AL FAATEH UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF BOTANY

FLORA OF LIBYA

15

10th. April, 1977

Editors:

S.I. ALI & S.M.H. JAFRI
Al Faateh University,
Faculty of Science,
Department of Botany, Tripoli.

NEURADACEAE

by S.M.H. JAFRI

Illustrations by
M.Y. SALEEM

Fl.Lib.15:1-4.1977

NEURADACEAE

S.M.H.JAFRI

Prostrate, tomentose or woolly herbs with alternate, variously lobed or pinnatifid leaves; stipules minute or absent. Flowers regular, hermaphrodite, solitary, axillary, small to showy, sometimes with epicalyx of 5 bracteoles. Calyx tube (hypanthium) broad and flat with ± valvate lobes, persistent. Petals 5, inserted in calyx throat. Stamens 10, in 2 series; filaments elongated, subulate, ± persistent; anthers small, ovoid. Carpels 3-10, horizontal, verticillate, ± connate and adnate to clayx tube with 1 pendulous ovule in each; styles as many as the carpels, persistent with small capitate stigma. Fruit false, orbicular, depressed-conical, winged or spinose; carpels dehiscent ventrally; seeds exalbuminous, horizontal.

3 genera and c. 10 species, chiefly African; only 1 genus is known from Libya.

Sometimes considered as a subfamily of *Rosaceae,* but without any close relative there, from which it differs primarily by its connate carpels within the concave receptacle (calyx-tube) and different pollen grains. It also resembles with some members of the family *Malvaceae* with verticellate carpels covered within persistent, flat-conic calyx, but differs in having petals inserted on the calyx throat. However, the affinities are still disputed. The seed germinates within the fruit in *Neurada* and the older spiny disc-shaped hypanthium (often called fruit coat) persists as a collar round the base of the new plant; a phenomena not known in either of these families.

NEURADA

L.,SP.Pl.441.1753; Gen.Pl.ed.5:199.1754.

Herbs prostrate, annual, tomentose or woolly with simple and branched, short and long hairs. Leaves small, alternate, sinuate-pinnatifid, petiolate, bistipulate. Flowers small, white, solitary axillary, pedicellate. Calyx-tube contracted above, echinate, at length conic, dilated and forming with the ripe carpels an orbicular spiny disc (fruit). Calyx lobes triangular or subulate. Petals 5,

small. Stamens 10, inserted in the contracted mouth of the calyx. Carpels 10, whorled, connate, with 1 ovule in each; style subulate, exserted. False fruit dry depressed conic, orbicular, woolly, spiny, usually persisting as a collar at the base of the new plant after the seed has germinated.

A monotypic genus of wide distribution.

Neurada procumbens L., Sp. Pl. 441. 1753; Durand & Barratte, Fl. Lib. Prod. 96. 1910; Pamp., Fl. Ciren. 240. 1931; Corti, Fl.Fezzan 126. 1942; Ozenda, Fl. Sahara, 2. 78. fig. 86. 1958; Keith, Prelim. Check List. Lib. Fl. 684. 1965. (Fig. 1).

Figaraea aegyptiaca Viv.,Pl.Aeg.dec.tab.1.1831.

Procumbent, woolly annual with 10-25 cm long branches. Leaves alternate, ovate, sinuate-pinnatifid, up to 18 × 10 mm; petiole 2-10 mm long. Flowers small, solitary axillary; pedicels up to 1 cm long in fruit. Calyx tube depressed, echinate, contracted above; lobes 2-3 mm long, outer subulate, inner triangular. Petals c. 1.5 × 1 mm obovate, whitish. Stamens usually 10, inserted in the contracted mouth of the calyx. Carpels 10, partly united, each 1-ovuled; style exserted, spiny. Fruits (6-) 10-20 mm in diameter, depressed, orbicular, indehiscent, spiny, woolly; seed germinating within the fruit which persists as spiny orbicular collar at the base of the stem.

Type: "Habitat in Aegypto, Arabia".

A-3 Ras El Masan, c. 110 km from Tripoli, near limestone hillock, 23.3.1972, *S.I.Ali* 35 (ULT); Al Naqata, before Khoms, prostrate, common, *S.I.Ali & M.M.Khalifa* 229 (ULT); Leptis Magna, along the sea-shore, 1.5.1974, *B.Faris* 331 (ULT); *G.H.Faris* 607 (ULT); **B-2** c. 65 km from Derj on way to Nalut, sandy roadside with small stones, prostrate, 26.2.1975, *S.I.Ali* 2155 (ULT); Wazen, Libyan-Tunisian border, 9.6.1974, *B.Faris* 627 (ULT); **B-4** Bugrain, prostrate, 28.3.1975, *K. Sifaw* 70 (ULT); near, sandy ground, roadside, 23.10.1975, *S.M.H.Jafri* 6011 (ULT); Sirte, 8.1.1977, *Alavi & Fathi* 83 (ULT); 25 km w.Syrte, 8.3.1968, *L.Boulos* 1942 (ULT).

Distribution: N. Africa (Algeria to Egypt), Arabia, Sinai, Palestine, Syria, Iraq, N. Iran, Afghanistan & Pakistan.

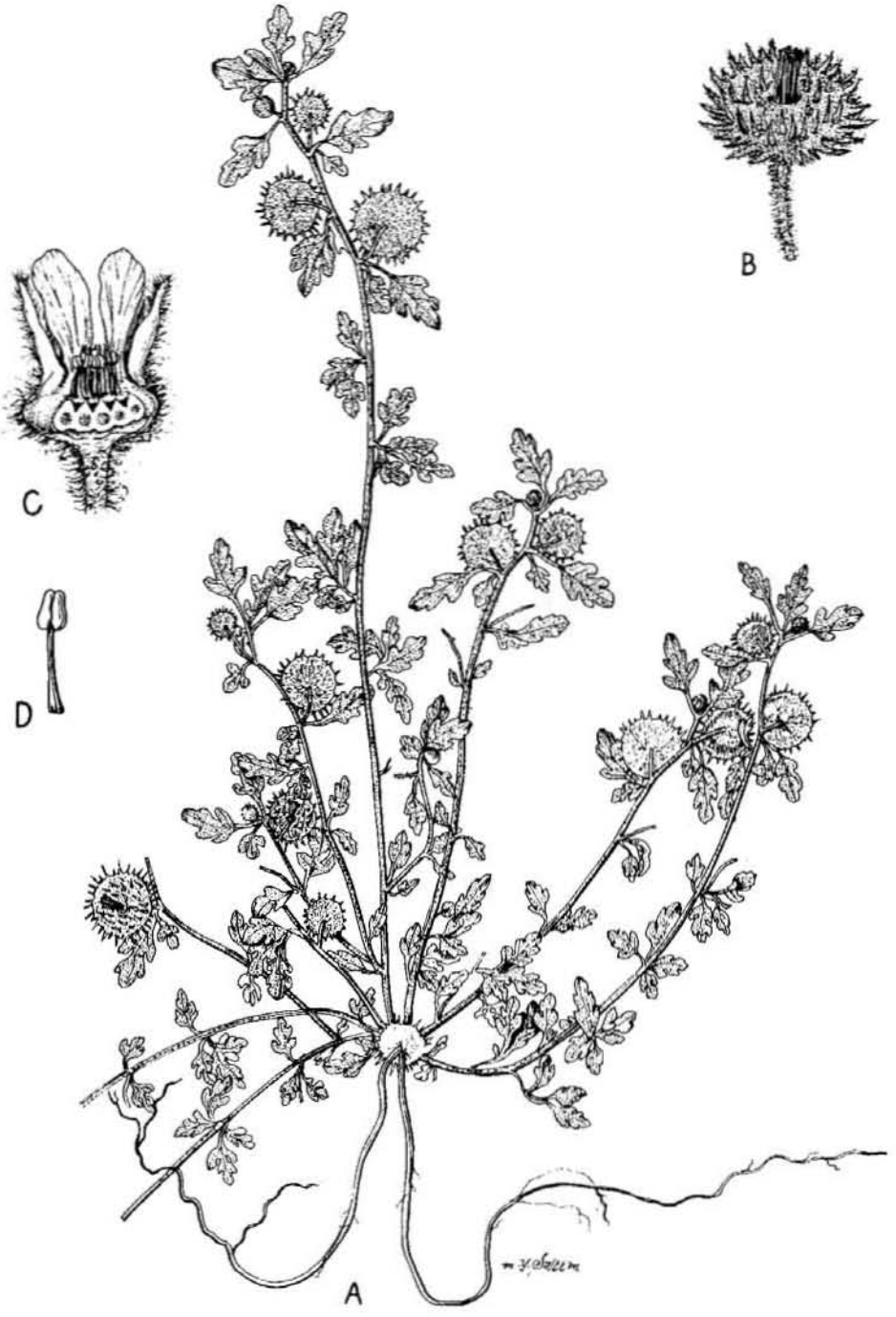


Fig. 1 **Neurada procumbens:** A, habit x 1/2; B, Fruit x 1,1/2; C, flower vertically cut x 7; D, stamen x 20.

A desert, Saharo-Sindian species, widely occurring in Libya. Fruits often dispersed in fleece of sheep and plants grazed by sheep and camel.

Fl. March-May. *Vern.* Saadan, Nefel, Anfel, Kofeiza.

Acknowledgements:

We are grateful to the following herbaria for herbarium and library facilities: Herbarium Universitatis Florentinae, Florence, Museum National d'Histoire Naturelle, Laboratoire de Phanerogamie, Paris, Institut de Botanique, Universite de Montpellier, Montpellier, Royal Botanic Gardens, Kew, British Museum (Natural History), London and Royal Botanic Garden, Edinburgh. Our thanks are also due Mr. B.L. Burtt, Mr. I. Hedge and Miss. J. Lamond for their help.

INDEX TO NEURADACEAE

Figaraea aegyptiaca Viv. 2
Neurada L. 1
Neurada procumbens L. 2