

Plant Diversity in Qena-Safaja and Quseir-Qift Roads, Egypt

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Plant diversity in Qena-Safaja and Quseir-Qift roads crossing the Eastern Desert of Egypt comprised 53 species in the former, 38 of them were found in the latter. The species belong to 21 angiosperme families. The percentages of representation of these families were: Leguminosae by 17%, each of the Cruciferae and Compositae by 11.3%, each of the Chenopodiaceae and Gramineae by 9.5%, the Zygophyllaceae by 8%, the Apocynaceae by 5.6%, the Euphorbiaceae by 3.6 % and each of Caryophyllaceae, Palmae, Rahmnaceae, Solanaceae, Tamaricaceae, Urticaceae, Convolvulaceae, Cucurbitaceae, Resedaceae, Boraginaceae, Cleomaceae, Malvaceae, and Moringaceae by 1.9 %. The annual and perennial species constituted 57% and 43% of the flora in the two roads. One annual parasite (*Cuscuta campestris* Yunck) was recorded.

Key Words: Plant diversity, Flora, Eastern Desert, Egypt.

Introduction

The loss of biodiversity in general and in hot and arid lands in particular has become an issue of great global concern. The degree of degradation varies from one region to another according to the biomass productivity, rainfall, soil characters and the severity of human impact. The percentage of

the species loss in arid regions with relatively low biodiversity is much higher than in the more species-rich regions (McNeely, 2003).

Egypt is among the hot arid regions of the world, where about 95% of the area is occupied by desert traversed by the river Nile in a south-north direction. The Eastern Desert occupies the area that extends from the Nile Valley in the west to the Gulf of Suez and the Red Sea in the east and represents about 21% of the total area of the country. It consists essentially of a back bone high and the rugged mountains running parallel to the Red Sea coast. The range of coastal mountains (e.g. Ataq, Shayeb El Banat, and Elba) divides the Eastern Desert into two sub-regions: the Red Sea coastal lands and the inland desert (Zahran, 1989). The main features of the natural vegetation and the different habitat types in the Eastern Desert were reviewed briefly (El Hadidi, 1993).

So far only little attention has been paid to monitoring plant diversity in the eastern desert. For example, a study of the flora of the area extending between Cairo- Suez road in the north and Idfu-Mersa Alam road in the south was conducted by (Hassan, 1987) and a similar floristic survey of Wadi Qena was performed by Fawzy and Mohamed (2009). They showed apparent diversity in life forms ranging between woody perennial desert plants to herbaceous submerged water plants, and that the habitats supporting the growth of plants varied from gravel, sand and limestone. A total of 433 species including 9 endemics were recorded from the study area.

The present study aims to survey the plant diversity along 160 km and 175 km of the desert roads between Qena-Safaja and Quseir-Qift, respectively.

Material and Methods

Field trips were conducted to the Qena-Safaja road (26° 17' 13" N - 26° 41' 48" N, 32° 48' 30" E - 33° 49' 41" E) and Quseir-Qift road (26° 6' 20" N - 25° 41' 18", 34° 11' 55" E - 33° 21' 7" E) during March 2008 and 2009 (Fig 1). The visits covered 160 km and 175 km of the two roads, respectively. The 600 specimens collected were identified according to Täckholm (1974) and Boulos (1999, 2000, 2002, and 2005). Voucher specimens were kept in the Herbarium of Flora and Phytotaxonomy Researches Department (CAIM; Holmgren *et al.*, 1990). The genera were referred to families according to the system of the Angiosperm Phylogeny Group (<http://www.mobot.org/MOBOT/research/APweb>) and its latest available

update (APG III, 2009). For each species, reference of original publication, habitat type, life form, floristic category and local names were cited.

Results

Table 1 summarizes the occurrence and duration of the 53 species of angiosperms recorded in Qena – Safaja and Quseir – Qift roads.

Table (1): Alphabetical arrangement of the 53 species recorded from Qena – Safaja and Quseir – Qift roads in the Eastern Desert of Egypt, together with their life cycles and presence in the two locations. A = annual; P = perennial; + = present; - = absent. Genera are referred to families according to

Species	Families	Life cycle	Qina – Safaja road	Quseir – Qift road
<i>Acacia nilotica</i> (L.) Delile subsp. <i>nilotica</i>	Leguminosae	P	+	+
<i>Alhagi graecorum</i> Boiss.	Leguminosae	P	+	+
<i>Astragalus eremophilus</i> Boiss.	Leguminosae	A	+	-
<i>Astragalus vogelii</i> (Webb) Bomm.	Leguminosae	A	+	-
<i>Bassia muricata</i> (L.) Asch.	Chenopodiaceae	A	+	+
<i>Beta vulgaris</i> L.	Chenopodiaceae	A	+	+
<i>Brassica nigra</i> (L.) Koch	Cruciferae	A	+	+
<i>Calotropis procera</i> (Aiton) W.T. Aiton	Apocynaceae	P	+	-
<i>Capsella bursa-pastoris</i> (L.) Medik.	Cruciferae	A	+	+
<i>Chenopodium album</i> L.	Chenopodiaceae	A	+	+
<i>Chenopodium ambrosioides</i> L.	Chenopodiaceae	A	+	+
<i>Chenopodium murale</i> L.	Chenopodiaceae	A	+	+
<i>Chrozophora oblongifolia</i> (Delile) Spreng.	Euphorbiaceae	P	+	-
<i>Citrullus colocynthis</i> (L.) Schrad.	Cucurbitaceae	P	+	+
<i>Cleome amblyocarpa</i> Braratte & Murb.	Cleomaceae	A	+	-
<i>Cotula cinerea</i> Delile	Compositae	A	+	+
<i>Cuscuta campestris</i> Yunck.	Convolvulaceae	A	+	+
<i>Cynanchum acutum</i> L.	Apocynaceae	A	+	-
<i>Euphorbia peplus</i> L.	Euphorbiaceae	A	+	+
<i>Fagonia arabica</i> L.	Zygophyllaceae	P	+	+
<i>Fagonia thebaica</i> Boiss.	Zygophyllaceae	P	+	+
<i>Filago desertorum</i> Pomel	Compositae	A	+	+
<i>Forsskaolea tenacissima</i> L.	Urticaceae	P	+	+
<i>Imperata cylindrica</i> (L.) Raeusch.	Gramineae	P	+	+
<i>Leptidium sativum</i> L.	Cruciferae	A	+	+
<i>Leptadentia pyrotechnica</i> (Forssk.) Decne.	Apocynaceae	P	+	-
<i>Malva parviflora</i> L.	Malvaceae	A	+	-
<i>Medicago intertexta</i> (L.) Mill. var. <i>ciliaris</i> (L.) Heyn	Leguminosae	A	+	-
<i>Medicago polymorpha</i> L.	Leguminosae	A	+	-

<i>Melilotus indicus</i> (L.) All.	Leguminosae	A	+	+
<i>Mimosa pigra</i> L.	Leguminosae	P	+	+
<i>Moringa peregrina</i> (Forssk.) Fiori	Moringaceae	P	+	+
<i>Ochrademus bacctus</i> Delile	Resedaceae	P	+	+
<i>Phalaris minor</i> Retz.	Gramineae	Λ	+	+
<i>Phoenix dactylifera</i> L.	Palmae	P	+	+
<i>Phragamitis australis</i> (Cav.) Trin. ex Steud.	Gramineae	P	+	+
<i>Pluchea dioscoridis</i> (L.) DC.	Compositae	P	+	-
<i>Polycarpha repens</i> (Forssk.) Asch. & Schweinf.	Caryophyllaceae	P	+	+
<i>Polypogon monspeliensis</i> (L.) Desf.	Gramineae	A	+	+
<i>Pulicaria incisa</i> (Lam.) DC.	Compositae	P	+	-
<i>Pulicaria undulata</i> (L.) C.A.Mey.	Compositae	P	+	+
<i>Schowwia purpurea</i> (Forssk.) Schweinfurth.	Cruciferae	A	+	+
<i>Sisymbrium irio</i> L.	Cruciferae	A	+	+
<i>Solanum nigrum</i> L.	Solanaceae	A	+	+
<i>Sonchus oleraceus</i> L.	Compositae	A	+	+
<i>Sorghum virgatum</i> (Hack.) Stapf	Gramineae	A	+	-
<i>Tamarix nilotica</i> (Ehrenb.) Bunge	Tamaricaceae	P	+	+
<i>Trichodesma africanum</i> (L.) R.Br. var. <i>africanum</i>	Boraginaceae	A	+	+
<i>Trigonella glabra</i> Thunb.	Leguminosae	Λ	+	-
<i>Zilla spinosa</i> (L.) Prantl	Cruciferae	P	+	+
<i>Ziziphus spina-christi</i> (L.) Desf.	Rhamnaceae	P	+	+
<i>Zygophyllum coccineum</i> L.	Zygophyllaceae	P	+	+
<i>Zygophyllum simplex</i> L.	Zygophyllaceae	A	+	+

The following is a detailed list of the 53 species mentioned in Table 1 together with their habitat types, life forms, floristic categories and local names. For floristic categories the following abbreviations are used: IR – Tur = Irano - Turanian; Med = Mediterranean; Sah - Sind = Saharo-Sindian; Sud – Zamb = Sudano - Zambezan.

1. Apocynaceae s.l.

1.1 *Calotropis procera* (Aiton) W. T. Aiton, Hort. Kew., ed. 2,2: 78 (1811)
Boulos 2000, p. 220.

Habitat and life form: desertic plant. Nanophanerophyte.

Floristic category: Sah – Sind, IR – Tur and Sud – Zamb Regions.

Local names: 'Oshar, 'Oshaar, 'Oshr, 'Osher, Abat, Abbad, Beid el – 'Oshar (fruit).

1.2 *Cynanchum acutum* L., Sp. Pl., ed. 1, 212 (1753); subsp. *acutum*,
Boulos 2000, p.222

Habitat and life from: Waste moist ground, Nile and canal banks. Therophyte.

Floristic category: Med, IR-Tur and Sah-Sind Regions.

Local names: 'Ollaiq, 'Olleiq, Modeid, Motteit, Libbein, Libbeina.

1.3 *Leptadenia pyrotechnica* (Forssk.) Decne, Ann. Sci. Nat. Bot., Ser. 2, 9: 270 (1838); Boulos 2000, p. 225.

Habitat and life from: Wadi beds and desert outskirts. Phanerophyte.

Floristic category: Sah-Sind and IR-Tur Regions.

Local names: Markh, Agwaam, Seisabaan, Sesebaan.

2. Boraginaceae

2.4 *Trichodesma africanum* (L.) R. Br., Prodr. Fl. Nov. Holl. 1: 496 (1810); var. *africanum*; Boulos 2000, p. 286.

Habitat and life from: Stony or rocky wadi beds. Chamaephyte.

Floristic category: Sud-Zamb and Sah-Sind Regions.

Local names: Hameem, Lisan et-teir (et-thor), Himhim, Horrraaqa, Horreiq, Shoak ed-dab'a, Khodaar, Tadatt, (B), Losseiq, Lesseq, Lisseq, Lossaaq, Lessaaq.

3. Caryophyllaceae

3.5 *Polycarpha repens* (Forssk.) Asch. & Schweinf., Oesterr. Bot. Z. 39: 126 (1889); Boulos 1999, p. 81.

Habitat and life from: Sandy and stony soils. Chamaephyte.

Floristic category: Sah-Sind Region.

Local names: Mokoar, Makkoar, Qameyla, Qomeyla, Shehebiya, Doqaiqa, Qebeishiya.

4. Chenopodiaceae

4.6 *Bassia muricata* (L.) Asch. in Schweinf., Beitr. Fl. Aethiop.: 187 (1867); Boulos 1999, p. 106.

Habitat and life from: Weed in new reclaimed lands with sandy soils. Therophyte.

Floristic category: Sah – Sind and IR – Tur Regions.

Local names: Ghobbeira, Ghobbayra, Layya, Haythaam.

4.7 *Beta vulgaris* L., Sp. Pl., ed. 1, 222 (1735); subsp. *maritima* (L.) Arcang., Comp. Fl. Ital. 593 (1882); Boulos 1999, p. 94.

Habitat and life from: Weed in winter cultivations and along roads sides. Therophyte.

Floristic category: Cosmopolitan.

Local names: Dirs el-kalb, Salq, Silq, Figlbou-leil.

4.8 *Chenopodium album* L., Sp. Pl., ed. 1, 218 (1753); Boulos 1999, p. 96.

Habitat and life from: Winter weed in fields and along irrigation canals. Therophyte.

Floristic category: Cosmopolitan.

Local names: Rokab el – gamal, Fiss el- kelb (kilaab).

4.9 *Chenopodium ambrosioides* L., Sp. Pl., ed. 1,219 (1753); Boulos 1999, p. 95.

Habitat and life from: Weed on canal banks and moist waste places. Chamaephyte.

Floristic category: Cosmopolitan.

Local names: Nitna, Natane, Abu 'efein ('efeina) Habaq el – bahr, Fiss el – kalb, Minteena, Fiss el – kelb (kilaab), Minatteena, Fihaniya, Zorbeih, Zorbeh Sorbeyh.

4.10 *Chenopodium murale* L., Sp. Pl., ed. 1, 219 (1753); Boulos 1999, p. 96.

Habitat and life from: Winter weed in fields and along irrigation Canals. Therophyte.

Floristic category: Cosmopolitan.

Local names: Lissan el-teir (el-thor), Qehaniya, Qeihaniya, Abu 'efin ('efeina), Fissel-kelb (kilaab) Sontaar, Fatteh, Shagaret el-motteina, Fisseih, Fosseish, Sakaraan, Sekraan.

5. Cleomaceae

5.11 *Cleome amblyocarpa* Barratte & Murb., Acta Univ. Lund. Ser. 2, 1 (4): 25 (1905); Boulos 1999, p.180.

Habitat and life from: Sandy coastal dunes, waste ground, desert wadis and plains. Therophyte.

Floristic category: Sah-Sind Region.

Local names: Berberaan.

6. Compositae

6.12 *Cotula cinerea* Delile, Descr. Egypte, Hist. Nat. 275,t. 47, f.4 (1814); Boulos 2002, p. 257.

Habitat and life from: Winter weed. Therophyte.

Floristic category: Cosmopolitan.

Local names: Ribyaan, Erbeyaana, Arbeyanny, Sakaraan, Sekraan.

6.13 *Filago desertorum* Pomel, Nouv. Mat. Fl. Atlant. 1: 46 (1874); Boulos 2002, p. 199.

Habitat and life from: Desert wadis and plains. Therophyte.

Floristic category: Sah-Sind, IR-Tur and Med Regions.

6.14 *Pluchea dioscoridis* (L.) DC., Prodr. 5: 450 (1836); Boulos 2002, p. 189.

Habitat and life from: Moist ground and canal banks. Chamaephyte.

Floristic category: Sah-Sind, IR-Tur and Med Regions.

Local names: Barnoof

6.15 *Pulicaria incisa* (Lam.) DC., Prodr. 5:479 (1836); Boulos 2002, p. 219.

Habitat and life from: Desertic wadies. Chamaephyte.

Floristic category: Sah-Sind and Sud-Zamb Regions.

Local names: Kootkaat, Rabool, Rabl, Rabd, Ghobbeira, Ghobbayra-a, Shaay gabali.

6.16 *Pulicaria undulata* (L.) C. A. Mey., Verz., Pfl. Casp. Meer. 79 (1831), Boulos 2002, p. 221.

Habitat and life from: Desertic plant. Chamaephyte.

Floristic category: Sud – Zamb and Sah - Sind Regions.

Local names: Kootkaat, Rabool, Rabl, Rabd, Ghobbayra, Shaay gabali

6.17 *Sonchus oleraceus* L., Sp. Pl., ed. 1,794 (1753); Boulos 2002, p. 309.

Habitat and life from: Common weed in cultivated lands, along canal banks and roadsides. Therophyte.

Floristic and category: Cosmopolitan.

Local names: Go'odied, Goo'dei, Galawein, Galaaweel, Galaeel, Khass, Khaz, Hoa el- ganayin , Hawa, Howa, Howei, Khass klab, Khass wez, Shekhasheikh, Shikschaakh.

7. Convolvulaceae

7.18 *Cuscuta campestris* Yunck., Mem. Torrey Bot. Club 18: 138 (1932); Boulos 2000, p. 265.

Habitat and life from: A stem parasite particularly on *Trifolium* and *Capsicum*. Parasite.

Floristic category: Pantropical.

Local names: Hamool.

8. Cruciferae

8.19 *Brassica nigra* (L.) Koch in Röhling, *Deutschl. Fl.*, Ed. 3, 4: 713 (1833); Boulos 1999, p. 211.

Habitat and life from: Common winter weed. Therophyte.

Floristic category: Cosmopolitan.

Local names: Lisaan, Lifsaan, Kabar, Khardal, Khodaar

8.20 *Capsella bursa-pastoris* (L.) Medik., *Pfl.- Gatt.* 85 (1792); Boulos 1999, p. 230.

Habitat and life from: Winter weed. Therophyte.

Floristic category: Cosmopolitan.

Local names: Kees er-raa'i, Mikh-lit er-raa'i.

8.21 *Lepidium sativum* L., *Sp. Pl.*, ed. 1, 644 (1753); Boulos 1999, p.225.

Habitat and life from: Weed in winter crops especially in clover fields. Therophyte.

Floristic category: Med Region (cultivated).

Local names: Habb er-rashaad (seed), Reshaad, Rashaad, Genab, Melwa.

8.22 *Schouwia purpurea* (Forssk.) Schweinf., *Bull. Herb. Boiss.* 4, App. 2: 183 (1896); Boulos 1999, p.221.

Habitat and life from: Desertic plant. Therophyte.

Floristic category: Sah. Sind. and Sud – Zamb. Temperate regions.

Local names: Mahad, Omm derhem.

8.23 *Sisymbrium irio* L., *Sp. Pl.*, ed. 1, 659 (1753); Boulos 1999, p.186.

Habitat and life from: Common winter weed in fields, gardens, orchard and along irrigation canals. Therophyte.

Floristic category: Cosmopolitan.

Local names: Shillyaat, Saleekh, Esseileih.

8.24 *Zilla spinosa* (L.) Prantl, in Engl. & Prantl, *Natürl. Pflanzenfam.* III (2): 175 (1891); Boulos 1999, p. 218.

Habitat and life from: Sandy plains. Chamaephyte.

Floristic category: Sah – Sind Region.

Local names: Zilla, Silla, Sillet, Besilla, Basilla, Shagaret el- hommoos, Ommo, Hammoos.

9. Cucurbitaceae

9.25 *Citrullus colocynthis* (L.) Schrad., *Linnaea* 12: 414 (1838); Boulos 2000, p. 140.

Habitat and life from: Wadies with sandy-silty ground. Hemicryptophyte.

Floristic category: Sah-Sind, Med and IR-Tur Regions.

Local names: Handal, Hanzal, Oorky, Tattoor.

10. Euphorbiaceae

10.26 *Chrozophora oblongifolia* (Delile) Spreng., Syst. Veg., ed. 16, 3: 850 (1826); Boulos 2000, p.41.

Habitat and life from: Desert wadies, sandy plains, edges of cultivation. Chamaephyte.

Floristic category: Sah-Sind and Sud-Zamb Regions.

Local names: Ghobbeira, Ghobbayra-a, Neela, Neeli.

10.27 *Euphorbia pepplus* L., Sp. Pl., ed. 1, 456 (1753); Boulos 2000, p. 64.

Habitat and life from: Winter weed. Therophyte.

Floristic category: Cosmopolitan.

Local names: Wideina, Ma'laqa, Saboon gheit.

11. Gramineae

11.28 *Imperata cylindrica* (L.) Raeusch., Nomencl. Bot., ed. 3, 10 (1797); Boulos 2005, p. 327.

Habitat and life from: On canal banks, along roadsides and in waste ground. Hemi – cryptophyte.

Floristic category: Pantropical.

Local names: Halfa, Halfaa, Halfa deil (thayl) el-Qott, Silla, Sill, Sillet, Besto', Boo- doweys, Bodweya, Beniesh-Shaam, Ambarta, Helein, Hellein.

11.29 *Phalaris minor* Retz., Observ. Bot. 3: 8 (1788); Boulos 2005, p.169.

Habitat and life from: Winter weed. Therophyte.

Floristic category: Med and IR-Tur Regions.

Local names: Sha'eer el-faar, 'Ain el-qott.

11.30 *Phragmites australis* (Cav.) Trin. ex Steud., Nomencl. Bot., ed. 2, 2: 324 (1841); Boulos 2005, p. 223.

Habitat and life from: Moist places and banks of the Nile and irrigation canals. Helophyte.

Floristic category: Pantropical.

Local names: Hagna, Hagana, Ghaab, Ghaab reehi Boos, Boos khabba . Boos baw, Qasaba, Qasab, Qassaba, Qasab hegaazi, Qesba, Hoshanaat, Heesh, Heesh- maddaad, Taghaaneenet, Tighaaminee'n, Taneimme, Aghaaneem, Ighoonaam, Moddeid, Meddaad, Mottiet.

11.31 *Polypogon monspeliensis* (L.) Desf., Fl. Atlant.1: 67 (1798); Boulos 2005, p. 176.

Habitat and life from: Common weed in fields, along Nile and canal banks and moist places. Therophyte.

Floristic category: Cosmopolitan.

Local names: Deil (Thayl) el-qott, Reesh (abu) el-hossein (el-hosny), Deil (Thayl) el-faar, Deil (Thayl) el-ta'lab (tha'lab), Abu rokba (roka, rekeiba), Denebel-faar, shar el-faar, Ashb el-moya.

11.32 Sorghum virgatum (Hack.) Stapf in Prain, Fl. Trop. Afr. 9: 111 (1917); Boulos 2005, p. 332.

Habitat and life from: Weed in cultivations and along Nile and canal banks. Therophyte.

Floristic category: Sud-Zamb Region.

Local names: Hasheesh el-faras, Garawa.

12. Leguminosae

12.33 Acacia nilotica (L.) Delile, subsp. *nilotica*, Descr. Egypt, Hist. Nat. 79 (1814); Boulos 1999, p.368.

Habitat and life from: Everywhere on Nile and canal banks. Phanerophyte.

Floristic category: Sud-Zamb Region.

Local names: Sant, Sont, Gorti (tree). Qarad (pods).

12.34 Alhagi graecorum Boiss., Diagn. Pl. Orient. 9: 114 (1849); Boulos 1999, p. 340.

12.35 Habitat and life from: Weed in waste places and along canal and Nile banks. Hemi-cryptophyte.

Floristic category: Palaeotropical.

Local names: 'Aqool, 'Agool, Shoak, Shoak el-gamal, Afisoor.

12.35 Astragalus eremophilus Boiss., Diagn. Pl. Orient. 2: 54 (1843); Boulos 1999, p.327.

Habitat and life from: Sandy wadies and desert plains. Therophyte.

Floristic category: Sah-Sind Region.

Local names: Faga'aye, Tawwtaww, Omm el-qorein, Maqd, Moqd.

12.36 Astragalus vogelii (Webb) Bornm., Beih. Bot. Centralbl. 33 (2): 233 (1915); Boulos 1999, p.329.

12.37 Habitat and life from: Silty Nile banks and new reclaimed lands. Therophyte.

Floristic category: Sah-Sind and Sud-Zamb Regions.

Local names: Qam, Qarna, Qarni, Horboss, Taweel, Fag'ai.

12.38 Medicago intertexta (L.) Mill. var. *ciliaris* (L.) Heyn, Ser. Hieros. 12: 129 (1963); Boulos 1999, p. 272.

12.39 Habitat and life from: Common winter weed in cultivation and waste ground. Therophyte.

Floristic category: Med Region.

Local names: Khaasag.

12.38 *Medicago polymorpha* L., Sp. Pl., ed. 1, 779 (1753); Boulos 1999, p. 269.

Habitat and life form: Common winter weed. Therophyte.

Floristic category: Cosmopolitan.

Local names: 'Oqqeil.

12.39 *Melilotus indicus* (L.) All., Fl. Pedem. 1: 308 (1785); Boulos 1999, p. 278.

Habitat and life form: Common winter weed. Therophyte.

Floristic category: Palaeotropical.

Local names: Hesheita, Hisheita, Mosheta, Hendaqooq morr, Handaqooq helw 'Atoor ('Otoor) el- khadm, Qort, Nafla, Nesl.

12.40 *Mimosa pigra* L., Cent. Pl. 1: 13 (1755); Boulos 1999, p. 364.

Habitat and life form: Nile banks. Nanophanerophyte.

Floristic category: Pantropical.

Local names: Habbaab.

12.41 *Trigonella glabra* Thunb. Pl. Cap: 137 (1800); El - Hadidi & Fayed 1994/95, p. 265.

Habitat and life form: Winter weed. Therophyte.

Floristic category: Sud - Zamb Med and Sah Sind Regions.

Local names: 'Eshb (Oshb) el- malik, Daraqraq, Deraaq, Daraaq, Zeraqraaq

13. Malvaceae

13.42 *Malva parviflora* L., Sp. Pl., ed. 2, 969 (1763); Boulos 2000, p. 94.

Habitat and life form: Winter weed in cultivated lands and along Nile and canal banks.

Floristic category: Med, Euro - Sib, IR- Tur and Sah - Sind Regions.

Local names: Raqma, Raqmiya, Khobbeiza, Khobaaza

14. Moringaceae

14.43 *Moringa peregrina* (Forssk.) Fiori, Agric. Colon. 5:59 (1911); Boulos 1999, p. 238.

Habitat and life form: rocky slopes and wadies. Phanerophyte.

Floristic category: Palaeotropical.

Local names: Yasaar, Yesaar, Baan, Elbaan, El-leban, Mae, Khiaam, (flowers), Habb ghaali, (Seeds), Habb el-Yasaar, (Seeds), Habb el-baan (Seeds), Roba' (Seeds).

15. Palmae

15.44 *Phoenix dactylifera* L., Sp. Pl., ed. 1, 1188 (1753); Boulos 2005 p. 104.

Habitat and life from: Cultivated every where .Phanerophyte.

Floristic category: Sud – Zamb and Sah – Sind Regions.

Local names: Nakhel el-balah.

16. Rhamnaceae

16.45 *Ziziphus spina-christi* (L.) Desf., Fl. Atlant. 1:210 (1798); Boulos 2000, p. 84.

Habitat and life from: Nile and canal banks, along roadsides and in desert plains. Nanophanerophyte.

Floristic category: Sud-Zamb, Sah-Sind and IR-Tur Regions.

Local names: Nabq, Nabaq, Sidr, Gabaat .

17. Resedaceae

17.46 *Ochradenus baccatus* Delile, Deser. Egypt, Hist. Nat. 63 (1814); Boulos 1999, p. 231.

Habitat and life from: Sandy plains and wadi beds. Nano phanerophyte.

Floristic category: Sah – Sind and IR - Tur Regions.

Local names: Qordi, Garthy, Thanabaan.

18. Solanaceae

18.47 *Solanum nigrum* L., Sp. Pl., ed. 1, 186 (1753); Boulos 2002, p. 39.

Habitat and life from: Common weed in fields and waste places. Therophyte.

Floristic category: Cosmopolitan.

Local names: 'Anab ('Enab) ed-deeb, Bandoret-deeb.

19. Tamaricaceae

19.48 *Tamarix nilotica* (Ehrenb.) Bunge, Tent. Tamaric. 54 (1852); Boulos 2000, p. 127.

Habitat and life from: Wide wadies with sandy – silty ground, along Nile and canal banks and in waste ground . Nanophanerophyte.

Floristic category: Sah – Sind, Sud – Zamb and IR – Tur Regions.

Local names: Abal, Atl and Athal.

20. Urticaceae

20.49 *Forsskaolea tenacissima* L., Oppobalasm. Decl. 18 (1764); Boulos 1999, p. 18.

Habitat and life from: Rocky wadies and slopes. Chamaephyte.

Floristic category: Med, Sah-Sind and Sud-Zamb Regions.

Local names: Losseiq, Lisseq, Lossaq, Lessaaq.

21. Zygophyllaceae

21.50 *Fagonia arabica* L., Sp. Pl., ed. 1, 386 (1753); Boulos 2000, p. 14.

Habitat and life from: Sandy plains. Chamaephyte.

Floristic category: Sah-Sind Region.

Local names: Gamd, Gamda, Shibreeq, Shobrooq, 'Aqool el-ghazaal, Halwa, Helwa el-gamal, Haad, Shoakaan, Shweiak.

21.51 *Fagonia thabaica* Boiss., Diagn. Pl. Orient., ser. 1, 8: 121 (1849); Boulos 2000, p. 15.

Habitat and life from: Desert wadies. Chamaephyte.

Floristic category: Sah-Sind Region.

Local names: Shoka'a, Halaawa, Halaawi.

21.52 *Zygophyllum coccineum* L., Sp. Pl., ed. 1, 386 (1753); Boulos 2000, p. 24.

Habitat and life from: Sandy plains. Chamaephyte.

Floristic category: Sah – Sind, IR – Tur and Sud – Zamb Regions.

Local names: Ratrayt, Rotreyt, Balbal, Belbel, Bawaal, Bizz el-Kalba, Hamd.

21.53 *Zygophyllum simplex* L., Mant. 68 (1767), Boulos 2000, p. 23

Habitat and life from: Sandy soils. Therophyte.

Floristic category: Sah – Sind and IR – Tur Regions.

Local names: Garmal, Qarmal, Goormeil.

Discussion

So far as we are aware the present study of the flora of the Qena - Safaja and Quseir-Qift roads seems to be second only to our previous floristic survey of Wadi Qena (Fawzi and Mohamed, 2009), which can be regarded collectively as representing the middle sector of the Eastern Desert of Egypt. The present study revealed the presence of only 53 species in Qena- Safaja road, of which 38 species were recorded in Quseir - Qift road indicating that this hyper-arid sector is among the floristically poorer phytogeographic regions of Egypt. Other factors contributing to the dwindling number of

species in this sector include over-grazing and severe destruction of the fragile habitats through road construction. Although none of the species recorded in the study sites is globally or regionally threatened, conservation measures seem urgently needed to ease the ecological pressures on the vegetation in this sector. The data presented in this study might then serve as baseline information to be complemented by comprehensive investigations covering other biodiversity groups.

The species recorded belong to 21 angiosperme families. The % of representation of these families are (in decreasing order): Leguminosae (17%), both of Cruciferae (11.3%), Compositae (11.3%), Chenopodiaceae (9.5%), Gramineae (9.5), Zygophyllaceae (8%), Apocynaceae (5.6%), Euphorbiaceae (3.6%) and each of Caryophyllaceae, Palmae, Rahmnaceae, Solanaceae, Tamaraceae, Urticaceae, Convolvulaceae, Cucurbitaceae, Resedaceae, Boraginaceae, Cleomaceae, Malvaceae, and Moringaceae were represented by (1.9 %). The perennial species in the studies areas were: 43%, while the annual ones were 57%. One annual parasite (*Cuscuta campestris* Yunck) was among the recorded species.

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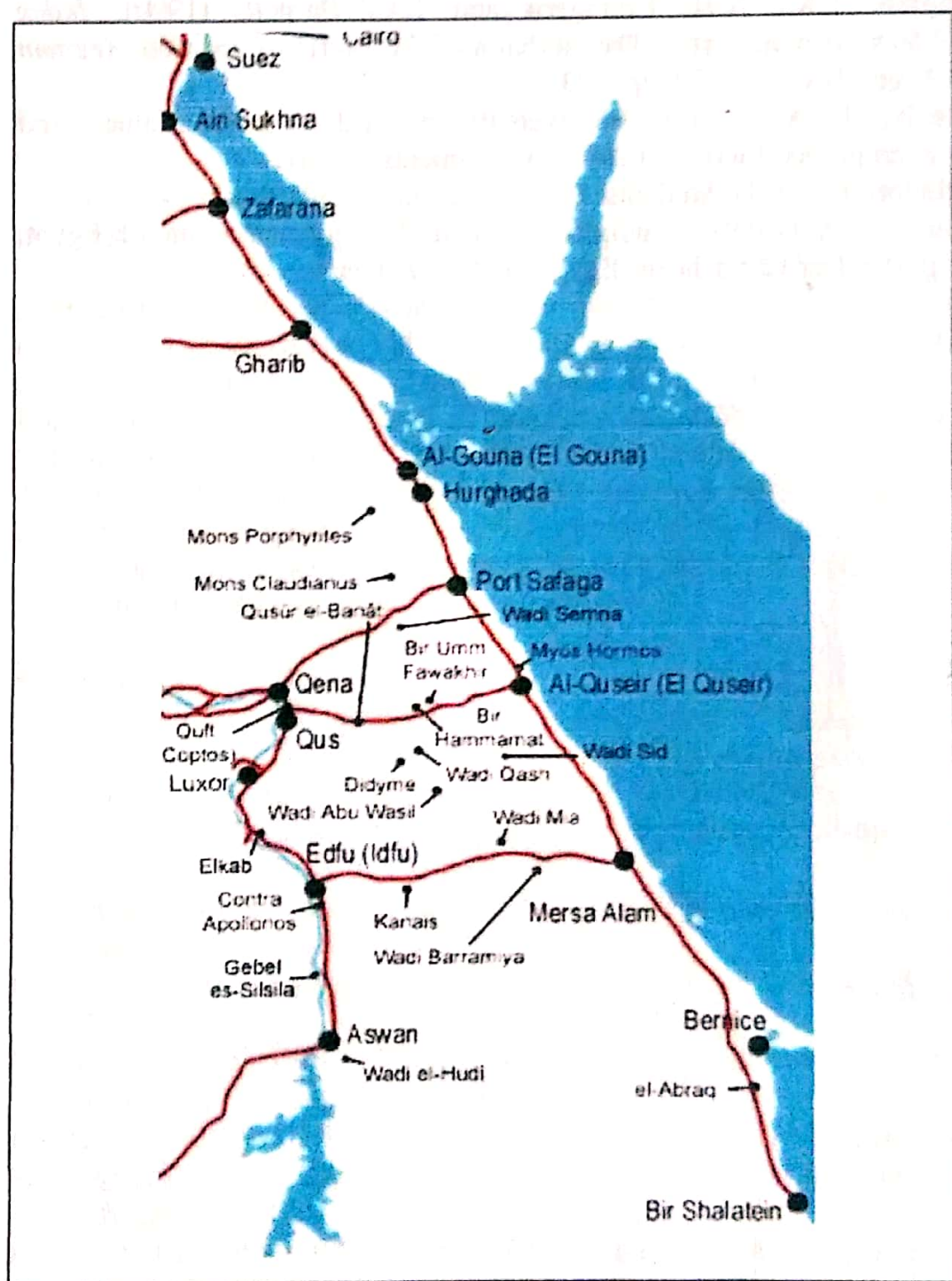


Fig. 1. A map showing the Qena-Safaja and Qusier-Qift roads in the middle sector of the Eastern Desert, Egypt.