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Medicinal uses of wetland plants in Allahabad District, Uttar Pradesh, India

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ABSTRACT

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The paper presents medicinal uses of wetland plants from the northern part of Allahabad district, Uttar Pradesh. Plants belonging to 17 medicinally important species of angiosperms were collected from four wetlands of this region, viz. 1. Malaka-Harhar Wetland, 2. Basupur-Handia Wetland, 3. Varuna-Phulpur Wetland and 4. Mahila Gram Inter College Wetland, during 2008-2011. Botanical and local names and medicinal uses of these species are provided here. Some important medicinal plant species are *Ranunculus sceleratus*, *Cyperus rotundus*, *Eclipta prostrata*, *Ipomoea aquatica*, *Xanthium indicum*, etc.

Key-words: Angiosperms, plants and wetland, Allahabad, Uttar Pradesh, India.

INTRODUCTION

Nature has gifted various medicinal plants to human beings to cure diseases. The knowledge of drugs obtained from these plants has accumulated over thousands of years as a result of man's inquisitive nature. The medicinal importance of plants is due to the presence of some special chemical substances like alkaloids, glycosides, resins, volatile oils, gums, tannins, etc. Their active principles are usually remained concentrated in the storage organs of the plants, viz. roots, seeds, leaves, etc.

In the present paper, medicinal uses of 17 species of angiosperms, collected from various wetlands in the northern part of Allahabad district, Uttar Pradesh, has been presented. Allahabad (Lat. 25.45°N, Long. 81.84°E, alt. 98 m) is located in the south-eastern part of Uttar Pradesh at the confluence of Ganga and Yamuna rivers (Text-figure 1). The total wetland area in the district is 27487 ha. Apart from river/stream, the major wetlands are lakes/ponds and water-logged (man-made) areas. There are 22 lakes/ponds with 1879 ha area and 19 reservoirs/barrages with 1270 ha area. In addition, there are 1892 small wetlands (<2.25 ha) (Ministry of Environment and Forests, Government of India 2011).

MATERIAL AND METHODS

For the present study, plants belonging to 17 medicinally important angiosperm species were collected from four wetland sites in the northern part of Allahabad district, Uttar Pradesh, viz. 1. Malaka-Harhar Wetland, 2. Basupur-Handia Wetland, 3. Varuna-Phulpur Wetland, and 4. Mahila Gram Inter College Wetland, during 2008-2011 (Text-figure 1). The information presented here is based on field observation and on interviews with knowledgeable persons. As for as possible, the voucher specimens of

Text-Figure 1. Wetland map of Allahabad showing study sites. **1.** Malaka-Harhar Wetland; **2.** Basupur-Handia Wetland; **3.** Varuna Phulpur Wetland; **4.** Mahila Gram Inter College Wetland.

medicinal plants were collected under the guidance of traditional medical practitioners. These plant specimens were identified in the Duthie Herbarium, Botany Department, University of Allahabad, with the help of available literature.

During the course of field study as well as at the time of study of plants from Allahabad, the information regarding medicinal uses of plants was gathered from the local inhabitants, which was later verified by consulting important literature. Notable among these are by Subramanyam (1962), Cook (1996), Saini et al. (2010), Ministry of Environment and Forests, Government of India (2011), Mohan (2012) and Misra & Mohan (2013). A large number of aquatic and marshy plants are used by the human beings as herbal medicines. Most of them are wild and only few of them have been cultivated.

RESULTS

The present study revealed occurrence of 17 angiosperm species of medicinal importance in the wetlands areas of Allahabad district. The enumeration embodies alphabetically arranged botanical names of plant species followed by local name, part used and medicinal uses. These are used in different problems like diarrhea, skin disease, dyspepsia, hemorrhoids, liver and dysuria, asthma and also as tonic in different forms such as juice, extract, paste, etc.

Alternanthera sessilis (L.) R. Br. ex DC (Madaranga): Plant pacifies vitiated kapha and pitta, burning sensation, diarrhea, skin disease, dyspepsia, hemorrhoids, liver and spleen diseases and fever.

Amaranthus virides L. (Choulai): Leaves and roots are used in centipedes bite (Plate 1, figure 1).

Ceratophyllum demersum L. (Sevar): Whole plant is used in cooling (Plate 1, figure 3).

Cyperus iria L. (Motha): Paste mixed with lemon juice is applied over face once a day for curing black spots and wrinkles (Plate 1, figure 7).

Cyperus rotundus L. (Nagarmotha): Tuber is a home remedy for indigestion and diarrhoea. Root paste is applied to cure wounds, sores, etc.

Eclipta prostrata (L.) L. (Bhringaraj): The paste of leaf and root is applied over the boils for easy discharge and on burns. The paste of entire plant is mixed with mustard oil and applied on the head to stop hair fall. It is effective to cure night blindness, eye diseases, headache and diseases pertaining to hair and its growth. A preparation obtained from the juice of leaves boiled with coconut oil is used for anointing the head to render the hair black and luxuriant (Plate 1, figure 4).

Hygrophila auriculata (Schumach.) Heine (Amarakosh): Leaves and tender shoots are diaphoretic and are given in the form of decoction in chronic rheumatism. Infusion of leaves is given internally in cephalalgia, hemiplegia and facial paralysis. Juice of leaves is given for earache (Plate 1, figure 2).

Ipomoea aquatica Forssk. (Karemua): Juice is used as an emetic in cases of opium and arsenical poisoning. Plant considered wholesome for women suffering from nervous and general debility (Plate 1, figure 6).

Nelumbo nucifera Gaertn. (Kamal): Root is bitter and cures cough and biliousness and cools body. In powder form, it is prescribed in piles as demulcent, also for dysentery. Seeds are demulcent and nutritive (Plate 1, figure 8).

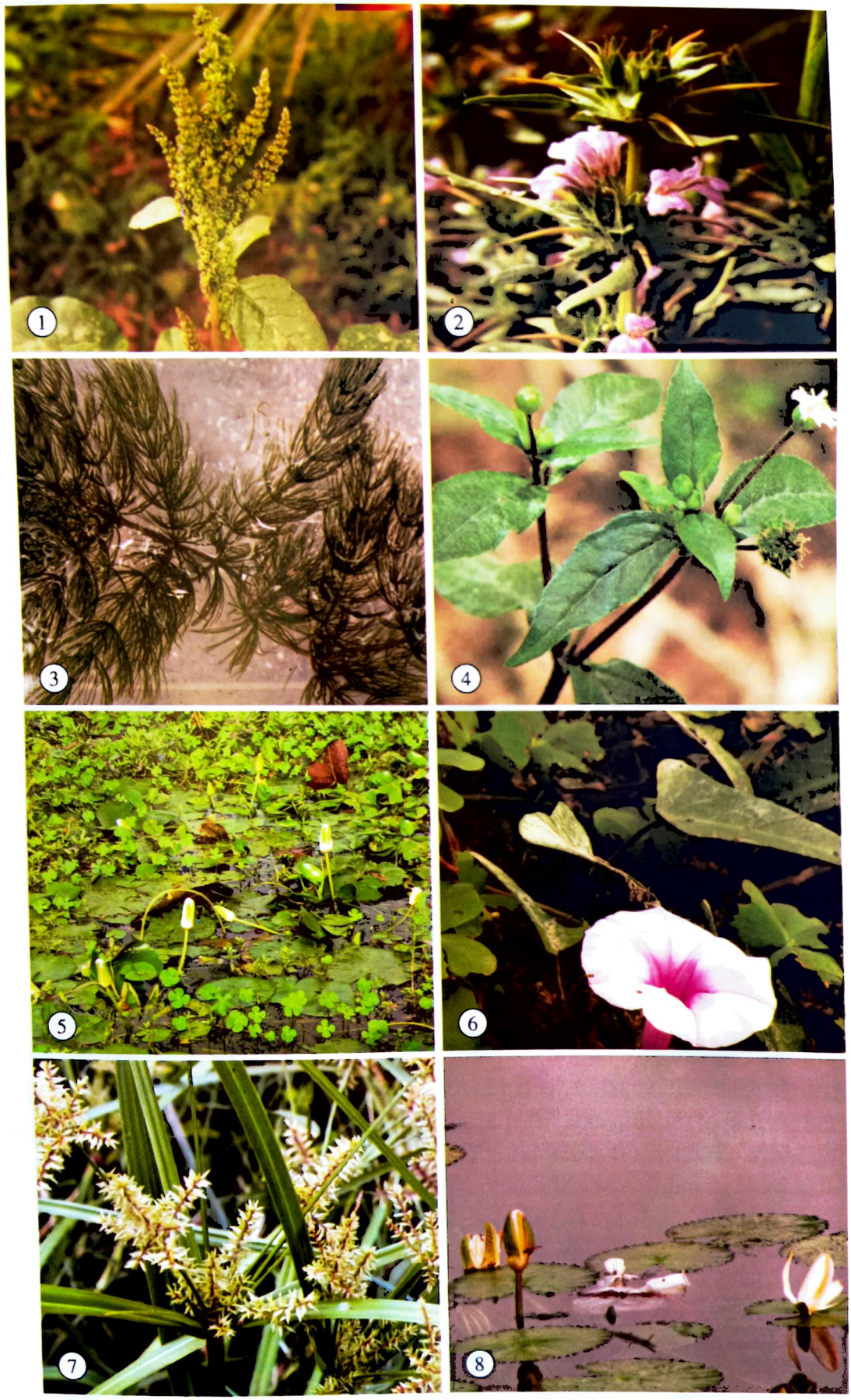

Plate 1

1-8. Some wetland medicinal plants from Allahabad District, Uttar Pradesh. **1.** *Amaranthus viridis*. **2.** *Hygrophila auriculata*. **3.** *Ceratophyllum demersum*. **4.** *Eclipta prostrata*. **5.** *Nymphea nouchali*. **6.** *Ipomea aquatica*. **7.** *Cyprus iria*. **8.** *Nelumbo nucifera*.

Nymphaea nouchali Bur (Neelkamal) : Alcoholic extracts of rhizomes, containing the alkaloid nymphaeine, have a mild sedative (Plate 1, figure 5).

Pistia stratiotes L. (Jal kumbhi): Leaf juice, boiled with coconut oil, is applied externally to cure skin diseases.

Polygonum barbatum* var. *stagninum (F. Ham. ex Meissn.) Stewart: Decoction of shoots is used as a stimulating wash for ulcers. Juice acts as a cicatrizant. Seeds tonic, purgative and externally in chronic skin disease was found useful.

Ranunculus sceleratus L. (Jal Dhania): Plant is stimulant and diuretic. Juice is used in sciatica, rheumatism, dysuria and asthma. Seeds are used as a tonic and stomachic; vesicant properties are attributed to protoanemoninmetic.

Rumex dentatus L. subsp. ***klotzschianus*** (Meisn.) Rchb. (Jangli palak): *Rumex* is a homoeopathic remedy, prominently a cough remedy. It is one of the most quick acting remedies. Main symptoms are violent, incessant and fatiguing cough with little expectoration.

Scirpus articulatus L. (Gai chira): Tubers are given to stop diarrhea and vomiting.

Trapa natans L. (Singhada): Fruit is sweetish, aphrodisiac and appetizer and is useful in chronic fevers, pains and sore throat. Juice of stem is beneficial in eye diseases and its poultice acts as an agent for resolution of tumor.

Xanthium indicum Koenig (Chhotagokhru): Seed powder is given in case of headache. Seed paste applied over affected portion of rheumatism. The paste of flower is used in case of toothache. It is diaphoretic, sedative and useful in long-standing cases of malaria. Root is bitter, tonic and is useful in strumous diseases; fruit is cooling, given in small pox and for eye ailments as ointment.

DISCUSSION

Water is the prime requisite of wetland vegetation and any variation in water availability affects its growth and distribution. Anthropogenic activities are also responsible for rapid disappearance of wetlands. Most of the wetland areas have been converted to agriculture fields, residential colonies, etc. Therefore, there is an urgent need to conduct a detailed ecological auditing of the wetlands of this region. Education and awareness among people about importance of wetland and conservation of its plant diversity are therefore significant. This kind of study will undoubtedly encourage the national development policies of the country by vegetation cover and afforestation of neglected lands through native plants, which in turn shall help in the eco-reforms of the wetland and wetland-land transition zone. These biotopes, if managed properly, may lead to material and ecological benefits for mankind.

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