

## 66. MALPIGHIACEAE

by M. Thulin

Cuf. Enum.: 402–405; Fl. Trop. E. Afr. (1968).

Woody climbers, sometimes shrubs or small trees, with appressed medifixed hairs. Leaves opposite, in threes, or alternate, simple, entire, often with glands near base of blade or on petiole; stipules present or absent. Inflorescences few- to many-flowered, racemose. Flowers regular or zygomorphic, bisexual (in Africa). Sepals 5, free or united at base, persistent, often with glands outside. Petals 5, usually clawed, free, imbricate, entire or with fringed or dentate margins. Stamens 10, the 5 outer opposite the petals; filaments often united at base; anthers 2-celled, introrse. Ovary superior, (2–)3(–5)-celled, with 1 pendulous axile ovule in each cell; styles as many as the carpels. Fruit a schizocarp, usually winged (samara), rarely a drupe. Seeds without endosperm; embryo large, usually straight.

Family of about 60 genera and 1200 species, pantropical, extending into the subtropics, most abundant in the New World.

1. Petals yellow..... 2
- Petals white, cream or pink..... 3
2. Leaves alternate; mericarps with a dorsal wing, lateral wing entirely reduced..... 1. *Acridocarpus*
- Leaves opposite; mericarps with lateral wing divided into 5–7 narrow stellately arranged lobes..... 2. *Tristellateia*
3. Ovary glabrous; styles with strongly incurved tip..... 3. *Triaspis*
- Ovary densely hairy; styles straight or evenly curved..... 4. *Caucanthus*

**1. ACRIDOCARPUS** Guill. & Perr. (1831), nom. cons. prop.

Woody climbers, shrubs or rarely small trees. Leaves alternate, petiolate, usually with glands at base of blade beneath, without stipules. Flowers regular or nearly so. Calyx with 1 or more subcircular sessile or sunken glands. Petals yellow (in Somalia) or white, longer than sepals, with entire to fringed margins. Stamens glabrous; anthers basifixed. Ovary 3-celled but usually with cell abortive, usually densely hairy; styles 2, curved inwards. Samara with a straight or oblique dorsal wing.

Genus of about 30 species, mainly in tropical Africa, but one species in Arabia, one in Socotra, one in Madagascar, and one in New Caledonia.

1. Leaves up to 6 × 1.8 cm; petioles up to 3 mm long..... 1. *A. glaucescens*
- Leaves, at least some of them, much larger; petioles 4–12 mm long..... 2

2. Leaves glabrous or practically so; wing of samara 3–4.5 cm long, glabrous..... 2. *A. zanzibaricus*
- Leaves with a dense, woolly, ± brownish indumentum; wings of samara shorter, hairy... 3. *A. orientalis*

1. *A. glaucescens* Engl. (1902); type: Sl, "Dar", near Baardheere, Riva 200 (FT holo.).

*A. ferrugineus* Engl. (1906); *A. glaucescens* var. *ferrugineus* (Engl.) Launert in Kew Bull. 19: 352 (1965).

*A. glaucescens* var. *graniticus* Fiori in Bull. Soc. Bot. Ital. 1915: 49 (1915); *A. graniticus* (Fiori) Giordano (1940); type: Sl, "Bur Meldac", Paoli & Stefanini 714 (FT holo.).

Ged bured, gomel, kadi-gududis, komel, marmarood, qoomaal (Som.).

Climbing or suberect shrub; younger branchlets ± densely hairy with ferrugineous or greyish hairs. Leaf-blade linear to oblong or narrowly elliptic, 1.5–6 × 0.2–1.8 cm, acute to obtuse at the apex, glabrous to densely hairy, with revolute margins, usually eglandular; petiole up to 3 mm long. Racemes 3–12 cm long,

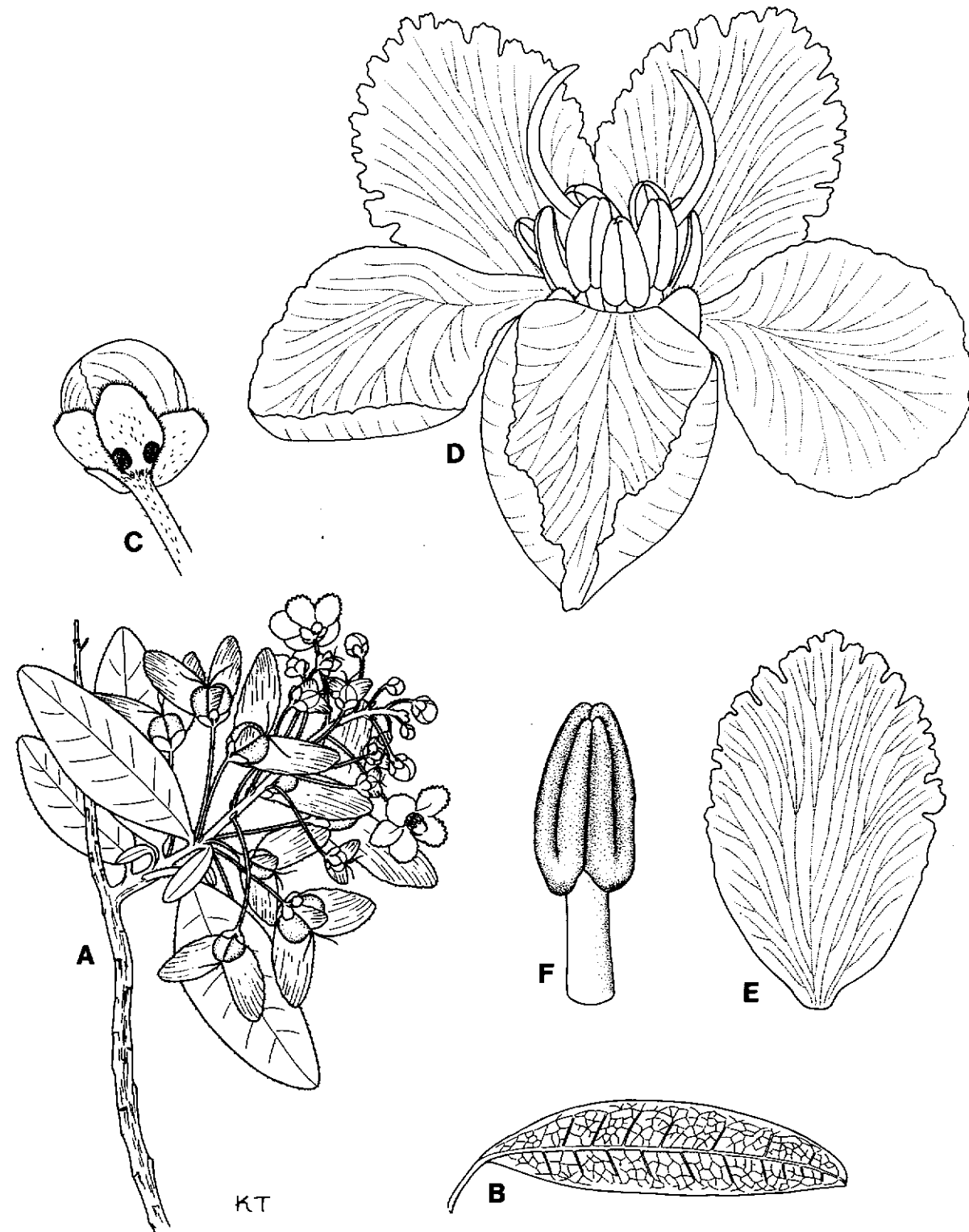


Fig. 146. *Acridocarpus orientalis*. A: habit, × 0.8. B: leaf, showing venation, × 0.8. C: bud, × 5. D: flower, × 5. E: petal, × 5. F: stamen, × 10. — From Thulin & Warfa 5531.

± densely pubescent; bracts and bracteoles subulate. Calyx with 3–5 glands; lobes 2.5–4 mm long. Petals yellow, 6–10 mm long, shortly clawed, slightly fringed. Styles 7.5–10 mm long. Wing of samara obliquely ovate, obovate or elliptic, 1.5–2(–2.5) × 1.2–1.4(–1.7) cm, sometimes clasping the nutlet.

Bushland or woodland, on sand or among rocks; 140–500 m. C2; S1–3; E Ethiopia, NE Kenya. Kazmi, Elmi & Rodol 786; Beckett & White 1782; Bally 3749.

Launert in Kew Bull. 19: 351 (1965) recognized three varieties, all occurring in Somalia: var. *glaucescens* with linear ± glabrous leaves, var. *graniticus* with oblanceolate to elliptic-lanceolate, ± glabrous leaves, and var. *ferrugineus* with ± densely hairy leaves. Although most specimens can be sorted into one or the other of these categories, the variation seems continuous and I prefer not to recognize any infraspecific taxa.

### 2. *A. zanzibaricus* A. Juss. (1840).

*A. zanzibaricus* var. *brachyphyllus* Chiov. in Fl. Somalia 2: 42 (1932); type: S3, "Baddada", Senni 548 (FT holo.).

Shrub, sometimes climbing, up to 4 m tall; branchlets soon glabrescent. Leaf-blade oblong or obovate-oblong, 5–11(–15) × (2–)3–4.5(–5.5) cm, obtuse and shortly acuminate at apex, leathery, glabrous or practically so, usually with 1 or 2 pairs of glands at base beneath; petiole 4–10 mm long. Racemes large, 8–20 cm long, glabrescent; bracts and bracteoles subulate. Calyx with 2–3 circular glands; lobes 3.5–4.5 mm long. Petals yellow, 10–12.5 mm long, shortly clawed, with fringed margins. Styles up to 12.5 mm long. Wing of samara obliquely semi-obovate, glabrous, 3–4.5 × 1.6–2.2 cm, not clasping the nutlet.

On granitic outcrops and in riverine vegetation; 50–230 m. S1, 3; coastal parts of Kenya and Tanzania, and on Zanzibar and Pemba. Thulin & Bashir Mohamed 7087; Gillett & Hemming 24875; Maunder 131.

### 3. *A. orientalis* A. Juss. (1843). Fig. 146.

Waxara-ka-cade (Som.).

Shrub, up to c. 3 m tall; branchlets densely tomentose with brownish, later greyish hairs. Leaf-blade elliptic to oblong-elliptic or lanceolate-elliptic, 4.5–10 × 1.2–4 cm, subacute to obtuse at the apex, leathery, brownish tomentose when young, later greyish, eglandular; petiole 5–12 mm long. Racemes 5–12(–20) cm long, brownish tomentose; bracts oblong or somewhat expanded upwards, bracteoles subulate. Calyx with 1–5 circular glands at base; lobes c. 3.2 mm long, broadly ovate to subcircular. Petals yellow, c. 12 mm long, shortly clawed, with fringed margins. Styles 7.5–8 mm long. Wing of samara c. 2–3 × 1.4–2 cm, densely hairy, clasping the nut at the base.

Semi-desert bushland, in rocky places, particularly along wadis; 100–700 m. N3; S Arabia. Bally & Melville 15851; Hemming & Watson 3107; Thulin & Warfa 5531.

First record for Somalia.



Fig. 147. *Tristellateia africana*. A: flowering and fruiting branch, × 2/3. B: flower, × 3. C: fruit, × 2/3. — Modified from Fl. Zamb. 2: 113 (1963).

### 2. *TRISTELLATEIA* Thou. (1806)

Woody climbers. Leaves opposite, usually with a pair of glands on margin of blade near base or near tip of petiole, with very small stipules. Inflorescences racemose, terminal; pedicels articulated. Flowers regular. Sepals sometimes with dorsal glands. Petals yellow (in Somalia), entire. Stamens glabrous; anthers basifixed. Ovary globose; styles 1(–2). Samara subwoody, sometimes with a dorsal crest; lateral wing divided into narrow stellately arranged lobes.

Genus of 22 species, mainly in Madagascar but one species in eastern Africa and one in SE Asia.

#### *T. africana* S. Moore (1877). Fig. 147.

Plant up to 5 m long or more; young branchlets ± pubescent, becoming glabrous and lenticellate. Leaf-blade ovate to broadly elliptic, 4.5–9.5 × 3.5–5 cm, acute or obtuse at the apex, glabrous or almost so; petiole 1.5–3 cm long with a pair of glands near apex. Racemes 5–12 cm long. Sepals 4–5 mm long, sericeous. Petals

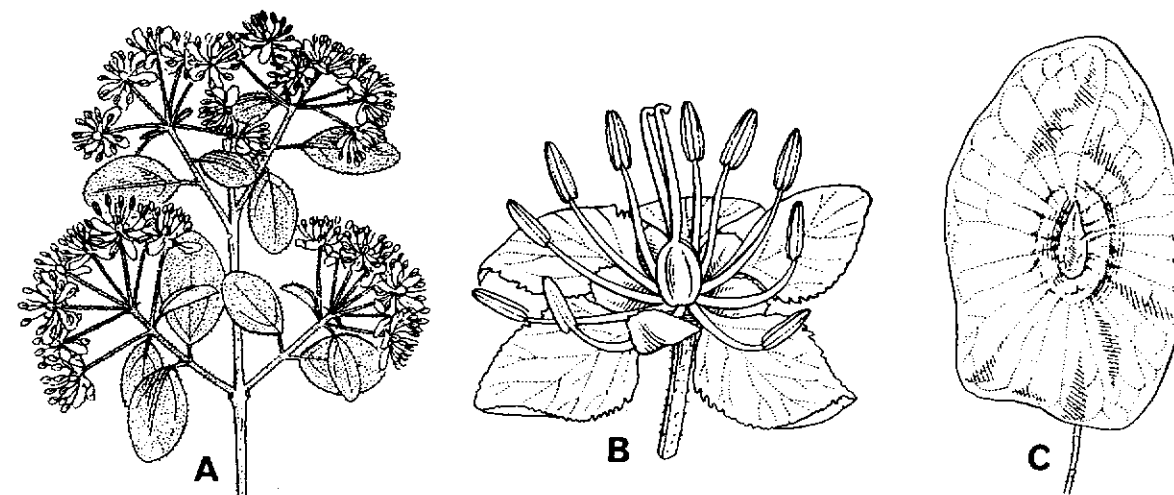


Fig. 148. *Triaspis niedenzuiana*. A: flowering branch, × 1. B: flower, × 6. C: fruit, × 2. — Modified from Fl. Trop. E. Afr. (1968).

yellow, 10–12 mm long, shortly clawed. Samara 1.5–2 cm in diam., lateral wing divided into 5–7 linear lobes, dorsal crest with a spine 8–10 mm long.

Semi-evergreen bushland; c. 30 m. S3 (0°57'S, 41°40'E); coastal parts of Kenya, Tanzania and Mozambique. Gillett & al. 25097A.

First record for Somalia (for *T. africana* var. *somalensis*, see under *Caucanthus edulis*).

### 3. *TRIASPIS* Burch. (1824)

Woody climbers, scandent shrubs or small trees. Leaves opposite, subopposite or rarely in threes, usually with glands near base of blade beneath, petiolate or sessile, with or without stipules. Inflorescences usually many-flowered corymbs, umbels or panicles; pedicels articulated. Flowers regular or zygomorphic. Calyx without glands. Petals white or pink (in Somalia), usually with fringed margins. Stamens usually glabrous; anthers basifixed. Ovary (2–)3-celled, glabrous (in Somalia) or hairy; styles (2–)3, with strongly incurved tip. Samara with a shield-like circular or ovate lateral wing; dorsal wing short or absent.

Genus of about 15 species, all in Africa.

#### *T. niedenzuiana* Engl. (1905). Fig. 148.

*T. erlangeri* Engl. (1905).

*Tristellateia cynanchoides* Chiov. (1932); types: C2, "Meggit" (Wajjid), Senni 837 & "Oddur", Senni 805 bis (both FT syn.).

Marmarood, saqo (Som.).

Semi-erect to scandent shrub, up to 3 m tall; young stems ± pubescent, soon glabrescent. Leaf-blade elliptic-oblong to ovate, 1.5–7 × 0.9–3.5 cm, obtuse to subacute at the apex, rounded to cuneate at the base, glabrous to pubescent on both surfaces; petiole 2–9 mm long. Flowers in loose corymbs at ends of branchlets.

Sepals ± narrowly ovate, c. 2 mm long. Petals white or pinkish, 3.5–5 mm long, shortly clawed, with slightly fringed margins. Styles 4.5–5.5 mm long. Samara elliptic-oblong to ovate-elliptic, 1.5–3 × 0.9–1.2 cm, entire or retuse at apex.

*Acacia-Commiphora* bushland, usually in rocky places; 200–500 m. N1; C2; S1; E Ethiopia, E Kenya, NE Tanzania. Kuchar 17213; O'Brien 146; Thulin & Bashir Mohamed 6897.

The differences mainly in leaf shape and indumentum used by, e.g., Launert in Fl. Trop. E. Afr. (1968) to separate *T. erlangeri* and *T. niedenzuiana* have proved to break down in the richer material now available. Following a suggestion made by J. B. Gillett (in sched.) *T. erlangeri* is here reduced to synonymy.

### 4. *CAUCANTHUS* Forssk. (1775)

Woody climbers or shrubs. Leaves alternate or opposite, usually with glands near base of blade beneath, petiolate, with minute stipules. Inflorescences many-flowered corymbs or racemes; pedicels articulated. Flowers regular. Calyx without glands. Petals white or cream, at least partly fringed. Stamens glabrous; anthers dorsifixed. Ovary densely hairy; styles 2–3, straight or evenly curved. Samara with a shield-like, circular or broadly elliptic, lateral wing; dorsal wing short or absent.

Genus of three species in eastern Africa from Somalia and Ethiopia to Mozambique and Zimbabwe, and in S Arabia.

1. Pedicels and calyx densely silky of white hairs; petals 3.5–5 mm long; styles 2.....1. *C. albidus*
- Pedicels and calyx sparsely pubescent; petals c. 6.5–7 mm long; styles 3.....2. *C. edulis*

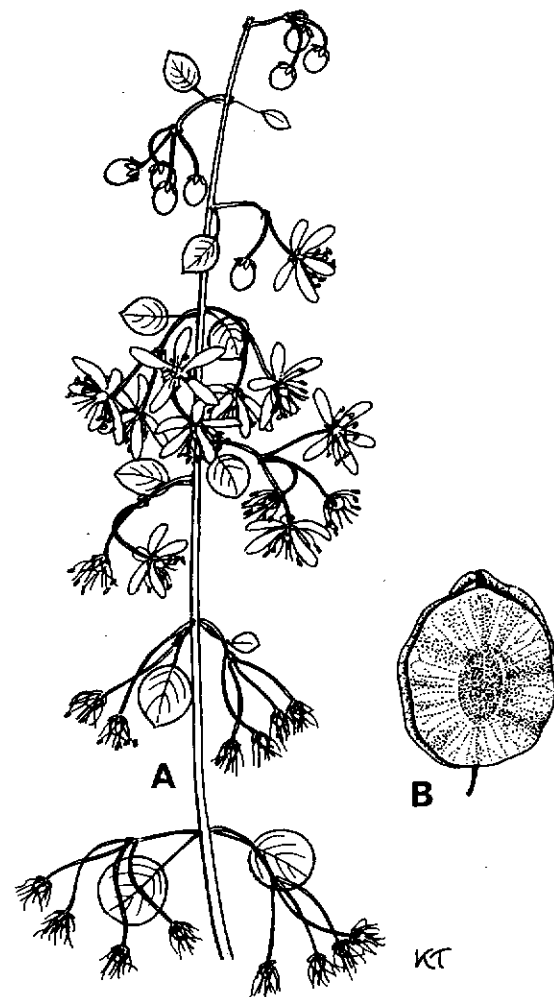


Fig. 149. *Caucanthus edulis*. A: flowering branch,  $\times 1$ , from Thulin 4714. B: fruit,  $\times 1$ , from Thulin 5549. — Drawn by K. Thunberg.

1. *C. albidus* (Niedenzu) Niedenzu (1928); *Diaspis albida* Niedenzu (1891).

*D. albida* forma *tristyla* Niedenzu in Verz. Vorl. Akad. Braunsberg S.-Sem. 1924: 2 (1924); *Caucanthus albidus* forma *tristylus* (Niedenzu) Niedenzu in Engl. Pflanzenr. IV.141: 36 (1928); type: S1, "Malca Rie" (Malkare), Ellenbeck 2146a (B holo., destr.).

*Caucanthus argenteus* Chiov. (1932), non Niedenzu, nom. illeg.; *C. chiovendae* Cuf. (1956); type: S3, "Os boda", Senni 341 (FT lecto.).

Marmarood (Som.).

Shrub or woody climber to 5 m tall; young stems  $\pm$  densely covered by a silvery silky indumentum. Leaf-blade obovate to subcircular,  $5-30 \times 4-20$  mm, mucronate particularly when young and often emarginate at the apex, rounded to cuneate at the base,  $\pm$  densely silky on both surfaces; petiole 1–8 mm long. Flowers in many-flowered dense racemes; pedicels densely silky. Sepals narrowly ovate, c. 1 mm long, silky. Petals white or cream, 3.5–5 mm long, shortly clawed. Styles usually 2, c. 1.5–2 mm long. Samara subcircular, 1–1.5 cm in diam.,  $\pm$  silvery hairy.

*Acacia-Commiphora* bushland, usually on limestone or in sand over limestone; 150–450 m. N2, 3; C1, 2; S1, 3; Ethiopia, Kenya. Elmi & Hansen 4036; Thulin & Warfa 4601; Gillett & Hemming 24212.

2. *C. edulis* Forssk. (1775). Fig. 149.

*C. squarrosus* (Radlk.) Niedenzu var. *benadirensis* Fiori in Bull. Soc. Bot. Ital. 1915: 49 (1915); *C. edulis* var. *benadirensis* (Fiori) Chiov. in Fl. Somalia 1: 110 (1929); type: S2, Mogadishu, Stefanini & Puccioni 82 (FT holo.).

*Tristellateia somalensis* Chiov. (1916); *T. africana* var. *somalensis* (Chiov.) Arènes in Mém. Mus. Nat. Hist. Paris, n. sér., 21: 311 (1947); type: S2, Mogadishu, Paoli 101 (FT holo.).

Marmarood, sagara salal (Som.).

Shrub or woody climber to 3 m tall; young stems sparsely hairy. Leaf-blade broadly ovate to subcircular,  $5-12 \times 5-12$  mm, rounded to slightly emarginate at the apex, or young leaves subacute, sparsely pubescent with appressed hairs on both surfaces; petiole 2–8 mm long. Flowers in few to many-flowered clusters; pedicels sparsely pubescent. Sepals narrowly ovate, c. 1.5 mm long, sparsely pubescent. Petals white, c. 6.5–7 mm long, shortly clawed. Styles usually 3, 2.5–3 mm long. Samara subcircular to broadly elliptic,  $1.5-3 \times 1.5-2.5$  cm, subglabrous.

Deciduous bushland, semi-desert scrub, often in rocky places or in sand; 30–1000 m. N1–3; C1; S2; E Ethiopia, S Arabia. Thulin 5549; Thulin & Warfa 4714; Hemming 1707.