

STUDIES IN THE FLORA OF ARABIA: XXVIII. SOME NEW TAXA FROM THE ARABIAN PENINSULA

D. F. CHAMBERLAIN*, R. A. CLEMENT* & J. LAMOND*

This paper provides two new combinations and formal descriptions for eight new species and three new subspecies that have resulted from the preparation of accounts for Volume 1 of the *Flora of the Arabian Peninsula and Socotra* for the genera *Cleome* (Capparaceae), *Polycarpha*, *Silene*, *Gypsophila* and *Dianthus* (Caryophyllaceae), and *Rubus* (Rosaceae).

CAPPARACEAE

Cleome brevipetiolata D.F. Chamberlain & Lamond, **sp. nov.** Fig. 1.

Intra speciei tetrandris generis *Cleome* seminibus dense pubescentibus recedit.

Frutex nanus ramosus 7–50cm altus, ramis glandulis subsessilibus vestitis. *Folia* simplicia late ovata vel orbiculata 3–8mm longa 2–8mm lata glandis subsessilibus vestita petiolis 0–5mm longis. *Inflorescentia* etiam florens laxa floribus pluribus, bracteis foliaceis sed manifeste brevioribus, pedicellis patentibus 0–8mm longis. *Sepala* lanceolata 1–5mm longa 0.5–2mm lata. *Petala* appendiculata dimorphica lutea vel viridescens interdum rubrolineata laminis ellipticis 3–6mm longis 1–3mm latis. *Stamina* quattuor. *Stylus* (2–)7–10mm longus. *Fructus* erectus oblongus leviter curvatus 5–20mm longus 2–5mm latus. *Semina* 0.5–1mm longa, dense pubescentia.

Type: Oman, 50km from Adam on Salalah Rd, 100m, 14 ix 1984, *Miller* 6021 (holo. E; iso. K, KTUH, ON, UPS).

Habitat: sandy or stony deserts, wadis, etc., 80–600m.

Other specimens seen:

OMAN. S Oman, 19°N 56°E, 13 ii 1968, *Popov* 68/19 (BM); SW of Wadi Amairi, 27 i 1947, *Thesiger* s.n. (BM); Dhofar, Jebal Qara, 20km N of Ravens Roost, on main Thamrait to Salalah Rd, 600m, 13 x 1979, *Miller* 2724 (E); Dhofar, Sahel al Jazir, between Wadis Qadam and Rawnab, 18°44'N 56°38'E, 80m, 1 x 1984, *Miller* 6497 (E); Wadi, 18km S of Thamrait, on Salalah Rd, 150m, 15 ix 1984, *Miller* 6046 (E); Montasar, 19°27'N 54°37'E, 150m, 15 ix 1984, *Miller* 6032 (E); 65km along Salalah to Thumrait Rd, 17°32'N 54°02'E, 480m, 12 x 1977, *Radcliffe-Smith* 5468 (K); 40km S of Adam, 200m, 18 ix 1979, *Miller & Whitcombe* M.2023 (E); Dhofar, 50km W of Mudhai, 500m, 13 ix 1985, *Miller* 7627 (E, K); c.90km S of Dauka, 100m, 20 ix 1979, *Miller & Whitcombe* M.2053 (E, K); 36km S from Marmul to Shaleem, 250m, 27 ix 1984, *Miller* 6397 (E); Wadi Arah, Marmul to Thumrait Rd, 10 iii 1978, *Lawton* 1999 (BM, K); above Sharbithat, 18°00'N 56°27'E, 100m, 29 ix 1984, *Miller* 6456 (E).

This is a distinct species, characterized by the combination of shortly petiolate leaves, flowers with four stamens, and densely pubescent seeds.

*Royal Botanic Garden Edinburgh, Inverleith Row, Edinburgh EH3 5LR, UK.

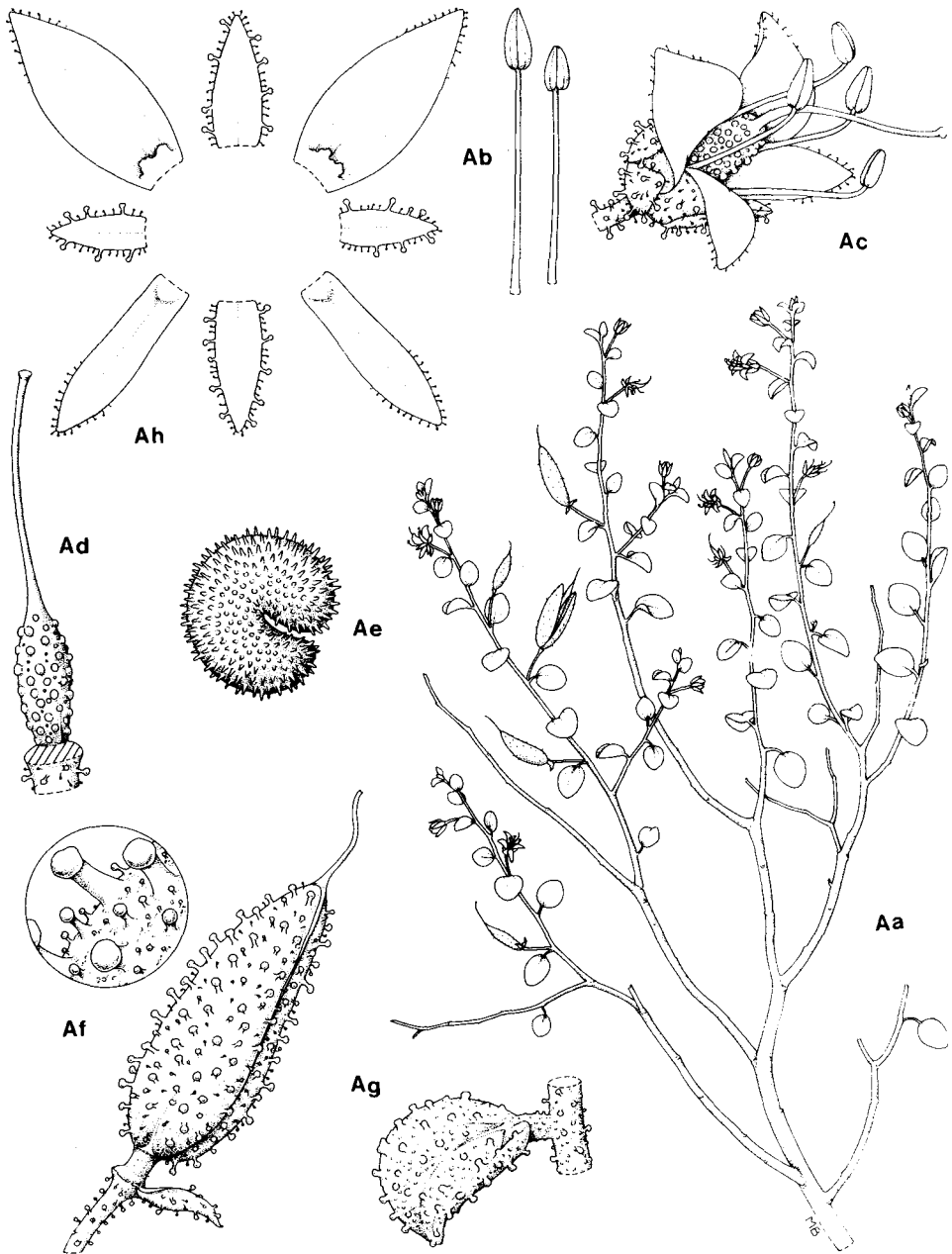


FIG. 1. Capparaceae. A, *Cleome brevipetiolata*: Aa, habit ($\times 0.6$); Ab, stamens ($\times 5$); Ac, flower ($\times 5$); Ad, gynoecium ($\times 5$); Ae, seed ($\times 32$); Af, fruit ($\times 4$) and detail of glands; Ag, leaf ($\times 4$); Ah, dissected perianth parts ($\times 5$).

C. austroarabica D.F. Chamberlain & Lamond, *sp. nov.*, subsp. **austroarabica**

C. droserifoliae Delile similis sed inflorescentia definita terminalia, plus minusve bracteata differt.

Frutex nanus 15–100cm altus dense stipito-glandulosus. *Folia* simplicia, late ovata vel orbiculata (5–)8–20mm longa (5–)8–15mm lata petiolis 7–20mm longis. *Inflorescentia* laxa floribus paucis bracteis ab initio foliaceis pedicellis 4–15mm longis. *Sepala* dimorphica lanceolata 3–5mm longa 1–2mm lata. *Petala* appendiculata lanceolata, 5–8mm longa, 1.5–3mm lata, lutea rufolineata dimorphica, petala majora lata, petala minora angustiora. *Stamina* quattuor. *Fructus* erectus vel erecto-patens estipitatus ellipticus 12–18(–22)mm longus 3–4.5mm latus rectus usque leviter curvatus stylo 5–7mm longo. *Semina* matura 0.6–0.8mm longa, minute papillata.

Type: Oman; Dhofar, 132km S of Thamrait, on Manston Rd, 450m, 21 ix 1984, *Miller* 6247 (holo. E; iso. K, KTUH, ON, UPS).

Habitat: rocky slopes, gravelly wadi beds, sea level–600m.

Other specimens seen:

YEMEN. Wadi Hajr 100km W of Mukalla, 11km N of Meifa Haga, 13 ii 1989, *Miller et al.* M.8143 (E).

SOCOTRA. Abd al Kuri, 12°14'N 52°15'E, N of the W summit of Jebel Hassala (Qarat Saleh), sea level, 6 v 1967, *Smith & Lavranos* 642 (K).

OMAN. 'Oman', *Jayakar* 5 (BM); Arzat, nr Salalah, 17°00'N 54°18'E, 10m, 8 x 1984, *McLeish* 75 (E); Wadi Adownib, 15km W of Raysut on Mugsahyl Rd, 100m, 3 x 1979, *Miller* 2497 (E, K); Wadi Adownib, 50m, 28 v 1985, *Miller* 7030 (E); tributary to Wadi Adownib, nr Raysut, 16°57'N 53°58'E, sea level, 7 x 1977, *Radcliffe-Smith* 5400 (K); Dhofar, Wadi Ayun, between Mirbaat and Sudh, 27 v 1988, *McLeish* 891 (E); Dhofar Mountains, 1895, *Bent & Bent* (K); Dhofar, nr Raysut, 50m, 28 ix 1979, *Miller* 2301 (E, K); Dhofar, Wadi Gizelot, 27 x 1943, *Guichard* 12746/15 (BM); Dhofar, Kuria Muria Islands, Al Hallaniya, nr main settlement, sea level–10m, 16 x 1979, *Miller* 2761 (E, K); Al Hallaniya, Kuria Muria, 17°30'N 56°05'E, 0–20m, 20 i 1985, *Gallagher* 7444/1 (E); 17°32'N 65°03'E, 40m, *Gallagher* 6602/53 (E); Kuria Muria Islands, Al Hallaniya, 17°30'N 55°59'E, 50m, 24 ix 1984, *Miller* 6348 (E, K); Dhofar, 10km N of Sadh, 17°03'N 55°02'E, 150m, *Miller* 6184 (E); Dhofar, cliffs above Schuwaimayah, 300m, 27 ix 1984, *Miller* 6401 (E, K); Dhofar, 10km W of Schuwaimayah, sea level, 17 ix 1989, *Miller & Nyberg* M.9421 (E); Dhofar, Schwamiya, 26 vi 1985, *McLeish* 552 (E); Dhofar, Southern foothills of Jebel Semhan, c.25km NE of Mirbat, 400m, 8 ix 1989, *Miller & Nyberg* M.9191 (E); Dhofar, 10km W of Mirbat, 5m, 23 ix 1985, *Miller* 7769 (E, K); Dhofar, plain nr Sawqirah, 20m, 30 ix 1984, *Miller* 6488 (E); Dhofar Mts, 1895, *Bent & Bent* s.n. (K); Jebal Qara, Ayun Pools, 500m, 25 ix 1979, *Miller* 2234 (E, K); Wadi Halit, nr Andur, 17°30'N 54°33'E, 600m, 26 ix 1984, *Miller* 6374 (E); Wadi Andur, by pools of Andur, 17°40'N 54°39'E, 600m, 26 ix 1984, *Miller* 6383 (E).

This subspecies is widespread in S Oman, especially in the Province of Dhofar.

Subsp. muscatensis D.F. Chamberlain & Lamond, *subsp. nov.*

A subsp. *austroarabica* caudicum et foliorum indumento glandulosi-villoso dignoscenda.

Type: Oman; Muscat, E Hajar Mountains, Siya, at foot of Jebel Aswad, 400m, 30 ix 1989, *Miller & Nyberg* M.9569 (holo. E; iso. K, KTUH, ON).

Habitat: on limestone and gabbro, rocky wadi beds, sea level–1750m.

Other specimens seen:

SAUDI ARABIA. Harrat Khaybar Camp, 125km N of Medinah, 25°41'N 39°57'E, 1700m, 10 viii 1982, *Collenette* 3763 (E).

OMAN. 'Oman', *Jayakar* 5 (BM); 'N Oman', *Bovey* 5 (BM); Old Bawsher Road, 23°35'N 58°27'E, 27 iv 1984, *Ash* 58, 61 (E); Muscat, Wadi Sahtan nr Murihah, 550m, 28 iii 1976, *Radcliffe-Smith* 4068 (K); Muscat, Matrak, 3 iii 1969, 30–60m, *Dickson* 1083 (K); W Hajar Mountains, wadi running into Wadi Fida, N of Jabal Wabah, 430m, 12 iii 1980, *Edmondson* E.3361 (E); Wadi Al'Asi, nr Nakhl, 500m, 14 ii 1979, *Whitcombe* 471 (E); Wadi Sahtan, 23°23'N 57°19'E, 450m, 5 iv 1975, *Mandaville* 6258 (BM); Maskat, 25 v 1893, *Bornmüller* 31 (K, W).

UNITED ARAB EMIRATES. Wadi Assmi tributary, N Tayyiboh, 25°23'N 56°09'E, 488m, *George* 15 (BM); Sharjah, Jabal Daw, 3km N of Khawr Fakkan, 20–30m, 25 ii 1960, *Edmondson* E.3149 (E); Fujeirah, Wadi at Al Goona, nr Dibba, 1 v 1987, *Western* 1079 (E).

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* Delile but exhibits a more open habit, and has a more well-defined, bracteate terminal inflorescence. The latter has a disjunct distribution in the Arabian Peninsula, occurring in NW Saudi Arabia, in the Hadramaut Region in Southern Yemen and in Socotra. It also occurs in the adjacent countries of Egypt, Syria, Palestine and Jordan. There is apparently no overlap between the ranges of the two species.

C. noeana Boiss. subsp. **brachystyla** (Deflers) D.F. Chamberlain & Lamond, **comb. et stat. nov.**

Syn.: *C. brachystyla* Deflers in Bull. Soc. Bot. Fr. 34: 65 (1887). Syntypi: Saudi Arabia & Yemen, *Ehrenberg* s.n. (K, L); *Courbon* 368 (n.v.); *Balansa* (n.v.); *Deflers* s.n. (n.v.); *Faurot* s.n. (n.v.).

Habitat: rocks, ravines, near sea level.

Distribution: Saudi Arabia, Yemen, Somalia.

Subsp. *brachystyla* to some extent intergrades with subsp. *noeana* and is intermediate between it and *C. polytricha* Franchet. There is, however, no overlap in the geographical distribution of the two subspecies; subsp. *noeana* is much more widespread, extending to Soviet C Asia and Pakistan. It may be distinguished from *C. polytricha*, which occurs in Southern Yemen and adjacent parts of Africa, by its narrower fruit with shorter erect pedicels.

C. albescens Franchet subsp. **omanensis** D.F. Chamberlain & Lamond, **subsp. nov.**

A subsp. *albescenti* (proveniente e Somalia) foliis supernis trifoliolatis dignoscenda.

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 × 0.5–1 mm, 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 diameter, densely hairy when mature.

Type: Oman; Dhofar, 4km W of Mugsail, 200m, 2 ix 1989, *Miller & Nyberg* M.9029 (holo. E; iso. K, KTUH, ON).

Habitat: wadis, rocky slopes, 125–660m.

Other specimens seen:

YEMEN (S). El Hajar (Raidat as Sa'ar) and Hainan, 2 x 1950, *Guichard* KG/HAD/418 (BM); Habarut, SW of Rub el Khali, 24 i 1946, *Thesiger* s.n. (BM); 25 vi 1946, *Thesiger* s.n. (BM).

OMAN. Andhur to W Afur, SE of Rub el-Khali, 2 i 1946, *Thesiger* s.n. (BM); 12km E of Ayun Pools, 17°16'N 53°59'E, 600m, 14 x 1977, *Radcliffe-Smith* 5492 (K); Jiddat al Harasis, upper Wadi Haitam, c.70km S of Yalooni, 125m, 23 ix 1989, *Miller & Nyberg* M.9520 (E).

A specimen from southern Yemen (*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, more lax flowering inflorescence, narrower fruit and narrower leaflets. Specimens in herbaria named '*C. venosa*' Hutch. belong here.

Subsp. *albescens* (described from Somalia) differs in its upper leaves which are generally simple and broader, only occasionally 3-foliolate. There is, however, some overlap between the two taxa.

CARYOPHYLLACEAE

Polycarphae jazirensis R.A. Clement, *sp. nov.* Fig. 2.

Herba perennis caespitosa basin versus lignosa. *Caules* erecti 5–9cm longi, rami superiores dichotomosi vel trichotomosi. *Folia* superne primum visum verticillata spathulata vel suborbiculata, 3–10mm longa 3–6mm lata glauca, leniter carnosae. *Stipulae* late ovatae, minutae. *Inflorescentia* e 2–4 capitulis spicatis densis composita axe spicae carnosae. *Bractae* triangulares brunneae. *Sepala* late ovato-oblonga fusca latecostata intimas longior c.2.5mm longa. *Petala* c.1.5mm, apice plus minusve acuta, margine basin versus dentata. *Capsulae* ellipticae.

Type: Oman, on road to Sawqirah, 6km beyond Sharbithat turnoff, 18°22'N 56°27'E, 150m, 29 ix 1984, *Miller* 6470 (holo. E).

Habitat: sandy depressions and limestone cliffs, 100–150m.

Other specimen seen:

OMAN. Limestone cliffs above Sharbithat, 18°00'N 56°27'E, 100m, 29 ix 1984, *Miller* 6457 (E).

A distinctive species, apparently distantly allied to *P. kuriensis* and *P. hassalensis* (q.v.).

P. hassalensis D.F. Chamberlain, *sp. nov.* Fig. 2.

P. kuriensi et *P. jazirensi* similis sed illa statura breviora magis erecta hac foliis caulibus angustioribus differt.

Herba perennis glabra basi lignosa caudice tumido. *Caules* erecti usque ab 5cm alti e basi ramosi. *Folia* ad basem caulis dense caespitosa, superne verticillata; basalia anguste spathulata lamina late obovata usque orbiculata 10–17mm longa 3–4mm lata apice breviter acuminata basi longe attenuata; caulina anguste spathulata 4–7mm longa 0.8–1.2mm lata. *Stipulae* triangulato-ovatae,

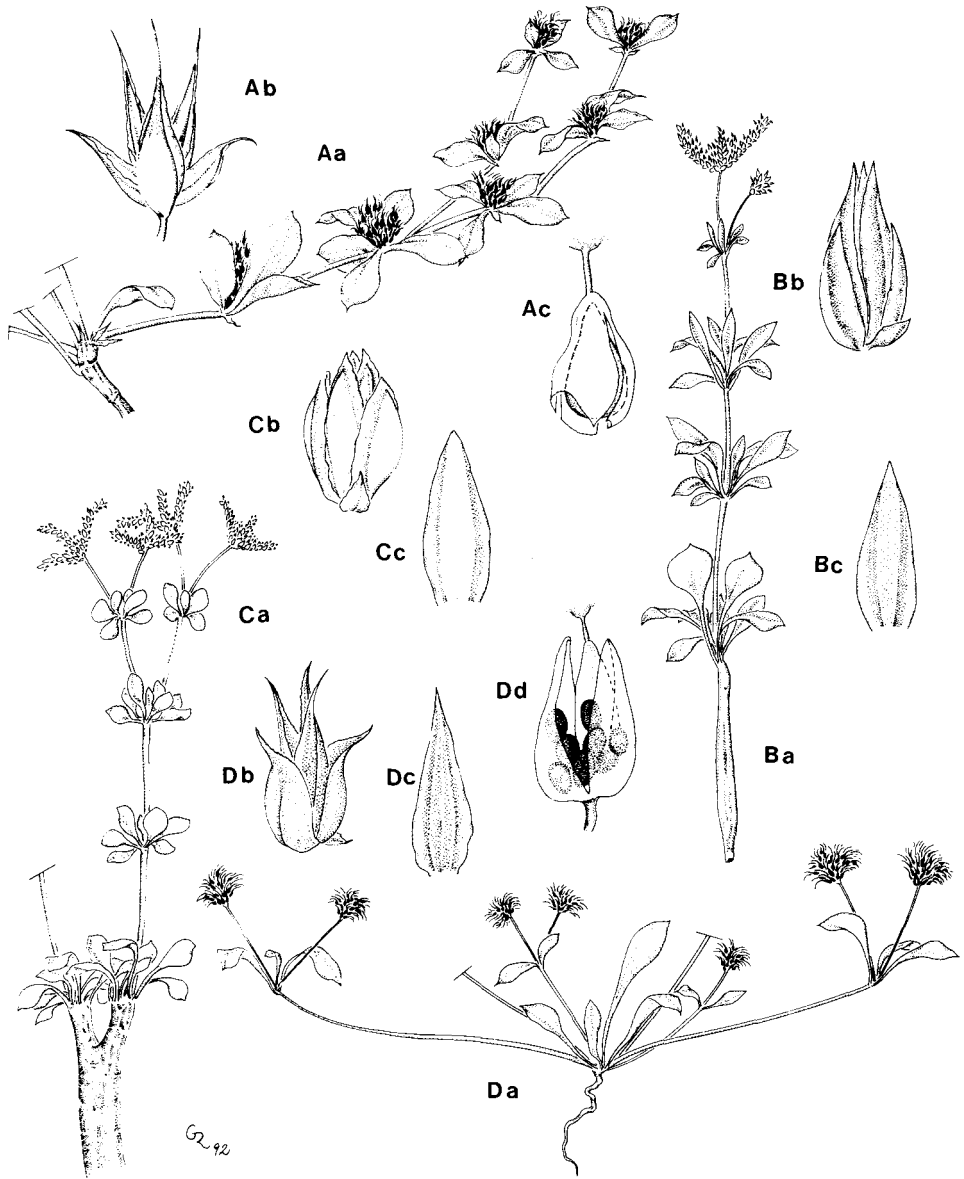


FIG. 2. Caryophyllaceae. A, *Haya obovata*: Aa, flowering shoot ($\times 1$); Ab, flower ($\times 12$); Ac, fruit ($\times 15$). B, *Polycarpha hassalensis*: Ba, habit ($\times 1$); Bb, flower ($\times 12$); Bc, bract ($\times 15$). C, *P. jazirensis*: Ca, habit ($\times 1$); Cb, flower ($\times 12$); Cc, bract ($\times 15$). D, *P. hayoides*: Da, habit ($\times 1$); Db, flower ($\times 12$); Dc, bract ($\times 15$); Dd, fruit ($\times 15$).

c.5mm longae 0.5mm latae scariosae costa brunnea margineque fimbriato. Flores in capitibus densis e 2-4 spicis compositis; spicae 5-10mm longae pedunculo 12-20mm longo. Bracteae late ovatae circa 1.3mm longae 1mm latae scariosae costa angusta brunneae. Sepala 2 exteriora 3 interioribus breviora, 2.2-2.5mm longa 1-1.2mm lata rubrescenti-brunnea costa viridi et margine

angusto hyalino. *Petala* alba longitudine $\frac{3}{4}$ sepalorum partes aequantia, oblongo-ovata c.1.8mm longa 1mm lata, margine basin versus fimbriato superne integro. *Capsula* late ovoidea c.1.8mm longa seminibus 6 vel ultra continens. *Semina* 0.5mm longa 0.3mm lata rubrescenti-brunnea.

Type: Yemen; Abd al Kuri Island, N slopes of J. Hassala, 150m, 9 ii 1992, *Miller & Nyberg* M.11399 (holo. E).

Habitat: rocky slopes and semi-desert scrubland, 150m.

P. hassalensis is a one of eight species that occur on Socotra and the surrounding islands, most of which are endemic to them. At present it is known only from the recently collected type. It differs from the allied *P. kuriensis* Wagner in its shorter, erect stems, and from *P. jazirensis* (described above) in its narrower cauline leaves, etc.

***P. hayoides* D.F. Chamberlain, sp. nov. Fig. 2.**

Herba minima annua glabra. *Caules* prostrati, 1–6cm longi. *Folia* ut videtur verticillata spathulata, lamina 5–15mm longa 3–6mm lata, petiolis 5–40mm longis. *Stipulae* membranaceae, lanceolatae, c.1mm longae apice aristato, marginibus interdum fimbriatis. *Inflorescentia* capitata densa e 2–4 spicis composita; spicae eramosae vel ramosae, 2–5mm longae floribus 2–8. *Bractae* ovato-lanceolatae vel lanceolatae, fuscae, marginibus scariosis. *Sepala* exteriora ovati-lanceolata acuta c.1.5mm longa, *sepala* interiora lanceolata acuta c.3 mm longa. *Petala* minuta capsula duplo brevior. *Capsula* ovoidea seminibus minimum tribus, in valvas tres ab apice aperiens.

Type: Socotra, 4km SE of Hadiboh, 50m, 19 ii 1989, *Miller et al.* M 8235b (holo. E, iso. K).

Habitat: semi-desert scrub on limestone, 50–450m.

Other specimens seen:

SOCOTRA. 3km SW of Hadiboh, 60m, 18 ii 1989, *Miller et al.* M 8208 (E, K); Hamaderoh, E of Homhil, 450m, 2 ii 1990, *Miller et al.* M 10236 (E).

This species, which is endemic to Socotra, superficially resembles *Haya obovata* (illustrated in Fig. 2), but differs in its at least 3-seeded capsule that opens from the top. In some respects *P. hayoides* links the Illecebroideae with the rest of the Caryophyllaceae.

***Silene asirensis* D.F. Chamberlain & Collette, sp. nov.**

S. villosae Forssk. verosimiliter affinis sed differt pedicellis fructiferis rigido-erectis et capsulis minoribus.

Herba annua erecta caulibus 30–50cm longis glanduloso-villosis. *Folia* elliptica, laxe glanduloso-villosa, folia basalia 40–50cm longa 10–17mm lata petiolis ad 12mm longis, folia in altiore parte caulis minora sessilia. *Inflorescentia* dichasiali-cymosa floribus (1–)5–10, pedicellis ubi floriferis c.5mm longis, pedicellis fructiferis rigido-erectis 25(–50)mm longis. *Sepala* c.2mm longa ovato-lanceolata apice obtusa. Flores albi noctiflori. *Petala* c.1.2mm longa limbo 2–3mm longo lamina in lobis duobus oblongis obtusis manifeste divisa. *Capsula* elliptica c.7mm longa carpophoro circa 2mm longo. *Semina* c.0.7mm longa saturate brunnea, profunde sulcata reticulata glabra.

Type: Saudi Arabia; Jabal Shada, 25km N of Mikhwa, 1300m, 24 ii 1990, *Collenette* 7331 (holo. E).

Habitat: open *Acacia* woodland, in sand and on granite, 1050–1300m.

Other specimens seen:

SAUDI ARABIA. Al Abna, nr Al Ma'aqas, 19°31'N 41°40'E, 1150m, 16 iv 1982, *Baierle et al.* 82-1733 (E); Wadi Numan, foot of Taif escarpment, 1000m, 26 iii 1991, *Collenette* 7733 (E).

Probably allied to *S. villosa* Forssk. but differing in its stiffly erect fruiting pedicels and smaller capsule.

***S. corylina* D.F. Chamberlain & Collenette, sp. nov.**

Herba perennis erecta in inferiori parte crasse lignosa, caespites usque 35cm lati formans. *Caules* 65–100cm alti insuper glandulis stipitatis in inferiore parte glabri. *Folia* basalia in rosulis disposita spatulata lamina 5–12 mm longa 3–5mm lata scabrida petiolis 7–15mm longis, folia caulina elliptica in parte alteriore magis linearia ad 15mm longa. *Inflorescentia* dichasiali-cymosa laxa floribus 2–8(–12) sessilibus vel pedicellis ad 17mm longis. *Calyx* 10-costatus 12–14mm longus, stipitato-glandulosus dentibus lanceolatis ad 2mm longis, calyx florescens cylindricus. *Flores* viridescenti-lutei marginibus castaneis, c.20mm longi limbo petali 4–5mm longo in lobis obtusis leviter diviso. *Capsula* oblonga 4–6mm longa glabra carpophoro 4–6mm longo. *Semina* 0.8–1mm longa, reniformia striata.

Type: Saudi Arabia; Jabal Hisma Range, 60km W of Bir Himass, Al Bad to Tabuk Rd, 1200m, 14 iv 1991, *Collenette* 7788 (holo. E).

Habitat: associated with round sandstone buttes, 1200m.

Other specimen seen:

SAUDI ARABIA. Jabal Hisma Range, 60km W of Bir Himass, Al Bad to Tabuk Rd, 1200m, 8 vii 1991, *Collenette* 7838 (E).

This species is a member of section *Brachypodeae*, a group of species largely restricted to the E Mediterranean region. However, it differs from all the presently known species in the section in its scabrid leaf indumentum. At present it is known only from two gatherings from NW Saudi Arabia, although it is evidently fairly common in the type locality.

***Dianthus strictus* Banks & Sol. subsp. *sublaevis* D.F. Chamberlain, subsp. nov.** Illustr.: *Collenette*, op. cit. p. 102, as *D. strictus*.

A subsp. *stricto* calycibus laevibus vel leviter verruculosus dignoscendus.

Perennial herb; stems 12–75cm, arising from a woody base, velutinous to glabrescent. *Leaves* linear, margins scabrid; basal leaves 15–30 × 1–2.5mm. *Flowers* solitary or on sessile clusters of 2–3; peduncles 5–10cm. *Bracteoles* usually 4, ovate-lanceolate to lanceolate, 5–8mm, aristate, often tuberculate, margin broad, scarious and scabrid. *Calyx* 15–18mm, minutely tuberculate-verruculose, teeth lanceolate, up to 4mm long. *Corolla* pink with darker lines, c.20mm; limb c.7mm, deeply dentate, barbulate on upper surface.

Type: Saudi Arabia, Jebel Shumruk to Al Baha, Taif to Abha Rd, 2100m, *Collenette* 4899 (holo. E, iso. K).

Habitat: open rocky hillsides, amongst granite boulders, sandstone and granite rocks, 950–2100m.

Distribution: Saudi Arabia, W Syria, Lebanon, Israel, Jordan.

Specimens seen from the Arabian Peninsula:

SAUDI ARABIA. 4km S of Biljurshi, Asir, 2100m, 13 iv 1977, *Collenette* 369 (K); Asir, 50km S of Biljurshi, Taif to Abha Rd, 1800m, 12 iv 1979, *Collenette* 1334 (K); Asir, Taif to Abha Rd, 2300m, 7 iv 1978, *Collenette* 609 (K); 5km SW of Al Hadda, 1900m, 26 iii 1979, *Collenette* 1094 (K); Umm al Khabath, 30 iii 1974, *Collenette* 74/166 (K); Al-Figra Area 55–95km SW of Medina, 550–1650m, 3 iii 1988, *Fayed* 1383 (E); Hema Fiqra, 50km W of Madinah, 1800m, 2 iii 1989, *Collenette* 6964 (E); Hema Fiqra, 60km W of Madinah, 1500m, 5 iv 1989, *Collenette* 7085 (E); 8km S of Wadi Lakus, Jabal Lauz Area, 1200m, 2 viii 1989, *Collenette* 7221 (E); N of Shiqri, off the Tabuk Rd, 1000m, 20 iv 1983, *Collenette* 4348; Jabal Anagayn, 95km S of Madinah, 1500m, 31 x 1986, *Collenette* 5901 (E); 10km S of Hadda, W of Mecca, 2100m, 20 iii 1980, *Lavranos & Collenette*, L.18472 (E); N Asir Mountains, Wadi Namna, c.1300m, 23 iv 1982, *Podzorski* 1052 (E); Asir, Bani Shahar, 2300m, 8 vi 1946, *Thesiger* s.n. (BM); 2–3km NW of Suda Village, 2800m, *Tothill* 186 (BM); Asir, Suda, 4–7 vii 1962, *Popov* 187/17 (BM); Numas, 10 vi 1972, *Popov* GP/72/163 (BM); nr Baha, 5 vi 1969, *Popov* 69/324 (BM); Jedda to Taif Rd, 1500–2000m, 27 v 1977, *Turner* DT66/71 (BM); Madrqah, 21°57'N 39°59'E, 22 iii 1969, *Popov* 69/134 (BM); Andab, Al Karaja, *Philby* s.n. (BM); Jabal Athrab, 2000m, 29 x 1969, *Mandaville* 2673 (BM); Al-Shafa, 24km W of Al-Taif, 16 v 1980, *Boulos & Ads B.* 13864 (E); nr Taif, 21°15'N 40°21'E, 5 iv 1969, *Popov* 69/179 (BM); Taif, 2150m, 4 v 1947, *Vesey Fitzgerald* (BM); ? Mecca to Taif, 1550m, 22 xi 1981, *El-Sheikh et al.* 81-496 (E); c.70km S of Abha, Najran road, 2150m, 15 x 1981, *Collenette* 2945 (E).

Material from NW and WC Saudi Arabia has velutinous stems and thus approaches the Palestinian var. *velutinus* (Boiss.) Eig. Some of the material has flowers in clusters of 2–3, so approaching var. *axilliflorus* Boiss. It therefore appears that much of the variation seen in the rest of *D. strictus* is represented in plants from Saudi Arabia but they consistently differ in having calyces that are smooth or at most only slightly rough.

It is probable that all records of *D. strictus* from the Arabian Peninsula belong to this subspecies.

Gypsophila umbricola (J.R.I. Wood) R.A. Clement, **comb. nov.**

Syn.: *Saponaria umbricola* J.R.I. Wood, Kew Bull. 39: 130 (1984). Type: Yemen, between As Sa'bah and Al Markah, J. Milhan, 1800m, 26 xi 1981, *J.R.I. Wood* 3458 (holo. K, iso. BM, E).

This species is endemic to Saudi Arabia and the northern part of the Yemen.

ROSACEAE

Rubus asirensis D.F. Chamberlain, **sp. nov.** Illustr.: *Collenette*, op. cit. p. 427.

Frutex magnus 3.5–4m altus, turionibus longis implexis, caulibus floriferis porcatis pilosi-tomentosis glandulis minutis rubris paucis. *Aculei* complanati e basi lati, curvati. *Folia* ternata. *Foliola* ovata vel elliptica apice breve cuspidata biserrata interdum ad basin lobata concoloria pagina superiora sparse pilosa vel glabrescentia, pagina inferiora secus nervas praesertim dense pilosa, foliolis lateralibus 3–6cm longis 2.7–5.5cm latis foliolo centrali saepe latiore. *Stipulae* lineares.

Flores 8–10 in corymbis laxis dispositi. *Pedicelli* et calyces dense tomentosi aculeis gracilibus et glandulis stipitatis paucis. *Sepala* 7–10mm longa cuspidate ad 3mm longa inclusa. *Petala* alba, 7–10mm longa. *Antherae* glabrae. *Carpela* pluria pilosa.

Type: SW Saudi Arabia; Asir Mountains, Taif to Abha Rd, 12 km S of An Numas, 1800m, 31 vii 1982, *Collenette* 3668 (holo. E).

Habitat: river banks and on walls, 1800–2500m.

Other specimen seen:

SAUDI ARABIA. As above, 13 iv 1979, *Collenette* 1355 (K).

R. asirensis is probably distantly allied to *R. canescens* DC., a species that extends from C and S Europe, through Turkey, to Caucasia, and possibly also to Syria. While they both have pilose carpels, an unusual character in the genus, they do nevertheless differ in several other important characters, especially in those relating to the calyx.

Two specimens from Saudi Arabia (Abha to J. Sawdah, *Collenette* 5161, and 20km NW of Abha, *Collenette* 7869), are intermediate between this species and *R. arabicus* (Deflers) Schweinfurth, with the calyx and stem indumentum of the former and the glabrous carpels and the more rounded calyx teeth with acute apices of the latter. These may have arisen as hybrids between *R. asirensis* and *R. arabicus* or may belong to an undescribed apomictic species.

ACKNOWLEDGEMENTS

We are grateful to Dr Robert Mill for assistance in preparing the Latin descriptions, to Mary Bates and Glenn Rodrigues for the illustrations, and to the curators of the Royal Botanic Gardens, Kew (K) and the Natural History Museum (BM) for the loan of specimens.

REFERENCE

COLLENETTE, I. S. (1985). *An illustrated guide to the flowers of Saudi Arabia*. London.