

9. 6. *J. rigidus* Desf., Fl. Atlant. 1: 312 (1798) – Fig. 14.

Typus: Described from NW Africa (P-Desf., photo!).

= *J. procerus* Bianca in Atti Accad. Gioenia Sci. Nat. Catania ser. 2, 3: 65 (1846) nom. illeg., non E. Mey. (1828) ≡ *J. maritimus* Lam. var. *biancae* Lojac., Fl. Sicul. 3: 152 (1909) – Typus: [Sicily], in udis maritimis ad littorale di Noto, *Bianca* (FI!).

= *J. maritimus* Lam. var. *arabicus* Asch. & Buchenau in Boissier, Fl. Orient. 5: 354 (1882) ≡ *J. arabicus* (Asch. & Buchenau) Adamson in J. Linn. Soc., Bot. 50: 10 (1935) – Typus: Lectotype (selected here): W Sinai, ad scaturigines Raphidim, 17. 7. 1835, *Schimper* 495 (W!, iso- CAS!, E!, FI!, M!).

[= *J. deserti* Caruel, Pl. exs. arab. – nom. nud.].

= *J. nevskii* V. Krecz. & Gontsch. in Komarov, Fl. URSS 3: 629 (1935) – Typus: Turcomania, ad fonticulum Kara-su prope pag. Kughitang, 12. 7. 1931, *Nevski* 763 (holo- LE!).

Note: For the synonym *J. nevskii* see also *J. maritimus*.

Perennial with a creeping, woody, up to 10 mm thick rhizome of variable internode length, often laxly caespitose by frequent rhizome forkings. Culms (50–)75–150 cm, rigid, usually



Fig. 14. *J. rigidus*. – A: Rhizome end and young inflorescence. – B, C: Inflorescences. – D: Head. – E: Flower. – F: Tepals with stamens. – G: Head with ripe fruits. – H: Capsule. – J: Seeds.

Material: A: NW Morocco, Jebel Kebir, *Dahlgren & Lassen 140-22* (LD). – B, D, E, F: Sinai, Wadi Talaa, *Snogerup et al. 2827* (LD). – C: Egypt, Wadi Kurkur, 16.12.1964, *Boulos s. n.* (CAI, LD). – G, H, J: Israel, Dead Sea, *Fl. Terr. Isr. Exs. 721* (LD).

2–5 mm thick, with usually 4–5 basal sheaths and 2–5 basal leaves. Leaves 25–110 cm long, 1.5–3 mm thick, terete, pungent, auricles lacking. Inflorescence 5–40 cm long, 2–5 cm broad, lax, usually elongated, rarely as broad as long, usually without any secondary branches in the axils of bracteoles, many-flowered, with (20–)50–150(–300) heads. Lowest two bracts leaf-like, pungent, with wide sheaths, the first 5–25 cm, including the 2–5 cm long sheath, shorter than to much exceeding the inflorescence, forming an apparent prolongation of the culm, the second 2–5 cm, including the 1.5–3 cm long sheath, erecto-patent; upper bracts small, those of the heads much shorter than flowers, ovate, amplexicaul, cuspidate, straw-coloured. Heads (1–)2–4(–6)-flowered; upper part of pedicel incrassate. Tepals 3.5–5 mm, equal or outer slightly longer, usually light brown to straw-coloured or when young herbaceous in central part, with broad scarious margins, rarely with a darker margin of the non-scarious part, outer tepals narrowly ovate, cymbiform, acute to obtuse, often with slightly wider scarious margins apically, sometimes with a small mucro, inner tepals oblong, obtuse, with the margin somewhat expanded apically. Stamens 6, $2/3$ – $3/4$ as long as tepals, anthers (1.0–)1.5–2.0(–2.5) mm long, 3–6 times as long as filaments, yellow when young. Style 0.7–1.2 mm long, stigmas 1–1.5 mm long. Capsule 3.5–5 mm, conspicuously exceeding or rarely equalling tepals, narrowly trigono-ovoidal with a tapering, trigonous top, sometimes abruptly contracted at apex (esp. in South African material), with an up to 0.5 mm long mucro, pale, usually light brown to straw-coloured (in South African material rarely darker brown apically), trilocular, usually containing 70–90 seeds. Seeds 0.6–0.7 mm, including the seed-coat 0.9–1.8 mm long, 0.2–0.3 mm broad, narrowly obliquely ovoidal, 20–25-striate; seed-coat forming two equal or subequal appendages.

Chromosome number: $2n = 46, 48$, chromosomes very small.

Distribution: N Africa, scattered in W and E Africa, inland localities in S Africa, Cyprus, SE Turkey, Syria, Israel, Jordan, Iraq, the Arabian Peninsula, S and E Iran, S Afghanistan, S Pakistan and Turkestan (Fig. 15). In Europe there is only one well identified locality: Sicily, Avola, littorale di Noto, before 1859. I vainly searched for it in and around this place in 1973.

Important specimens examined:

I t a l y : Sicily, in uliginosis maritima (Avola), 6. 7.[before 1859], *Bianca* 283 (FI); in uliginosis maritima (ad littorale di Noto), *Bianca* (FI); saline di S. Pietro, *Hb. Martelli* (FI); in arenosis maritima Campaniae, Scavli, 6. 1824, *Terracino* (FI).

Unidentified localities in **C e n t r a l A s i a** : Amudaria-Gebiet von Ostbuchara, zwischen Kulab und Gullag, 1000', 12.–24. 10. 1881, *Regel It. Turkest.* (LE); [?Kunu Kycumaur. Uemornuk Karnoy], 12. 7. 1883, *Regel* (K, LE, G).

Ecology: Maritime and inland, usually sandy, saline localities. Wadis, wells, depressions and other permanently or seasonally wet places in desert and steppe areas. *J. rigidus* is, in most of its area, a desert plant; it occurs in maritime localities in the Mediterranean part of its distribution only.

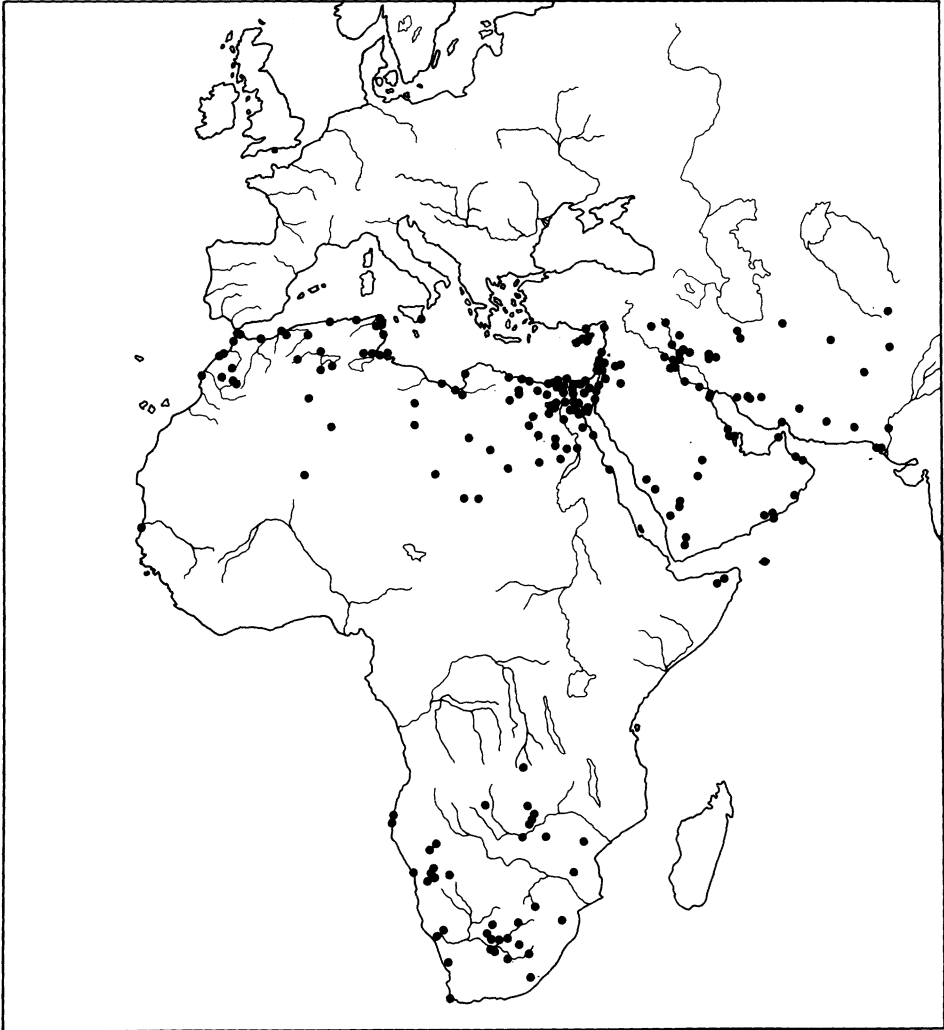


Fig. 15. *J. rigidus*, distribution according to revised material.