

A NEW SUCCULENT *EUPHORBIA* (*EUPHORBIACEAE*) SPECIES FROM THE RED SEA COAST AND ISLANDS

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The shrubby, spiny, succulent species *Euphorbia collenetteae* D.Al-Zahrani & El-Karemy (*Euphorbiaceae*) from the southern Red Sea coast and islands is described and illustrated as new. Diagnostic characters, a description and taxonomic comments on the species are given. It is compared with the closely related *Euphorbia fractiflexa* S.Carter & J.R.I.Wood. The geographical distribution of the new species is shown.

Keywords. Eritrea, *Euphorbia*, Red Sea coast and islands, Saudi Arabia, Sudan, taxonomy.

NEW SPECIES

***Euphorbia collenetteae* D.Al-Zahrani & El-Karemy, sp. nov. Figs 1–3.**

Euphorbia aff. *fractiflexa* S.Carter & J.R.I.Wood: Collenette, Ill. Guide Fl. Saudi Arabia 241 (1985); Collenette, *Euphorbia* J. 4: 102–122 (1987); Collenette, Wildfl. Saudi Arabia 314 (1999).

Frutex succulentus spinosus usque ad 4 m altus, in omni parte glaber; caules copiose ramosi, praesertim a basi, fasciculos densos ramorum usque ad 3 m vel plus latos facientes; rami caeruleo-virides fere erecti 25–35 cm in circumscriptione, manifeste constricti in segmenta pyriformia (23–25 cm longa et prope basin 25–35 cm in circumscriptione), 3–8-anguli, angulis spinis gemellis in margine continuo corneo griseo 3–15 mm longis, interdum ad basin aculeolis parvis rudimentalibus instructis. Foliorum rudimenta parva (3.5–4 × 5–7 mm), caeruleo-viridia vel e rubro viridia simplicia sessilia cordata, apice subacuto, margine integro, mox decidua. Cyathia terna aggregata, centrale plerumque masculo, raro bisexuali, sessili primum florente, lateralibus bisexualibus in pedicellis 2 mm longis, crescentibus masculum centrale occultantibus; cymae involucriaque bracteata, bracteis 2–3 × 3 mm sessilibus triangularibus acutis serratis. Involucrum campanulatum, 5–6 mm latum 3–4 mm profundum; glandulae cyathiorum flavae oblongo-ovatae laeves 1–3.5 × 4 mm, lobis marginalibus 1.5 × 3 mm marginibus distincte fimbriatis. Flores masculi pedicello 5.5 mm longo, bracteolis circa 2 mm longis, in dimidio superiore dissectis. Flores femineae

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FIG. 1. *Euphorbia colletteae* D.Al-Zahrani & El-Karemy: mature plant (A) and close-up of relatively young branch (B) on Farasan Island.

subsessiles, ramis stylorum circa 2 mm longis, infra connatis per 0.5 mm, ad apicem bifidis. Capsula lobis 3 rotundatus, $4.5 \times 7-8$ mm, rubrobrunnea. Semina brunnea raphe nigro, subglobosa 2.5–3 mm longa laevia. – Type: Saudi Arabia: Farasan Island, 7 m alt., 10 vi 1998, D. Al-Zahrani 170 (holo M; iso BM, CAI, E, K, KAAU¹, KSU, M, RIY).

Succulent spiny shrub up to 4 m tall, glabrous in all parts; stems branching freely, especially from the base, to form dense clumps up to 3 m or more in circumference;

¹ King Abdulaziz University herbarium, Jeddah, Saudi Arabia, proposed abbreviation.



FIG. 2. *Euphorbia collenetteae*: close-up of flowering branch (A) and fruiting branch (B) on Farasan Island.

branches blue-green, almost erect, 25–35 cm in circumference, distinctly constricted into pear-shaped segments (23–25 cm long and 25–35 cm in circumference near the base), 3–8-angled, with paired spines on contiguous horny, grey margins; spines 3–15 mm, with occasional small rudimentary prickles at the base. *Leaf* rudiments small (3.5–4 × 5–7 mm), blue-green to reddish-green, simple, sessile, cordate; apex subacute, margin entire, soon deciduous. *Cyathia* in groups of three; the central usually male, rarely bisexual, sessile, flowering first; the lateral bisexual, with 2 mm long pedicel, obscuring the male cyathium as they develop; cymes and involucre bracteate; bracts 2–3 × 3 mm, sessile, triangular, acute, serrate. *Involucre* campanulate, 5–6 mm across, 3–4 mm deep; cyathial glands yellow, oblong-ovate,

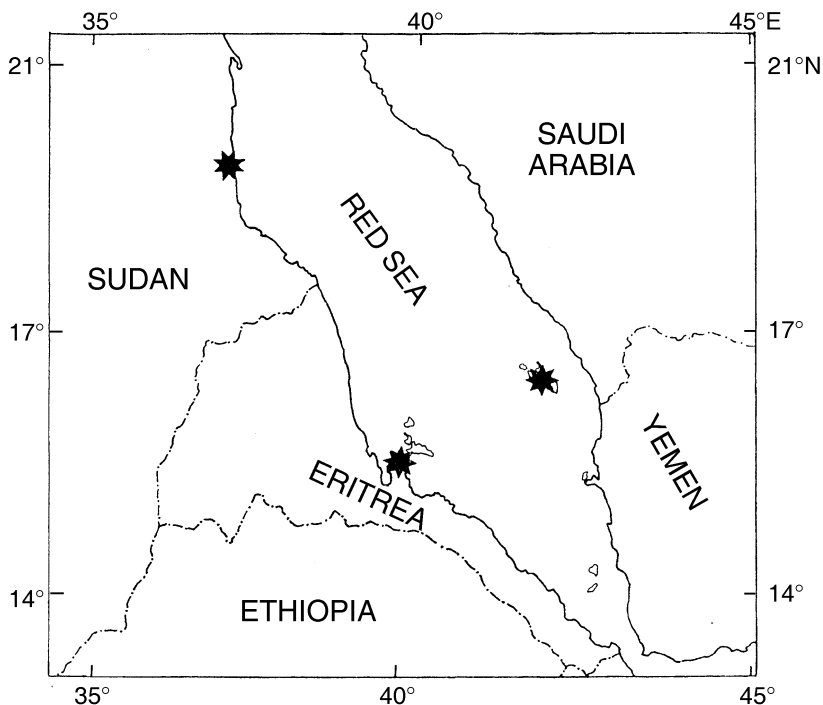


FIG. 3. Distribution of *Euphorbia colletteae*.

smooth, $1\text{--}3.5 \times 4$ mm; marginal lobes 1.5×3 mm, with distinctly fimbriate margins. Pedicel of *male flowers* 5.5 mm long; bracteoles c.2 mm long, dissected in the upper half. *Female flower* subsessile; style arms c.2 mm long, connate for c.0.5 mm below, bifid at apex. *Capsule* with 3 rounded lobes, $4.5 \times 7\text{--}8$ mm, reddish-brown. *Seeds* brown, with black raphe, subglobose, 2.5–3 mm long, smooth.

Distribution. Known, so far, from the Red Sea coast islands of Saudi Arabia (Farasan Archipelago), and the coastal plains of Sudan (Port Sudan) and Eritrea (Archico Bay, $15^{\circ}36'N$, $39^{\circ}29'E$) (Fig. 3).

Habitat and flowering times. The plant is common in the cracks and faults of the fossil coral substratum of the coastal areas as well as on basalt outcrops. Flowering and fruiting from March to June.

Vernacular names. Marar, Saab, Scharath.

Conservation status. The new species is thought to be restricted in its area of occupancy and in its estimated abundance, being known only from the Red Sea coastal islands and in low numbers from the coastal plains of Sudan and Eritrea. We suggest a Near Threatened status (IUCN, 2001, 2003). Further survey work is urgently required to establish the status and extent of the populations.

TABLE 1. Comparison of morphological characters in *Euphorbia collenetteae* and *E. fractiflexa*

Character	<i>E. collenetteae</i>	<i>E. fractiflexa</i>
Habitat	Restricted to seashore habitats, on the fossil coral substratum and basalt outcrops, coastal area, at 0.5–75 m alt.	Gravel mounds, granite rocks, coastal plains, at 150–550 m alt.
Habit	Up to 4 m tall	Up to 2.5 m tall
Branches		
– Colour	Dark blue-green	Green to greyish-green
– Angles	3–8, slightly zigzagged	3, strikingly zigzagged
– Shape	Pear-shaped segments	Not segmented
– Circumference	25–35 cm	18–20 cm
Capsule		
– Size	4–5 × 7–8 mm	4–5 × 6.5 mm
– Pedicel	4 mm	2–5 mm

Etymology. This species is named after Sheila Collenette, an explorer and writer specializing in the Saudi Arabian flora and author of *Wildflowers of Saudi Arabia*.

The new species seems to be closely related to *Euphorbia fractiflexa* S.Carter & J.R.I.Wood (hence identified as *Euphorbia* aff. *fractiflexa* by Collenette, 1985, 1987, 1999). However, *Euphorbia collenetteae* is readily separated by its characteristic habit: the plants are more stout, dark blue-green in colour, and with almost erect and less branching stems which attain 4 m in height. In addition the stems are distinctly constricted at intervals, with the segments pear-shaped. *Euphorbia collenetteae* is restricted to seashore habitats whereas *Euphorbia fractiflexa* occurs at elevations ranging between about 200 and 550 m. A morphological comparison between *Euphorbia collenetteae* and *E. fractiflexa* is given in Table 1.

Specimens examined. SUDAN. Port Sudan, salt ground, near the sea, 1 day north of Port Sudan by camel, 4 v 1928, *Khattab* (F3758) 6457 (K); Port Sudan, cult. in a garden, v 1943, *Andrews* s.n. (K).

ERITREA. Archiko, 7 miles S of Massawa, coastal plains, sea level, 24 iv 1949, *Bally* 7040 (K).

SAUDI ARABIA. Gomari Island (16°39'52"N, 47°11'08"E), 24 v 1983, *Pitts* 5/039/A (K); Farasan Island, v 1983, *Pitts* 5/002/A (K); Farasan Island, old gardens, 10 km NW of village, 3 ii 1985, *Collenette* 5013 (E, K); Farasan Island, 10 m alt., 14 viii 1997, *D. Al-Zahrani* 136 (KSU); Farasan Island, 75 m alt., 9 i 1998, *D. Al-Zahrani* 148 (KAAU); Farasan Island, 60 m alt., 17 iv 1998, *D. Al-Zahrani* 154 (KAAU); Farasan Island, 7 m alt., 10 vi 1998, *D. Al-Zahrani* 170 (BM, CAI, E, K, KAAU, KSU, M, RIY); Dumsuk Island, near Farasan Island, 20 m alt., 16 iii 1984, *Collenette* 4836 (K).

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