward, with slightly expanded pappus disk, somewhat constricted near the pale-calloused base, 10-ribbed, ribs nearly equal, narrow but rather prominent, some extending to summit, rounded, finely muriculate under lens; pappus pale yellow, 7 mm long, rather coarse, 2-seriate, united at base, persistent. Flowering Oct.-Feb.; flowers deep yellow.

Crepis kiliindscharica O. Hoffm. var. *meruensis* R. E. Fr., Svensk Bot. Tidskr. 22: 356, 1928.