

20.3.+27.3.1970, *Kaae* (C); Salamis, 11.4.1905, *Holmboe* 455 (S); *ibid.*, 4.1928+ 4.1930, *Druce* (OXF); Famagusta, 22.3.1970, *Kaae* (C); *ibid.*, 9.7.1939, *H. Lindberg* (K. LD, S); sand dunes near Agios Memmon, 1.5.1948, *Mavromoustakis* (K).

## Use

Arnold-Apostolides (1991: 1535 sub *L. resedifolia*) reports from Cyprus that “les feuilles ... sont consommées en salade condite à l’huile et au vinaigre”. Guichard (1952 in sched. KG/Lib/31) states from Libya, Tripoli that “locals chew the root which is gathered after flowering. Said to taste like chewing gum.” The plant is called there “Artheeda”.

## (b) *Launaea fragilis* subsp. *asirensis*

*Launaea fragilis* subsp. *asirensis* N. Kilian, **subsp. nova** – Holotype: Yemen, about 4 km from Shelaan towards Shibam, c. 2500 m, on a bare gravelly hillside, 13.6.1975, *Wood Y/75/315* (BM!; isotype C!) – Fig. 103.

A proxima *Launaea fragilis* subsp. *fragilis* characteribus sequentibus distinguitur: achenia intima sine costis secundariis prominentibus, stramineo-brunnea usque ad rufescentia (versus pallide brunnea usque ad atrobrunnea) et distributio geographica in parte regionis montanis Arabiae peninsulae austro-occidentalis (versus in parte regionis mediterraneae australis).

**lc.:** Figs 14k-m, 102.

## Description (v.v.)

*Perennial herb*, flowering 4-60 cm high, with a woody, sometimes even tuft-like base, (probably) with shoot bearing roots, flowering stems usually a few to several, already basally branched, leafy in lower half, becoming leafless higher up. *Basal leaves* often (sub)rosulate, *basal and lower cauline leaves* up to 14 × 3 cm, in outline (± narrowly) spatulate, attenuate into a narrow base, sinuate-dentate to ± deeply pinnatifid with rather long, lanceolate, acute segments (to sub-bipinnatifid) and the terminal segment ± long-acuminate; lamina bluish-green, margin ± denticulate; higher up the stem cauline leaves with amplexicaule, subauriculate base, smaller and in outline lanceolate, with smaller segments, finally sinuate-dentate or even subentire, and passing over into lanceolate to narrowly ovate-acute bracts. *Synflorescence* of a flowering stem subdivaricately branched, with several repeatedly branched flowering axes overtopping the terminal capitulum of the main axis. *Peduncles* as the terminal segment of the flowering axes 1-7.5 cm long, with a few bracts passing over into the outer involucre bracts. *Capitula* with c. 30-60 flowers. *Receptacle* at fruiting time 3-4 mm in diameter. *Involucre* at anthesis (7)9-12 mm long, slender clubshaped, prolonged after anthesis and finally 12-16 mm long, slender cylindrical; at time of fruit dispersal involucre bracts spreading and their midrib swollen and hardened in lower part; outer involucre bracts 6-8, with apex contracted into an acute, white-cartilagineous prickle and ± without scarious margin, the outermost ovate-acute, 1.5-2.5 mm long, the

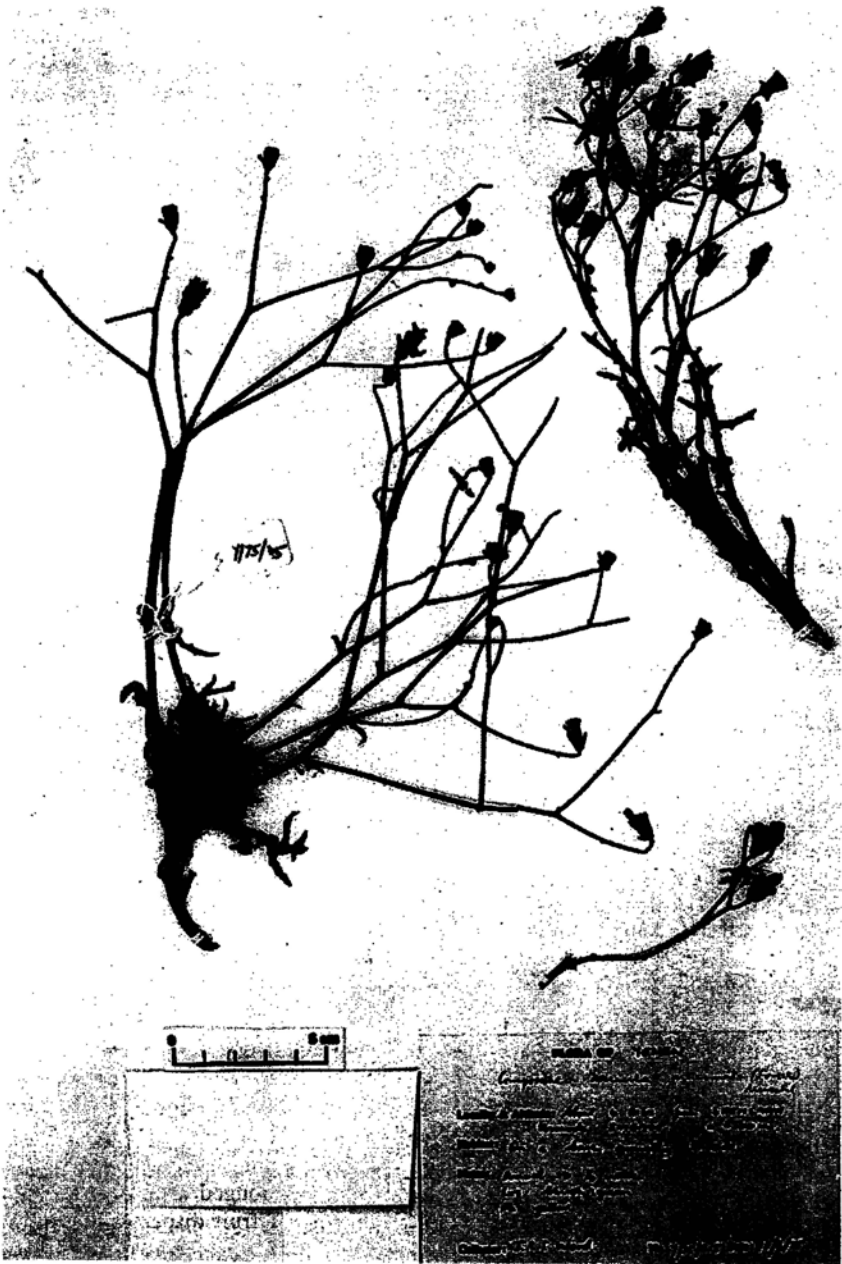


Fig. 102. *Launaea fragilis* subsp. *asirensis* (holotype specimen, BM).

following bracts gradually longer and more lanceolate, the innermost lanceolate to linear-lanceolate, at anthesis reaching up to 3/4 (or even more) of the length of the inner involucral bracts; inner involucral bracts 8-12, linear-lanceolate, with  $\pm$  distinct scarious margin and an obtuse scarious tip, at anthesis subequal in length, 9-10  $\times$  1-2 mm, with the postfloral prolongation of the involucre becoming somewhat different in length. *Flowers* with a yellow ligule of 9-12  $\times$  2.2-2.6 mm and a distinctly shorter tube; anther tube without appendages 2.8-3.8(4.2) mm long (somewhat longer in inner flowers than in marginal), apical appendages  $\pm$  0.3 mm and basal appendages 0.4-0.5 mm long; style branches 1.8-2.8 mm long, sweeping hairs yellow. *Achenes* 3.9-6.1  $\times$  0.5-0.9 mm, heteromorphic, inner with 4 main ribs, secondary ribs not differentiated, cylindrical to columnar,  $\pm$  glabrous to papillose-pubescent, base 4-horned because of the protruding and spreading main ribs, yellowish pale brown to reddish brown; the following achenes densier papillose with the hyaline papillae arranged  $\pm$  diffusely, somewhat compressed and curved; the outermost achenes with 5 main ribs each accompanied by 2 secondary ribs, otherwise like the former. *Pappus* 7-9(11) mm long, persistent, dimorphic, of numerous downy and a smaller number of setaceous, longer inner rays.

**Chromosome number:** Unknown.

### Distribution and ecology

*Launaea fragilis* subsp. *asirensis* is restricted to the mountains of the SW Arabian Peninsula (Asir Mountain Range and its continuation in Yemen, Fig. 100) and has been collected at elevations of 1450-2800 m. On the basis of the few data available the species seems rather indifferent to the substrate as it has been found on granite, schist, limesandstone as well as on volcanic material. Habitats mentioned by the collectors are wadi beds, rock crevices and rocky slopes.

Flowering and fruiting plants were collected in December, March to June and September.

Specimens seen:

S A U D I A R A B I A: 30 km N Taif, 1450 m, Granitblöcke, Felsenspaltenvegetation, 22.3.1982, *Baierle & al. 82-564* (BSB); Taifa [= Taif], 1838, *Botta* (P); wet marshy area in front of the old king's palace c. 8 km N of Taif, c. 1700 m, 29.12.1977, *J. Humbles 10038* (E); 2 km W Sha'ar, 18°27'N, 42°27'E, 2050 m, AbfluBrinne/Wadi, 13.4.1982, *Baierle & al. 82-1611* (BSB); 15 km N Abha, 18°21'N, 42°29'E, 2200 m, Schiefer, 12.4.1982, *Baierle & al. 82-1573* (BSB); 15 km S of Al-Baha, Wadi Bida, 17.5.1980, *Boulos & Ads 13927* (CAIM, K).

Y E M E N: S. loc., 1937, *C. Rathjens 37/143* (BM); above Sanaa, 22.6.1977, *Chaudhary* (K); near Sana'a, Wadi Daher, 15.12.1977, *S.A. & Z. Chaudhary* (E, K); 11 km N Sana'a nahe der Straße nach Alram, Djebel Serir, 2240 m, Kalksandstein, 29.9.1981, *Podlech 35947* (M); Jabal Shamsan, 15 km NNE of Sanaa, recent volcanic cone, rainfall c. 200 mm, 2450 m, 14.9.1977, *Lavranos & Newton 15842* (E); Sana'a, sur le revers O. du Gebel Nugum, 2200 m, 28.5.1887, *Defflers 456* (P); Djebel Hadida, 26.9.1931, *C. Rathjens 42* (BM); Telhán, 14°22'N, 44°26'E, 2540 m, 8.9.1982, *Bisset 168a* (K); Jabal Isbil, 14°31'51"N, 44°42'28"E, c. 2800 m, rocky slopes, 11.4.1997, *Kilian 4888* (B, etc.); 3 km S of the turn-off to Al Bayda from Mukayras, 13°57'N, 45°40'E, 2150 m, rocky outcrops, 25.3.197, *Kilian 4571 & Al-Gifri* (B).

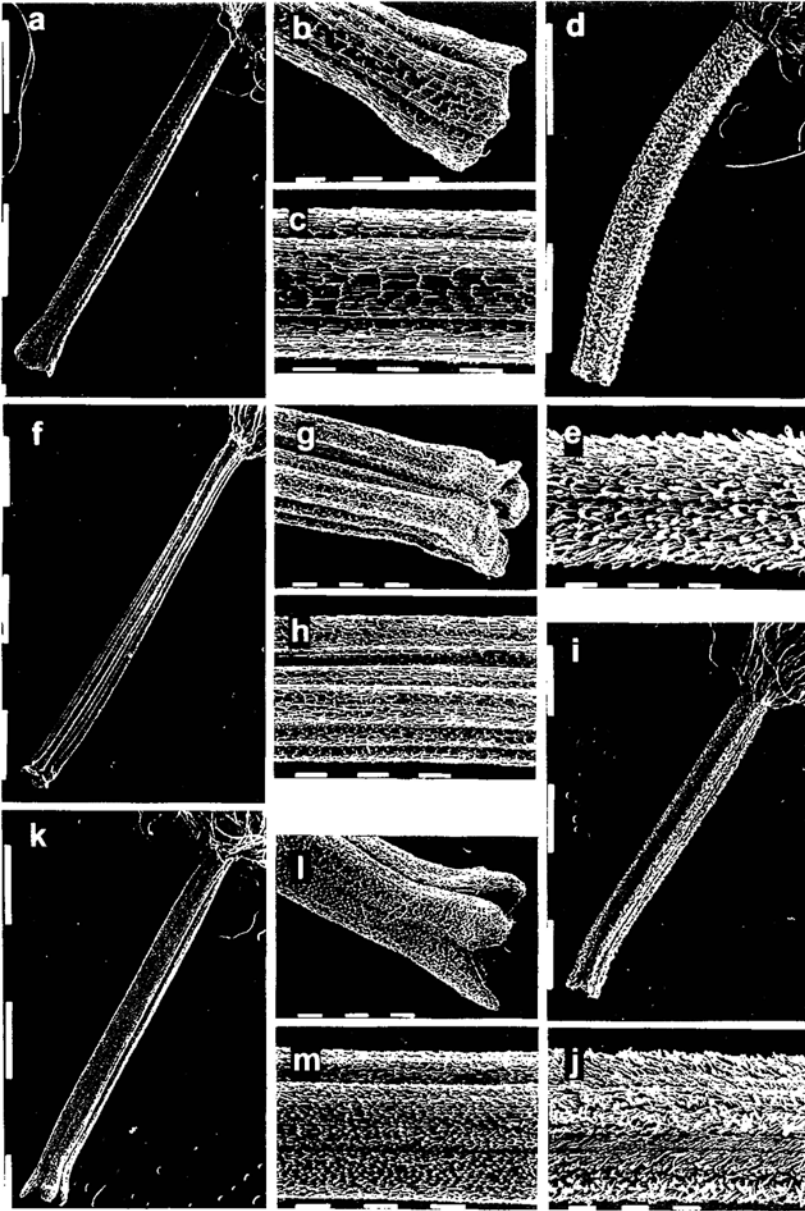


Fig. 14. SEM micrographs of *Launaea* achenes – a-e: *L. mucronata* subsp. *mucronata*, inner (a-c), marginal (d-e) (Frey & Kürscher 80-564, BSB); f-j: *L. fragilis* subsp. *fragilis*, inner (g-h), marginal (i-j) (Hiepko & Scholz 445, B); k-m: *L. fragilis* subsp. *asirensis*, inner (Wood Y/75/315, E). – Scale: 1 mm (a, d, f, i, k) and 0.1 mm (b-c, e, g-h, j, l-m).