ROLE OF A SACRED GROVE IN CONSERVATION OF MEDICINAL PLANTS

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Introduction

Sacred groves are small patches of native vegetation traditionally protected and managed by local communities. Named differently in different parts of India, these groves are mainly found in tribal dominated areas (Bhakat, 1990), and managed by local people for various reasons. Irrespective of their origin and size, all sacred groves are islands of greenery in the landscape, protecting biodiversity and enhancing the environmental quality. Sacred groves, in general, act as a nursery and storehouse of many of the local ayurvedic, tribal and folk medicines. Some of the species so preserved are already of medicinal significance, others waiting to be given their right place and importance. Protection of a large number of medicinal plants in 'Kavus' of Kerala (Pushpangadan *et al.*, 1998), 'Hariyali' sacred site of Garhwal Himalaya (Sinha and Maikhuri, 1998) and 'Zaheerthan' of Purulia District of West Bengal (Pandit, 2000) are some of the noteworthy examples.

With this realisation, the recent upsurge of interest in studying sacred groves has not only established the topic as one of biological significance, but this tradition is also being revived in some cases (Bhakat *et al.*, 2002a). Therefore, there is an urgent need to assess the status of such areas in terms of biodiversity in general and medicinal plants in particular. Keeping this in mind, an attempt has been made in this paper to make an inventory of medicinal plants of a well protected sacred grove situated in a rural landscape of Chilkigarh village in West Bengal.

Study Area

Chilkigarh (latitude 22°15' - 22°0'N and longitude 86°45' - 87°0' E), a village of Gidhni police station under Jhargram sub-division of Midnapore (now West Midnapore) District, harbours a forest patch which is spread over an area of 58 acres on the east catchment zone of the Dulong river (Fig. 1). This forest houses the famous temple of Kanak Durga. The entire forest area seems to represent the relict vegetation in its climax stage. Although there is no taboo whatsoever associated with the forest or any plant, the entire landscape has been conserved out of respect to the Goddess Durga. This is of course in sharp contrast with the caste-based sacred groves of Santhal and Kora tribals situated adjacent to Chilkigarh village (Malhotra *et al.*, 1997).

During the last few years, the first author has had privilege to make several visits to this forest in course of botanical

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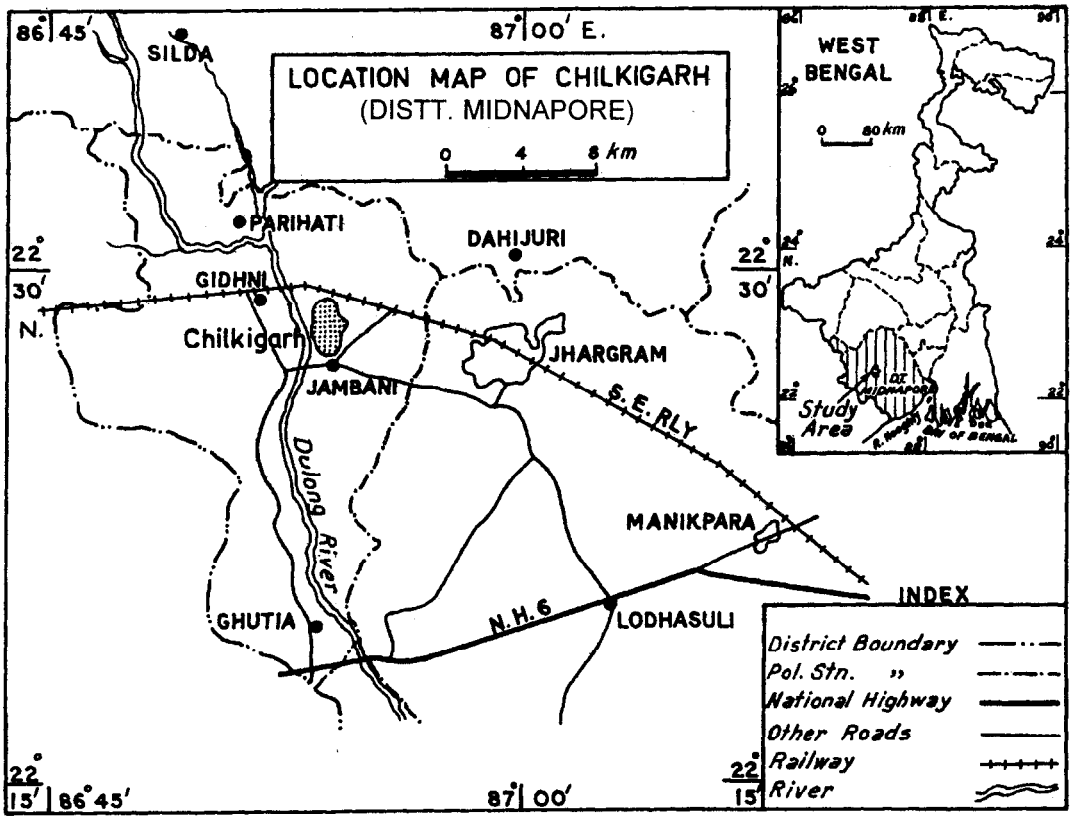
Fig. 1



Map of Midnapore District (undivided) showing the location of Chilkigarh

study tours. A retrospective search for the older literature pertaining to this area revealed a detailed floristic study carried out by Kamilya and Paria (1994). Recently Ghosh (2001) and Bhakat (2002b) have highlighted the role of this sacred grove in medicinal plant conservation. These facts prompted the present authors to undertake the present study.

Methodology

(i) *Field Study* : In the course of investigation for a period of one year (2001-2002), the area was frequently surveyed. Several attempts were made for collection/ study in different seasons. During the field trips, samples of medicinal plants with flowers and or fruits were collected.

(ii) *Herbarium Study* : After collection, the specimens were processed, preserved and mounted on herbarium sheets following the standard and modern herbarium techniques (Jain and Rao, 1977). The herbarium sheets have been identified by matching with the correctly annonated materials available at the Vidyasagar

University Herbarium. For identification purpose, different relevant floras, monographs, revision works and other literature were consulted. Out of the collections, an alphabetical list of species mentioning part(s) used and medicinal importance was made. The dried specimens are preserved in the Herbarium of Botany and Forestry Department, Vidyasagar University, Midnapore.

(iii) *Medicinal Importance* : The medicinal values of plants have been ascertained in consultation with Anon. (Undated – a, b), Basak (1997), Chopra *et al.* (1956, 1968), Kirtikar and Basu (1935), Pakrashi and Mukhopadhyay (2001), Saini (2000), Sanyal and Namhata (1995), Sur *et al.* (1992) and Zaidi (1994-95). While the general medicinal uses are screened through the literature, the local and tribal values are enumerated by asking the local people.

Results and Discussion

The present study of the Chilkigarh sacred grove reveals 105 species of medicinally useful plants covering herbs, shrubs, and trees (Table 1). The grove is home to 12 species of therapeutically useful plants which are found rare in the wild and seem to be locally threatened (Bhakat *et al.*, 2001). The area accounts for around 36 per cent of the total 288 medicinal plant species of Midnapore District and 33 per cent of the total 318 angiospermic taxa of Chilkigarh. Since the sacred grove is a segment of the landscape containing plants and other forms of geographical features that are protected by human society, it is of great ecological significance. It offers an interesting botanical study area because of rich vegetation being located almost at the trijunction of three States (Bihar, Jharkhand and West Bengal). The sacred grove, in essence, represents an all-embracing concept and practice of the Indian way of *in-situ* conservation of biodiversity. It still serves as a miniature representative vegetation of the area reminiscent of modern Protected Areas. Therefore, this study calls for a continued protection of the grove.

Table 1

List of medicinal plants found in Chilkigarh sacred grove.

Species	Part(s) used	Medicinal Use(s)
1	2	3
Abrus precatorius L.	Root, leaf, seed	Substitute of liquorice; cures body pain, skin diseases
Abutilon indicum (L.) Sw.	Root, bark, leaf	Cures dysentery, hepatitis, diabetes
Acalypha indica L.	Whole plant, leaf	Used as laxative; cures asthma, bronchitis
Achyranthes aspera L.	Whole plant, leaf	Used in rheumatism, snake bites, urinary infections.
Aerva lanata (L.) Juss. ex Schult.	Whole plant	Used as anthelmintic, diuretic; cures headache

Contd...

1	2	3
Alangium salvifolium (L.f.) Wang.	Whole plant, leaf	Used in rheumatism, snake bites, urinary infections.
Alstonia scholaris (L.) R. Br.	Root, bark	Cures leprosy, skin diseases, malaria, diarrhoea, asthma
Alternanthera sessilis (L.) R. Br. ex DC	Young shoot	Used as febrifuge; cures night blindness
Amaranthus spinosus L.	Whole plant	Used as febrifuge; cures sore, eczima
Andrographis paniculata (Burm.f.) Wall. ex Nees	Whole plant, leaf	Cures dysentery, worm infection; used as liver tonic
Anthocephalus cadamba (Roxb.) Miq.	Leaf, stem-bark	Used as febrifuge, astringent; cures dyspepsia
Argemone mexicana L.	Root, seed	Used in skin disease
Argyreia nervosa (Burm.f.) Boj	Root, stem, leaf	Used as carminative, cardiotonic, expectorant, nerve tonic
Aristolochia indica L.	Root, stem, leaf	Used as tonic, stimulant; cures acidity, gastric problems
Atylosia scarabaeoides (L.) Benth.	Whole plant	Used to treat worm infection
Azadirachta indica A. Juss	Leaf, flower, seed	Used as antibacterial, antiviral; cures skin infections
Bacopa monnieri (L.) Wetts.	Whole plant	Used as digestive, anti-inflammatory, diuretic; cures asthma, skin diseases
Barleria prionitis L.	Root, leaf	Used in tooth-ache, glandular swelling
Barringtonia acutangula (L.) Gaertn.	Root, leaf, bark, seed	Cures diarrhoea; used as tonic, anthelmintic, expectorant
Bauhinia acuminata L.	Bark, leaf	Used to treat leprosy, asthma, malaria, piles
Bauhinia purpurea L.	Root, bark	Root is carminative; bark used in diarrhoea, worm infections
Bauhinia vahlii (Wt. et Arn.) Benth.	Root, bark, leaf, seed	Used as aphrodisiac, tonic; cures dysentery
Biophytum sensitivum L.	Whole plant, leaf	Used as laxative, diuretic, stimulant
Blumea lacera (Burm.f.) DC.	Whole plant, root, leaf	Used as antipyretic, anthelmintic, febrifuge stimulant, diuretic
Boerhaavia diffusa L.	Whole plant, leaf	Cures liver disorders, anaemia; used as laxative, diuretic, expectorant
Bombax cieba L.	Root, bark, gum, flower, fruit, seed	Used in sexual weakness, gum used as tonic
Butea monosperma (Lamk.) Taub.	Root, bark, leaf, flower, seed	Useful in night blindness, elephantiasis; bark/ gum cures piles, tumours, menstrual disorders
Caesalpinia pulcherimma (L.) Sw.	Root, leaf, flower, pod	Used in jaundice, snake bite

Contd...

1	2	3
Canscora decussata (Roxb.) Roem. & Schult.	Whole plant	Used in nervous debility, mental disease
Cardiospermum helicacabum L.	Root, leaf, fruit	Used as diuretic, laxative; cures nervous disease
Cassia fistula L.	Leaf, fruit, seed	Used in fungal infections, urinary troubles.
Cassia sophera L.	Leaf, bark, seed	For treating blood dysentery, skin infections
Centella asiatica (L.) Urban	Leaf	Used in jaundice, dysentery
Cissus pedata Lamk.	Leaf	Used to heal ulcers
Cissus quadrangularis L.	Stem	Used to treat bone fractures
Clerodendrum viscosum Vent.	Leaf, flower	Used to treat tumours, leucoderma, burning sensation of skin
Costus speciosus (Koen. ex Retz.) Smith	Root, leaf	Used in liver disorders
Croton bonplandianum Baill.	Leaf	Used as blood-coagulant, antiseptic
Cryptolepis buchanani Roem. & Schult.	Root, bark, leaf	Used in rickets, high fever
Curculigo orchiodes Gaertn.	Rhizome	Used as appetizer; cures diseases of blood and leucoderma
Cynodon dactylon Pers.	Whole plant	Used for treating leprosy, fever, dysentery, vomiting, skin diseases
Datura fastuosa L.	Leaf, seed	Used for relieving pain and fever
Dioscorea bulbifera L.	Tuber	Used in dysentery, piles, ulcers, birth control
Eclipta prostata (L.) L.	Whole plant, leaf	Used as tonic, hair dye; cures jaundice
Elephantopus scaber L.	Root, leaf	Used in diabetes, bronchitis
Enhydra fluctuans Lour.	Leaf	Used as laxative; cures skin infections
Euphorbia hirta L.	Latex, whole plant	Used in dysentery, cough, asthma, worm infections
Evolvulus alsinoides (L.) L.	Whole plant, leaf	Useful in bronchitis, epilepsy, falling and greying of hair
Ficus hispida L.f.	Root, leaf, bark, fruit	Used as laxative
Flacourtia indica (Burm.f.) Merr.	Root, leaf, fruit	Used as diuretic; useful in skin diseases and poisonous bites
Glycosmis arborea (Roxb.) DC	Root, stem, leaf	Used in snake bite, facial inflammations, rheumatism
Gnaphalium indicum L.	Root, leaf	Leaf paste used in pulmonary trouble
Grangea maderaspatana (L.) Poir.	Leaf, flower	Useful in headache and earache
Gymnema sylvestre (Retz.) R.Br. ex Schult.	Leaf	Used in diabetes

Contd...

1	2	3
Haldinia cordifolia (Roxb.) Rids.	Stem bark	Used as antiseptic; heals wounds
Helicteres isora L.	Bark, fruit	Used in diarrhoea, dyspepsia, gastric troubles
Heliotropium indicum L.	Leaf	Cures impotency, fever, wounds
Hemidesmus indicus R. Br.	Root	Used as tonic; cures poisonous bites
Hemigraphis hirta (Vahl.) T. Anders.	Whole plant	Used in dysentery
Holarrhena antidysenterica Wall. ex Don.	Bark, seed	Used in dysentery, fever, intestinal worms
Hygrophila spinosa Anders	Whole plant, leaf	Used in jaundice, dysentery, urinogenital diseases
Ichnocarpus frutescens R.Br.	Root, leaf	Used in leprosy, skin diseases
Indigofera linnaei Ali	Whole plant	Used in epilepsy, insanity, veneral diseases
Ipomoea aquatica Forsk.	Tender shoot	Used as purgative; cures nervous and general debility
Ixora parviflora Vahl.	Bark	Used for healing wounds
Jatropha gossypifolia L.	Shoot, leaf	Used in dental diseases, carbuncles
Justicia adhatoda L.	Leaf	Used in cold, cough
Kalanchoe pinnata (Lamk.) Pers.	Leaf	Used for treating diarrhoea, vomiting, inflammation
Laucas indica (L.) R.Br.ex Vatke	Leaf	Used as appetizer; removes snake venoms
Lindernia ciliata (Colsm.) Pennell	Whole plant	Used in sexual diseases
Ludwigia adscendens (L.) Hara	Whole plant	Used in dysentery, intestinal worm infection
Merremia tridentata (L.) Hall.f.	Whole plant	Used as tonic in general debility
Mimosa pudica L.	Leaf	Used in iron deficiency
Mimusops elengi L.	Bark, flower, fruit, seed	Used as tonic, anthelmintic
Mollugo spergula L.	Stem, leaf	Used as antiseptic; cures skin diseases
Murraya paniculata (L.) Jack.	Leaf	Used in rheumatism, hysteria
Ocimum canum Sims.	Leaf	Used in skin diseases
Ocimum sanctum L.	Leaf	Used to treat common cold, asthma, bronchitis, fever
Oldenlandia corymbosa L.	Whole plant	Used in jaundice and liver diseases
Oxalis corniculata L.	Whole plant	Used as stomachic, antiseptic
Paederia scandens (Lour.) Merr.	Root, leaf	Cures piles, fever, stomach and liver troubes

Contd...

1	2	3
Pergularia daemia (Forssk.) Chiov.	Leaf	Used in rheumatism, carbuncle
Peristrophe paniculata (Forssk.) Burmitt	Whole plant	Used in tuberculosis, snake bites
Phyla nodiflora (L.) Greene	Whole plant	Used as appetizer, digestive, anthelmintic
Phyllanthus emblica L.	Bark and fruit	Cures piles, anaemia, inflammation
Piper longum L.	Root, leaf, fruit	Used as anthelmintic, aphrodisiac, digestive; cures insomnia, headache
Polygonum hydropiper L.	Whole plant	Used as stimulant, diuretic; cures urinary disorders
Pterospermum acerifolium Willd.	Bark, leaf, flower	Cures leprosy, inflammations, ulcers, sexual diseases
Rauvolfia serpentina (L.) Benth.ex Kurz	Root, leaf	Used to treat hypertension, insomnia, nervous disorders
Sida cordifolia L.	Leaf	Used to heal wounds
Solanum nigrum L.	Whole plant	Used in liver and skin diseases, dysentery, piles
Stephania japonica (Thunb.) Miers.	Whole plant	Cures fever, urinary diseases
Streblus asper Lour.	Bark, leaf	Used as antiseptic, anti-inflammatory; cures sinusitis, bronchitis
Terminalia arjuna (Roxb.ex DC) Wt. & Arn.	Leaf, bark, seed	Used as cardio-tonic, antidysenteric; cures cirrhosis of liver
Thevetia nerifolia Juss.ex Steud	Latex, seed	Used as anti-haemorrhagic
Tiliacora acuminata (Lamk.) Hook & Thoms.	Root	Used to treat snake bite
Tinospora cordifolia Miers.	Stem, leaf	Used as astringent, analgesic, stomachic
Tragia involucrata L.	Root, fruit	Used in pains, leprosy
Trema orientalis (L.) Bl.	Root, leaf	Cures epilepsy, blood flow of urine
Trewia nodiflora L.	Root, bark, leaf	Used in rheumatism, swelling
Tridax procumbens L.	Leaf	Used to check bleeding of wounds
Tylophora asthmatica W. & A.	Root, leaf	Used as cathartic, emetic, expectorant; cures asthma, bronchitis, cough
Urena lobata L.	Root, stem	Treats bone fracture, rheumatism
Ventilago denticulata Willd.	Root-bark, stem-bark, seed	Useful in dyspepsia, general debility, skin diseases
Vitex negundo L.	Leaf	Used as tonic, antiseptic, anthelmintic, tranquillizer

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SUMMARY

Sacred groves are tracts of near-virgin forests, the vestiges of an ancient practice in which people protected forest patches. A repository of medicinal plants, these are a unique example of the all-embracing concept and practice of the Indian way of *in-situ* conservation of biodiversity. This paper deals with an account of the role of Chilkigarh sacred grove in the conservation of regional medicinal plants. It records for the first time 105 species of useful medicinal species of which 12 are threatened elsewhere in the Midnapore District. The paper also calls for the continued protection of the grove.

औषधीय पादपों के संरक्षण में पावन निकुंजों की भूमिका

आर०के० भगत व पी०के० पण्डित

सारांश

पावन निकुंज लगभग अक्षुण्ण वनों के, किसी प्राचीन प्रथा के अवशिष्ट रह गए टुकड़े हैं जिसमें लोग वन के टुकड़ों की सुरक्षा किया करते थे । औषधीय पादपों के शरण्य ये मूल स्थानों में ही जैव-विविधता संरक्षित करने के सर्वसमावेशी विचार और व्यवहार की भारतीय प्रणाली का विलक्षण उदाहरण हैं । इस अभिपत्र में क्षेत्रीय औषध पादपों के संरक्षण में चिलकीगढ़ पावन निकुंज की भूमिका का वर्णन किया गया है । इसमें पहली बार 105 उपयोग औषध जातियों का उल्लेख किया गया है जिनमें से 12 मिदनापुर जिले में अन्यत्र विलुप्ति खतरे में हैं । अभिपत्र में इस निकुंज को आगे भी सुरक्षित रखने की बात कही गई है ।

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