

Family 56. CAPPARACEAE

Herbs, shrubs or trees, sometimes climbing; rarely dioecious or gynomonoecious* (*Dhofaria*). Leaves alternate or rarely opposite, simple or digitately 2–7-foliolate, usually entire. Stipules present. Flowers hermaphrodite or rarely unisexual (*Dhofaria*), actinomorphic or zygomorphic, in axillary or terminal racemes or solitary or clustered. Sepals 4, free or fused. Petals 4 or absent, free, sessile or clawed. Stamens few to many, often borne on an elongated androphore. Ovary sessile or borne on an elongated gynophore, 1–several-celled; placentation parietal; ovules few to many. Fruit a berry,

nutlet or tardily or readily dehiscent capsule. Seeds reniform or angular.

[*gynomonoecious - having female and hermaphrodite flowers on the same plant]

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|---|-----------------------|
| 1. Herbs | 2 |
| + Trees or shrubs | 3 |
| 2. Fruit an indehiscent nutlet | 2. Dipterygium |
| + Fruit a dehiscent, linear capsule | 1. Cleome |
| 3. Climbing or virgate shrubs, with paired stipular thorns at the base of the petiole | 5. Capparis |
| + Trees or non-climbing shrubs, if climbing then without paired spines | 4 |
| 4. Shrub with spinescent branches, soon becoming leafless; fruits tardily dehiscent, globose, bearing large stalked glands | 7. Dhofaria |
| + Leafy trees or shrubs, branches not spinescent; fruits globose or cylindrical, sometimes glandular but not bearing large stalked glands | 5 |
| 5. Receptacle (the hypanthium) cylindrical or campanulate; stamens many | 3. Maerua |
| + Receptacle disc-like; stamens 4-9 | 6 |
| 6. Stamens borne on an androphore; nectary appendage tubular, often petaloid above; fruits cylindrical, torulose, tardily dehiscent | 6. Cadaba |
| + Stamens not borne on an androphore; nectary gland absent; fruits globose, indehiscent | 4. Boscia |

1. CLEOME L.

D.F. CHAMBERLAIN & J. LAMOND

Annual or perennial herbs, or subshrubs. Leaves alternate, simple or digitately compound. Flowers in racemes, often zygomorphic. Sepals 4, free or fused at the base. Petals 4, equal or unequal, sessile or clawed. Stamens 4-numerous, free; androphore usually absent (present in *C. gynandra*). Staminodes present or absent. Gynophore present or absent. Fruit a broadly elliptic to linear capsule, dehiscent by 2 valves.

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|--|--------------------------|
| 1. Most leaves compound, with 3 or more leaflets | 2 |
| + Most leaves simple | 12 |
| 2. Stamens 10-20; leaves 3(-5)-foliolate | 19. C. viscosa |
| + Stamens 6-8; leaves 3-7-foliolate | 3 |
| 3. Stamens borne on an androphore; gynophore present | 20. C. gynandra |
| + Stamens not borne on an androphore; gynophore present or absent | 4 |
| 4. Flowers pink; stamens 7-8; seeds ridged, glabrous | 21. C. hanburyana |
| + Flowers greenish, white or yellow to brownish; stamens 6; seeds smooth or finely reticulate, glabrous or hairy | 5 |

- 20. Fruit 5–6mm broad; bracts usually cordate 12. *C. polytricha*
 + Fruit 2.5–4.5mm broad; bracts seldom cordate, sometimes absent 11. *C. noeana*
- 21. Inflorescence \pm terminal and well-defined, \pm bracteate 9. *C. austroarabica*
 + Inflorescence scarcely terminal, flowers scattered in the axils of the leaves 22
- 22. Leaves thick-textured, not glaucous, often broader than long, usually with an obtuse apex 8. *C. droserifolia*
 + Leaves thin-textured, glaucous, apex usually acute 10. *C. pruinosa*

1. *C. chrysanth* Decne in Ann. Sci. Nat. Bot. 3: 274 (1835). Illustr.: Collenette (1985 p.96).

Glandular, woody, aromatic perennial, up to 60cm. Leaves simple, thick, ovate, 5–17 × 3–10mm, densely villous with a mixture of short and long glandular hairs; petioles absent or up to 12mm. Flowers borne in the axils of leaf-like bracts; pedicels 5–15mm, thickening and becoming circinnate in fruit. Sepals oblong-ovate, 2–7 × 1–2mm. Petals shortly appendiculate, obovate, 4–7 × 1.5–3mm, yellow. Stamens 10–14. Style c.1.5mm. Fruit broadly elliptic, compressed, c.8 × 2.5mm, not stipitate. Seeds c.1mm diam., reticulate, glabrous. **Map 475, Figs 67 & 68.**

Moist sand, rocky places and cultivated land; 200–800m.

Saudi Arabia. Libya, Egypt, Sudan, Ethiopia and S Iran.

A distinctive species on account of the circinnate pedicels and the number of stamens.

2. *C. scaposa* DC., Prodr. 1: 239 (1824). Syn.: *C. papillosa* Steud., Nomencl. bot. ed. 2: 382 (1840), nom. nud. Illustr.: Collenette (1985 p.97); Fl. Qatar pl.35 (1981).

Herb, usually annual; stems simple or branched, 7–30cm, sparsely villous, glandular-hairy above. Leaves simple, broadly ovate to orbicular, up to 20 × 17mm, strigillose, the hairs arising from tuberculate bases, the margin glandular-hairy; petioles 5–25mm. Inflorescence lax, few-flowered, ebracteate above; pedicels elongating to 12mm in fruit. Flowers actinomorphic. Sepals lanceolate to ovate, 1.5–2mm. Petals not appendiculate, obovate to elliptic, 3–4 × c. 1.5mm, pale yellow. Stamens 6. Style 1–3mm. Fruit not stipitate, usually spreading and curved, occasionally erect or recurved, (4–)20–35 × 0.5–1mm. Seeds minutely granulate, c.0.5mm diam., glabrous. **Map 476, Figs 67 & 68.**

Wadi-beds, sand dunes and rocky hillsides; 0–600m.

Saudi Arabia, Yemen (N & S), Socotra, Oman, Qatar. N & tropical Africa, Pakistan.

3. *C. brachycarpa* Vahl ex DC., Prodr. 1: 240 (1824). Syn.: *C. brevisiliqua* Schultes f. in Schultes & Schultes f., Syst. veg. 7: 40 (1829); *C. diversifolia* Hochst. & Steud. nom. nud. in sched. Illustr.: Collenette (1985 p.96); Fl. Qatar pl.34 (1981); Western (1989 p.57). Type: Yemen (N), *Forsskal* (BM).

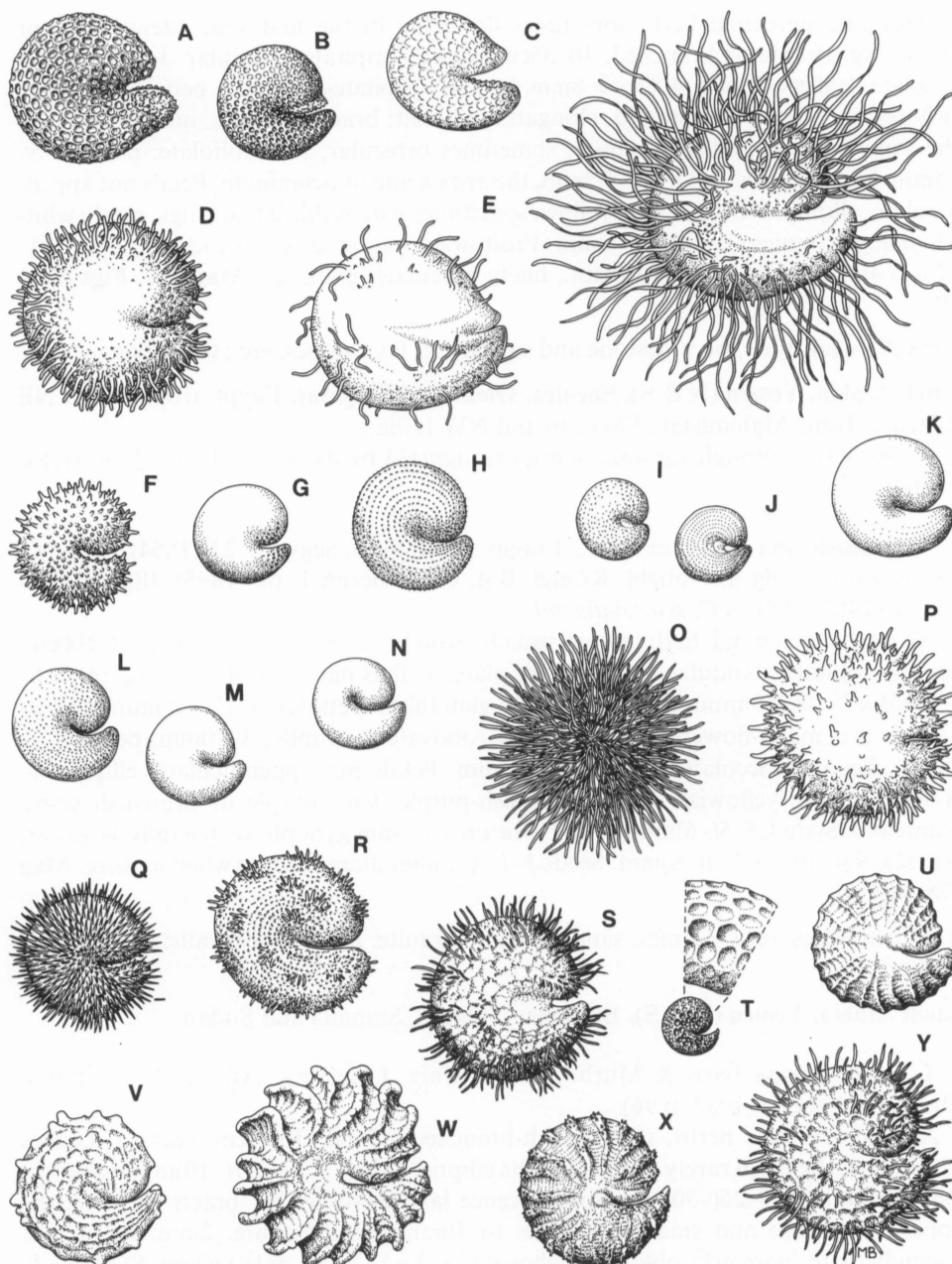


Fig. 67. *Capparaceae*. A–Y, *Cleome* seeds: A, *C. chysantha*; B, *C. scaposa*; C, *C. brachycarpa*; D, *C. ramosissima*; E, *C. amblyocarpa* (showing variation in indumentum); F, *C. brevipetiolata*; G, *C. macradenia*; H, *C. droserifolia*; I, *C. austroarabica* subsp. *austroarabica*; J, *C. austroarabica* subsp. *muscatensis*; K, *C. pruinosa*; L, *C. noeana* subsp. *noeana*; M, *C. noeana* subsp. *brachystyla*; N, *C. polytricha*; O, *C. rupicola*; P, *C. arabica*; Q, *C. albescent* subsp. *omanensis*; R, *C. socotrana*; S, *C. angustifolia*; T, *C. tenella*; U, *C. viscosa*; V, *C. gynandra*; W, *C. hanburyana*; X, *C. monophylla*; Y, *C. paradoxa*. (E, M & Q $\times 16$, others $\times 24$).

Aromatic perennial herb, sometimes flowering in the first year; stems erect or ascending, simple or branched, 10–35cm, shortly stipitate-glandular. Leaves 3(–5)-foliolate; leaflets elliptic, 4–15 × 1–8mm, sparsely stipitate-glandular; petioles 2–30mm. Inflorescence lax, few-flowered, elongating in fruit; bracts leaf-like, minute or up to the same size as the leaves, entire, sometimes orbicular, to trifoliolate; pedicels 5–15mm. Sepals ovate, 1–3 × 0.5–1.5mm, the apex acute or acuminate. Petals not appendiculate, elliptic, 3–8 × 1–2mm, yellow, sometimes with reddish markings, rarely whitish-yellow. Stamens 6. Style 1–6mm. Fruit not stipitate, erect-spreading, oblong, 4–12 × 1–4mm. Seeds 0.5–1mm diam., finely reticulate, glabrous. **Map 477, Figs 67 & 68.**

Gravelly wadi-beds, on limestone and sandstone, lava slopes, etc.; 0–2600m.

Saudi Arabia, Yemen (N & S), Socotra, Oman, UAE, Qatar. Egypt, tropical and NE Africa, S Iran, Afghanistan, Pakistan and NW India.

A distinctive, though variable, species recognized by its short, oblong, long-styled fruits.

4. *C. ramosissima* Webb ex Parl., *Fragm. fl. aethiop.-aegypt.*: 22 (1854). Syn.: *C. schweinfurthii* Gilg in *Notizbl. Königl. Bot. Gart. Berlin* 1: 62 (1895). Illustr.: Collette (1985 p.98) as *C. schweinfurthii*.

Aromatic perennial herb; stems usually woody, copiously branched, 7–100cm, densely stipitate-glandular. Leaves trifoliolate; leaflets narrowly elliptic to elliptic, 6–35(–45) × 2–10(–15)mm, shortly stipitate-glandular; petioles 5–15(–45)mm. Inflorescence lax, many-flowered; bracts simple, obovate to elliptic, 3–10mm; pedicels 5–15mm. Sepals lanceolate, 1.5–3 × 0.5–1.5mm. Petals not appendiculate, elliptic, 4–7(–8) × 1–2mm, yellowish-white to reddish-purple, with purple or brownish veins. Stamens 6. Style 1.5–5(–6)mm. Fruit borne on a 3–5mm gynophore, pendulous, linear, (15–)25–95(–105) × 1–4(–8)mm. Seeds 1–1.5(–2)mm diam., lanate when mature. **Map 478, Fig. 67.**

Rocky hillsides, on volcanics, sandstone and granite, and terrace walls; (550–)1200–2900m.

Saudi Arabia, Yemen (N & S). Ethiopia, Djibouti, Somalia and Sudan.

5. *C. amblyocarpa* Barr. & Murb. in *Acta Univ. Lund. n.s. Afl.* 2,1,4: 25 (1905). Illustr.: Collette (1985, p.96).

Annual aromatic herbs; stems much-branched, 10–60(–100) cm, scabrid. Leaves trifoliolate, the basal rarely simple; leaflets elliptic, 5–30(–35) × 2–7(–10)mm, minutely scabrid; petioles 5–25(–30)mm. Inflorescence lax, few-flowered; bracts leaf-like, the uppermost entire and smaller; pedicels to 10mm. Sepals ovate, 2mm. Petals not appendiculate, narrowly oblong to obovate, 3–4 × 1–2mm, pale yellow. Stamens 6. Style to 4mm. Fruit sometimes shortly stipitate, pendulous, oblong, straight or slightly curved, (17–)30–40 × 5–8mm. Seeds c.2mm diam., densely lanate when mature. **Map 479, Fig. 67.**

Damp places in sand dunes, wadis and waste ground; 15–2400m.

Saudi Arabia, Yemen (N & S), Oman, UAE. N Africa, Sudan, Ethiopia, Palestine, Iraq and S Iran.

This species has previously been confused nomenclaturally with *C. arabica*. The application of the name used here follows Botschantzev (in Novosti Sist. Vyssh. Rast. 1968: 236–237).

6. *C. brevipetiolata* Chamberlain & Lamond in Edinb. J. Bot. 51 (1): 49 (1994). Type: Oman, *Miller* 6021 (E, K, ON, UPS).

Dwarf twiggy shrub; stems 7–50cm, covered with \pm sessile glands. Leaves simple, broadly ovate to orbicular, $3-8 \times 2-8$ mm, covered with \pm sessile glands; petioles 0–5mm. Inflorescence several-flowered, lax, even in flower; bracts leaf-like but obviously smaller than the leaves; pedicels spreading, 0–8mm. Sepals lanceolate, $1-5 \times 0.5-2$ mm. Petals appendiculate, dimorphic, the lamina elliptic, $3-6 \times 1-3$ mm, yellow or greenish, sometimes with a red stripe. Stamens 4. Style (2–)7–10mm. Fruit erect, oblong, slightly curved, $5-20 \times 2-5$ mm. Seeds 0.5–1mm, densely pubescent. **Map 480, Figs 67 & 69.**

Sandy or stony deserts, wadis, etc.; 50–600m.

Oman. Endemic.

A distinctive species among those with four stamens on account of its densely pubescent seeds. A hybrid between this species and *C. noeana* has been reported from Oman.

7. *C. macradenia* Schweinf. (1896 p.188). Type: Yemen (S), *Schweinfurth* 178 (K).

Foetid dwarf shrub; stems much-branched, 10–90cm, densely glandular-pilose at first. Leaves simple, \pm orbicular, 4–10(–13)mm diam., glandular-tuberculate, the margin glandular-crenate; petioles 4–12(–20)mm. Inflorescence lax, few-flowered; bracts leaf-like, not clearly differentiated from the leaves; pedicels 5–15mm. Sepals lanceolate, $3-6 \times 1-2$ mm. Petals appendiculate, dimorphic, the lamina narrowly elliptic or broadly lanceolate, $5-12 \times 1-3$ mm, yellow. Stamens 4. Style 2–7(–10)mm. Fruit erect-spreading, elliptic, $9-15 \times 3-4$ mm, straight. Seeds c.0.5mm diam., smooth. **Map 481, Figs 67 & 68.**

Sand dunes and wadis; 30–800m.

?Saudi Arabia, Yemen (S). Endemic.

Closely allied to *C. droserifolia* but distinguished by its glandular-crenate leaves and somewhat smaller petals. Schwartz (1939) records *C. macradenia* from Saudi Arabia though no specimens have been seen to confirm this.

8. *C. droserifolia* Del. (1813 p.106). Syn.: ?*C. brachyadenia* Schwartz (1939 p.62).

Aromatic dwarf shrub; stems much-branched, 25–75cm, with a dense '2-storeyed' glandular indumentum. Leaves simple, thick-textured, broadly ovate to orbicular,

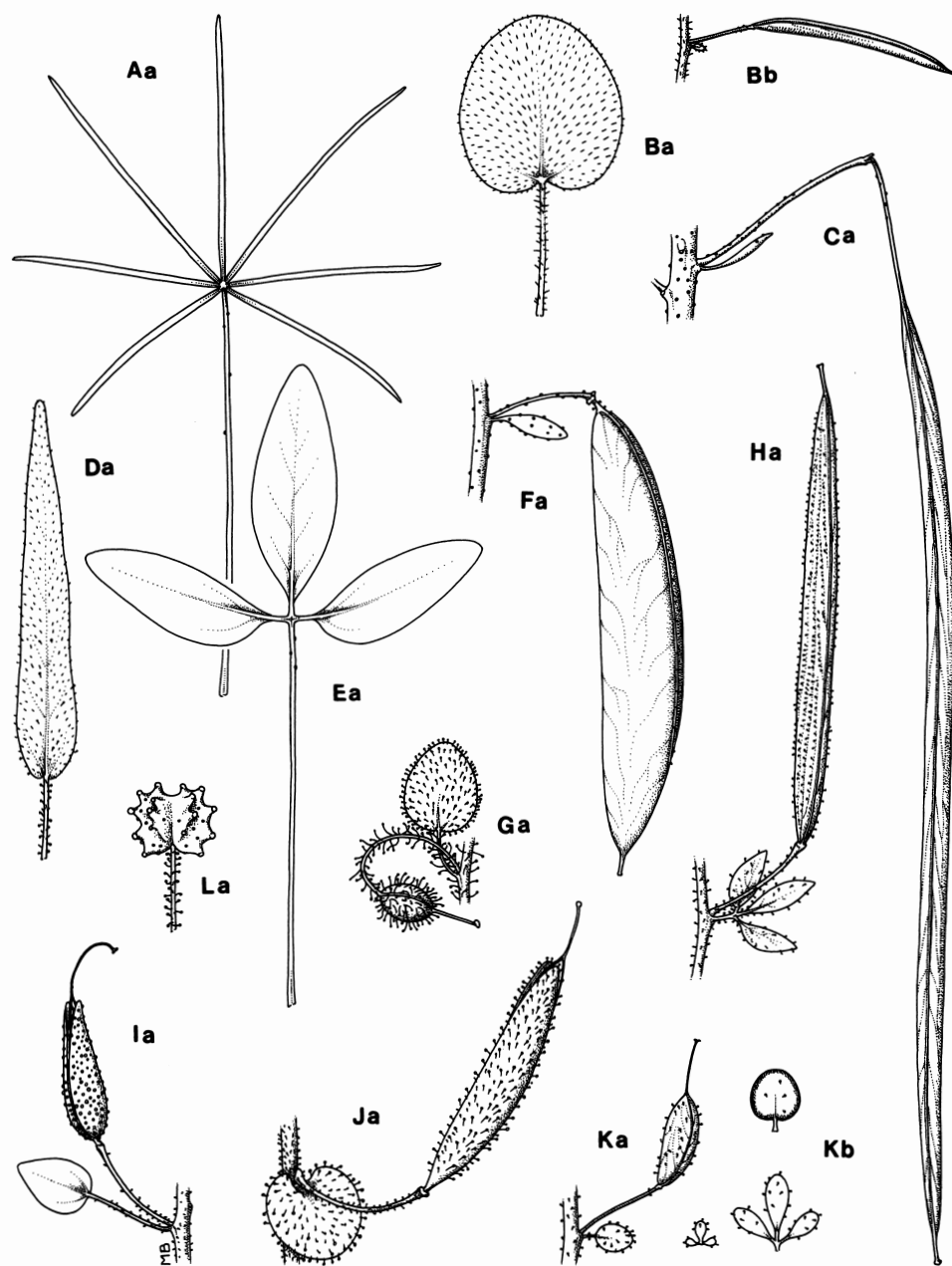


Fig. 68. Capparaceae. A, *Cleome angustifolia*: Aa, leaf. B, *C. scaposa*: Ba, leaf; Bb, fruit. C, *C. paradoxa*: Ca, fruit. D, *C. monophylla*: Da, leaf. E, *C. albescens* subsp. *omanensis*: Ea, leaf. F, *C. rupicola*: Fa, fruit. G, *C. chrysantha*: Ga, fruit. H, *C. viscosa*: Ha, fruit. I, *C. pruinosa*: Ia, fruit. J, *C. polytricha*: Ja, fruit. K, *C. brachycarpa*: Ka, fruit; Kb, bracts. L, *C. macradenia*: La, leaf. (All $\times 1.5$)

often broader than long, 4–14 × 4–14mm, the apex obtuse, green or glaucous, glandular-hairy, the hairs fine and short or longer and coarser; petioles 8–20mm. Inflorescence lax, few-flowered, the flowers apparently axillary; bracts not differentiated from the leaves; pedicels 10–15mm. Sepals lanceolate, dimorphic, 4–7 × 1–2mm. Petals appendiculate, dimorphic, 2 broad and 2 narrow, the lamina lanceolate, 7–10 × 1.5–3mm, greenish yellow to yellow. Stamens 4. Style 4–10mm. Fruit erect, not stipitate, oblong, 10–17 × 3–3.5mm. Seeds 0.5–1mm diam., smooth or minutely papillate, glabrous. **Map 482, Fig. 67.**

Rocky hills, wadis, etc.; 0–1200m.

Saudi Arabia, Yemen (S). Egypt, Palestine, Syria and Jordan.

This species has a disjunct distribution in the Arabian Peninsula, being restricted to NW Saudi Arabia and the Hadramaut in Yemen (S).

Two extreme forms may be recognized. The first, matching the type of the species (originally described from Egypt) and restricted in Arabia to NW Saudi Arabia, is much-branched, with fine stems, short (c. 10mm) fruits and comparatively thin leaves. The second, probably referable to *C. brachyadenia*, from Yemen (S), has fewer and thicker branches, longer (15–20mm) fruits and thicker leaves. Plants intermediate between the two extreme forms occur in Saudi Arabia and Egypt. Records of *C. droserifolia* in Schwartz (1939) from Oman refer to *C. austroarabica* subsp. *muscatensis*.

9. *C. austroarabica* Chamberlain & Lamond in Edinb. J. Bot. 51 (1): 51 (1994). Illustr.: Miller (1988 p.95) as *C. droserifolia*. Type: Oman, *Miller* 6247 (E, K, KTUH, ON, UPS).

Dwarf shrub; stems 15–100cm, densely stipitate-glandular to glandular-villous. Leaves simple, broadly ovate to orbicular, (5–)8–20 × (5–)8–15mm; petioles 7–20mm. Inflorescence lax, few-flowered; bracts leaf-like at least initially, 3–6mm diam.; pedicels 4–15mm. Sepals dimorphic, lanceolate, 3–5 × 1–2mm. Petals appendiculate, lanceolate, dimorphic, the larger broad, the smaller narrow, 5–8 × 1.5–3mm, yellow with a central reddish-brown stripe. Stamens 4. Style 5–7mm (in fruit). Fruit erect to erect-spreading, not stipitate, elliptic, 12–18(–22) × 3–4.5mm, straight or slightly curved. Seeds 0.6–0.8mm, minutely papillate when mature. **Map 483, Fig. 67.**

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|----|--|-----------------------------|
| 1. | Indumentum of stems and leaves stipitate-glandular | subsp. austroarabica |
| + | Indumentum of stems and leaves glandular-villous | subsp. muscatensis |

subsp. **austroarabica**

Rocky slopes, gravelly wadi-beds etc.; 0–600m.

Yemen (S), Socotra, Oman, UAE. Endemic.

In Oman this subspecies is restricted to the south, mainly to Dhofar.

subsp. **muscatensis** Chamberlain & Lamond in Edinb. J. Bot. 51 (1): 51 (1994). Illustr.: Colletette (1985 p.97) as *C. sp. aff. droserifolia*. Type: Oman, *Miller & Nyberg* 9569 (E, K, KTUH, ON).

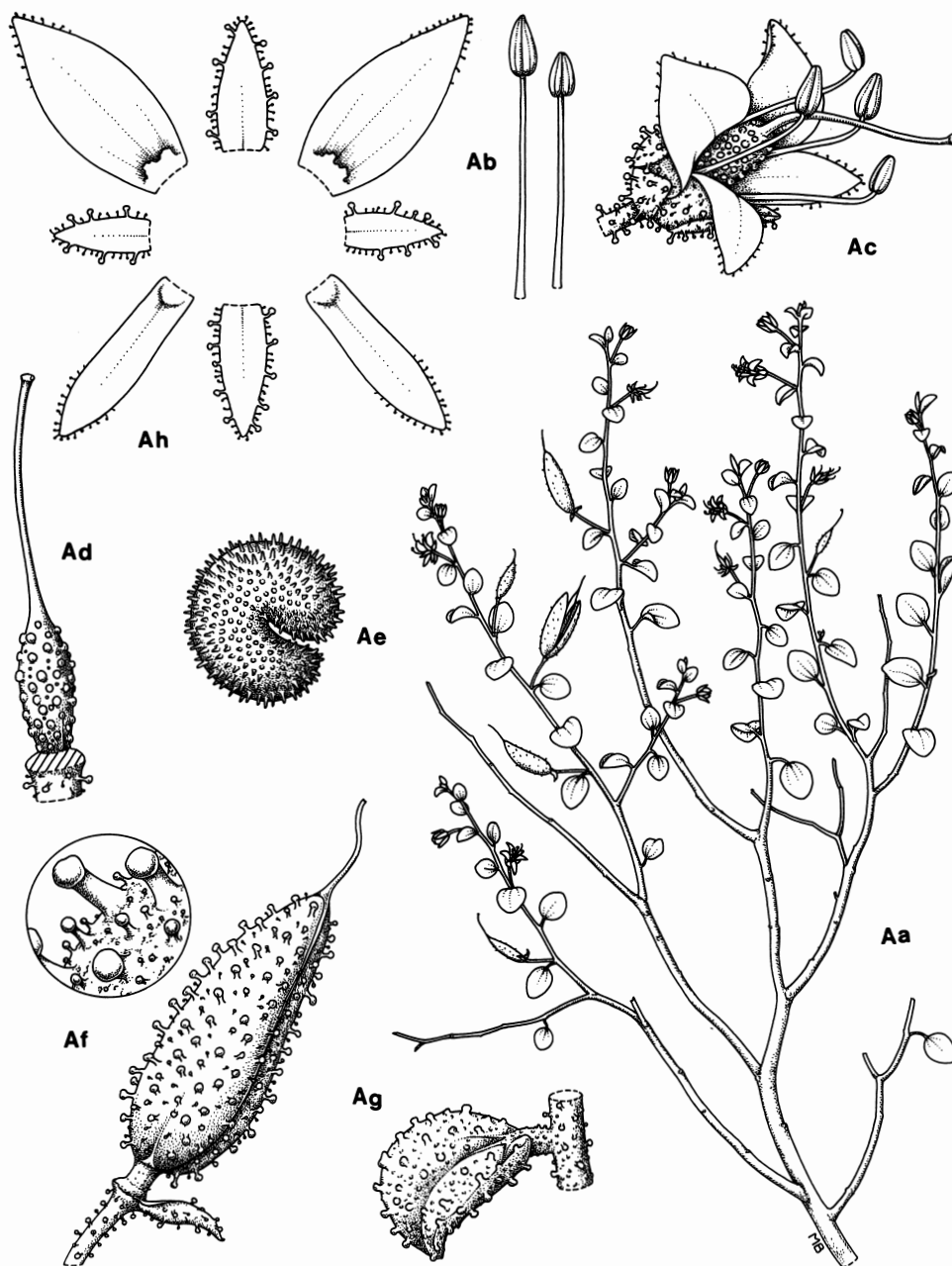


Fig. 69. Capparaceae. A, *Cleome brevipetiolata*: Aa, habit ($\times 0.6$); Ab, stamens ($\times 5$); Ac, flower ($\times 5$); Ad, gynoeceum ($\times 5$); Ae, seed ($\times 32$); Af, fruit ($\times 4$) and detail of glands; Ag, leaf ($\times 4$); Ah, dissected perianth parts ($\times 5$).

On limestone and gabbro, cinder cones, rocky wadi-beds etc.; 0–1700m.

Saudi Arabia, Oman, UAE. Endemic.

Subspecies *muscatensis* occurs in N Oman with an outlying station in W Saudi Arabia. The differences between the two subspecies are small but there is no overlap in their geographical distributions. The indumentum of subsp. *muscatensis* may have evolved in response to a drier, non-monsoonal climate; in this character the one specimen from Saudi Arabia is extreme.

C. austroarabica is allied to *C. droserifolia* but exhibits a more open habit, and has a different distribution.

10. *C. pruinosa* T. Anders. (1860 p.3). Type: Yemen (S), *J.D.Hooker* s.n. (K).

Low aromatic shrub; stems 30–100cm, minutely glandular-scabrid, with a few larger scattered stipitate glands. Leaves simple, thin-textured, broadly ovate to orbicular, 7–15 × 5–14mm, the apex ± acute, apparently glaucous at least when dry, minutely glandular-scabrid with a few stout stipitate glands especially on the margins; petioles 5–15mm. Inflorescence lax, few-flowered, the flowers apparently axillary; bracts leaf-like, not differentiated from the leaves; pedicels 7–15mm. Sepals lanceolate, 3–5 × 1–2mm. Petals appendiculate, dimorphic with 2 broad and 2 narrow, the lamina lanceolate, 4–9 × 1–2mm, yellow. Stamens 4. Style 3–10mm. Fruit erect-spreading, not stipitate, elliptic, straight, 10–16 × 3–4.5mm. Seeds c.0.5mm diam., smooth, glabrous. **Map 484, Figs 67 & 68.**

Rocky basaltic slopes and wadi-beds; 0–15m.

Yemen (?N & S). ?Endemic.

Distinguished from *C. droserifolia* and *C. macradenia* particularly by its thin, glaucous leaves. It is however, only doubtfully distinct from the former and is apparently restricted to the area immediately around Aden, with one doubtful record for Hanish Island in the Red Sea.

11. *C. noeana* Boiss., Diagn. pl. orient. sér. 2,1: 48 (1853).

Annual or perennial, unpleasantly aromatic herb or dwarf shrub; stems branched, 10–60cm, with dense and spreading glandular hairs. Leaves simple, broadly ovate to orbicular, up to 40 × 40mm, shortly glandular-hairy; petioles 5–20(–50)mm. Inflorescence lax, often elongate even in flower; bracts like the leaves but smaller, to 10 × 10mm, sometimes absent in the upper part of the inflorescence; pedicels erect or spreading, 6–15mm. Sepals ovate, 3–5mm. Petals appendiculate, 4–7 × 0.5–3mm, yellow, sometimes with a central red line, dimorphic, 2 with lamina triangular and 2 with lamina lanceolate. Stamens 4. Style (1–)3–7(–12)mm. Fruit not stipitate, erect to erect-spreading, narrowly oblong to linear, (8–)15–30 × 2.5–4.5mm, straight or curved, glandular. Seeds 0.7–0.8mm diam., minutely granulate to ± smooth, glabrous, shining. **Map 485, Fig. 67.**

1. Inflorescence spicate, overtopping the leaves; bracts usually much-reduced or absent subsp. **noeana**
- + Inflorescence not an obvious spike; bracts ± leaflike, gradually decreasing upwards subsp. **brachystyla**

subsp. **noeana**. Syn.: *C. drepanocarpa* O. Schwartz (1939 p.62). Illustr.: Cornes (1989 p.109) as *C. cf. quinquenervia*; Western (1989 p.58) as *C. aff. dolichostyla*.

Gravel deserts; 0–700m.

Saudi Arabia, Yemen (S), Oman, UAE, Qatar, Bahrain. Iraq, Iran, Afghanistan, Pakistan and C Asia.

While some of the material of this subspecies from the northern part of its range in Arabia has a leaf indumentum composed of long glandular and eglandular hairs (like that of the type), that from Oman consistently differs in having much shorter hairs.

Records of *C. quinquenervia* DC., a species described from Iran which differs in its generally smaller stature and shorter (10–18mm) fruits, are almost certainly referable to this species.

Records of the poorly known *C. fimbriata* Vicary, originally described from Pakistan, are also almost certainly referable to this species.

C. dolichostyla Jafri, a species described from western Iran and recorded from the Arabian Peninsula, is supposed to differ from *C. noeana* in its gland-fringed leaves and styles that are 8–12mm long. There is no evidence that there is any correlation between these two characters in the Arabian material so the older name is used for material that is referable to these two taxa.

subsp. **brachystyla** (Deflers) Chamberlain & Lamond in Edinb. J. Bot. 51 (1): 52 (1994). Syn.: *C. brachystyla* Deflers in Bull. Soc. Bot. France 34: 65 (1887). Illustr.: Collenette (1985 p.96). Type Yemen (S), *Deflers* s.n. (P).

Rocky basaltic slopes and ravines; 0–10m.

Saudi Arabia, Yemen (N & S). ?Somalia.

Subsp. *brachystyla* to some extent intergrades with subsp. *noeana* and is intermediate between it and *C. polytricha*. There is, however, no overlap in the geographical distribution of the two subspecies. It may be distinguished from *C. polytricha* by its narrower fruits borne on shorter erect pedicels.

12. *C. polytricha* Franchet in J. Bot. (Morot) 1: 41 (1887). Syn.: *C. beckiana* Rech.f. in Österr. Akad. Wiss., Math.-Naturwiss. Kl., Anz. 87: 296 (1950). Syntypes: Yemen (S), *Courbon* (P); *Beaudoin* (P); *Deflers* 43 (K).

Perennial aromatic herb with a woody base; stems divaricately branched, 10–40 (–60)cm, densely glandular-villous. Leaves simple, broadly ovate to orbicular, 10–30 × 10–25mm, densely glandular-strigillose; petioles 8–12mm. Inflorescence lax, several- to many-flowered; bracts like the leaves but smaller, 5–8mm diam.; pedicels 10–17mm, spreading. Sepals narrowly lanceolate, c.4 × 1mm. Petals appendiculate, c.5 × 1.5mm, yellow with red markings, dimorphic, 2 with lamina triangular and 2 with lamina lanceolate. Stamens 4. Style 3–7mm. Fruit not or hardly stipitate, erect, narrowly oblong, 20–27 × 5–6mm, straight or slightly curved, glands with long slender stalks. Seeds c.0.8mm diam., ± smooth, glabrous. **Map 486, Figs 67 & 68.**

Waste ground, basaltic slopes etc.; 30–300m.

Yemen (S). Somalia.

This species can be generally distinguished from its allies by the broad erect fruits borne on spreading pedicels.

13. *C. rupicola* Vicary in J. Asiat. Soc. Bengal 16: 1158 (1847). Syn.: *C. glaucescens* sensu Mandaville (1990) non DC.; *C. oxypetala* Boiss. var. *micrantha* Boiss., Fl. orient. 1: 415 (1867). Illustr.: Western (1989 p.58); Mandaville (1990 pl.71) as *C. glaucescens*.

Perennial, often glaucous herb with a woody base; stems branched, erect, 15–45cm, shortly stipitate-glandular. Leaves simple (rarely 2–3-foliolate), ovate-elliptic, 15–40 × 8–28mm, thick, glandular; petioles 8–35mm. Inflorescence many-flowered, contracted in flower, elongating in fruit; bracts narrowly elliptic to elliptic, up to 15mm long; pedicels 5–15mm. Flowers zygomorphic. Sepals triangular to ovate, 1–3 × 0.5–1mm, glandular. Petals not appendiculate, broadly ovate to suborbicular, 3–7 × 1–2mm, yellow to orange, with brown to purple veins, the apex rounded to acute. Stamens 6. Style 0.5–1mm. Fruit with gynophore lacking or up to 1mm long, pendulous, linear, straight, 20–45 × 4–8 mm, sparsely glandular, at least when young. Seeds (0.5–)1mm, papillate when young, densely lanate when mature. **Map 487, Figs 67 & 68.**

Rocky places, on sandstone and sandy plains; 30–1750m.

Saudi Arabia, Oman, UAE. SE Iran and Pakistan.

Closely allied to *C. glaucescens* DC. and *C. oxypetala* Boiss. but distinguished from both by the glandular fruit. All the specimens seen from the Arabian Peninsula that have been assigned to these two species are referable to *C. rupicola*, as is the type of *C. oxypetala* Boiss. var. *micrantha* Boiss.

14. *C. arabica* L., Cent. pl. I: 20 (1755), non L., Syst. Nat. ed. 12: 448 (1767) et auctt. Syn.: *C. trinervia* Fresen., Beitr. Fl. Aegypt. 2: 177, t.11 (1834). Illustr.: Collenette (1985 p.98) as *C. trinervia*.

Strongly aromatic perennial herb with a woody base; stems multiple, simple or with a few branches, 14–50cm, glandular-strigillose. Leaves simple (rarely 3-foliolate), ovate, 10–40 × 5–18mm, stipitate-glandular; petioles 4–25mm. Inflorescence lax, few- to many-flowered, with progressively smaller linear-lanceolate bracts; pedicels 6–14mm. Flowers zygomorphic. Sepals ovate, c.2mm. Petals not appendiculate, oblong-elliptic to elliptic-rhomboid, 5–9mm long, reddish-brown. Stamens 6. Style 0.5–1mm. Fruit not or very shortly stipitate, pendulous, straight or slightly curved, (8–)15–43 × (1–)2–5 mm. Seeds c.1.5mm diam., papillose when young, lanate when mature. **Map 488, Fig. 67.**

Rocky hillsides, often on volcanics; 600–900m.

Saudi Arabia, Yemen (?N & ?S). Egypt, Palestine, S Iran (Islands).

For a discussion of the nomenclature of this species see Kers (*Acta Horti Berg.* 20 (8): 335–342 (1966)). Records from Yemen probably refer to *C. amblyocarpa*. A specimen (Collenette 7070) from Saudi Arabia has some of the upper leaves with three leaflets but otherwise resembles *C. arabica*.

15. *C. albescens* Franchet subsp. *omanensis* Chamberlain & Lamond in Edinb. J. Bot. 51 (1): 52 (1994). Type: Oman, *Miller & Nyberg* 9029 (E).

Glaucous annual or perennial herb; stems 15–30cm, shortly stipitate-glandular. Leaves 3-foliolate, occasionally simple near the base; leaflets elliptic, 5–15(–20) × 1–8mm, ± glabrous; petioles 2–12mm. Inflorescence few-flowered, lax in flower, elongating in fruit; bracts trifoliolate, 2–3mm or (more usually) absent; pedicels 2–10mm, usually glabrous. Sepals ovate, 1–1.5 × 0.5–1mm, glabrous. Petals not appendiculate, narrowly elliptic, 1–4 × 0.5–1mm, orange-yellow. Stamens 6. Style 0.5–2mm. Fruit very shortly stipitate, erect or erect-spreading, narrowly elliptic, 10–40 × 2–4mm, glabrous. Seeds c. 1mm diam., densely hairy when mature. **Map 489, Figs 67 & 68.**

Wadis and rocky slopes; 100–600m.

Yemen (S), Oman. Endemic subspecies.

A single specimen from Yemen (S) (*Guichard* KG/HAD/418) differs only in the stipitate-glandular pedicels and calyces, in which respect it approaches the closely allied *C. socotrana*. However, it agrees with the present taxon in its shorter stature, laxer inflorescences, narrower fruits and narrower leaflets. Specimens in herbaria named '*C. venosa* Hutch.' belong here.

Subsp. *albescens* (from Somalia) differs in its upper leaves which are generally broader and simple or only occasionally 3-foliolate.

16. *C. socotrana* Balf. f. (1882 p.501). Syntypes: Socotra, *Balfour, Cockburn & Scott* 76 (BM); *Schweinfurth* 659 (K) & 710 (K).

Woody-based, probably perennial, herb; stems branched, 25–70cm, shortly stipitate-glandular, occasionally glabrous. Leaves 3-foliolate; leaflets broadly elliptic to obovate, 5–20 × 4–20mm, very sparsely stipitate-glandular or glabrous; petioles 5–30mm. Inflorescence many-flowered, ± dense in flower, becoming lax in fruit; bracts simple, broadly obovate to orbicular, 2–4mm; pedicels 4–10mm, stipitate-glandular. Sepals ovate, 1–2 × 0.5–1mm, stipitate-glandular. Petals not appendiculate, narrowly elliptic, 2–5 × 0.5–1.5mm, white to yellow, with red or brown markings. Stamens 6. Style 0.5–2 mm. Fruit not stipitate, erect or erect-spreading, narrowly elliptic to narrowly oblong, 10–45 × 4–7mm, sparsely stipitate-glandular. Seeds c. 1.5mm diam., densely hairy when mature. **Map 490, Fig. 67.**

Bushland and thicket on granite; 200–1350m.

Socotra. Endemic.

Closely allied to *C. albescens* Franchet.

17. *C. angustifolia* Forsskal (1775 p.120). Type: Yemen (N), *Forsskal* (BM).

Glaucous annual foetid herb; stems laxly branched, 30–100 cm, glabrous. Leaves 5–7-foliolate; leaflets filiform, 5–33 × 0.5mm, glabrous; petioles 20–50mm. Inflorescence lax, few-flowered; bracts 1–3-foliolate, to 2cm; pedicels 20–25mm. Sepals lanceolate, 3–5 × 1–2mm. Petals not appendiculate, obovate, 3–10 × 1–3mm, yellow, sometimes with red veins. Stamens 6. Style 2–9mm. Fruit borne on a 3–6mm gyno-

phore, spreading or pendent, straight, 20–70 × 1–6mm. Seeds c.1.5mm diam., reticulate, shortly hairy. **Map 491, Fig. 67.**

A weed of fields and roadsides; 1000–2400m.

Yemen (N). Ethiopia and Sudan.

18. *C. tenella* L.f., Suppl. pl.: 300 (1781).

Annual herb; stems erect, slender, much-branched, 15–30cm, glabrous. Leaves 3-foliolate; leaflets filiform, 7–20 × c.0.5mm, glabrous; petioles 7–20mm. Flowers solitary or up to 5 in lax inflorescences; bracts simple or 3-foliolate, filiform; pedicels 8–15mm. Sepals ovate, c.1mm, glabrous. Petals not appendiculate, obovate, c.2.5mm, colour not known. Stamens 6. Style minute. Fruit without a gynophore, erect or erect-spreading, linear, straight or curved, 20–35 × c.2.5mm. Seeds c.1mm diam., reticulate, glabrous. **Map 492, Fig. 67.**

Weed of date gardens, etc.; c.50m.

Socotra. Tropical Africa from Ethiopia to Senegal, India.

19. *C. viscosa* L., Sp. pl.: 672 (1753). Illustr.: Collenette (1985 p.98).

Annual foetid herb; stems erect, simple or branched, up to 70cm, densely glandular-villous and stipitate-glandular. Leaves 3(–5)-foliolate; leaflets ovate-elliptic, 10–40 × 3–20mm, shortly glandular-pilose; petioles 7–70mm. Inflorescence few-flowered; bracts leaf-like, trifoliolate; pedicels 10–30mm. Sepals ovate-elliptic, 3–6mm. Petals not appendiculate, broadly elliptic, 4–10 × 1–3mm, yellow drying white. Stamens 10–20. Style 1–4mm. Fruit without a gynophore, erect or erect-spreading, linear, straight or slightly curved, 50–80 × 3–5mm, prominently nerved. Seeds 1–1.5mm diam., transversely ridged, glabrous. **Map 493, Figs 67 & 68.**

Rocky and gravelly slopes, fields and amongst scrub; 50–1500m.

Saudi Arabia, Yemen (N & S), Socotra. A pantropical weed.

20. *C. gynandra* L., Sp. pl.: 671 (1753). Syn.: *C. pentaphylla* L., Sp. pl. ed.2: 938 (1763); *Pedicellaria gynandra* (L.) Schrank in Bot. Mag. (Römer & Usteri) 3 St. 8: 10 (1790); *Gynandropsis pentaphylla* (L.) DC., Prodr. 1: 238 (1824); *G. gynandra* (L.) Briq., Annuaire Conserv. Jard. Bot. Genève 17: 382 (1914). Illustr.: Collenette (1985 p.99) as *Gynandropsis gynandra*.

Faintly aromatic annual herb; stems branched from the base, 35–100cm, ± villous and stipitate-glandular. Leaves 3–5-foliolate; leaflets obovate, up to 13–70 × 6–33mm, cuneate at base, glandular above or almost glabrous; petioles (19–)30–95(–120)mm. Inflorescence many-flowered; bracts small, the lower 3-foliolate, the upper simple; pedicels 15–25mm, spreading, not elongating in fruit. Sepals ovate, 2–4mm, acute. Petals not appendiculate, the lamina orbicular, 2–6mm diam., white or yellow to mauve-pink. Stamens 6, borne on an 8–20mm anthophore. Style 1–4mm. Fruit borne on a 5–12mm gynophore, linear, straight or slightly curved, erecto-patent, 20–80 (–115) × 2–5mm. Seeds c.1mm diam., coarsely reticulate, glabrous. **Map 494, Fig. 67.**

Cultivated ground; 0–1500m.

Saudi Arabia, Yemen (N & S), Socotra, Oman, UAE. A pantropical weed.

Allied to *C. hanburyana* and sometimes confused with it. Often placed in a separate genus, on account of the long androphore.

21. *C. hanburyana* Penzig in Penzig (ed.), Atti Congr. Bot. Genova: 330 (1893). Syn.: *C. areysiana* Deflers in Bull. Soc. Bot. France 42: 297 (1895); *C. deflersii* Blatter (1919–36, p.38) nom. nud.

Annual or perhaps perennial herb; stems branched from the base, 20–40cm, densely glandular-villous and shortly stipitate-glandular. Leaves 5-foliolate; leaflets obovate, 5–20 × 2–6mm, densely stipitate- or villous-glandular; petioles (8–)15–60mm. Inflorescence many-flowered; bracts small, the lower 3-foliolate, the upper simple; pedicels 8–15mm. Sepals triangular-ovate, 3–7 × 1–3mm, densely glandular. Petals not appendiculate, the lamina elliptic, 13–25 × 3–6mm, white and crimson to purple with a yellow spot. Stamens 6–8. Style 1–3 mm. Fruit borne on a 17–25mm gynophore, linear, straight or slightly curved, spreading to pendulous, 55–90 × 1–4cm. Seeds 1–2mm diam., ridged, glabrous. **Map 495, Fig. 67.**

Rocky places on hillsides and in wadis; 30–1100m.

Saudi Arabia, Yemen (S). N Kenya and NE tropical Africa.

Allied to *C. gynandra*, differing in the absence of an androphore and in its smaller leaflets. It has a more restricted distribution.

22. *C. monophylla* L., Sp. pl.: 672 (1753).

Sprawling annual; stems branched, 30–50cm, stipitate-glandular. Leaves simple, linear-lanceolate to lanceolate, 20–35(–60) × 3–5(–20)mm, rounded at the apex, stipitate-glandular; petioles absent or up to 10mm. Inflorescence few-flowered; bracts similar to the leaves but smaller; pedicels c.2mm in flower, elongating to 10mm in fruit. Sepals linear, 2.5–3 × 0.5mm, stipitate-glandular. Petals not appendiculate, linear to obovate, 4–7 × 1–2mm, mauve. Stamens 6. Style 2–5mm. Fruit borne on a 3–6mm gynophore, linear, straight, spreading. Seeds c.1.5mm diam., ridged, the ridges minutely papillate. **Map 496, Figs 67 and 68.**

Roadside; c.2000m.

Yemen (N). Tropical Africa, India and Sri Lanka.

In Arabia only known from a single gathering from Yemen (N).

23. *C. paradoxa* R.Br. ex DC., Prodr. 1: 241 (1824). Illustr.: Collenette (1985 p.97).

Large upright herb, probably perennial, aromatic or not; stems sometimes woody, 40–250cm, ± glabrous, often with brown punctate glands above. Leaves 5(–6)-foliolate; leaflets linear to narrowly elliptic, 15–65 × 1–7mm, glabrous; petioles 20–110mm. Inflorescence many-flowered; bracts simple, linear, 5–15 × 0.5–1mm; pedicels stout, especially in fruit, 10–30 mm. Sepals dimorphic, lanceolate or triangular-ovate,

5–14 × 2–6mm, punctate-glandular. Petals not appendiculate, dimorphic, the larger 1.5–2 × the smaller, broadly elliptic, 15–30 × 5–15mm, yellow, sometimes with red or brown veins. Stamens 6. Style 1–5(–9)mm. Fruit borne on a 10–15(–25)mm gynophore, linear, 60–120(–130) × 3–7mm, straight or slightly curved, spreading or pendulous. Seeds c.1.5mm diam., reticulate, densely hairy when mature. **Map 497, Figs 67 & 68.**

Rocky slopes, screes and disturbed ground; 30–700(–1650)m.

Saudi Arabia, Yemen (N & S). Ethiopia and Sudan.

The size of the plants and flowers make this a distinctive species.

Species incompletely known

C. digitata Forsskal (1775 p.120). Type: Yemen (N), *Forsskal* (?).

Stems villous-hispid. Lower leaves digitate, upper leaves 3-foliate; leaflets c.25mm. Stamens 6.

Only known from the type which unfortunately cannot be traced (according to Christensen (1922) it is not at C). The digitate lower leaves limit the number of species with which *C. digitata* might have affinities. Since we have not seen the only known specimen, we hesitate to confirm the status of this species.

2. DIPTERYGIUM Decne

J.A. NYBERG

Glabrous or glandular perennial herbs. Leaves small, simple, shortly petiolate. Flowers small, in lax racemes, actinomorphic. Sepals 4, free. Petals 4, free, shortly clawed. Disc-appendage absent. Stamens 6, equal; androphore absent. Gynophore short. Fruit an indehiscent, 1-seeded, winged nutlet.

1. D. glaucum Decne in Ann. Sci. Nat. Bot. sér. 2, 4: 67 (1835). Syn.: *D. glaucum* Decne var. *macrocarpa* Blatter (1919–36 p.30); *Cleome pallida* Kotschy in Sitzungsber. Kaiserl. Akad. Wiss. Math.-Naturwiss. Cl., Abt. 1, 52: 262 (1866). Illustr.: Collenette (1985 p.98) Type: Saudi Arabia, *Bové* (P).

Woody-based herb or sub-shrub up to 60(–150)cm, with dense slender branches. Leaves linear-oblong to ovate, 2–20 × 1–6mm, acute to obtuse. Flowers on short slender pedicels. Sepals 0.5–2mm long. Petals pale yellow, rarely pink-tinged, 3–4 × 1–2mm. Stigma capitate on a short style. Fruits elliptic, 3.5–5 × 2–4mm, muricate, narrowly winged. **Map 498, Fig. 71.**

Widespread in stony, sandy and gravelly deserts; 0–500(–1350)m.

Saudi Arabia, Yemen (N & S), Oman, UAE. Egypt, Sudan, Ethiopia, Somalia, Djibouti, Iran and Pakistan.

3. MAERUA Forsskal

A.G. MILLER & J.A. NYBERG

Shrubs, trees or climbers. Leaves alternate or clustered, simple or 1–3-foliolate. Flowers in terminal racemes, panicles or clustered in the leaf axils, actinomorphic. Receptacle (the hypanthium) cylindrical or campanulate. Sepals 3–4, free. Petals (3–) 4 or absent, subequal. Stamens 6–numerous, free, borne on an androphore. Gynophore present. Stigma capitate. Fruits globose to ellipsoidal or cylindrical, often torulose, indehiscent.

- | | |
|--|---------------------------|
| 1. Climbing shrubs or, if rarely non-climbing, then a low and stunted shrub; petals present; fruits irregularly globular | 4. M. oblongifolia |
| + Tree or non-climbing shrub; petals present or absent; fruits globose to ellipsoidal, or if cylindrical then \pm regularly torulose | 2 |
| 2. Petals present; leaves simple or 1–3-foliolate | 3. M. triphylla |
| + Petals absent; leaves simple | 3 |
| 3. Leaves shortly petiolate (petioles 1–4(–5)mm), usually clustered on short spur-branches; flowers in axillary clusters | 1. M. crassifolia |
| + Leaves long-petiolate (petioles (5–)8–20mm), not usually clustered; flowers in terminal or axillary racemes | 2. M. angolensis |

1. M. crassifolia Forsskal (1775 p. CXIII & 104). Syn.: ?*M. thomsoni* T. Anders. (1860 p.5); *M. uniflora* Vahl (1790 p.36); *M. arabica* J.F. Gmel., Syst. nat.: 827 (1791); *Wiegmannia arabica* (J.F. Gmel.) Hochst. & Steud. ex Steud., Nomencl. bot. ed. 2, 2: 787 (1841). Illustr.: Collenette (1985 p.99) as *M. oblongifolia*; Miller (1988 p.89); Western (1989 p.59). Type: Yemen (N), Forsskal (C).

Tree or shrub, 1–7m (less commonly a large tree up to 20m and with a c.1m diam. trunk), typically with an umbrella-shaped canopy. Leaves solitary on the new shoots and in clusters on short spur-branches on the older wood, simple, obovate to elliptic or oblong-elliptic, 7–20(–32) \times (3–)4–10(–18)mm, obtuse or rarely acute to retuse at the tip, mucronate, glabrous or finely pubescent; petioles 1–4(–5)mm. Flowers in 1–4(–6)-flowered clusters arising from the spur-branches. Sepals greenish yellow, (3–)5–7mm. Hypanthium 2–3mm. Petals absent. Gynophore 10–20mm. Fruits cylindrical, torulose, 10–50 \times 4–6mm, pale green when mature. **Map 499, Fig. 70.**

Sandy or gravelly plains, stony hills, rocky outcrops, dry volcanic slopes in semi-desert bushland and *Acacia-Commiphora* bushland; 10–1800m.

Saudi Arabia, Yemen (N & S), Oman, UAE. N Africa, W, C, NE & E tropical Africa, Palestine, Iran and Pakistan.

A very variable species, requiring further study in Arabia, and perhaps better treated as several taxa. In Yemen, John Wood (pers. comm.) records two forms with different vernacular names: “MERU” for glabrous plants from the Tihama (coastal plain) and “SIRAH” for pubescent plants from the dry inner plateau. Mats Thulin

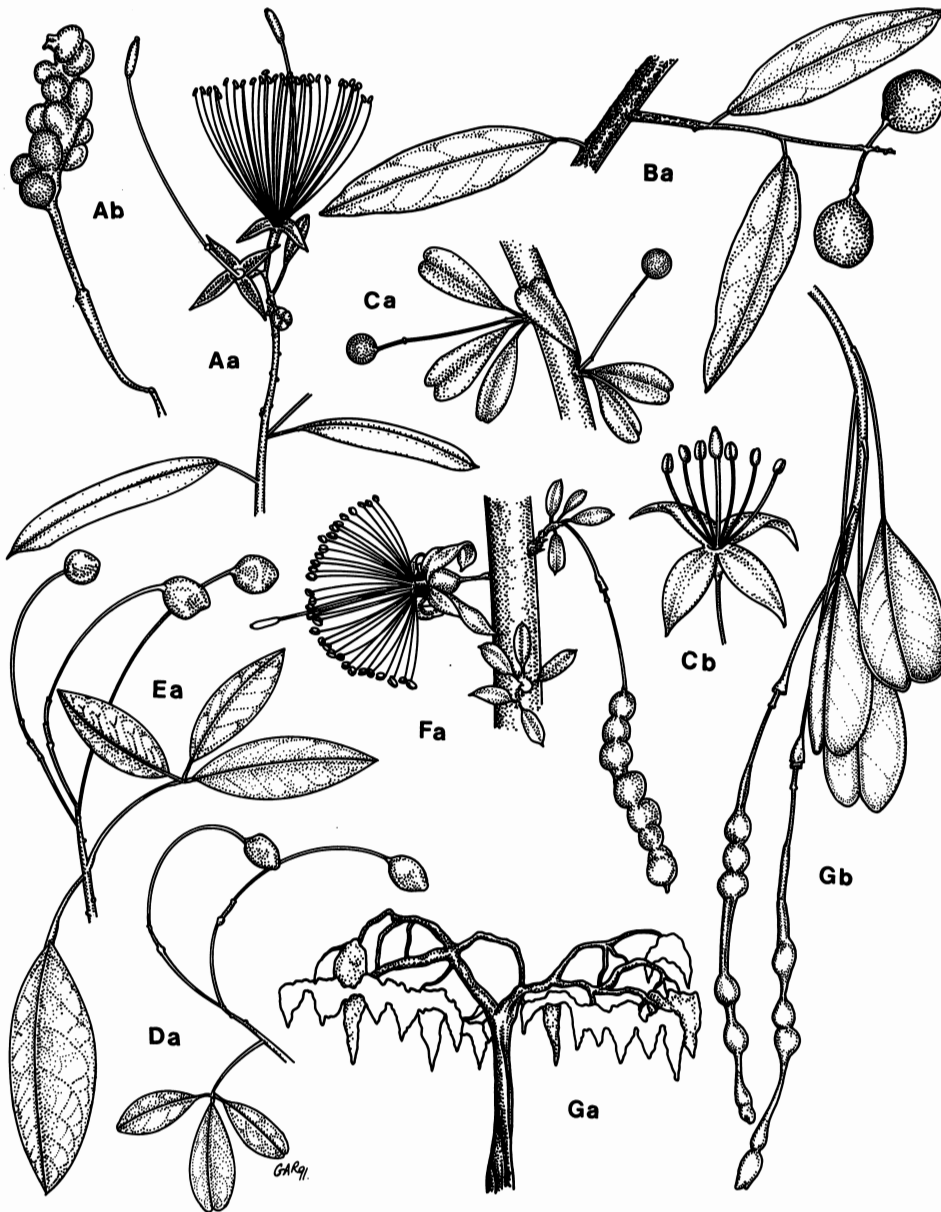


Fig. 70. Capparaceae. A, *Maerua oblongifolia*: Aa, flowering shoot ($\times 1$); Ab, fruit. B, *Boscia angustifolia*: Ba, fruiting branch ($\times 1$). C, *B. arabica*: Ca, part of fruiting stem ($\times 1$); Cb, flower ($\times 4$). D, *Maerua triphylla* var. *calophylla* type "A": Da, fruiting stem ($\times 0.3$). E, *M. triphylla* var. *calophylla* type "B": Ea, fruiting stem ($\times 0.3$). F, *M. crassifolia*: Fa, part of fruiting and flowering branch ($\times 1$). G, *M. angolensis* subsp. *socotrana*: Ga, tree; Gb, fruiting shoot ($\times 1$).

(pers. comm.) considers the mainly coastal, glabrous plants to be *M. crassifolia* (syn. *M. thomsonii* T. Anders.) and the pubescent plants to be a separate, more widespread taxon, which would have to be called *M. rigida* R. Br. The ranges of both of these taxa overlap in southern and western Arabia.

In the past *M. thomsonii* (described from Aden) has been wrongly misinterpreted as being conspecific with *M. angolensis*. De Wolf (Fl. Trop. E. Afr.: 29 (1964)) states that *M. thomsonii* T. Anders. appears to be an ecological variant of the widespread *M. angolensis*. However, *M. thomsonii* is clearly part of the *M. crassifolia* complex and not at all closely related to *M. angolensis*.

2. *M. angolensis* DC., Prodr. 1 : 254 (1824).

Shrub or small tree up to 6m. Leaves solitary, simple, obovate to oblong-ovate or subcircular, 1.5–40 × 1–3cm, rounded or retuse at the tip, mucronate, glabrous; petioles (5–)10–20mm. Flowers solitary or in few-flowered axillary and terminal racemes. Sepals cream, greenish or pale yellow, 5–10mm. Hypanthium 2–6 (–15)mm long. Petals absent. Fruit cylindrical, torulose, up to 40–50 × 3–5mm, green. **Fig. 70.**

1. Hypanthium 4–6(–15)mm; leaf-blade ovate to oblong-ovate, 1.5–3.5 × 1–2cm; low shrub subsp. **angolensis**
- + Hypanthium 2–4mm; leaf-blade narrowly obovate to ovate or subcircular, 2–4 × 1–3cm; small tree with pendulous branches subsp. **socotrana**

subsp. **angolensis**.

Shrub (in Arabia) up to 1.5m. Leaves ovate to oblong-ovate, 1.5–3.5 × 1–2cm. Sepals cream, 10mm. Hypanthium 4–6(–15)mm. Fruit cylindrical, torulose, up to 22cm long, green. **Map 500.**

Volcanic cones and sandstone hills; 1900–2100m.

Yemen (N). Tropical & southern Africa.

In Arabia known only from two gatherings in the dry inner plateau of Yemen. Fruiting material from Arabia has not been seen and the description has been completed from African material.

subsp. **socotrana** (Schweinf. ex Balf. f.) Kers var. **socotrana** in Novon 3: 54 (1993). Syn.: *M. angolensis* DC. var. *socotrana* Schweinf. ex Balf. f. (1884 p.402); *M. angolensis* sensu Balfour (1888) non DC.; *M. socotrana* (Schweinf. ex Balf. f.) Gilg in Bot. Jahrb. Syst. 33: 228 (1903). Syntypes: Yemen (Socotra) *Balfour, Cockburn & Scott* 193 (BM, K); 588 (B, BM, E, K, P); *Schweinfurth* 251; 457 (B, K, P); 603 (K, P).

Tree up to 6m, with a single trunk and graceful pendulous branches. Leaves narrowly obovate to ovate or subcircular, 2–4 × 1–3cm. Sepals greenish or pale yellow, 5–10mm. Hypanthium 2–4mm long. Fruits cylindrical, torulose, 40–50 × 3–5mm, pale green when mature. **Map 501, Fig. 70.**

Sandy plains, rocky slopes and on cliffs in *Jatropha unicostata*-*Croton socotranus* bushland; 10–400m.

Socotra. Endemic variety.

Two varieties are recognized within *M. angolensis* subsp. *socotrana*: var. *africana* (Ethiopia and Somalia) differs from var. *socotrana* (Socotra) in its longer sepals (1–2 cm) and hypanthia (2–6 mm). For a discussion of the *M. angolensis* complex in NE Africa and Arabia see Kers (*Novon* 3: 50–54 (1993)).

3. *M. triphylla* A. Rich. (1847 p.32, t.6).

Shrub or small tree up to 5 m. Leaves simple or trifoliolate, narrowly elliptic to lanceolate or oblong-elliptic, 2–11 × 1–3.5 cm, acute or obtuse at the tip, often mucronulate, sometimes retuse, the base cuneate, pubescent or glabrous; petioles 5–50 mm. Flowers in axillary or terminal corymbose racemes. Sepals white or cream, 5–7 mm. Hypanthium 2–4 mm. Petals absent. Fruit globose or oblong-ovoid (in Arabia), 10–15 × 6–12 mm, green. **Fig. 70.**

A very variable species with several varieties recognized in Africa. We have found it difficult to assign varieties to the few gatherings made in Arabia. This treatment must remain provisional and awaits a fuller revision of the genus in Africa and Arabia.

- | | | |
|----|---|--------------------------------------|
| 1. | Twigs and pedicels densely pubescent; ovary usually hairy; fruit cylindrical | |
| | | var. johannis |
| + | Twigs and pedicels glabrous or pubescent; ovary usually glabrous; fruit globose or ovoid-ellipsoid | 2 |
| 2. | Twigs and pedicels glabrous | 3 |
| + | Twigs and pedicels pubescent | var. calophylla type C |
| 3. | Leaves and leaflets oblong-elliptic, 20–40 × 10–17 mm, obscurely reticulate beneath; fruits ellipsoid | var. calophylla type A |
| + | Leaves and leaflets elliptic, 50–90 × 25–40 mm, distinctly reticulate beneath; fruits globose | var. calophylla type B |

var. **johannis** (Volkens & Gilg) De Wolf in Kew Bull. 16: 82 (1962).

Shrub to 1 m, densely pubescent throughout. Leaves mainly trifoliolate; leaflets elliptic to lanceolate, up to 90 × 23 mm, strongly reticulate beneath. Ovary hairy. Fruits in Arabia unknown. **Map 501.**

Terrace walls; 1500 m.

Yemen (N). Tropical Africa.

Very rare in Arabia. Found only once, on J. Raymah, in the outer escarpment mountains.

var. **calophylla** (Gilg) De Wolf in Kew Bull. 16: 82 (1962).

Within var. *calophylla* three variants, with apparently distinct ecological preferences, are found in Arabia. No attempt has been made to compare these with African material. Outside Arabia var. *calophylla* is found in E and NE tropical Africa.

Type A. including: *M. cylindricarpa* sensu Schwartz (1939 p.68) non Gilg & Benedict; *M. nervosa* sensu Blatter (1919–36 p.40) non Oliv.

Shrub to 2m, glabrous throughout. Leaves simple and trifoliate; leaves and leaflets, oblong-elliptic, 20–60 × 10–25mm, obscurely reticulate beneath; fruits ellipsoid to club-shaped. **Map 501, Fig. 70.**

Succulent shrubland dominated by *Euphorbia* spp.; 1300–2200m. **Yemen (N).**

Type B. including: *M. variifolia* sensu Schwartz (1939 p.69) non Gilg & Benedict.

Small tree up to 5m, glabrous throughout. Leaves simple and trifoliate; leaves and leaflets elliptic, 50–90 × 25–40mm, visibly reticulate beneath; fruits globose. **Map 502, Fig. 70.**

Valley forest, cliffs and field margins, 500–1900m. **Yemen (N).**

Restricted to the outer escarpment mountains

Type C. Illustr.: Collenette (1985 p.99)

Shrub up to 1m, pubescent throughout. Leaves simple and trifoliate; leaves and leaflets elliptic, up to 80 × 40mm, visibly reticulate beneath. Ovary glabrous. Fruits globose. **Map 502.**

On steep road cutting; 1525m. **Saudi Arabia.**

Outer escarpment mountains. Very similar to var. *calophylla* type B except that the plants are pubescent.

4. *M. oblongifolia* (Forsskal) A. Rich., (1847 p.32, t.5). Syn.: *Capparis mithridatica* Forsskal (1775 p.99); *C. oblongifolia* Forsskal (1775 p.99); *M. ovalifolia* sensu Blatter (1919–36 p.41) non Cambess.; *Niebuhrnia oblongifolia* (Forsskal) DC., Prodr. 1: 244 (1824). Illustr.: Collenette (1985 p.99) as *M. crassifolia*. Type: Yemen (N), *Forsskal* (C, BM).

Climbing shrub up to 3m, rarely non-climbing and then a low stunted shrub. Leaves typically narrowly oblong, rarely broadly elliptic (in non-climbing plants), 25–75 × 5–12(–30)mm, acute or obtuse at the tip, mucronate, the base rounded; petioles 5–10mm. Flowers in axillary or terminal corymbose racemes, rarely solitary and axillary. Sepals green, 8–10mm, with white-puberulous margins. Hypanthium 5–8mm. Petals white or yellowish-green. Gynophore 15–20mm. Fruit unevenly globular, 2–4 × c. 1cm, red at maturity. **Map 503, Fig. 70.**

Acacia-Commiphora bushland, semi-desert shrubland, ?salt flats and terrace walls; 0–1750m.

Saudi Arabia, Yemen (N & S), Oman. Tropical Africa.

A single specimen (Collenette 6885) growing, together with typical plants, on Farasan Island is a low non-climbing shrub with broadly elliptic leaves up to 30mm across.

Species incompletely known

M. racemosa Vahl (1790 p.36); no specimen has been seen. According to Christensen (1922) there is no specimen at C.

4. *BOSCIA* Lam.

J.A. NYBERG

Small trees. Leaves alternate, solitary or clustered, simple. Flowers small, in terminal or axillary corymbose racemes, actinomorphic. Sepals 4, free, valvate. Petals absent. Stamens 4–9, free, borne on a very short androphore. Gynophore present. Stigma capitate, borne on a short style. Fruit globose, indehiscent.

1. Leaves narrowly oblong-elliptic to obovate, usually more than 2.5cm long; leaf venation reticulate, prominent on the undersurface **1. B. angustifolia**
- + Leaves obovate or oblong-obovate, up to 3cm long; leaf venation obscure **2. B. arabica**

1. B. angustifolia A. Rich. in Guill. & Perr., Fl. Seneg. tent. 1: 26, t.6 (1831). Illustr.: Collenette (1985 p.93).

Tree up to 12m, with a rounded crown; trunk smooth, pale brown or grey; young branches sometimes pubescent. Leaves dark green, narrowly oblong-elliptic to obovate, 2.5–6 × 0.8–2cm, rounded to retuse at the tip, mucronate, glabrous; petioles 1–5mm. Flowers in terminal or axillary clusters; pedicels 3–10mm. Sepals c.4 × 1–1.5mm; disk fimbriate. Stamens (4–)5–9. Gynophore present. Fruit green, ovoid, verrucose, c.1cm diam. **Map 504, Fig. 70.**

Acacia-Commiphora bushland; 200–1950m.

Saudi Arabia, Yemen (N). Tropical Africa.

Very variable in leaf shape.

2. B. arabica Pestalozzi in Bull. Herb. Boissier 6, App. 3: 127 (1898). Illustr.: Miller (1988 p.89).

Tree up to 6m, usually with a flat-topped crown; trunk smooth, greyish or greyish brown. Leaves yellow-green, becoming glaucous with age, obovate to oblong-obovate, 8–30 × 3–12mm, rounded or retuse at the tip, glabrous to finely pubescent, somewhat farinose; petioles 2–4mm. Flowers in axillary racemes; pedicels 10–15mm. Sepals 2.5–4 × 1.5–2.5mm. Stamens 6–8. Gynophore 5–7mm long. Fruit globose, 5–10mm diam. **Map 505, Fig. 70.**

Acacia-Commiphora bushland; 50–1250m.

Yemen (N & S), Oman. Endemic.

The leaves and pedicels of specimens from Oman and the eastern part of Yemen (S) are finely pubescent, whereas those from the western part of the range are glabrous. There are no other consistent differences between the two variants so they have not been given any formal taxonomic status.

Species doubtfully recorded

B. senegalensis (Pers.) Lam. ex Poir. (Migahid 1978); the specimen of this at KSUH is an Asclepiad.

B. minimifolia Chiov. (De Marco & Dinelli p. 222).

5. CAPPARIS L.

J.A. NYBERG

Shrubs or small trees. Leaves simple, entire, often leathery, with a pair of recurved stipular thorns. Flowers solitary in the leaf axils or in terminal or axillary racemes or clusters. Sepals 4, free, \pm equal or with the upper sepal larger and strongly hooded. Petals 4, free. Stamens 10–numerous; androphore absent. Gynophore present. Fruit a globose to obovoid berry.

- | | | |
|----|---|------------------------|
| 1. | Plant soon aphyllous; leaves when present linear-oblong; petals red | |
| | | 1. C. decidua |
| + | Leaves present, broadly ovate to orbicular; petals white or cream, often becoming pink with age | 2 |
| 2. | Flowers in terminal racemes; fruits globose | 4. C. tomentosa |
| + | Flowers solitary in the axils of the leaves; fruits obovoid to ellipsoid | 3 |
| 3. | Sepals subequal, ovate to broadly ovate | 2. C. spinosa |
| + | Sepals unequal, with 3 oblong-ovate and shallowly boat-shaped and the other ovate and strongly hooded | C. cartilaginea |

1. C. decidua (Forsskal) Edgew. in J. Linn. Soc. Bot. 6: 184 (1862). Syn.: *Capparis aphylla* Roth, Nov. pl. sp.: 238 (1821) *Sodada decidua* Forsskal (1775 p. 81);. Illustr.: Collenette (1985 p.95). Type: Yemen (N), *Forsskal* (C).

Shrub or small tree up to 3m, usually leafless. Leaves soon deciduous, linear to linear-oblong, 10–25 × 0.5–3mm, sparsely pubescent. Flowers axillary, solitary or in clusters; pedicels 5–15mm. Sepals unequal, 5–10mm long, with 3 shallowly boat-shaped and the upper strongly hooded. Petals pale orange or red; inner pair narrowly ovate, 8–12 × c.2mm; outer pair ovate, 6–12 × 5–8mm. Stamens 8–20, c.15mm. Gynophore 10–15mm. Fruit yellow to scarlet, globose, 5–15mm diam., pubescent. **Map 506.**

Sandy coastal plains, fossil coral; 0–300m.

Saudi Arabia, Yemen (N & S), Socotra, Oman. Tropical NE & N Africa, Palestine, Iran, Pakistan and NW India.

2. C. spinosa L., Sp. pl.: 503 (1753) non *C. spinosa* Forsskal. Illustr.: Mandaville (1990 pls. 69 & 70).

Spreading or sprawling shrub up to 60cm; young shoots velutinous at first, becom-

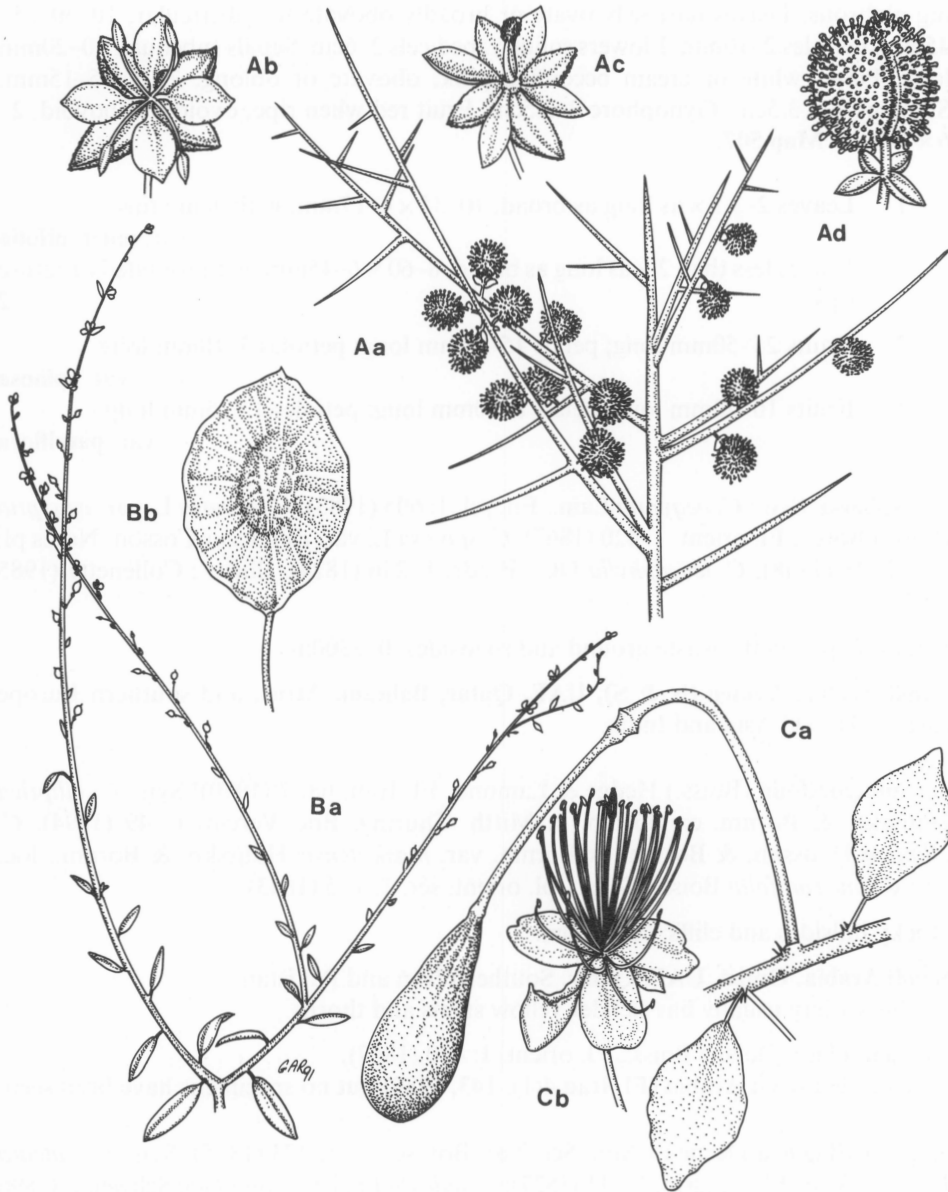


Fig. 71. Capparaceae. A, *Dhofaria macleishii*: Aa, fruiting branch ($\times 1$); Ab, male flower ($\times 4$); Ac, female flower ($\times 4$); Ad, fruit ($\times 2.5$). B, *Dipterygium glaucum*: Ba, habit ($\times 1$); Bb, fruit ($\times 8$). C, *Capparis cartilaginea*: Ca, part of fruiting branch ($\times 1$); Cb, flower ($\times 1$).

ing glabrous. Leaves narrowly ovate or broadly obovate to subcircular, 10–50 × 5–45mm; petioles 2–10mm. Flowers solitary; pedicels 2–6cm. Sepals subequal, 10–20mm long. Petals white or cream becoming pink, obovate or oblong, 7–25 × 5–15mm. Stamens 1.5–3.5cm. Gynophore 2–3.5cm. Fruit red when ripe, ovoid or obovoid, 2–6 × 1–2cm. **Map 507.**

1. Leaves 2–3.5 × as long as broad, 10–35 × 4–17mm, with acute tips
var. **mucronifolia**
- + Leaves less than 2 × as long as broad, 8–60 × 6–45mm, with rounded or retuse tips 2
2. Fruits 25–50mm long; petals 15–40mm long; petioles 3–10mm long
var. **spinosa**
- + Fruits 10–20mm long; petals 8–20mm long; petioles 1.5–5mm long
var. **parviflora**

var. **spinosa**. Syn.: *C. aegyptia* Lam., Encycl. 1: 605 (1783); *C. spinosa* L. var. *aegyptia* (Lam.) Boiss., Fl. orient. 1: 420 (1867); *C. spinosa* L. var. *canescens* Cosson, Notes pl. crit. 1: 28 (1848); *C. leucophylla* DC., Prodr. 1: 246 (1824). Illustr.: Collenette (1985 p.95).

Rocky slopes, cliffs, waste ground and roadsides; 0–2300m.

Saudi Arabia, Yemen (N & S), UAE, Qatar, Bahrain. Africa and southern Europe eastwards to C Asia and India.

var. **mucronifolia** (Boiss.) Hedge & Lamond, Fl. Iran. 68: 7 (1970). Syn.: *C. elliptica* Hausskn. & Bornm. ex Bornm. in Mitth. Thüring. Bot. Vereins 6: 49 (1894); *C. elliptica* Hausskn. & Bornm. ex Bornm. var. *maskatensis* Hausskn. & Bornm., loc. cit.; *C. mucronifolia* Boiss., Diagn. pl. orient. sér. 1, 1: 5 (1843).

Rocky hillsides and cliffs; 50–1250m.

Saudi Arabia, Oman, UAE, Qatar. Southern Iran and Pakistan.

This variety usually has slender yellow stems and thorns.

var. **parviflora** (Boiss.) Boiss., Fl. orient. 1: 420 (1867).

Recorded from Arabia (Fl. Iraq 4(1): 143, 1980) but no specimens have been seen.

3. C. cartilaginea Decne in Ann. Sci. Nat. Bot. sér. 2, 3: 273 (1835). Syn.: *C. galeata* Fresen., Beitr. Fl. Abyssin. 2: 111 (1837); *C. galeata* Fres. var. *montana* Schweinf. (1896 p.191); ?*C. inermis* Forsskal (1775 p.100); *C. spinosa* L. var. *galeata* (Fresen.) Hook. f. & Thoms. in Hook f., Fl. Brit. India 1: 173 (1872); *C. spinosa* sensu Balf.f (1888 p.14) non L.; ?*C. spinosa* sensu Forsskal (1775 p.99) non L. Illustr.: Collenette (1985 p.94); Miller (1988 p.93). **Map 508, Fig. 71.**

Spreading or sprawling shrub up to 2m; young shoots puberulous at first, becoming glabrous. Leaves elliptic to ovate or orbicular, 15–50 × 8–50mm, acute to rounded with a small recurved spine inserted below the tip, leathery; petiole 5–30mm. Flowers

solitary, on stout 3–8cm pedicels. Sepals unequal, 1–4cm long, the upper strongly hooded. Petals white becoming pink or purple, unequal, ovate to orbicular, 1–3cm long, the upper pair appearing fused. Stamens many, c.5cm long. Gynophore c.3.5cm. Fruit bright red, obovoid, 2–5 × 2–3cm. **Map 508.**

Cliffs and large boulders; 0–2400m.

Saudi Arabia, Yemen (N & S), Socotra, Oman, UAE. E and SW Africa to India.

4. *C. tomentosa* Lam., *Encycl.* 1: 606 (1785). *Illustr.*: Collenette (1985 p.95).

Shrub or small tree, velutinous throughout. Leaves ovate, 4–7 × 2–3.5cm; petiole 3–10mm. Flowers in short terminal and axillary racemes; pedicels c. 2.5cm. Sepals subequal, 13–20mm. Petals creamy-green, obovate, 2–2.5 × c.1cm. Stamens many, c.5cm. Gynophore c. 4cm. Fruit reddish or yellowish green, globose (pear-shaped in *Wood* 3392), up to 5cm diam. **Map 509.**

Cliffs; 300–1500m.

Saudi Arabia, Yemen (N). Tropical and southern Africa.

6. CADABA Forsskal

J. A. NYBERG

Trees or shrubs. Leaves alternate or clustered, simple. Flowers in terminal corymbs or racemes, rarely solitary, zygomorphic. Sepals 4, free. Petals 4 or absent, clawed. Nectarial appendage tubular, the upper part sometimes petaloid. Stamens 4–5; androphore present. Ovary 1–2-locular; gynophore present; ovules many. Fruits cylindrical, often somewhat torulose, tardily dehiscent.

1. Leaves broadly elliptic to broadly ovate or orbicular, usually more than 1cm long and about as broad as long; stamens attached towards the base of the gynophore 2
- + Leaves linear-elliptic to narrowly oblong or narrowly obovate, usually at least twice as long as broad, if rarely broader then less than 5mm long; stamens attached near the middle of the gynophore 5
2. Petals present 3
- + Petals absent 4
3. Leaves densely and minutely stellate-hairy; fruits densely clothed with sessile glands **1. *C. heterotricha***
- + Leaves glabrous or minutely pubescent, hairs simple; fruits densely clothed with stalked glands **2. *C. mirabilis***
4. Leaves clothed with stalked glandular hairs; fruits glandular **3. *C. glandulosa***
- + Leaves glabrous or sometimes strigose when young, never glandular; fruits non-glandular **4. *C. rotundifolia***

- | | |
|--|--------------------------------|
| 5. Leaves bright green, glabrous, 30–70mm long | 6. <i>C. longifolia</i> |
| + Leaves grey-green, farinose, 5–25mm long | 6 |
| 6. Petals yellowish-green to brownish-green to cream; fruits non-glandular | 5. <i>C. farinosa</i> |
| + Petals clear yellow; fruits glandular | 7. <i>C. baccarinii</i> |

1. *C. heterotricha* Stocks ex Hook. in Hooker's Icon. pl. ser. 2, 9: t.839 (1852). Illustr.: Miller (1988 p.91).

Small tree up to 5m. Leaves grey-green, broadly obovate to orbicular, 10–35 × 7–20cm, rounded or retuse at the tip, densely clothed with minute stellate hairs and rarely also with simple glandular hairs. Flowers in terminal corymbs. Sepals 4–7 × c.2mm. Petals white, 6–8mm, suborbicular with a long claw ± equalling the blade. Stamens 5, attached at the base of the gynophore. Nectarial appendage c.1cm, tubular, broadened at the tip. Fruits c.25 × 3mm, densely covered with sessile glands and stellate hairs. **Map 510, Fig. 72.**

Acacia-Commiphora bushland on dry rocky slopes and cliff faces; 50–1400m.

Yemen (N & S), Oman, Kenya, Ethiopia, Somalia, Pakistan and India.

The stems and leaves of *Miller* 6368 are unusual in being densely clothed with long-stalked and somewhat strigose glandular hairs which resemble those of *C. glandulosa*. *Miller* 7010 is intermediate between the above specimen and typical *C. heterotricha* in having similar stalked glands but only on the young leaves.

2. *C. mirabilis* Gilg in Annuario Reale Ist. Bot. Roma 6: 93 (1896).

Shrub up to 3m. Leaves ovate to oblong-elliptic or subcircular, 2.5–4 × 1.5–3cm, rounded or obtuse at the tip, fleshy, glabrous or minutely pubescent. Flowers in terminal corymbs. Sepals 8–10 × 2–3mm. Petals cream, 10–15mm long, subcircular and shortly and abruptly clawed. Stamens 5, attached to the base of the gynophore. Nectarial appendage c.2cm, 'S'-shaped with an oblong, orange, petaloid tip. Fruits 1–3 × c.0.4cm, densely covered with stalked glandular hairs. **Map 511, Fig. 72.**

Acacia-Commiphora bushland; 300m.

Yemen (S), Sudan, Ethiopia, Somalia and Kenya.

3. *C. glandulosa* Forsskal (1775 p.68). Illustr.: Collenette (1985 p.94). Type: Yemen (N), *Forsskal* (C).

Shrub up to 1.5m. Young shoots densely glandular-hairy. Leaves grey-green, broadly elliptic to orbicular, 5–20 × 5–20mm, mucronate, clothed with long-stalked and somewhat strigose glandular hairs. Flowers in few-flowered corymbs. Sepals 7–9 × 4–6mm. Petals absent. Stamens 5, attached at the base of the gynophore. Nectarial appendage c.15mm, tubular, petaloid at the tip, yellow. Fruits 10–15 × 5mm, densely covered with stalked glands. **Map 512, Fig. 72.**

Acacia-Commiphora bushland on dry rocky slopes and sandy plains; 0–1400m.

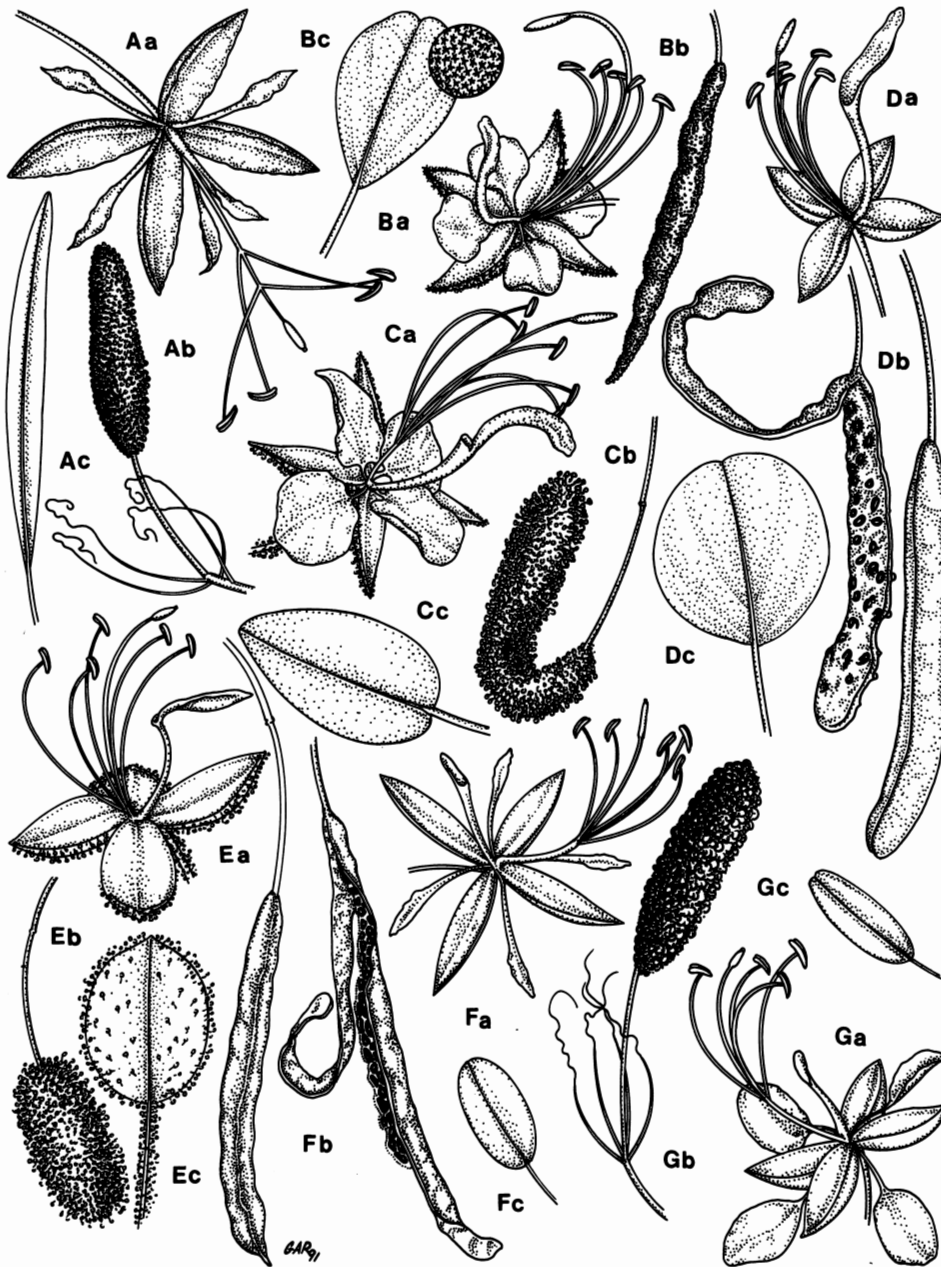


Fig. 72. Capparaceae. *Cadaba* species: A, *C. longifolia*; B, *C. heterotricha*; C, *C. mirabilis*; D, *C. rotundifolia*; E, *C. glandulosa*; F, *C. farinosa*; G, *C. baccarinii*: a, flowers ($\times 2$); b, fruits ($\times 2.5$); c, leaves ($\times 1.5$).

Saudi Arabia, Yemen (N & S). Uganda, Kenya, Tanzania, Somalia, Ethiopia, Sudan and Mali.

4. *C. rotundifolia* Forsskal (1775 p.68). Illustr.: Collenette (1985 p.94). Type: Yemen (N), *Forsskal* (C, BM).

Shrub up to 2m. Leaves dark green, broadly ovate to orbicular, 17–50 × 12–45mm, retuse or rounded at the tip, sometimes strigose at first but becoming glabrous. Flowers in terminal corymbs. Sepals c. 7 × 4mm. Petals absent. Stamens 4–5, attached at the base of the gynophore. Nectarial appendage c.2cm, tubular, petaloid at the tip, yellow. Fruits 15–50 × 2–7mm, non-glandular. **Map 513, Fig. 72.**

In *Acacia-Commiphora* bushland on sand and rocky slopes, along wadi-margins, coastal plains and escarpment foothills; 0–1000m.

Saudi Arabia, Yemen (N & S), Socotra. Kenya, Sudan, Ethiopia, Djibouti and Somalia.

5. *C. farinosa* Forsskal (1775 p.68). Illustr.: Fl. Pakistan 34: 14 (1973); Collenette (1985 p.93); Miller (1988 p.91). Type: Yemen (N), *Forsskal* (C).

Shrub up to 2(–3)m. Leaves farinose, grey-green, narrowly elliptic or oblong to obovate or more or less orbicular, 2–20(–25) × 1.5–12mm, rounded at the tip. Flowers solitary or in few-flowered racemes at the tips of branches. Sepals 8–10 × 3–4mm. Petals cream to greenish yellow, 10–15mm, linear-elliptic, clawed. Stamens 4–5. Androgynophore 5–8mm. Nectarial appendage short, tubular, c.5mm long, shortly toothed at the tip. Fruits 25–55 × 3–5mm, somewhat torulose, farinose. **Map 514, Fig. 72.**

Acacia-Commiphora bushland and succulent shrubland on rocky and sandy slopes and plains; 0–1800m.

Saudi Arabia, Yemen (N & S), Socotra (Abd al Kuri), Oman. Widespread in tropical Africa, Egypt, Pakistan and India.

Low and stunted specimens have been placed in subsp. *rariflora* Jafri. However, these seem to be merely grazed forms.

6. *C. longifolia* DC., Prodr. 1: 244 (1824). Illustr.: Collenette (1985 p.94).

Shrub up to 1.5m. Leaves bright green, linear-elliptic to linear-oblong or narrowly ovate, 30–70 × 5–12mm. Flowers in terminal corymbs. Sepals 8–15mm. Petals bright yellow, ageing red, 10–15mm, narrowly elliptic, clawed. Stamens 4. Androgynophore 10–15mm long. Nectarial appendage c.10mm long, the tip broadened and slightly lobed. Fruits 8–20 × 3–6mm, densely glandular. **Map 515, Fig. 72.**

In *Acacia-Commiphora* bushland on dry rocky slopes, sand and dry coastal foothills; 0–800m.

Saudi Arabia, Yemen (N & S), Socotra. Kenya, Ethiopia, Djibouti, Somalia and Sudan.

7. **C. baccarinii** Chiov. in Ann. Bot. (Rome) 13: 377 (1915). Illustr.: Miller (1988 p.91).

Shrub up to 1(–2)m. Leaves farinose, grey-green, narrowly oblong to narrowly obovate, 5–25 × 2–8mm, acute to rounded at the tip. Flowers 1–3 at the tips of branches. Sepals 7–10 × 4–6mm. Petals clear yellow, 10–14mm, ovate, clawed. Stamens 4. Androgynophore 7–15mm. Nectarial appendage 8–10mm, tubular, acute at the tip. Fruit 10–17 × 2.5–6mm, conspicuously papillose-glandular. **Map 516, Fig. 72.**

Acacia-Commiphora bushland on dry coastal hills; 5–150m.

Oman. Somalia.

7. DHOFARIA A. Miller

J.A. NYBERG

Dioecious or gynomonoecious shrubs; branches becoming spine-tipped, glabrous. Leaves simple, soon deciduous. Flowers small, in spinose racemes, zygomorphic. Sepals 4, free, unequal, the upper and lower valvate. Petals 4, free, unequal, shortly clawed. Male flowers with 4 stamens, the gynoecium absent. Female flowers with a short gynophore. Fruit a tardily dehiscent capsule, 1–3(–4)-seeded, splitting into (3–)4 valves, densely covered with stalked glands.

A monotypic genus, endemic to Arabia.

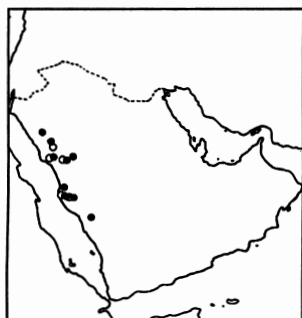
1. **D. macleishii** A.G. Miller in Notes Roy. Bot. Gard. Edinburgh 45(1): 55 (1988). Illustr.: Miller (1988 p.97). Type: Oman, *Miller 6330* (E, K, ON, UPS, KTUH).

Much-branched spiny shrub up to 1m. Leaves soon deciduous, linear-elliptic to linear-obovate, 4–15 × 1–2mm, acute to obtuse at the tip, glabrous; pedicels 1.5–2.5mm. Sepals 3–4.5 × 1.5–4mm, densely stellate-hairy. Petals cream, 3–4 × 1.3–2.5mm. Gynophore c.5mm. Stigma sessile, capitate. Fruit globose, 6–8mm diam. **Map 517, Fig. 71.**

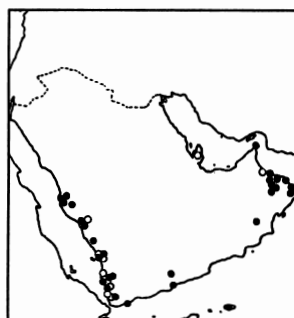
Dry rocky slopes and wadi-sides in *Acacia-Commiphora* bushland; 450–1600m.

Yemen (S), Oman. Endemic.

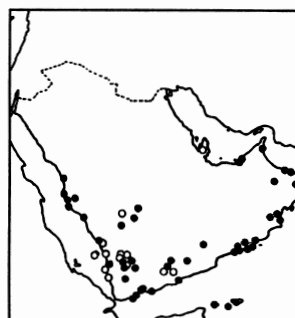
An endemic, monotypic genus restricted to the Dhofar region of Oman and adjacent parts of Yemen where it is quite common on the dry, northern dip slopes of the escarpment mountains and is also occasionally found in the wetter, south-draining wadis of the escarpment woodlands. Its spiny, leafless habit and distinctive, pea-sized fruits, which persist on plants throughout the year, make it readily recognizable. It flowers in the dry season (January and February) and has only been collected in flower once. It occupies an isolated position in the Capparaeaceae and its affinities are obscure.



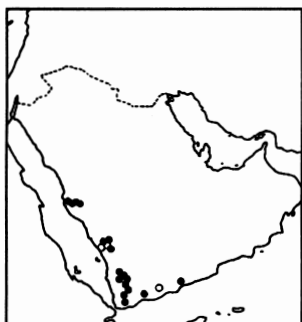
Map 475. *Cleome chrysantha*



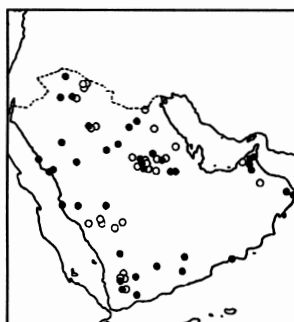
Map 476. *C. scaposa*



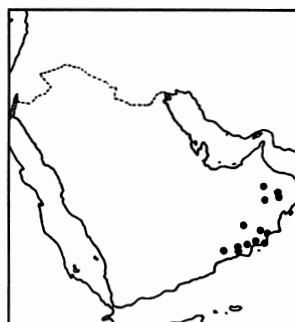
Map 477. *C. brachycarpa*



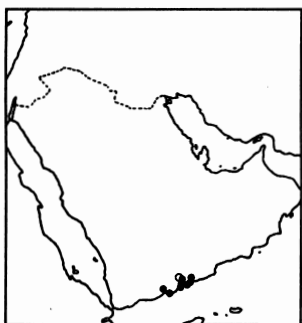
Map 478. *C. ramosissima*



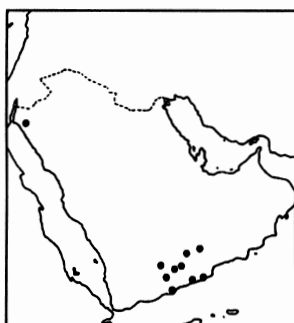
Map 479. *C. amblyocarpa*



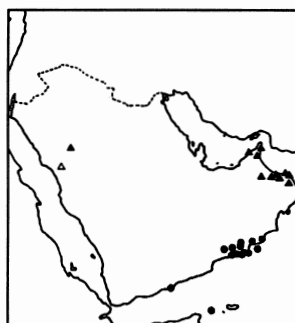
Map 480. *C. brevipetiolata*



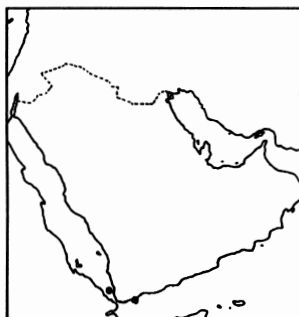
Map 481. *C. macradenia*



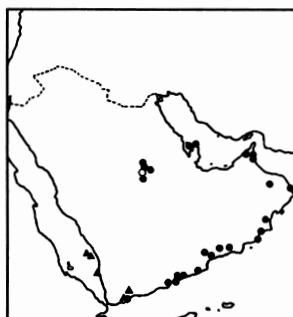
Map 482. *C. droserifolia*



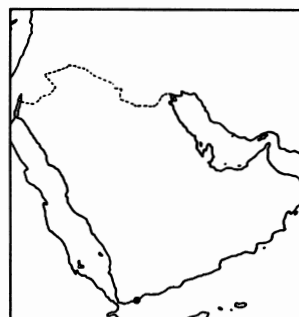
Map 483. *C. austroarabica*
subsp. *austroarabica* ●
subsp. *muscatensis* ▲



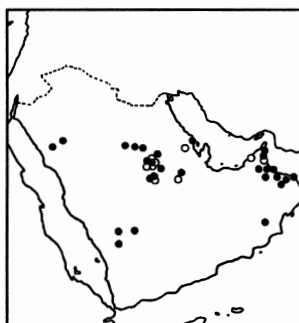
Map 484. *C. pruinosa*



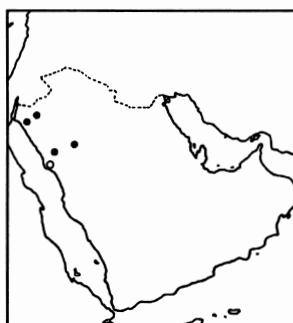
Map 485. *C. noeana* subsp. *noeana* ● subsp. *brachystyla* ▲



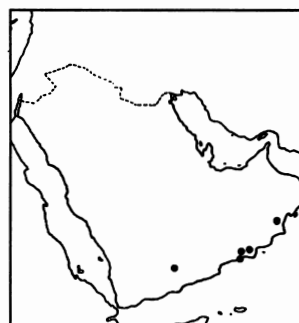
Map 486. *C. polytricha*



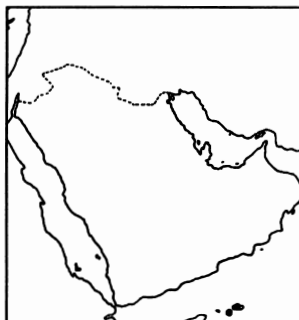
Map 487. *C. rupicola*



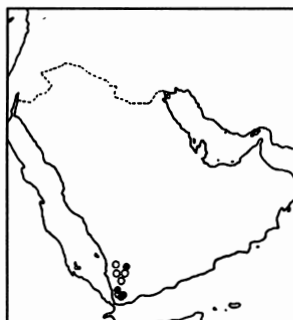
Map 488. *C. arabica*



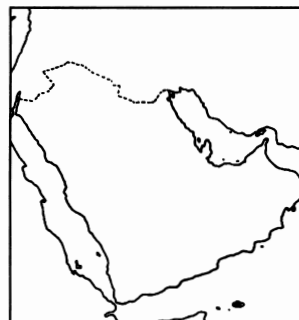
Map 489. *C. albescens* subsp. *omanensis*



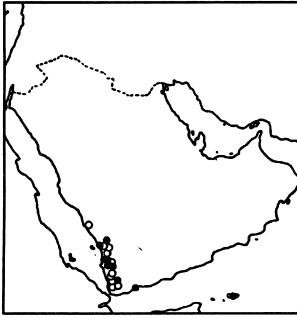
Map 490. *C. socotrana*



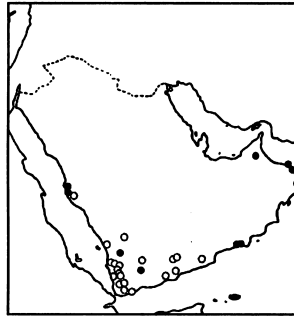
Map 491. *C. angustifolia*



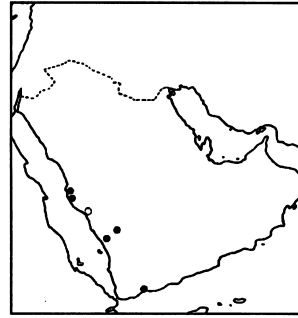
Map 492. *C. tenella*



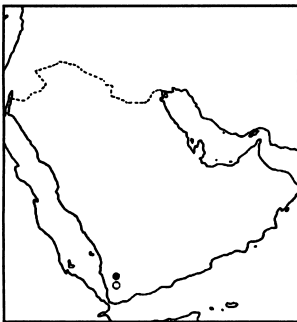
Map 493. *C. viscosa*



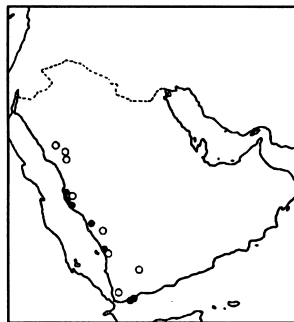
Map 494. *C. gynandra*



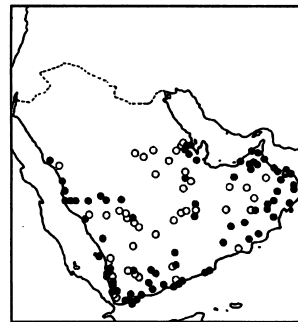
Map 495. *C. hanburyana*



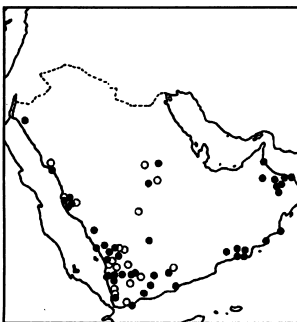
Map 496. *C. monophylla*



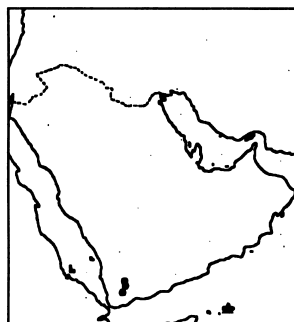
Map 497. *C. paradoxa*



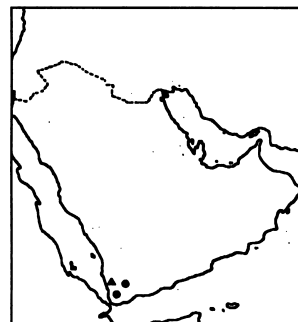
Map 498. *Dipterygium glaucum*



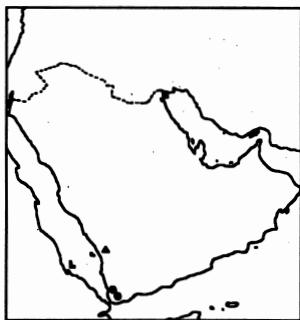
Map 499. *Maerua crassifolia*



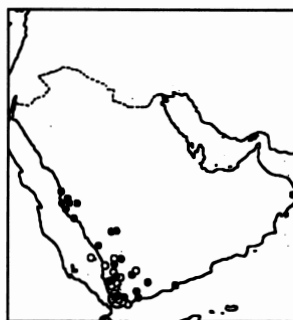
Map 500. *M. angolensis* subsp. *angolensis* ● subsp. *socotrana* ▲



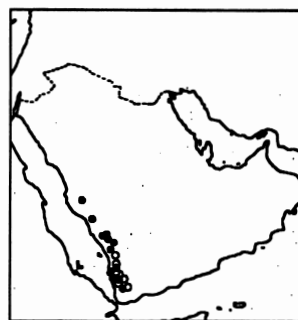
Map 501. *M. triphylla* var. *calophylla* type A ● var. *johannis* ▲



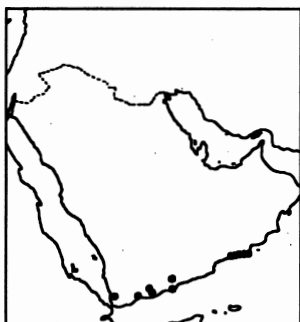
Map 502. *M. triphylla* var. *calophylla* type B ● type C ▲



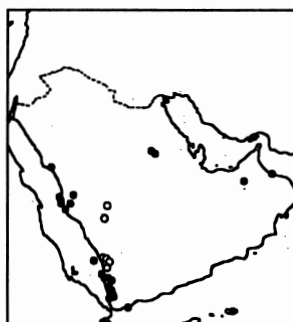
Map 503. *M. oblongifolia*



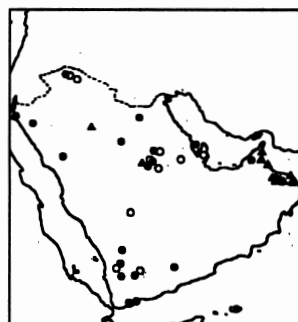
Map 504. *Boscia angustifolia*



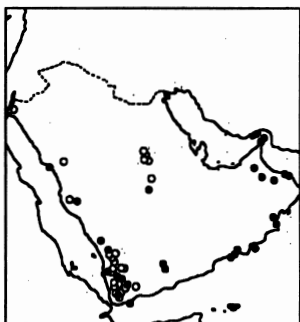
Map 505. *B. arabica*



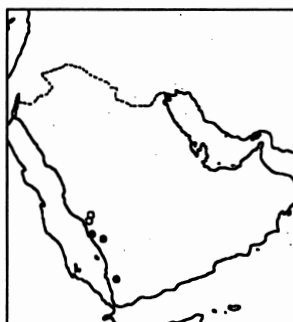
Map 506. *Capparis decidua*



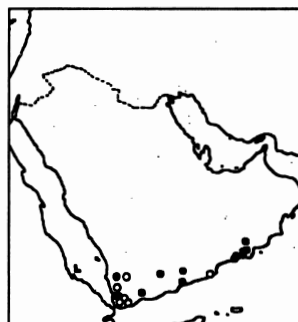
Map 507. *C. spinosa* var. *spinosa* ● var. *mucronifolia* ▲



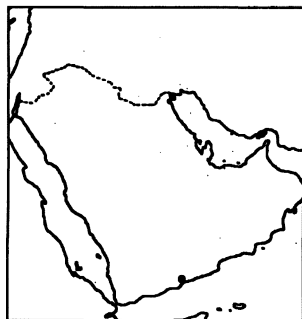
Map 508. *C. cartilaginea*



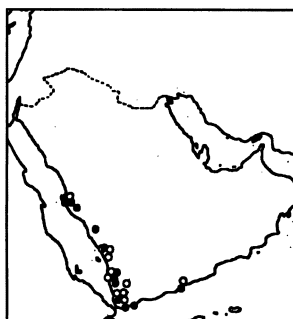
Map 509. *C. tomentosa*



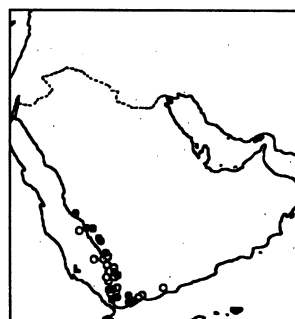
Map 510. *Cadaba heterotricha*



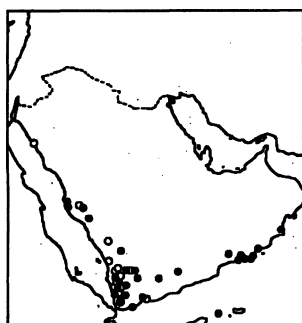
Map 511. *C. mirabilis*



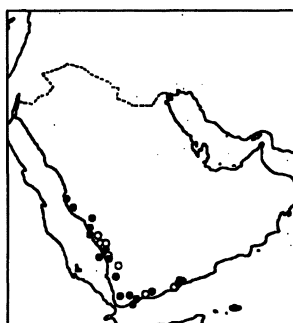
Map 512. *C. glandulosa*



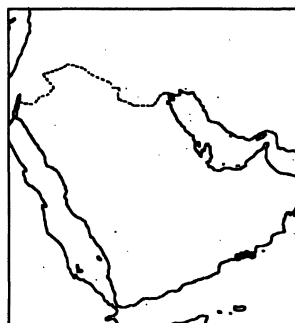
Map 513. *C. rotundifolia*



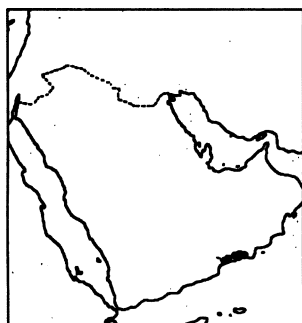
Map 514. *C. farinosa*



Map 515. *C. longifolia*



Map 516. *C. baccarinii*



Map 517. *Dhofaria macleishii*