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Research

Updates and new reports for the Flora of southern Somalia and north-eastern Kenya (with a note on *Blepharis kenyensis*)

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Based on the collections held at herbarium FT, new and noteworthy records of vascular plants are provided for the flora of southern Somalia and north-eastern Kenya. One taxon, *Polycarpaea somalensis* is recorded as new for the flora of Kenya. Nine taxa, *Cyanotis* aff. *foecunda*, *Blepharis kenyensis*, *Launaea sarmentosa*, *Jatropha hildebrandtii* var. *hildebrandtii*, *Scaevola taccada*, *Polygala* aff. *muratii*, *Portulaca coralloides*, *Portulaca oblonga*, *Grewia glandulosa* are recorded as new for the flora of Somalia and the presence of four taxa, *Aneilema lamuense*, *Ehretia bakeri*, *Ipomoea aitonii*, *Strychnos decussata*, previously known from single collections, is confirmed. New distributional or noteworthy records are reported for 16 species (*Dyschoriste bayensis*, *Kleinia grantii*, *Pluchea sarcophylla*, *Vernonia bayensis*, *Maerua angolensis* subsp. *angolensis*, *Polycarpaea somalensis*, *Ipomoea kotschyana*, *Euphorbia hirta*, *Jatropha stuhlmannii*, *Lobelia fervens* subsp. *fervens*, *Flueggea leucopyrus*, *Digitaria macroblephara*, *Portulaca commutata*, *Talinum portulacifolium*, *Melhaniania kelleri*, *Corchorus aestuans*) and for the recently described *Emilia corallina* one additional record is provided. A note on capsule and seed morphology of *Blepharis kenyensis* is included.

Keywords: *Blepharis kenyensis*, flora of Kenya, flora of Somalia, new records

Introduction

Recently, the flora of Somalia has attracted new interest as demonstrated by initiatives such as the Somaliland Biodiversity Foundation (SBF 2021), the result of a joint project of the University of Hargeisa and Utah State University. Considering the current critical political and social situation of Somalia and the consequent difficulty in updating the state of plant diversity by field surveys in central and southern parts of the country, the investigation of neglected herbarium collections provides an important tool for increasing the current knowledge on this crucial area of the African flora situated between the two poorly collected areas in southernmost Somalia and north-eastern Kenya.

The Florence Tropical Herbarium (FT), currently known as Centro Studi Erbario Tropicale (CSET) (Raffaelli and Tardelli 2006, Baldini 2011), is a unique institution in Italy, in which over 230 000 specimens are housed, mostly from the Horn of Africa but also from other tropical regions (Tardelli 1996). Over 4000 type specimens



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are deposited at FT, which can be considered an important reference point for tropical and subtropical plant taxonomy worldwide, but especially focused on the Horn of Africa.

Among the European herbaria, FT holds one of the largest collections of dried plant specimens from Somalia, followed in importance by e.g. Royal Botanic Gardens, Kew (K), Museum of Evolution in Uppsala (UPS) and the Swedish Museum of Natural History in Stockholm (S). The Florentine plant collections made on the Horn of Africa are the result of a long historical connection between that area and Italy (late 19th – second half of 20th Century; Meleca 2018, Roncati and Maccanti 2019).

This work – focused on the southern territory of Somalia – is part of a series of recent contributions to the flora of Somalia based on the plant collections housed at the FT herbarium (Baladesi et al. 2020, Baladesi and Baldini 2021, Baladesi and Carter 2021, Baladesi and Killian 2021).

Material and methods

The specimens reported on in this paper are housed at FT, mainly belonging to unidentified collections from several expeditions made between 1958 and 1979 and never previously studied. Part of the examined material has turned out to provide additional data to the Flora of Somalia (FOS) (Thulin 1993b, 1995, 1996, 2006), either as additional taxa not previously reported from Somalia, or as new distributional records of taxa already known from other parts of Somalia.

For identification, relevant floras were used, mainly flora of Somalia and flora of Tropical East Africa, as well as – when available – taxonomic monographs. The previously known general distribution for each taxon is based on information in the flora of Somalia (Thulin 1993b, 1995, 1996, 2006j) and Flora of Tropical East Africa (1952–2012) or POWO (2021).

The metadata of the specimens mentioned are available on the portal JACQ at <www.jacq.org>.

Plant families and genera/species under each family are alphabetically ordered. For each name the following data are reported:

- Reference to the protologue.
- Previously known general distribution according to literature.
- Habitat.
- List of examined specimen/s with reference to country, locality, (optionally also coordinates, altitude, etc.), collection date, collector(s) and, when available, collection number, herbarium barcode/accession number.
- Notes on the taxon and its distribution and collecting locality or localities. For rare or narrowly distributed species, the conservation status is quoted or discussed.
- References to the Floras, monographs or other bibliographical sources consulted.

Following Flora of Somalia (Thulin 1993b, 1995, 1999b, 2006j) the floristic regions of Somalia are indicated as: N1, 2, 3; C1, 2; S1, 2, 3; and following Flora of Tropical East Africa

(1952–2021) the floristic regions of Kenya are indicated as K1–7. The following abbreviations are also used: FOS (Flora of Somalia), FEE (Flora of Ethiopia and Eritrea); FTEA (Flora of Tropical East Africa).

Species list

Monocotyledones

Commelinaceae

Aneilema lamuense Faden, *Smithsonian Contr. Bot.* **76: 133. 1991**

Distribution

Previously known from coastal Kenya and southern Somalia (S3).

Habitat

Dune area along the coast.

Specimen examined

Somalia, reg. Jubbada Hoose (Lower Juba). Boscaglia rada su substrato madreporico ed emergenze rocciose lungo la costa (sparse bushland on madrepores and rocky outcrops along the coast) between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo, rocce sopra il campo (rocks above the camp). 0°30'S, 42°26'E, 15–17 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT007873); Somalia, reg. Jubbada Hoose (Lower Juba). Boscaglia rada su substrato madreporico ed emergenze rocciose lungo la costa (sparse bushland on madrepores and rocky outcrops along the coast) between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo, rocce e piana presso campo (rocks and plain at the camp). 0°30'S, 42°26'E, 25 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007872).

Notes

This coastal endemic, described from coastal Kenya, was previously known in Somalia from a single collection 5 km S of Moofe Maam (Jamaame) (0°8'N, 42°46'E). The specimens cited above represent the second and southernmost records from Somalia (S3). This taxon is peculiar in its contracted cincinnus partially enclosed in a pair of leafy bracts.

References

Faden 1991, 1995a (FOS), 2012a (FTEA), POWO 2021.

Cyanotis aff. *foecunda* DC. ex Hassk., *Commelin.* **Ind. 110. 1870**

Distribution

Tropical Africa, previously reported from Cameroon to Ethiopia and N Botswana South to Namibia and Mozambique.

Habitat

Bare rocky ground, rock crevices, bushland, woodland, grassland.

Specimens examined

Somalia, foresta sempreverde di Ola Uager (Hoja Wajeer), 20 km from Badadda (Badhaadhe), 1°14'S, 41°32'E, 27 Aug 1959 G. Moggi, R. Bavazzano 1615 (FT0007862).

Notes

No taxa belonging to *Cyanotis* sp. are given for S3 in FOS. *Cyanotis* species are difficult to key out due to their variability and often also underground parts – mostly lacking in dried specimens, as in this case – are important for correct identification. This specimen represents the southernmost record of this genus in Somalia. It is provisionally placed in *C. foecunda* in reason of its inflorescence born on up to 10 nodes with slightly falcate, distally decrescent bracteoles and the deeply transversely furrowed seed, although lacking longitudinal striae. The plant is covered by a dense arachnoid indumentum. This is the first report of this genus from S3 and the material needs more investigation; in FOS it is mentioned that *C. somaliensis* C. B. Clarke, known from northern Somalia, may questionably be distinct from *C. foecunda*.

References

Faden 1995b (FOS), 2012b (FTEA), POWO 2021.

Poaceae

***Digitaria macroblephara* (Hack.) Paoli, in Stefan. & Paoli, Miss. Somal. Ital. Merid., Relaz. 245 1916**

Distribution

Previously known from Somalia (C1, 2), Ethiopia, Sudan, Uganda, Kenya, Tanzania.

Habitat

Low deciduous bushland on orange or white sand overlying limestone.

Specimens examined

Somalia, reg. Jubbada Hoose (Lower Juba). Boscaglia rada su substrato madreporico ed emergenze rocciose lungo la costa (sparse bushland on madrepores and rocky outcrops along the coast) between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo. 0°30'S, 42°26'E, 25 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0008054).

Notes

This is the first record of this taxon from S3.

References

Cope 1995 (FOS), POWO 2021.

Dicotyledones

Acanthaceae

Barleria eranthemoides* R. Br. ex C. B. Clarke, Fl. Trop. Afr. 5(1): 147. 1899 var. *eranthemoides

Distribution

Previously known from Somalia (N1; C2; S2), Ethiopia, Eritrea, Kenya, Sudan, Uganda, Tanzania, Cameroon, Nigeria, Benin.

Habitat

Open dry bushland and grassland on sandy soils or on rocky slopes.

Specimens examined

Somalia, Bur Acaba (Buurhakaba). 14 May 1979 L. Curti 77 (FT0007987, 2 sheets).

Notes

This is the first record for this taxon from S1. The specimen is clearly a sub-shrub with longer axillary spines (up to 25 mm) in comparison to other material from Somalia, being more similar to the Ethiopian specimens.

References

Hedrén 2006, Kelbessa 2006, Darbyshire et al. 2010, POWO 2021.

***Blepharis kenyensis* Vollesen, *Blepharis* (Acanthac.) Taxon. Revis. 263. 2000 (Fig. 1)**

Distribution

Previously only known from E Kenya.

Habitat

On sandy to clayey soil in shallow damp depressions in coastal bushland, roadsides.

Specimen examined

Somalia, reg. Jubbada Hoose (Lower Juba), saline di Osboda (Osboda salt lake) between Lac Badanà (Lac Badàna) and Stambul (Lac Salàmo), ca 70 km SW of Kismayo, 0°45'S, 42°9'E, 28 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007877, MO).

Notes

This coastal endemic is reported as Endangered (EN) in the IUCN Red List (Luke et al. 2015). It grows together with the congeneric *B. pratensis* S. Moore and is distinct in its narrower leaves, shorter sepals and smaller corolla. The specimen is the first record in Somalia, extending its distribution from Kenya to the adjacent southern coastal area of Somalia (S3). The reported specimen shows both flowers and capsules, the latter have not previously been seen according to the taxon description in Vollesen (2000). Measurements of the capsules and seeds are provided: capsule ca 7 mm long; seed ca 5.0 × 3.5 mm (Fig. 1).

References

Vollesen 2000, Thulin 2006d (FOS), Luke et al. (2015), POWO 2021.

***Dyschoriste bayensis* Thulin, Nord. J. Bot. 23(5): 519. fig. 1. 2005 (Fig. 2)**

Distribution

Only known from Somalia (S1).

Habitat

Granitic outcrops.

Specimens examined

Somalia, Bay region, Bur Acaba (Buurhakaba). 19 Apr 1979 L. Curti 34 (FT0007986).

Notes

Previously only known from the type collection, Thulin, Hedrén & A. Dahir 7554 (2°48'N, 44°04'E), this species

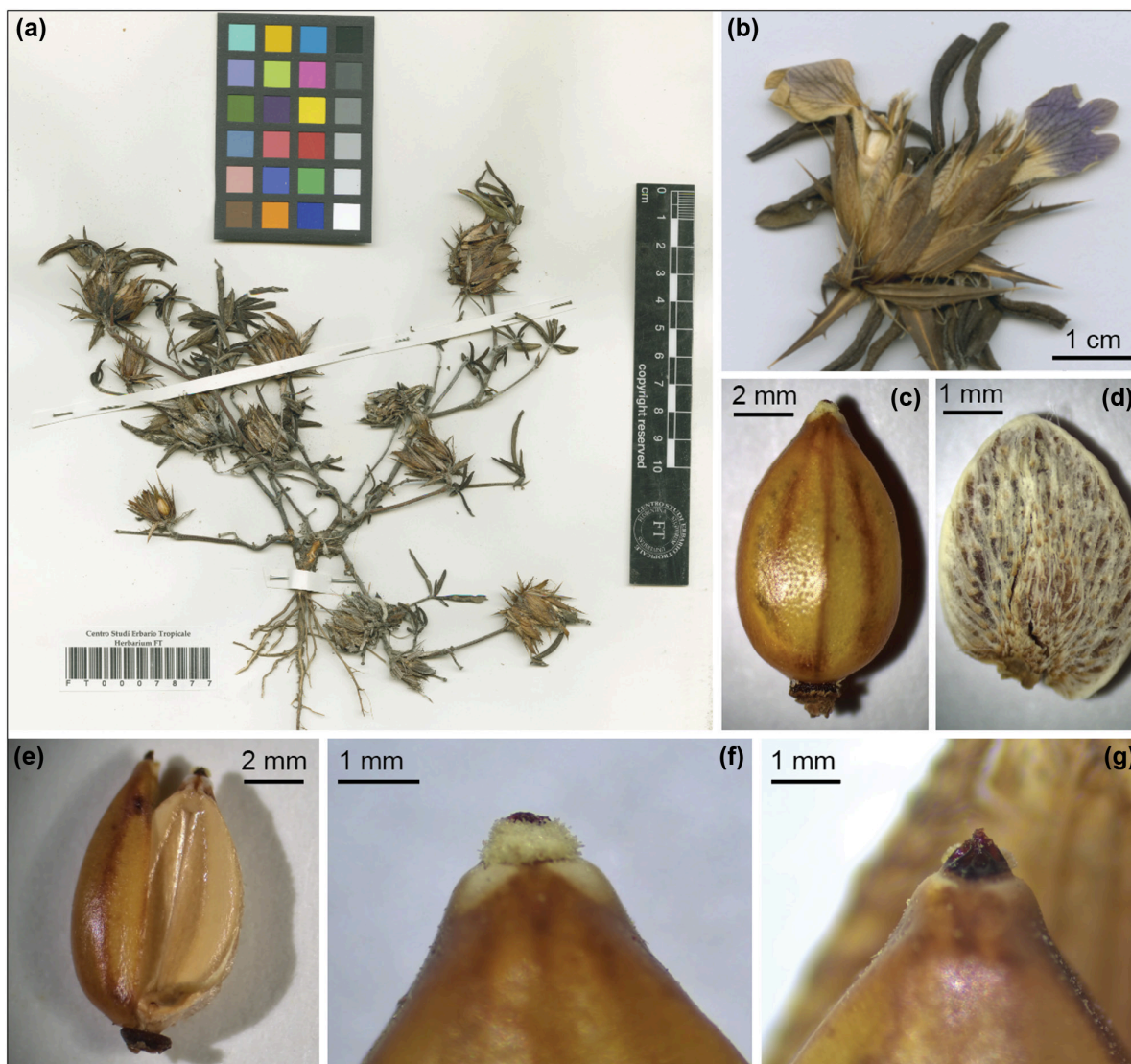


Figure 1. Table showing anatomical details of *Blepharis kenyensis*: (a) whole plant, (b) inflorescence, (c) capsule, (d) seed, (e) open capsule showing the septum, (f–g) close up of capsule showing details of the stylar base.

was collected at Buurhakaba in the same area as the type by L. Curti before its formal description. The reported specimen represents the ‘second’ gathering of *D. bayensis* from the type locality. The specimen shows flowers arranged either singly or in up to 10-flowered, dense to almost congested axillary inflorescence (instead of the 2–5-flowered inflorescence reported in the species description).

References

Thulin 2005, 2006i (FOS), POWO 2021.

Asteraceae

***Emilia corallina* Baldesi, Nord. J. Botany 36(9): 2. 2021 (Fig. 3)**

Distribution

Only known from southern Somalia (S3).

Habitat

Coastal dunes and madreporic limestone outcrops.

Specimen examined

Somalia meridionale, Sar Uanle, nelle vicinanze del campo (close to the camp), 31 Jul 1975 R. Bavazzano, G. Moggi, M. Tardelli s.n. (FT0007881, 2 sheets).

Notes

This specimen represents an additional record from S3 for this recently described species.

References

Baldesi and Baldini (2021).

***Kleinia grantii* (Oliv. & Hiern) Hook. f., Bot. Mag. 125: t. 7691. 1899**

Distribution

Previously known from Somalia (N1, 2), Eritrea, Ethiopia, Guinea, Kenya, Mali, Burundi, Rwanda, Tanzania, Zambia, Zaïre.

Habitat

Rocky places in *Acacia–Commiphora* woodland or bushland.



Figure 2. *Dyschoriste bayensis* (FT0007986).

Specimen examined

Somalia, Foresta secca (dry forest) at Bur Eile (Bur Heybe), 2°59'N, 44°17'E, ca 500 ma.s.l., 18 Aug 1959 G. Moggi, R. Bavazzano s.n. (FT0007864).

Notes

Kleinia grantii is reported in FOS only for the northern regions (N1, 2) where it is found in evergreen bushland above 1400 m. This specimen from S1 represents the first record for

this taxon from southern Somalia where it grows at considerably lower elevations (ca 500 m). The specimen is clearly rhizomatous and shows the typically wide and conspicuously striate-sulcate phyllaries (ca 13) and succulent leaves with wide and winged leaf base and mucronate apex.

References

Tadesse 2004 (FEE), Jeffrey and Beentje 2005 (FTEA), Thulin 2006b (FOS), POWO 2021.



Figure 3. *Emilia corallina* (FT0007881).

***Launaea sarmentosa* (Willd.) Kuntze, Revis. Gen. Pl. 1: 350. 1891**

Bas.: *Prenanthes sarmentosa* Willd., Phytographia 10, t. 6, f. 2. 1794

Distribution

Previously known from Kenya, Tanzania, Mozambique, Aldabra, Madagascar, Mauritius, Reunion, South Africa (Cape Province),

Maldives, India, Sri Lanka, Andaman Islands, Burma, Thailand, Indonesia, China (Guangdong), Western Australia.

Habitat

Confined to littoral sandy beaches.

Specimen examined

Somalia, Bajuni Islands, Koyama Island, 0°38–39'S, 42°20–21'E, 4 Sep 1959 G. Moggi, R. Bavazzano 2009 (FT0007868).

Notes

This taxon is new for the Flora of Somalia, although it is known from northern Kenya and was thought to occur in Somalia by Kilian (2006). This specimen from S3 is the first confirmed record for this taxon from southern Somalia. The plant is characteristic by its flowering stems transformed into trailing flabelliform runners. The record is from the Bajuni Islands, but *L. sarmentosa* is likely to be found also on the adjacent mainland.

References

Kilian 1997, 2006 (FOS), POWO 2021.

***Pluchea sarcophylla* Chiov., Fl. Somalia 1: 198. 1929**

Distribution

Previously known from Somalia (N1, 2, 3; C1, 2), not known elsewhere.

Habitat

Open bushland on gypsum, limestone or sand.

Specimen examined

Somalia, reg. Jubbada Hoose (Lower Juba), Mangrovieta e zona retrostante (Mangroves and back area) at Yamen (Yaman), between Lac Badanà (Lac Badàna) and Stambul (Lac Salàmo) (74 km SW of Kismayo), 0°50'S, 42°6'E, 28 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007863; MO; US; C).

Notes

This is the first specimen of this taxon from S3. Apparently, the species is quite widespread and its range extends to southern Somalia, where it is found at sea level and also further inland on saline ground.

References

King-Jones and Thulin 2006 (FOS), POWO 2021.

***Vernonia bayensis* Thulin & Beentje, Kew Bull. 66(1): 175. fig. 1. 2011 (Fig. 4)**

Distribution

Only known from Somalia (S1).

Habitat

Deciduous bushland on quartz.

Specimen examined

Somalia, Bur Acaba (Buurhakaba) – Ischia Baidoa (Baydhabo), boscaglia (bushland), 12 Jan 1953 T. Sacco, F. Sappa, G. Ariello 215 (FT0007974).

Notes

This taxon was referred to as '*V. sp.* = Thulin, Hedrén & Abdi Dahir 7622' in FOS, it is known from a small population at type locality in the Bay Region only and is regarded as critically endangered (CR B1B2 a, biii). The present record represents the second gathering of this Somali endemic. *V. bayensis* is distinguished from the probable related *V. zanzibarensis* Less. and *V. popeana* C. Jeffrey by its glabrous achenes.

References

Beentje 2006 (FOS), Thulin and Beentje 2011, POWO 2021.

Boraginaceae

***Ehretia bakeri* Britten, J. Bot. 33: 88. 1895**

Distribution

Somalia (S3), Kenya, Tanzania.

Habitat

Coastal bushland (FOS), thicket on shallow soil over rock or on coral rag.

Specimen examined

Somalia meridionale, Kismayo, Sar Uanle, piana rocciosa (rocky plain), 0°37'S, 42°27'E, 3 Aug 1975 G. Moggi, M. Tardelli, R. Bavazzano 319 (FT0007831, 2 sheets; K).

Notes

The species was known in Somalia from a single collection: Somalia, Kismayo, 7 Jun 1929 L. Senni 172 (FT0007829), cited as *E. obrusifolia* Hochst. ex A. DC. in Fl. Somalia 2: 313 (Chioventa 1932) and later correctly identified as *E. bakeri* by M. Thulin (revised on 9/2002, FT) and included in the FOS. The additional record reported here confirms the presence of this taxon in S3.

References

Chioventa 1932, Verdcourt 1991 (FTEA), Thulin 2006c (FOS), POWO 2021.

Capparaceae

Maerua angolensis* DC., Prodr. 1: 254. 1824 subsp. *angolensis

Distribution

Tropical Africa, from Somalia (previously in N1; S2, 3) to South Africa (Natal) and west to Senegal, and in Arabia.

Habitat

Deciduous woodland and bushland.

Specimen examined

Somalia meridionale, Bur Acaba (Buurhakaba), versante SE del Bur (SE side of the Bur). 25 Jul 1975 G. Moggi, R. Bavazzano 74 (FT0007882, 2 sheets).

Notes

According to FOS, this subspecies has not been recorded from S1, from where *M. angolensis* subsp. *socotrana* (Schweinf. ex Balf.f.) Kers has been recorded. This specimen is identified as subsp. *angolensis* on account of the long receptacle (ca 1.5 cm), the long gynophore (ca 2 cm) and large leaves (over 3 cm), and it represents the first record for this widespread tropical African taxon from S1.

References

Elffers et al. 1964 (FTEA), Thulin and Kers 1993 (FOS), Kers 1993, POWO 2021.



Figure 4. *Vernonia bayensis* (FT0007974).

Caryophyllaceae

Polycarpaea somalensis Engl., Bot. Jahrb. Syst. 48: 381. 1912 (Fig. 5)

Distribution

Previously only known from Somalia (C1; S2).

Habitat

Limestone or coral outcrops or sheltered sites near sand dunes on or very near the coast.

Specimens examined

Somalia, Chisimaio (Kismayo), spiaggia marina (coastal shore). 1925 P. Gorini 85 (FT0007861); Somalia, Isole Bagiuni (Bajuni Islands) Koyama Island, 0°38–39'S, 42°20–21'E, 4 Sep 1959 G. Moggi, R. Bavazzano 2008 (FT0007846); Somalia, Reg. Jubbada Hoose (Lower Juba), costa rocciosa madreporica (medreporic rocky coastal-shelf) at Stambul (Lac Salàmo), ca 72 km SW of Kismayo, 0°52'S, 42°7'E, 28 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007860); Somalia, Oltregiuba, Sar Uanle (Kismayo),

duna litoranea verso sud (southern coastal dune) Fuma terra (Fuuma mainland), 0°37'S, 42°27'E, 11, 17 Jun 1973 R. Bavazzano s.n. (FT0007859); Somalia, Sar Uanle (Kismayo), Duna litoranea nei pressi del campo (coastal dune close to the camp), 0°37'S, 42°27'E, 7 Jun 1973 R. Bavazzano s.n. (FT0007858); Somalia meridionale, Sar Uanle (Kismayo), fascia costiera (coastal strip), 0°27'S, 42°27'E, 25–26 Jul 1975 M. Tardelli 137 (FT0007854); Somalia, reg. Jubbada Hoose (Lower Juba). Boscaglia rada su substrato madreporico ed emergenze rocciose lungo la costa (sparse bushland on madrepores and rocky outcrops along the coast) between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo, boscaglia a *Sterculia* a 4 km a S del campo (*Sterculia* thicket 4 km S of the camp), 0°30'S, 42°26'E, 18 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007857); Somalia, between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo, boscaglia litoranea e costa a S di Fuma (coastal bushland and coast S of Fuma Is.), 0°30'S, 42°26'E, 20 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007856); Somalia, reg. Jubbada Hoose (Lower Juba), costa rocciosa (rocky coast) at Sar Uanle, 15–20 km SW of Kismayo, 0°30'S, 42°26'E, 18–21 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007853); Somalia, reg. Jubbada Hoose (Lower Juba), costa sabbiosa e dune litoranee (sandy coast and coastal dunes) at Sar Uanle, 15–20 km SW of Kismayo, 0°30'S, 42°26'E, 16–27 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007852); Somalia, reg. Jubbada Hoose (Lower Juba), Isole Bagiuni (Bajuni Islands), Fuma-Nangue Island, 30 km ca SW of Kismayo, 0°33'S, 42°25'E, 24 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007851); Somalia, Oltregiuba, Kismayo, Isole Bagiuni (Bajuni Islands), Isola di Fuma giù (Fuma Island) 13 Jun 1973 R. Bavazzano s.n. (FT0007850); Somalia meridionale, Isole Bagiuni (Bajuni Islands), Fuma Giù Is. (Fuma Island) 12 Aug 1975 R. Bavazzano, M. Tardelli 591 (FT0007847); Somalia meridionale, Isole Bagiuni (Bajuni Islands), Fuma Nango Island 12 Aug 1975 R. Bavazzano, M. Tardelli n. 567 (FT0007848), 568 (FT0007849); Somalia meridionale, Sar Uanle, nelle vicinanze del campo (close to the camp), 31 Jul 1975 R. Bavazzano, G. Moggi, M. Tardelli s.n. (FT0007878). Kenya, Lamu district, Takwa, SE side of Manda Is, 3 Oct 1957 P.J. Greenway n. 9269 (FT0007845; EA).

Notes

This coastal endemic has characteristic cymes with swollen internode that distinguish it from other species in the FOS. It is reported uniquely from C1 and S2 in FOS, and apparently the above-cited specimens from the southernmost coast stretch of Somalia at FT were not seen during the preparation of the FOS account. The range of this species is therefore widened to include S3 as well as NE coastal Kenya (Lamu district, K7). This is the first record from Kenyan territories, the label on the specimen describes the locality of the collection, which matches the habitat of this species: 'very locally common in a grey sand covering coral rag and marginal to the *Dolichos* 9266 stand with *Tephrosia* sp. and *Sporobolus spicatus* on a low cliff top composed of coral rag'. The Kenyan specimen is confirmed as *P. somalensis* as previously identified by J. B. Allen (on 9 Aug 1979, FT).

References

Gilbert 1993a (FOS), POWO 2021.

Convolvulaceae

***Ipomoea aitonii* Lindl., Edwards's Bot. Reg. 21: t. 1794. 1835**

(=) ***Ipomoea dichroa* Hochst. ex Choisy, Prodr. 9: 364. 1845**

Distribution

Africa, S. Arabian Peninsula, Indian subcontinent. In Somalia previously only known from (S1).

Habitat

Riverine forest, thickets, clearing in bushland, becoming a weed of cultivated ground.

Specimens examined

Somalia, Bur Acaba (Buurhakaba), 1979 L. Curti 90 (FT0007989).

Notes

This is the second record from Somalia of this widespread species; the specimen confirms the presence of the species for S1.

References

Thulin 2006e (FOS), Demissew 2006 (FEE), Verdcourt 1963 (FTEA), POWO 2021.

***Ipomoea kotschyana* Hochst ex Choisy, Prodr. 9: 354. 1845**

Distribution

Previously reported from Somalia (C2; S1, 2), Soqotra, Eritrea, Ethiopia, Sudan, Mali, Kenya, Tanzania.

Habitat

Deciduous bushland on sand or red soil, or a weed in cassava plantation.

Specimen examined

Somalia, Sar Uanle boscaglia (bushland) with *Acacia*, *Adansonia* and *Cordia*, 0°37'S, 42°27'E, 9 Aug 1975 R. Bavazzano, M. Tardelli s.n. (FT0007874).

Notes

A small individual of this taxon was incidentally gathered together with *Hyalocystis viscosa* Hall. f. The specimen comes from S3, from where this species was not recorded in FOS.

References

Thulin 2006e (FOS), Demissew 2006 (FEE), Verdcourt 1963 (FTEA), POWO 2021.

Euphorbiaceae

***Euphorbia hirta* L., Sp. Pl. 1: 454. 1753**

Distribution

Pantropical, native to Tropical and Subtropical America. In Somalia (N1; S1, 2).

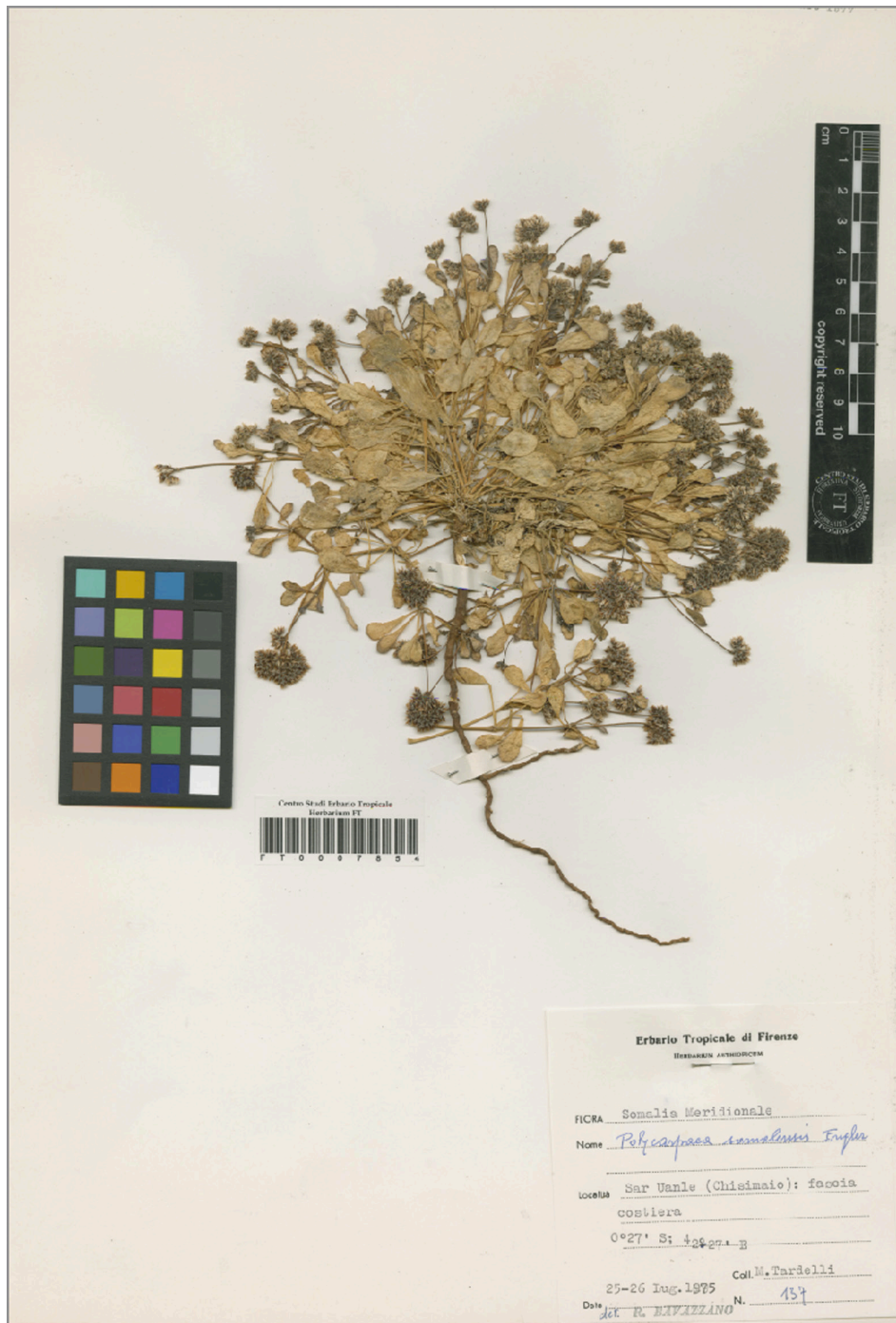


Figure 5. *Polycarpaea somalensis* (FT0007854).

Habitat

Weed of cultivation, roadside and waste places.

Specimens examined

Somalia, Jubbadda Hoose (Lower Juba), Lac Badanà (Lac Badàna), rive asciutte del fiume (temporarily dry riverbanks),

ca 75 km WSW of Kismayo, 0°32'S, 41°58'E, 28 Oct 1971
 G. Moggi, R. Bavazzano s.n. (FT0007885).

Notes

This pantropical taxon has not previously been recorded from S3.

References

Holmes 1993, POWO 2021.

Jatropha hildebrandtii* Pax, Bot. Jahrb. Syst. 19: 108. 1894 var. *hildebrandtii

Distribution

Previously recorded from Kenya, Tanzania, Comoros Island.

Habitat

On dry sand and on established dunes in open coastal bushland.

Specimens examined

Somalia, Oltregiuba, Ras Mtumi (Ras Matooni) (Kismayo), duna (dune) 15 Jun 1973 R. Bavazzano s.n. (FT0007939); Somalia, Oltregiuba, Isole Bagiuni (Bajuni Islands), Isola di Fuma giù (Fuma Islands) 13 Jun 1973 R. Bavazzano s.n. (FT0007838); Somalia meridionale, Isole Bagiuni (Bajuni Islands), Fuma Nango Island 12 Aug 1975 R. Bavazzano, M. Tardelli 577 (FT0007837); Somalia meridionale, Isole Bagiuni (Bajuni Islands), Fuma Giù (Fuma Island) 12 Aug 1975 R. Bavazzano, M. Tardelli 597 (FT0007836); Somalia meridionale, between Fuma terra (Fuuma mainland) and Girole (Jiroole), litorale e roccia sporgente (shore and rocky outcrops) 13 Aug 1975 R. Bavazzano, M. Tardelli 640 (FT0007834, 2 sheets); Somalia, Isole Bagiuni (Bajuni Islands), Ngumi Island, 0°45–46'S, 42°16–18'E, 4 Sep 1959 G. Moggi, R. Bavazzano n. 2117 (FT0007832); Somalia, Isole Bagiuni (Bajuni Islands), Ciovai (Jofai) Island, 0°52–53'S, 42°9–10'E, 4 Sep 1959 G. Moggi, R. Bavazzano 2214 (FT0007833).

Notes

This species was not included in the Flora of Somalia. It is reported as Endangered (EN) in the IUCN Red List (2013); these are the first records for this taxon from S3. The specimens agree fully with var. *hildebrandtii*, showing the typical indurated stipules and the bract margins beset with stalked glands.

References

Smith 1987a (FTEA), Thulin 1993a (FOS), IUCN SSC East African Plants Red List Authority (2013), POWO 2021.

***Jatropha stuhlmannii* Pax, Pflanzenw. Ost-Afrikas C: 240. 1895**

Distribution

Previously recorded from Somalia (S1, 2), Kenya, Tanzania.

Habitat

Open dunes or in open coastal bushland on sand or in rocky places.

Specimens examined

Somalia, reg. Jubbada Hoose (Lower Juba), costa rocciosa (rocky coast) at Sar Uanle, 9 km dal campo in direzione (9 km from the camp toward) Kismayo, 0°30'S, 42°26'E, 18 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007841); Somalia

meridionale, Sar Uanle (Kismayo), rocce (rocks), 0°37'S, 42°27'E, 30 Jul 1975 G. Moggi, M. Tardelli, R. Bavazzano 203 (FT0007844); Somalia meridionale, Sar Uanle (Kismayo), piana rocciosa (rocky plain), 0°37'S, 42°27'E, 8 Aug 1975 R. Bavazzano, M. Tardelli 452 (FT0007842 (2 sheets); Somalia, Oltregiuba, Sar Uanle (Kismayo), valle a terra rossa con predominanza di Acacie (valley with red soil with dominance of Acacias) at ca 3–4 km NO of Sar Uanle, 0°37'S, 42°27'E, 9, 12, 18 Jun 1973 R. Bavazzano s.n. (FT0007840).

Notes

This species was recorded from S1 and S2 for Somalia and further south in Kenya and Tanzania. These specimens cited here fill the gap in the distribution of this taxon in S3. According to Smith (1987a) the Somali plants differ in their smaller leaf size, and details of apex and margins.

References

Smith 1987a (FTEA), Thulin 1993a (FOS), POWO 2021.

Goodeniaceae

***Scaevola taccada* (Gaertn.) Roxb., Pflanzenw. Ost-Afrikas C; 240. 1895**

Distribution

Previously recorded from Kenya, Tanzania, South Africa (Natal), Mascarene Islands, India, China, Australia, Pacific Isles.

Habitat

Strand vegetation immediately above high-water level, on sand and coral rock.

Specimens examined

Somalia, Oltregiuba, Sar Uanle (Kismayo), duna litoranea verso sud (southern coastal dune), Fuma terra (Fuuma mainland) 0°37'S, 42°27'E, 11, 17 Jun 1973 R. Bavazzano s.n. (FT0007865); Somalia Meridionale, Sar Uanle, duna a sud (southern dune). 31 Jul 1975 G. Moggi, M. Tardelli, R. Bavazzano 234 (FT0007866).

Notes

This pantropical coastal species was not recorded in the FOS. These two specimens confirm the presence of this taxon in southern Somalia (S3). The species is distinguished from the more widespread *S. plumieri* (L.) Vahl by its densely silky hairy leaf axils and the distinctly toothed calyx-limb.

References

Davies 1978 (FTEA), Thulin 2006f (FOS), POWO 2021.

Lobeliaceae

Lobelia fervens* Thunb., Fl. Cap. 2: 46. 1818 subsp. *fervens

Distribution

Previously recorded from Somalia (S1), Ethiopia to S Tropical Africa, W Indian Ocean.

Habitat

Grassland, forest margins, roadsides, stream sides or in coastal sand, often in damp places.

Specimens examined

Somalia, foresta umida sempreverde e stagno (evergreen moist forest and pond) at Ola Uager (Hoja Wajeer), 27 km from Badadda (Badhaadhe), 1°14'S, 41°32'E, 28 Aug 1959 G. Moggi, R. Bavazzano 1707 (FT0006687 2 sheets); Somalia meridionale, sulla pista (on the road) Kismayo–Afmadù (Afmadow), piana (plain) 12 km from Kismayo, 5 Aug 1975 G. Moggi, M. Tardelli, R. Bavazzano 380 (FT0007855).

Notes

This widespread species was reported in Somalia only from S1. The two cited specimens record its presence also in S3.

References

Thulin 1984 (FTEA), 2006a (FOS), POWO 2021.

Loganiaceae

***Strychnos decussata* (Pappe) Gilg, Bot. Jahrb. Syst. 28(1): 121. 1899**

Distribution

Previously recorded from Somalia (S2), Kenya to South Africa, Madagascar.

Habitat

Bushland on sand or sandy soil.

Specimen examined

Somalia, foresta umida di (moist forest of) Ola Uager (Hoja Wajeer), 27 km from Badadda (Badhaadhe), 1°14'S, 41°32'E, 28 Aug 1959 G. Moggi, R. Bavazzano 1702 (FT0007884, 2 sheets).

Notes

The first record for this species in Somalia is reported in FOS, this additional specimen from S3 confirms its presence in the gap in the distribution between S2 and Kenya.

References

Thulin 2006h (FOS), Bruce and Lewis 1960 (FTEA), POWO 2021.

Phyllantaceae

***Flueggea leucopyrus* Willd., Sp. Pl., ed. 4: 757. 1805**

Distribution

Previously recorded from Somalia (N1–3; C2; S2) to Ethiopia, Socotra, Saudi Arabia (Sajid Island), Pakistan to China (Sichuan, Yunnan), Sri Lanka.

Habitat

Open deciduous woodland/bushland on limestone or granite.

Specimens examined

Somalia, reg. Jubbada Hoose (Lower Juba). Boscaglia rada su substrato madreporico ed emergenze rocciose lungo la costa (sparse bushland on madrepores and rocky outcrops along

the coast) between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo. 0°30'S, 42°26'E, 25 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007830, 2 sheets); Somalia, reg. Jubbada Hoose (Lower Juba). Boscaglia rada su substrato madreporico ed emergenze rocciose lungo la costa (sparse bushland on madrepores and rocky outcrops along the coast) between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo. 0°30'S, 42°26'E, 15–16 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007843); Somalia, reg. Jubbada Hoose (Lower Juba). Boscaglia rada su substrato madreporico ed emergenze rocciose lungo la costa (sparse bushland on madrepores and rocky outcrops along the coast) between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo. 0°30'S, 42°26'E, 15–17 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007835, 2 sheets).

Notes

According to FOS this species is not easily distinguished from *F. virosa* (Roxb. ex Willd.) Voigt. The above cited specimens are placed under *F. leucopyrus* in reason of the short spine tipped lateral branches with whitish bark and the small truncate or emarginate leaves. These specimens represent the first records from S3, extending the distribution of this taxon to southernmost Somalia.

References

Gilbert 1993b (FOS), Smith 1987b (FTEA), POWO 2021.

Polygalaceae

***Polygala* aff. *muratii* Jacq. Fél., Bull. Soc. Bot. Fr. 99: 66. 1952**

Distribution

Previously recorded from Ethiopia, Sudan, Chad, Uganda, Kenya, Tanzania.

Habitat

Grassland, seepage grassland, thin soil over rock.

Specimens examined

Somalia, Bur Acaba (Buurhakaba), 1979 L. Curti 87 (FT0007988, 2 sheets).

Notes

This specimen is the first record for this taxon in Somalia (S1). The specimen agrees with *P. muratii* in the presence of many axillary racemes with 3–4 mm pedicels and its persistent wing sepals (ca 5 mm long), therefore it is provisionally ascribed to this taxon. However, the seeds (ca 3–4 mm long) resemble those of *P. amboniensis* Gürke and *P. citrina* Thulin in the lack of glands on the convex base and the conspicuous caruncle (ca 1 mm long). The specimen is particular in its broad leaves (up to 5 mm wide) and beaked capsules (up to 6 × 4 mm, acumen up to 1 mm). Both *P. muratii* and *P. amboniensis* have connate anterior sepals and possess conical seeds with a pyramidal caruncle completely covered by hairs. But these two species are ecologically distinct: the former occurs at higher elevations while the latter is found in lowlands not too far from the coast. Their distribution areas apparently

overlap in S1 (although *P. amboniensis* is not yet recorded from S1) and is likely that hybrids are to be found, as might be the case with this specimen. Also, Polygalas are variable, especially in petals color, and *P. citrina* – occurring in the Bur Eile area not far from Bur Acaba and much resembling the specimen in question except for raceme arrangement and flower colour – may, as well as this specimen, represent a hybrid between these two taxa. More studies are needed to elucidate this species complex.

References

Gilbert 2000 (FEE), Thulin 2006g (FOS), Paiva 2007 (FTEA), POWO 2021.

Portulacaceae

***Portulaca commutata* M. G. Gilbert, Nord. J. Bot. 14(3): 308. 1994**

Distribution

Previously recorded from Somalia (N1–3), S Ethiopia, Kenya, N Tanzania.

Habitat

Among rocks, and in dry open places in deciduous bushland.

Specimens examined

Somalia, road El Uak (Ceel Waaq)–Garba Harre (Garbaharey) (km 711), 8 km after Semarole (Buur Samarole) right outside the Gersale (Garsaale) village. 4 Nov 1986 M. Tardelli 185 (FT0008050).

Notes

This is the first record for this taxon in southern Somalia (S1). This species somewhat resembles the widespread *P. quadrifida* L. but it is distinct in its tufted rather than creeping habit, nodal hairs always with scaly bases and noticeably smaller seeds.

References

Gilbert 1993c (FOS), Phillips 2002a (FTEA), POWO 2021.

***Portulaca coralloides* S. M. Phillips, Kew Bull. 55(3): 695. 2000 (Fig. 6)**

Distribution

Previously only known from coastal NE Kenya.

Habitat

Sandy open patches in deciduous bushland on coral and between coastal dunes.

Specimens examined

Somalia, Sar Uanle, costa rocciosa (rocky coast) 0°37'S, 42°47'E, 6 Aug 1971 G. Moggi, M. Tardelli, R. Bavazzano 391 (FT0008038); Somalia, Jubbada Hoose (Lower Juba), costa rocciosa (rocky coast) at Sar Uanle, 15–25 km SW of Kismayo, 0°30'S, 42°46'E, 18–21 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0008039); Somalia, Jubbada Hoose (Lower Juba), Bajuni Islands, Fuma–Nangue, ca 30 km SW of Kismayo, 0°33'S, 42°25'E, 24 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0008040).

Notes

Portulaca coralloides is reported to occur only in NE coastal Kenya (K7) with a very local distribution. The above cited specimens fully agree with the species description and are the first records of this taxon in Somalia (S3). This species is likely an offshoot of the variable *P. kermesina* N. E. Br. complex, being distinguished by its minute obtuse leaves crowded on short internodes, more numerous stamens and small brown seeds. An additional isotype of *P. coralloides* (FT0008041) is here reported (Kenya, Lamu district, Simambaya Island, P. J. Greenway & S. P. Rawlins 9423 (K holo.; EA, FT iso.).

References

Gilbert 1993c (FOS), Phillips 2000, 2002a (FTEA), POWO 2021.

***Portulaca oblonga* Peter, Repert. Spec. Nov. Regni Veg. Beih. 40(2, Anhang): 32. 1932**

Distribution

Previously only known from Ethiopia, Djibouti, Kenya, Tanzania.

Habitat

Open bushland and disturbed weedy places.

Specimens examined

Somalia, Kismayo, Sar Uanle, piana rocciosa oltre le rocce a dominanza di (rocky plain behind the rocks with dominance of) *Sterculia*, *Combretum*, 0°37'S, 42°27'E, 9–11 Jun 1973 R. Bavazzano s.n. (FT0008042); Somalia, Kismayo, Sar Uanle, Fuma terra (Fuma mainland), southern coastal dune, 0°37'S, 42°27'E, 11–17 Jun 1973 R. Bavazzano s.n. (FT0008043); Somalia, Sar Uanle, costa rocciosa (rocky coast) 0°37'S, 42°27'E, 3 Aug 1975 G. Moggi, M. Tardelli, R. Bavazzano 291 (FT0008044); Somalia, Sar Uanle, fascia costiera a Ovest (western coastal strip) 0°37'S, 42°27'E, 3 Aug 1975 G. Moggi, M. Tardelli, R. Bavazzano 299 (FT0008045); Somalia, Sar Uanle, duna a Sud (southern dune) 3 Aug 1975 G. Moggi, M. Tardelli, R. Bavazzano 240 (FT0008046).

Notes

Portulaca oblonga is frequently mistaken for *P. oleracea* L., but the former has distinctly larger flowers with more than 20 stamens, different seeds and a more upright habit with strictly terminal flowers on the branches. The above cited specimens are the first records for this taxon in Somalia (S3).

References

Gilbert 1993c (FOS), Phillips 2002a (FTEA), POWO 2021.

Sterculiaceae

***Melhanianella kelleri* Schinz, Bull. Herb. Boissier Ser. II. ii. 1908**

Distribution

Previously only recorded from Somalia (N1; C1, 2; S2) and E Ethiopia.

Habitat

Deciduous bushland on sand.



Figure 6. *Portulaca coralloides* (FT0008038).

Specimen examined

Somalia meridionale, Sar Uanle 0°37'S, 42°27'E, Boscaglia ad (Bushland with) *Acacia*, *Adansonia*, *Cordia*. 9 Aug 1975 R. Bavazzano & M. Tardelli 472 (FT0007867).

Notes

This species had not been reported previously for S3. This species is distinct from *Melbania denhami* R. Br. in its medially pubescent sepals and small subglobose capsules (3–4 mm) with 1-seeded locules.

References

Vollesen 1995 (FEE), Thulin 1999a (FOS), POWO 2021.

Talinaceae

***Talinum portulacifolium* Asch. ex Schweinf., Bull. Herb. Boissier iv. App. II. 172. 1896**

Distribution

Tropical and S Africa, S Arabian Peninsula, Indian subcontinent to Myanmar. In Somalia previously only known from (N1, 2; C2; S1, 2).

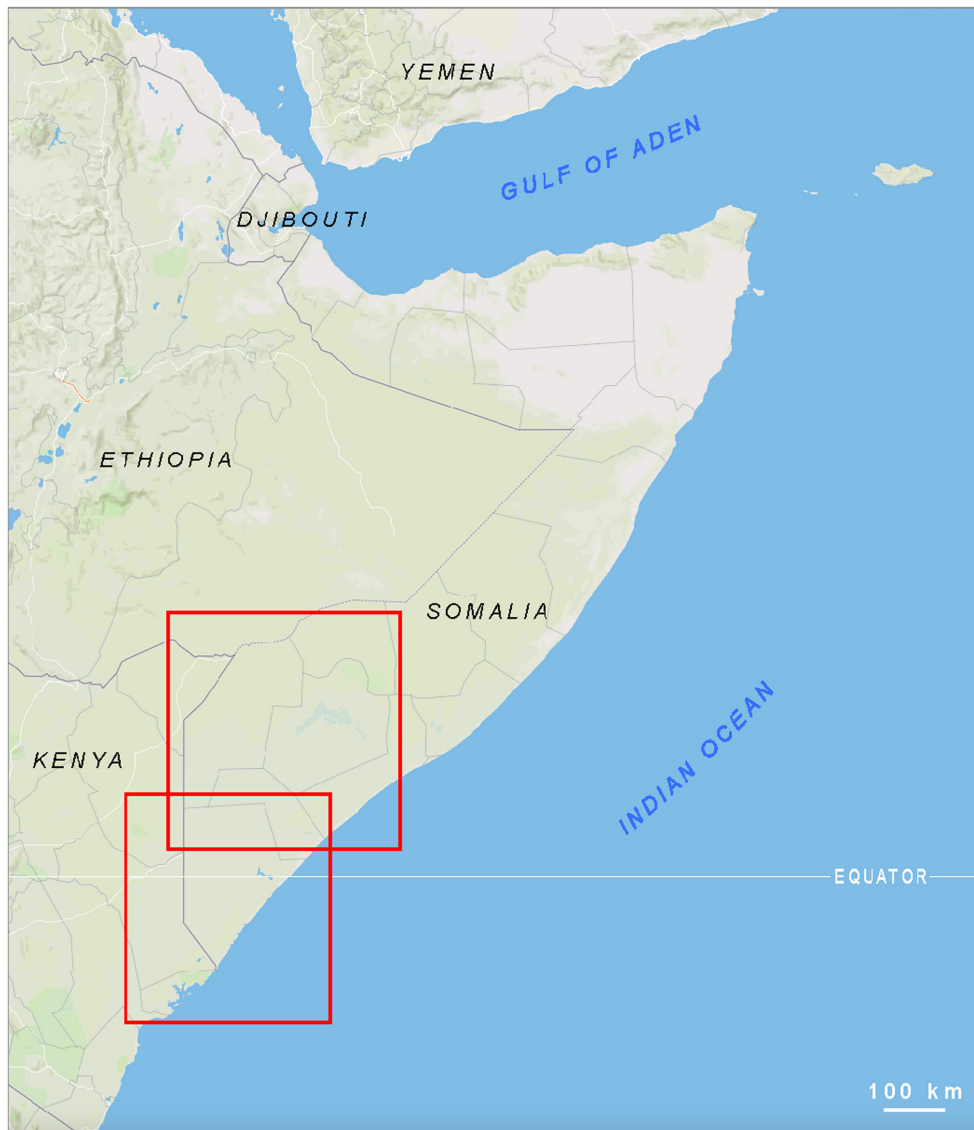


Figure 7. Somalia. Map showing the areas in which the records reported in the floristic list are located.

Habitat

Weedy to rocky places to open bushland, grassland and thicket.

Specimens examined

Somalia, Kismayo, fra la duna e il fiume (between the dune and the river), 1926 P. Gorini 496 (FT0008047); Somalia, reg. Jubbada Hoose (Lower Juba). Boscaglia rada su substrato madreporico ed emergenze rocciose lungo la costa (sparse bushland on madreporites and rocky outcrops along the coast) between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo. 0°30'S, 42°26'E, 25 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0008048); Somalia, reg. Jubbada Hoose (Lower Juba). Boscaglia rada su substrato madreporico ed emergenze rocciose lungo la costa (sparse bushland on madreporites and rocky outcrops along the coast) between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo.

0°30'S, 42°26'E, 16 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0008049); Somalia, Reg. Jubbada Hoose (Lower Juba), costa rocciosa madreporica (medreporic rocky coastal-shelf) at Stambul (Lac Salàmo), ca 72 km SW of Kismayo, 0°52'S, 42°7'E, 28 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0008051, 2 sheets); Somalia, Kismayo, Sar Uanle, rocce presso il campo (rocks at the camp), 0°37'S, 42°27'E, 16 Jun 1973 R. Bavazzano s.n. (FT0008052); Somalia, Sar Uanle (Kismayo), piana rocciosa (rocky plain), 0°37'S, 42°27'E, 3 Aug 1975 R. Bavazzano 315 (FT0008053).

Notes

These are the first records for this widespread taxon from southernmost Somalia (S3), filling the gap between Somalia and Kenya.

References – Gilbert 1993d (FOS), Phillips 2002b (FTEA), POWO 2021.



Figure 8. Map showing the Bay region, located in the floristic region S1. The localities mentioned in the floristic list are indicated.

Tiliaceae

Corchorus aestuans L., Syst. Nat. ed. 10, 2: 1079. 1759

Distribution – Pantropical. In Somalia previously only known from (S1).

Habitat – Grassland on heavy alluvial soil.

Specimen examined – Somalia, reg. Jubbada Hoose (Lower Juba). Boscaglia rada su substrato madreporico ed emergenze rocciose lungo la costa (sparse bushland on madrepores and rocky outcrops along the coast) between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo. 0°30'S; 42°26'E. 21 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007869).

Notes – This pantropical taxon had previously not been reported for S3.

References – Andrews 2001 (FTEA), Demissew 1999a (FOS), POWO 2021.

Grewia glandulosa Vahl, Symb. Bot. 1: 34. 1790

Distribution – Previously only recorded from Kenya, Tanzania, Madagascar, Mozambique and cultivated in Mauritius.

Habitat – Dry forest and bush on coral rag and clifftops.

Specimen examined – Somalia meridionale, Bajuni Islands, Ngumi Island. 15 Aug 1975 M. Tardelli, R. Bavazzano 769 (FT0007880); Somalia meridionale, Bajuni Islands, Ngumi Island. 15 Aug 1975 M. Tardelli, R. Bavazzano 781 (FT0007883); Somalia, reg. Jubbada Hoose (Lower Juba). Boscaglia rada su substrato madreporico ed emergenze rocciose lungo la costa (sparse bushland on madrepores and rocky outcrops along the coast) between Ras Mtoni (Ras Matooni) and Sar Uanle, ca 15–20 km SW of Kismayo. 0°30'S; 42°26'E. 15–16 Oct 1971 G. Moggi, R. Bavazzano s.n. (FT0007870); Somalia, Bajuni Islands, Ngumi Island, 0°45–46'S; 42°16–18'E. 4 Sept 1959 G. Moggi R. Bavazzano 2138 (FT0007871, 2 sheets).



Figure 9. Map showing the Lower Juba (Jubbada Hoose) and Lamu regions, located in the floristic region S3 and K7 respectively. The localities mentioned in the floristic list are indicated.

Notes

This species was not included in FOS. The specimens cited are the first records for this taxon in southern Somalia. The large leaves with long acuminate apex and subcordate base together with the large, squarish, rusty brown pubescent fruits are very distinctive and makes the species easily recognizable. This plant typically forms thickets along the coast just above the high-water mark on the Eastern African coasts.

References

Whitehouse 2001 (FTEA), Demissew 1999b (FOS), POWO 2021.

Geographical localities

The location of the floristical zones in Somalia, listed here, is shown in Fig. 7, including localities mentioned (Fig. 8, 9).

The upper rectangle is presented in detail in Fig. 8 (floristic region S1). The lower rectangle in Fig. 7 is shown in detail in Fig. 9.

Data availability statement

There are no additional data for this paper.

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