

The Vegetation of Morna River

Rothe S. P.

Principal, Smt. Maherbanu College of Science and Commerce, Akola-444001

Abstract

Morna is the main water source for of Akola district. It was planned to explore Morna banks for a satisfactory knowledge of our plant resources found in and on the bank of Morna river. The Morna's vegetation is abundant rich in both aquatic as well as terrestrial plant species. During the survey it was found that the vegetation of Morna river comprises of about 11 aquatic plant species and about 296 plant species along the banks. It is obvious that the vegetation of Morna river is quite rich in diversity and abundance.

Key words: Morna, Akola district, aquatic plant species, vegetation, etc.

Introduction:

The watershed of Morna lies mostly in eastern Vidarbha region of Maharashtra state. The Morna River basin which is a tributary of Purna River lies towards the northern and southern part of Akola district, and parts of Washim district, forming near about 190 to 200 meters thick lava flows covering an area of 941.39 sq. km. Morna is the main water source for of Akola district. It rises in the southern Barshitakli tehsil Maharashtra state, and flows northward, draining Maharashtra's Vidarbha region before merging with the Purna river.

Akola is one of the district of Maharashtra state of India, situated at the Northern border; between the meridians of longitudes 76⁰51' and 27⁰44' East and between the parallels of latitudes 19⁰51' and 27⁰17' North. Its maximum length from North to South is about 145 km and maximum breadth is about 100 km. Its total area is about 10,606 sq. km. There is a considerable variation in the topography, geology and climate.

It was planned to explore Morna area botanically, for a satisfactory knowledge of our plant resources found in and on the bank of Morna river, as the area of Morna river, is not screened for the floristic survey. In the present investigation, attempts have been made to study the vegetation of this area which has not been reported hitherto. The vast fertile plain of the Morna river, the soil over the entire trap area varies from light reddish sandy loams on the ridges and black cotton soil. Reports and additions of the vegetation of Akola district was reported time to time by Rothe (1997;1999;2004 and 2011).

Materials and Methods:

In the present investigation, the plants from different localities along the river Morna were collected by visiting these localities four times in a year (i.e. June, September, January and April). Collected plant material was cleaned and then dried in blotting papers. Every care was taken to preserve the material in good condition by using insecticide (3% HgCl₂). Herbarium sheets for 305 species were prepared. Plants were identified by following the standard flora like that of Hooker (1872-1897); Cooke (1901-1908), Kamble and Pradhan (1988); Sharma et al., (1996); Naik, (1998); Singh and Karthikeyan, (2000) and Singh et al., (2001).

Observations and Results:

Vegetation: It appears that there is some relation between the level of water in the river and the growth of aquatic as well as marginal plants. It is observed that as the river gets flooded in the rainy season, the vegetation as a whole of the riverain track diminishes more or less completely from June to October. It is true for other rivers also. Later on, the entire situation changes. As the water recedes and starts becoming stagnant in certain deeper pockets, the vegetation starts reappearing from November onwards till the next monsoon and attains its maximum growth. The flowering period for the most of the plants is from January to May.

The vegetations can be conveniently classified into two main categories namely:

1. The submerged aquatic vegetation.
2. The marginal vegetation along the bank.

The submerged aquatic vegetation:

Hydrocharitaceae: Hydrilla verticillata L., Vallisneria spiralis L.

Najadaceae: Najas graminea Del., var. minor Rendle, Najas indica (Willd.) Cham.

Zannichelliaceae: *Zanichellia palustris* L. ssp. *pedicellata* Wahl.

Free floating aquatic Vegetation:

There are few floating aquatics which include *Echhornia crassipes*, *Nymphoides cristatum*, *Lemna perpusilla*, *Azolla* sp., *Wolffia globosa*.

The marginal vegetation along bank:

Cleomaceae: *Cleome gynandra* L., *Cleome simplicifolia* Hook. f & Th, *Cleome viscosa*, *Cleome chelidonii*

Capparidaceae: *Capparis aphylla* Roth., *C. sepiaria* L.

Violaceae: *Hybanthus enneaspermus* (L.) f. Muell.

Malvaceae: *Abelmoschus manihot*, *Abutilon indicum* (L.) Sweet., *Abelmoschus glaucum*, *Abutilon pannosum*, *Hibiscus panduriaeformis* Burm. f., *Malvastrum coromandelianum* (L.) Garcke, *Sida acuta* Burm. F., *Sida alba* L., *Sida glutinosa* Cav.

Sterculiaceae: *Melochia corchorifolia*.

Tiliaceae: *Corchorus olitorius* L., *C. trilocularis* L., *C. aestuans*, *C. fascicularis*, *Triumfetta pentandra* Jam., *T. rotundifolia* Lam., *T. rhomboidea*

Bombacaceae: *Bombax ceiba* L.

Oxalidaceae: *Biophytum reinwardtii* (Zucc.) Klotz., *B. sensitivum* (L.) DC.

Balanitaceae: *Balanites aegyptica* (L.) Del.

Zygophyllaceae: *Tribulus rajasthanensis* Bhandari & Sharma., *Tribulus terrestris* L.

Fabaceae: *Alysicarpus rugosus* DC. var. *heyneanus* Baker., *Alysicarpus tetragonolobus* Edgew., *A. vaginalis* DC., *Atylosia scaraboides*, *Crotalaria filipes* Benth., *C. notonii* Wight & Arn., *Crotalaria orixensis*, *Crotalaria retusa*, *Clitoria ternatea*, *C. orixensis* Willd., *Goniogyna hirta* (Willd.) Ali., *Dalbergia sisoo*, *Derris indica*, *Vigna trilobata* (L.) Verdc., *Zornia diphylla* (Retz.) Pers., *Indigofera linifolia*, *Indigofera glandulosa*, *I. tinctoria*, *Melilotus indica*, *Mucuna pruriens*, *Psoralea corylifolia*, *Ryncosia minima* var. *minima*, *Ryncosia minima* (L.) DC. var. *laxiflora*, *Tephrosia purpurea* (L.) Pers., *Teramnus labialis*, *Canavalia gladiata*, *Vigna catajang*, *Desmodium gangeticum*

Mimosaceae: *Acacia chundra*, *Acacia leucocephala*, *Acacia nilotica*, *A. torta*, *Albizia lebbeck*, *Dichrostachys cinerea*, *Leucaena glauca*, *Mimosa hamata*, *Pithecolobium dulce*, *Prosopis juliflora*

Caesalpiniaceae: *Caesalpinia bonduc* L. Emend Dandy et Exell., *Cassia uniflora*, *Cassia siamea*, *Cassia tora*, *Cassia auriculata* L., *C. obtusifolia* L., *C. occidentalis* L., *Parkinsonia aculeata*, *Tamarindus indica*.

Cucurbitaceae: *Melothria maderaspatana* (L.) Cogn., *Diplocyclos palmatus*, *Coccinea grandis*

Rhamnaceae: *Ziziphus mauritiana* Lamk.

Sapindaceae: *Cardiospermum helicacabum*

Moringaceae: *Moringa oleifera*

Celastraceae: *Maytenus emarginatus*

Myrtaceae: *Syzigium cumini*

Lythraceae: *Amania baccifera*, *Amania multiflora*, *Lawsonia innermis*.

Ongraceae: *Ludwegia perennis*

Molluginaceae: *Mollugo pentaphylla*

Aizoaceae: *Trianthema portulacastrum*

Rubiaceae: *Borreria pucila* (Wall.) DC., *Oldenlandia carymbosa* L., *Dentella repens*, *Morinda citrifolia* L., *Morinda tomentosa*

Asteraceae: *Acanthospermum hispidum* DC., *Ageratum conyzoides*, *Blumea* spp., *Cythocline purpurea* (Don.) O. Ktze., *Blainnallea acemella*, *Glossocardia bosvallea* (L.f) DC., *Gnaphalium polucaulon* Pers., *Pulicaria wightiana* (DC.) Clarke., *Tricholepis glabberima* DC., *Amberboa ramosa*, *Bidens biternata*, *Blumea eriantha*, *Blumea laciniata*, *Blumea ranollis*, *B. obliqua*, *Caesulia axillaris*, *Echinopus echinatus*, *Eclipta alba*, *E. prostrata*, *Emilia sonchifolia*, *Lagascea mollis*, *Launaea procumbens*, *Parthenium hysterphorus*, *Sonchus oleraceus*, *Tridax procumbens*, *Vernonia cinerea*, *Xanthium strumarium*, *Zinia elegans*.

Convolvulaceae: *Argyreia cymosa*, *Evolvulus alsinoides*, *Ipomea aquatica*, *I. eriocarpa*, *I. hederifolia*, *I. fistulosa*, *I. nil*, *I. obscura*, *I. pestigridis*, *I. petaloidea*, *I. sinensis*, *Jacquemontia paniculata*, *Merremia emarginata*, *M. quinequefolia*, *Rivea hypocrateriformis*, *Convolvulus arvensis*.

Cuscutaceae: *Cuscuta reflexa*, *C. chinensis*

Solanaceae: *Datura ferrox*, *D. innoxia*, *D. metel*, *Physalis minima*, *Solanum indicum*, *S. nigrum*, *S. surattense*

Asclepiadaceae: *Calotris procera*, *C. gigantea*, *Leptadenia reticulata* Roxb., *Dregea volubilis*, *Telosma pallida*, *Pergularia daemia*, *Cryptolepis buchmani*, *Cryptostegia grandiflora*

Boraginaceae: *Trichodesma indicum* (L.) Lehm. var. *amplexicaule* (DC.) Chatt., *Cordia gharaf*, *Coldenia procumbens*, *Helitropium sepinum*, *Helitropium ovalifolium*.

Scrophulariaceae: *Alectra parasitica*, *A. thomsonii*, *Bacopa monieri*, *Kickxia ramocissima*, *Sophubia delphinifolia*, *Stemodia viscosa*, *Striga densiflora*, *S. gesneroides*, *Sutera dissecta*, *Verbascum chinense*, *Veronica anagallis* O. Kuntze., *Veronica anagallis-aquatica* L.

Pedaliaceae: *Sesamum laciniatum*

Martyniaceae: *Martynia annua* L.

Acanthaceae: *Barleria cristata* L., *B. prionitis*, *B. gibsoni*, *Blepharis maderaspatensis*, *B. repens*, *Dicliptera verticillata*, *Dipterocanthus patulus*, *D. prostratus*, *Gautelbua urens*, *Hygrophila auriculata*, *Justicia diffusa*, *J. quinqueangularis*, *Lapidogathis cristata*, *Peristrophe paniculata*, *Rungia repens*.

Verbenaceae: *Clerodendron multiflorum*, *Vitex negundo* L., *Phyla nodiflora* (L.) Green., *Lantana camara* L. var. *aculata* L. indica

Lamiaceae: *Leucas aspera* (Willd.) Spreng., *L. cephalotes* Spreng., *L. diffusa* Benth., *Lavendula bipinnata*, *Hyptis suaveolens*, *Leonotis nepetifolia*, *Leucas biflora*, *L. martinicensis*, *Ocimum americanum*, *O. sanctum*, *Orthosiphon pallidus*.

Chemopodiaceae: *Basella rubra* L., *Chenopodium album*

Nyctaginaceae: *Boerhaavia diffusa* L., *B. chinensis* (L.) Aschers., *B. repens* L.

Amaranthaceae: *Digera muricata*, *Amaranthus viridis*, *Celosia argentea*, *Achyranthus aspera* L., *Aerava lanata* (L.) Juss., *Alternanthera sessilis* (L.) R. Br., *Amaranthus dubius* Mart., *Amaranthus spinosus* L., *Amaranthus tricolor*, *Amaranthus polygonoides*, *Pupalia lappacea* (L.) Juss.

Gentianaceae: *Enicostemma axillare*, *Exacum pedunculatum*, *Hoppea dichotoma*, *Nymphoides hydrophylla*.

Polygonaceae: *Polygonum glabrum*, *P. plebeium*, *Rumex deutatus*,

Aristolochaceae: *Aristolochia bracteolata*

Moraceae: *Ficus amphissima*, *F. benghalensis*, *F. racemosa*, *F. religiosa*, *F. hispida*.

Dioscoreaceae: *Dioscorea bulbifera*

Euphorbiaceae: *Acalypha indica* L., *Acalypha ciliata*, *Baliospermum montana*, *Chrozophora prostrata* Dalz., *Chrozophora rottleri* (Geis) Juss ex Spreng., *Croton bonplandianus*, *Euphorbia chamaesyce* L., *E. heyneana* Spreng, *E. parviflora*, *E. thymifolia*, *E. hirta* L., *Jatropha curcas* L., *Phyllanthus maderaspatensis*, *P. virgatus*, *Securinega virosa*, *Tragia involucrata* L., *Kirganelia reticulata*.

Liliaceae: *Scilla hycinthina* (Roth.) Macbr.

Asparagaceae: *Asparagus racemosus* Willd. var. *javonica* Baker.

Commelinaceae: *Amischophacelus cucullata* (Roth.) R. Rao & Kammathy, *Commelina benghalensis* L., *C. attenuata*, *C. diffusa*, *C. forskalaei*.

Typhaceae: *Typha domingensis* Pers.

Cyperaceae: *Kyllinga tenuifolia*, *Cyperus alulatus* Kern., *C. compressus* L., *C. difformis* L., *C. pygmaeus*, *C. rotundus* L., *Fimbristylis ferruginea*, *F. ovata*, *Fuirena wallichiana*.

Poaceae: *Chloris barbata*, *Dactyloctenium aegyptianum* (L.) P. Beauv., *D. aristatum* L., *Dicanthium* sp., *Aristida funiculata*, *Brachiaria ramosa*, *Dinebra retroflexa*, *Heteropogon contortus* (L.) P. Beauv., *Saccharum spontaneum* L., *Setaria* sp., *Lophopogon tridantatus* Hack., *Tragus roxburghii* Panigrahi, *Echinochloa colona*, *Eleusine indica*, *Panicum* sp.

Menispermaceae: *Coculus hirsutus*, *Tinospora cordifolia*

Papaveraceae: *Argemone mexicana*

Brassicaceae: *Brassica campestris*

Capparaceae: *Capparis zeylanica*

Portulacaceae: *Portulaca oleraceae*, *Portulaca quadrifida*

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