AL FAATEH UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF BOTANY

FLORA OF LIBYA

80

15th January, 1980

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NYCTAGINACEAE

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Fl. Lib. 80:1-8.1980

NYCTAGINACEAE

M.A. SIDDIQI & A. EL-GADI

Trees, herbs or shrubs, sometimes climbing or straggling. Leaves alternate, exstipulate. Flowers hermaphrodite or sometimes unisexual, in cymes often dense and capitate, usually bracteate; bracts large and coloured or inconspicuous. Perianth tubular, salverform or infundibuliform, 4-5-lobed, often petaloid. Petals absent. Stamens 1-many (up to 30), free or connate into a cup at the base, or sometimes branching above; alternating with the perianth lobes; filaments small, usually unequal; anthers 2-celled, dehiscing longitudinally. Pistil monocarpellary; ovary unilocular with a single basal ovule; style slender and simple. Fruit often enclosed in persistent base of the calyx and indehiscent (an anthocarp), sometimes broadly winged at maturity.

A family of 30 genera and c. 290 species mostly tropical American, but with some representatives in temperate regions; represented by 3 genera in Libya, of these 2 are exotic and are known from cultivation only and are marked with an asterisk (*).

1. + Stem woody and armed with spines. Leaves alternate or fascicled. Flowers in clusters of usually 3, each subtended by a large coloured bract — 1. **Bougainvillea***
   − Stem herbaceous or woody only at the base and unarmed. Leaves opposite — 2

2. + Flowers small, surrounded singly or in cluster by some early deciduous, very small bracts. Anthocarp usually glandular — 2. **Boerhavia**
   − Flowers large, surrounded by a calyx-like, 4-5 lobed involucre. Anthocarp eglandular — 3. **Mirabilis***

NYCTAGINACEAE

1. **BOUGAINVILLEA***

Comm. ex Juss. Gen. 91. 1789 *(nom. cons.)*

Shrubs, usually climbing or straggling. Leaves alternate, petiolate, entire. Flowers tubular, hermaphrodite, each developed on the midrib of a bract. Cymes 3-flowered. Bracts 3, coloured and showy. Perianth tube inconspicuously 5-6-lobed. Stamens 7-8, connate at the base. Style lateral. Anthocarp fusiform, glabrous or pubescent, 5 ribbed.

A genus of c. 18 species, mostly S. American; represented by 2 cultivated species in Libya.

+ Spines up to 1 cm long, straight or slightly curved. Involucral bracts acute, deep rosy	1. **B. glabra***
– Spines up to 5 cm long, often much curved. Involucral bracts obtuse, rosy-red to crimson	2. **B. spectabilis***

1. ***Bougainvillea glabra** Choisy in DC., Prodr. 13, 2: 437. 1849; L.H. Bailey, Stand. Cyclop. Hort. 1: 533. 1963; Keith, Prelim. Check List Lib. Fl. 294. 1965. (Fig. 1, A-D)

An evergreen glabrous or slightly pubescent climber, up to 4 m or more tall. Stem much branched, cylindrical with straight or slightly curved spines, 0.5-1 cm long. Leaves petiolate, alternate, ovate, oblong-ovate, or broadly ovate, 2.5-10 x 1.8-7.5 cm, entire, bright green, glabrous or sparsely pubescent when young, acute or shortly acuminate; petiole 0.5-3 cm. Flowers 1.5-2 cm long, paniculate, arranged on branchlets surrounded by 3 deep rosy, cordate-ovate acute or subacuminate membranous and brown purplish nerved bracts, 3-3.5 x 2.5-3 cm. Perianth 5, united, petaloid, acute with villous tips alternate with 5 yellow irregular appendages forming the throat, subsessile with c. 4 mm long pedicels adnate to the bracts; filaments filiform 11-13 mm long, unequally inserted. Ovary c. 4 mm long; style c. 2 mm long; stigma c. 5 mm long, plumose.

Type: Described from Brazil.

A-3 Tripoli, Al-Faateh University Campus, a cultivated ornamental climber, 21.3.1979, *M.A. Siddiqi* 337 (ULT); id., 11.4.1978, *S.A. Alavi* 45 (ULT).

Distribution: An ornamental climber, cultivated in the tropical and subtropical regions of the world.

A commonly cultivated ornamental here.

Fl. Throughout the year. *Ver.* Aljohannamia.

2. ***Bougainvillea spectabilis** Willd., Sp. Pl. 2: 348. 1799; Bailey, l.c.; Keith, l.c. 294. 1965.

B. peruviana Nees & Mart. in Nov. Act. Nat. Cur. 11: 39. 1823.

Like the last but more stout and taller, larger with dark green leaves and more hairy or pubescent parts and much curved spines, up to 5 cm long. Bracts obtuse and pubescent usually lilac-rose, but can be of various shades in other cultivars like red, purple, orange, brick-red to crimson and white. Sometimes two coloured types can be seen on the same plant.

Type: Described from Brazil.

Many "varieties" such as *Fastuosa, gracilis, Mrs. Butt, Sanderianal* elegantissima, *Crimson lake, salvatore allegra* etc. are reported to be in cultivation in Tripoli and elsewhere by Keith (l.c.).

Distribution: Cultivated in the tropical and subtropical regions of the world like the last species.

Fl. Throughout the year.

2. **BOERHAVIA**

L., Sp. Pl. 3: 1753; Gen. Pl. ed. 5: 119. 1754.

Erect or diffuse, usually divaricately much branched perennial herbs, often woody at base. Leaves opposite, rarely subopposite, in unequal pairs, entire, often irregularly undulate, petiolate. Bract small, usually deciduous, rarely whorled and involucrate. Flowers small, paniculate, umbellate or subcapitate, articulated with pedicel, sessile or subsessile. Perianth tube persistent and becoming hardened to enclose the fruit, the upper part petaloid and deciduous; limb funnel shaped with 5-lobed margin, the lobes plicate. Stamens 1-3 (5), ± exserted; filaments capillary, unequal, connate at base; anthers rounded, biloculed. Ovary short, oblique, stipitate,

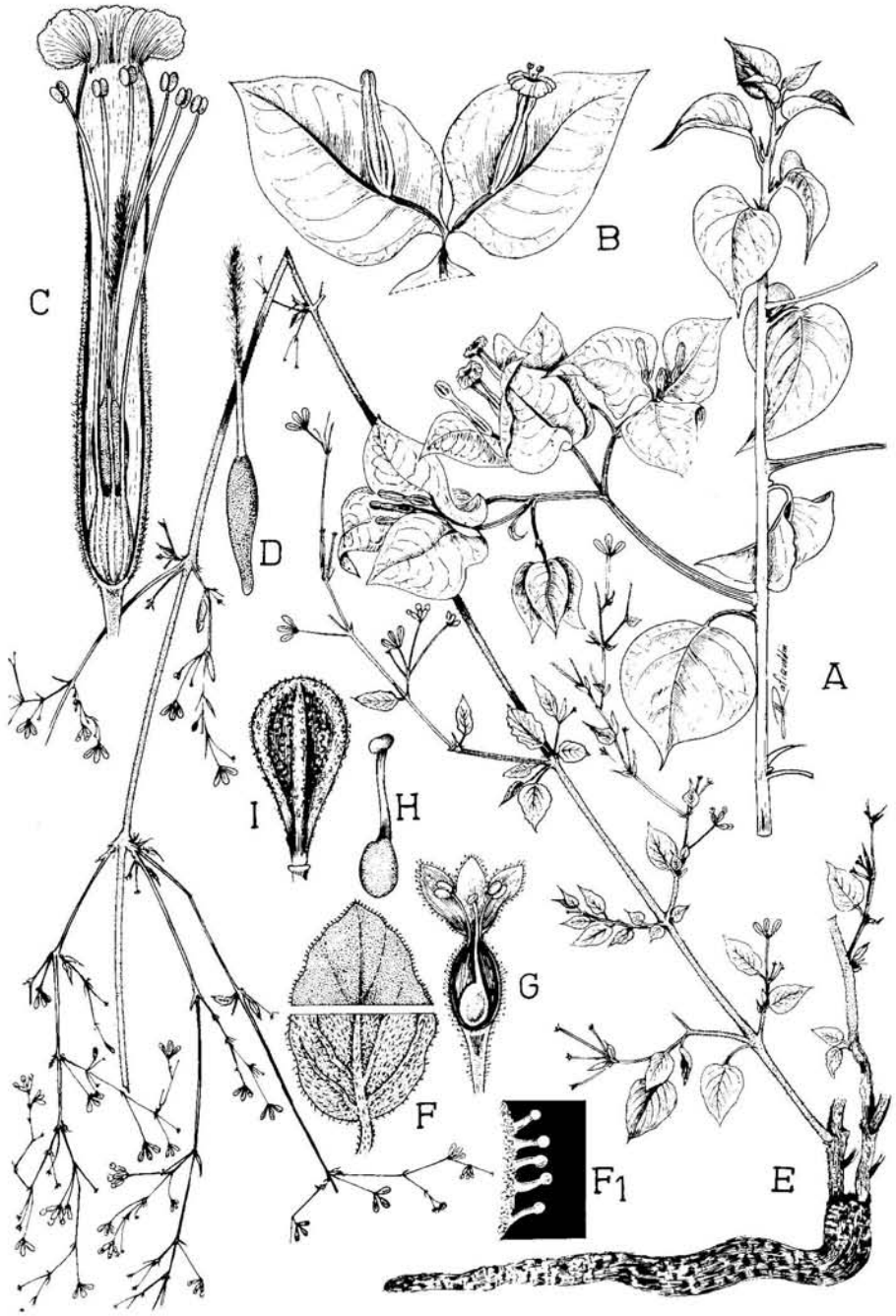


Fig. 1 **Bougainvillea glabra**: A, portion of the flowering shoot x 0.5; B, bracts bearing flowers x 1; C, dissected flower x 5; D, gynoecium x 5. **Boerhavia diffusa**: E, habit x 0.5; F, dorsal and ventral views of leaf x 2.5; F_1, portion of leaf margin showing glandular hairs x 15; G, dissected flower x 10; H, gynoecium x 15; I, anthocarp x 8.

bilocular, ellipsoid; ovule erect, style filiform; stigma capitate and peltate. Anthocarp clavate or oblong-clavate, 5-ribbed.

A genus of c. 40 species, chiefly tropical and subtropical; represented by the following species in Libya.

Boerhavia diffusa L., Sp. Pl. 3. 1753; Täckh., St. Fl. Egypt 69. 1974. (Fig. 1, E-I)

B. repens L., Sp. Pl. 3. 1753; Quezel & Santa, Nouv. Fl. Alger., 1. 307. 1962; Ozenda, Fl. Sahara, ed. 2: 218. 1977; *P. procumbens* Banks ex Roxb. Fl. Ind. 148. 1820; *B. repens* L. var. *procumbens* (Roxb.) Hook. f., Fl. Brit. Ind. 4. 709. 1885; *B. pubescens* R. Br. Prodr. 1: 422. 1810.

Perennial herb with procumbent diffuse or ascending stem and woody rootstock. Stems 10-70 (-90) cm, with branches reddish, glabrous below and pubescent or hirsute above. Leaves opposite, unequal or rarely equal, ovate or oblong to subcordate, upper ones usually smaller, narrow oblong to subcordate, entire, undulate at the margin, the smaller one sometimes clustered in the axils, often whitish beneath, acute or acuminate, ventral veins prominent, puberulous. Bracts and bracteoles small, lanceolate, acute or acuminate, puberulous. Flowers small, 2.5-3.5 mm long, sessile or subsessile, in head or umbel of 3-5 flowers on filiform peduncles ± branched into diffuse axillary or terminal compound umbels or panicles. Perianth campanulate, pinkish-mauve, as long as or longer than the lower half, deciduous, 3 x 0.7-1 mm; limb 1.7-2 x 3.5 mm, deciduous. Stamens (1-) 2, inserted in a narrow cup- shaped toothed disc adnate to the ribs of the ovary, which as well as the ovary is entirely enclosed in the anthocarp; filaments ± as long as or longer than the perianth. Anthocarp 3-3.5 (-4) x 1-1.5 mm, oblong, clavate-turbinate, short, dense, glandular-muricate when dry, becoming enveloped in mucilage when wet.

Type: Described from India.

F-8 Wadi-Karkour, Gabal Arkenu, c. 40 km N.W. of Jabal al Uwaynat, soil gravelly, a prostrate perennial herb with thick and woody taproot, flowers pink, 26.1.1979, *A. El-Gadi et al* 2298 (ULT); **G-8** Gebel Uweinat, s.n. 7.11.1968, *L. Boulos* (ULT).

Distribution: Tropical and subtropical Asia, Africa & Australia.

A widely distributed plant, very variable in indumentum; recorded for the first time from Libya.

Fl. Throughoutthe year.

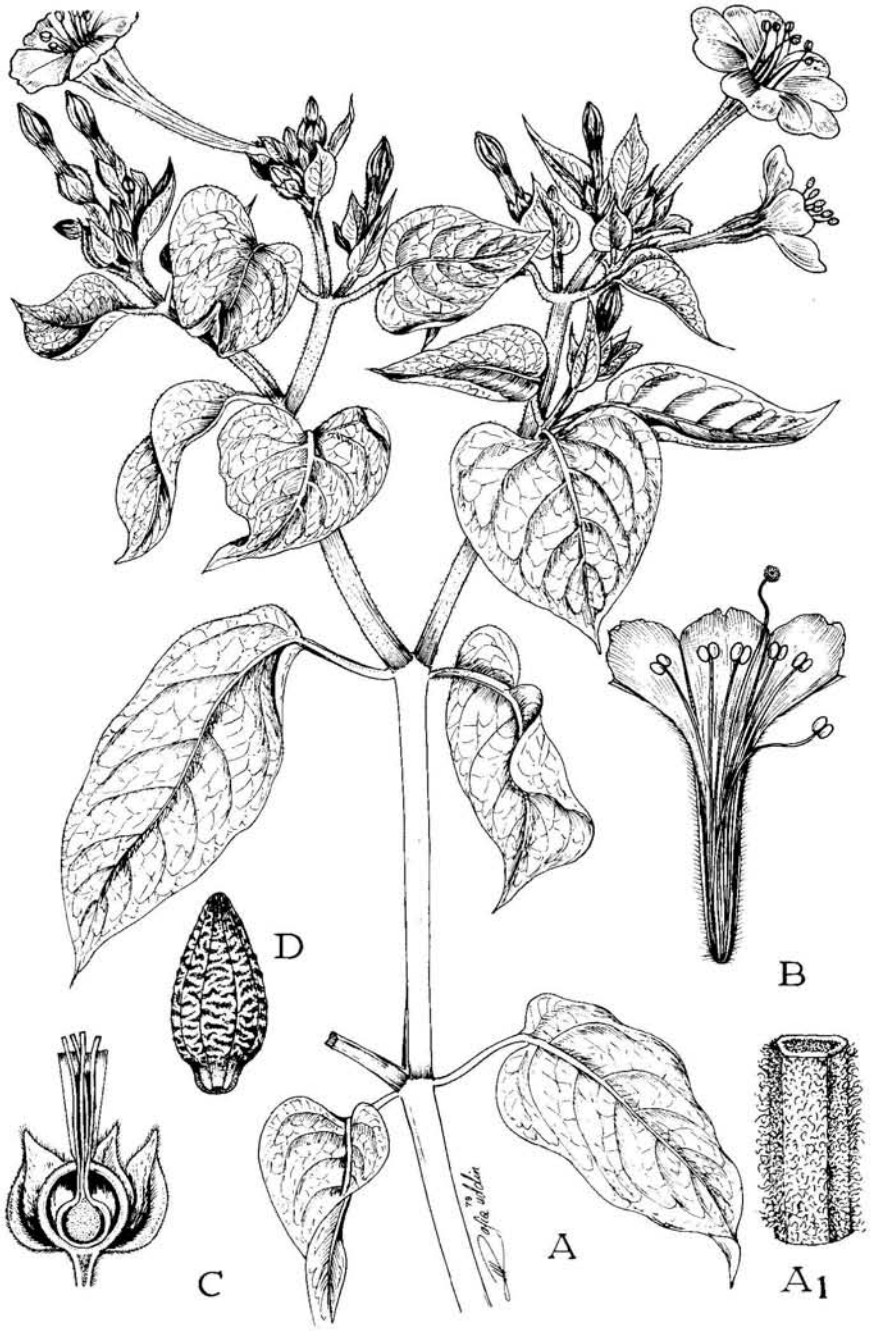


Fig. 2 **Mirabilis jalapa**: A, flowering shoot x 0.5; A1, portion of stem showing kinky hairs x 5; B, dissected corolla showing stamens and style x 1; C, l.s. of lower half of flower x 5; D, anthocarp x 3.

3. **MIRABILIS***

L., Sp. Pl. 252. 1753; Gen. Pl. ed. 5: 82. 1754.

Annual or perennial herb, bi- or tri- chotomously branched, glabrous or glandular, thick tuber-like roots. Leaves simple, opposite, entire, exstipulate, the lower petiolate, the upper sessile. Inflorescence many flowered, dense pseudo-umbellate cymes. Involucre calyx-like, 1- to many flowered, gamophyllous, (4-) 5-lobed. Perianth red, purple, white, yellow or variegated, infundibuliform, constricted above the ovary; limb 5-lobed, deciduous. Stamens 5-6, unequal, exserted; filaments filiform, incurved, united into a fleshy cup at the base; anther cells subglobose. Ovary ellipsoid or ovoid, monocarpellary with a single erect basal ovule; style filiform, exserted; stigma globose, bearing stalked papillae. Fruit 5- (10) ribbed, enclosed in the hardened base of the perianth and surrounded by the persistent staminal cup. Seeds endospermic with perisperm around a curved embryo; cotyldeons surrounding the scanty farinaceous albumen.

A genus of about 60 species, mostly in the hotter parts of America, introduced elsewhere; represented here by the following cultivated species.

> ***Mirabilis jalapa** L., Sp. Pl. 177. 1753; Bailey, Stand. Cyclop. Hort. 2. 2056. 1961 (Reprint ed.), Webb in Tutin et al, Fl. Europ. 1: 111. 1964; Keith, Prelim. Check List Lib. Fl. 671. 1965. (Fig. 2)

An erect perennial much branched herb, 60 cm or more tall, with tuberous root. Stem glabrous or shortly pubescent. Leaves 5-12 x 2-6 cm, ovate, acuminate, glabrous or puberulent above, entire, base rounded, truncate or cordate, often ciliate margined, petioles 1.5-4 cm long. Flowers fragrant, 3-6 in each cyme; involucre c. 1.5 cm long, glandular when young; lobes ovate, shortly bristles-tipped. Perianth crimson, red, yellow or white, sometimes ± blotched or striped; tube 2.5-3.5 (4) cm long, cylindric below, funnel shaped above, limb spreading, c. 2.5 cm or more in diameter. Stamens 5, free exserted. Carpel one; style long; stigma branched; ovary superior, unilocular with an erect basal ovule, completely surrounded by the perianth. Anthocarp ovoid, 5-ribbed, 9 mm long, wrinkled-tuberculate, exserted.

A-3 Tripoli, Al-Faateh University campus, a cultivated herb with jointed stem, swollen at the nodes, flowers deep pink or magenta coloured, 15.8.1979, *M.A. Siddiqi* 349 (ULT).

NYCTAGINACEAE

Cultivated as an ornamental plant, for its fragrant flowers opening in late afternoon, closing in morning.

Fl. Sept.-October *Ver.* Nowar Ashiya

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