

Survey of medicinal plants in the Gorumara National Park, Jalpaiguri, West Bengal, India

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Abstract

Gorumara National Park is located in Duars and falling in the Jalpaiguri District of West Bengal. The National Park area is surrounded by plantations of Khayer, Jarul, Bambu, Amlaki, Chalta etc. *Shorea robusta* occurs with its usual associates namely *Schima wallichii*, *Magnolia champaca*, and *Terminalia bellirica*. All these species have popular medicinal use. The other important species which are also used as medicinal plants by local people include *Terminalia myriocarpa*, *Bischofia javanica*, *Bombax ceiba*, *Acacia catechu*, and *Albizia* spp. A total of 192 medicinally important plants have been recorded during the present three years long survey.

Key word: Gorumara National Park, Medicinal plants.

INTRODUCTION

Wild plants have always been an important component of healthcare throughout the human history (Pushpangadan 2002; Toksoy *et al* 2010). Since time immemorial, people have gathered plant and animal resources from nature to meet up their various needs (Schippmann *et al* 2002). The major biodiversity rich areas of North Bengal are Terai, Duars and the Hills of Darjiling [a part of Eastern Himalaya]. The present study area, Gorumara National Park (GNP), is located in Duars and falling in the Jalpaiguri District of West Bengal. Though this is comparatively a smaller park (7945.28 hectare) but its location is very critical. Murti, Jaldhaka, Garati and Indong are the main rivers passing through this important Protected Area. The entire forest tract of GNP comes under the North Indian moist tropical forest type in Champion & Seth's (1968) classification. The trees which are commonly found within the forest and are highly important from the economic and ecological points of view includes *Shorea robusta* Gaertner *f.* This species occurs here with its usual associates like *Schima wallichii* Choisy, *Chukrasia tabularis* A. Jussieu, *Magnolia champaca* (Linnaeus) Baillon *ex* Pierre and *Terminalia bellirica* (Gaertner) Roxburgh. The other important species which are also commonly seen in GNP includes *Lagerstroemia parviflora* Roxburgh, *Terminalia myriocarpa* Van Heurck & Müller, *Duabanga grandiflora* (DC.) Walpers, *Aglaia spectabilis* (Miquel) S.S. Jain & S. Bennet, *Aphanamixis polystachya* (Wallich) Parker, *Bischofia javanica* Blume, *Bombax ceiba* Linnaeus, *Acacia catechu* (Linnaeus *f.*) Willdenow, *Dalbergia sissoo* DC. and *Albizia* spp. etc. During botanical survey of

GNP, Mohanty (2008) recorded 70 species belonging to 38 families those have medicinal values.

The GNP area is surrounded by plantations of *Acacia catechu* (Linnaeus f.) Willdenow, *Lagerstroemia speciosa* (Linnaeus) Persoon, *Bambusa* spp., *Phyllanthus emblica* Linnaeus, *Dillenia indica* Linnaeus, etc. All these species has popular medicinal use. The important tree species those are used as medicine by local people include *Terminalia myriocarpa* Van Heurck & Müller, *Bischofia javanica* Blume, *Bombax ceiba* Linnaeus, *Acacia catechu* (Linnaeus f.) Willdenow and *Albizia* spp. However, most of the medicinally interesting plants are herbs and shrubs. Keeping the richness of the medicinal plants in GNP in mind, a survey was conducted to record such plants during the years 2006 to 2009.

METHODOLOGY

First hand information regarding the medicinal uses of different plants was gathered through interactions with tribal people in local forest villages. Further interactions with local *Baidyas* were also helpful to gather information regarding commonly used medicinal plants. During interactions, prepared semi-structured questionnaire (Medicinal Plants Datasheet) was used following Jain (1995) and Sarkar (2011). To ascertain the uses of these medicinal plants the earlier published literatures of Das & Mandal (2003), Das *et al* (2010), Joy *et al* (1998), Ansari (1993), Biswas & Chopra (1982), Chomchalow & Henle (1995), Chopra *et al* (1980), Dey (1980), Dey (1984), FAO (1993), Graves (1996), Husain *et al* (1992), Kirtikar & Basu (1935), Khare (2004), Kurup *et al* (1979), Nadkarni (1998), Satyavati *et al* (1986, 1987) and Sivarajan & Balachandran (1994) were also followed.

Plant specimens were processed following Jain & Rao (1977), identified in the Taxonomy and Environmental Biology Laboratory of the Department of Botany, North Bengal University, matched at CAL and NBU and finally deposited at NBU.

RESULT AND DISCUSSION

During the present study, 127 species of medicinal plants has been recognized those are directly used by the local people. Of these, 36 are trees, 34 are shrubs and climbers and 57 are herbaceous plants. The local people not only use all the listed plants, they have also detailed knowledge about the availability, local distribution and various other aspects related to these plants. Apart from these, literature supported additional 65 species of plants of medicinal importance also has been recorded during the present explorations. However, these are not included in the present enumeration. All the 127 species of recorded medicinal plants are presented below in Table – 1 along with their uses. From the collected data, the study area of Gorumara National Park is very rich in medicinal plants of which maximum plants are used to treatment of cold, cough, fever, dysentery and diarrhea. It is very interesting to note that 29 species of recorded plants are very popular in this region as cure to dysentery and diarrhea. In majority of cases, they used leaves and bark of different species. More than 36 species of plants used against fever, cold and cough. In this case, popularly used whole plants, sometimes only roots are used. For the treatment of snake bite generally roots and barks are used. It is also noted that the local traditional practitioners find plants in GNP for the treatment of many difficult diseases like cancer, throat sore, bronchitis, gonorrhoea, syphilis, leprosy, paralysis, Parkinson's disease, diphtheria, irregular menstruation, jaundice, ulcers, etc. and also for contraception, smooth delivery, abortion,

etc. In fact, local people recognize one or more plants to treat almost all types of diseases they suffer from the GNP.

GNP is a protected area but too much of tourism related commercial exploitation is, probably, affecting the biological diversity of this prestigious park of the country.

Table 1. Medicinal plants recorded from the Gorumara National Park in the Jalpaiguri district of West Bengal

Scientific Name [Family]; Local name; Exsiccate	Used Parts	Uses
<i>Ageratum conyzoides</i> Linnaeus [Asteraceae]; <i>Bhusbhuse</i> ; <i>Murti</i> , Goutam & A.P. Das 331	Leaves, flowers, roots, whole plant	Leaves used in wounds, cuts and burns; root juice antibiotic, plants used febrifuge
<i>Alstonia scholaris</i> (Linnaeus) R. Brown [Apocynaceae]; <i>Chhatim</i> ; <i>Indong</i> , Goutam & A.P. Das 117	Bark, leaves	Anthelmintic, laxative; good in heart disease, skin disease, leucoderma, asthma, ulcers
<i>Ampelocissus barbata</i> (Wallich) Planchon [Vitaceae]; <i>Gorumara</i> , Goutam & A.P. Das 671	Whole plant	Plants are used in fever, cough, tonic
<i>Andrographis paniculata</i> (Burman f.) Nees [Acanthaceae]; <i>Kalmegh</i> ; <i>Budhiram</i> , Goutam & A.P. Das 1123	Whole plant	Dental disease, antibacterial, anti-inflammatory, fever, dysentery, diarrhea, cough, sore throat, tonsillitis, bronchitis, hypertension, snake bite
<i>Ardisia solanacea</i> Roxburgh [Myrsinaceae]; <i>Dhupjhaora</i> , Goutam & A.P. Das 114	Roots	Fever, rheumatism, diarrhea
<i>Asparagus racemosus</i> Willdenow [Liliaceae]; <i>Shatamuli</i> ; <i>Khunia</i> , Goutam & A.P. Das 32	Roots	Used in dysentery, diarrhea, leprosy, diabetes, jaundice, urinary disorders; anti-fungal and anti bacterial
<i>Bauhinia purpurea</i> Linnaeus [Caesalpiniaceae]; <i>Kanchan</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 97	Barks, roots, flowers	Barks used in diarrhea; roots used in animal bite; flowers laxative; roots carminative
<i>Bidens pilosa</i> Linnaeus [Asteraceae]; <i>Murti</i> , Goutam & A.P. Das 346	Whole plant	Used in toothache, rheumatism, leprosy, skin disease; checks bleeding; leaf juice used in ear and eye complaints
<i>Bischofia javanica</i> Blume [Bischofiaceae]; <i>Kainjal</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 91	Leaves	Leaf juice used in sores, tonsillitis, and throat pain
<i>Boehmeria rugulosa</i> Weddell [Urticaceae]; <i>Murti</i> , Goutam & A.P. Das 339	Bark	Diuretic; snake bite, colic pain during pregnancy
<i>Bombax ceiba</i> Linnaeus [Bombacaceae]; <i>Simul</i> ; <i>Murti</i> , Goutam & A.P. Das 335	Roots, gums, flowers	Used in diarrhea, dysentery; also as astringent, stimulant and emetic
<i>Buddleja asiatica</i> Loureiro [Buddlejaceae]; <i>Gorumara</i> , Goutam & A.P. Das 617	Leaves, flowers, stems	Used in skin complaints and to induce abortion
<i>Callicarpa arborea</i> Roxburgh [Verbenaceae]; <i>Khunia</i> , Goutam & A.P. Das 057	Bark	Carminative, used in rheumatism, gonorrhoea and skin diseases
<i>Calotropis gigantea</i> (Linnaeus) Dryand [Asclepiadaceae]; <i>Akanda</i> ; <i>Khunia</i> , Goutam & A.P. Das 58	Whole plant	Sores & skin disease, leprosy, leucoderma, ulcers; leaves applied to paralyzed parts, painful joints, swellings, bronchitis, asthma, skeletal fracture; plants emetic, purgative, anthelmintic, antifungal
<i>Cannabis sativa</i> Linnaeus [Cannabinaceae]; <i>Bhang</i> ; <i>Khunia</i> , Goutam & A.P. Das 65	Leaves, inflorescence	Used in hysteria, asthma, neuralgia, stomachic, astringent, alterative, hypertension, diabetes, spasmodic cough, indigestion

Scientific Name [Family]; Local name; Exsiccate	Used Parts	Uses
<i>Cassia fistula</i> Linnaeus [Fabaceae]; <i>Bandarlathi</i> ; <i>Murti</i> , <i>Goutam</i> & <i>A.P. Das</i> 349	Leaves, bark, root, seeds	Purgative, laxative, astringent, antipyretic, demulcent, tonic; ringworm, syphilis, skin disease, leprosy, ulcers, ophthalmic diseases, dyspepsia, constipation, fever, strangury, diabetes
<i>Castanopsis indica</i> (Roxburgh) A.DC. [Fagaceae]; <i>Kathbadam</i> ; <i>Murti</i> , <i>Goutam</i> & <i>A.P. Das</i> 352	Bark	Antiviral, hypotensive, diuretic, anticancerous
<i>Centella asiatica</i> (Linnaeus) Urban [Apiaceae]; <i>Thankuni</i> ; <i>Murti</i> , <i>Goutam</i> & <i>A.P. Das</i> 313	Whole plant	Tonic, antibacterial, anti-inflammatory, diuretic, digestive; diabetes, pneumonia, diarrhoea, dysentery, jaundice, constipation, leucorrhoea
<i>Choerospondias axillaris</i> (Roxburgh) B.L. Bruth & A.W. Hill [Anacardiaceae]; <i>Bonamra</i> ; <i>Murti</i> , <i>Goutam</i> & <i>A.P. Das</i> 366	Fruits, seed oil	Antispasmodic
<i>Cinnamomum glanduliferum</i> Meissner [Lauraceae]; <i>Malagiri</i> ; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> 619	Seeds, wood	Antibacterial, uterotonic; respiratory problems, dyspepsia, colic, diarrhea, cough, asthma, snake bite
<i>Cissampelos pareira</i> Linnaeus [Menispermaceae]; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> 623	Leaves, bark, roots	Antipyretic, diuretic, laxative; dyspepsia, dropsy, dysentery, urinary trouble, ulcers, colic
<i>Citrus maxima</i> (Burman) Merrill [Rutaceae]; <i>Jambura</i> ; <i>Khunia</i> , <i>Goutam</i> & <i>A.P. Das</i> 42	Fruits	To treat leprosy, asthma, cough, epilepsy, mental aberration, anthelmintic, diarrhea, headache, eye trouble; general and cardiac tonic
<i>Citrus medica</i> Linnaeus [Rutaceae]; <i>Lebu</i> ; <i>Khunia</i> , <i>Goutam</i> & <i>A.P. Das</i> 44	Fruits	Used in typhoid, indigestion, dysentery
<i>Colebrookea oppositifolia</i> Smith [Lamiaceae]; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> 615	Leaves, roots	Skin infection, epilepsy, gastric trouble
<i>Costus speciosus</i> (Koenig ex Retzius) J.E. Smith [Zingiberaceae]; <i>Kemukh</i> ; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> 643	Roots, stem	Diabetes, anti-inflammatory, fever, biluria, rheumatism, neuralgia
<i>Curcuma zedoaria</i> (Christmann) Roscoe [Zingiberaceae]; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P.</i> <i>Das</i> 645	Rhizome	Anthelmintic, antipyretic, laxative, tonic, carminative, emetic; leucoderma, bronchitis, piles, asthma, fever, epilepsy, pains, toothache, leucorrhoea
<i>Datura metel</i> Linnaeus [Solanaceae]; <i>Dhutro</i> ; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> 648	Fruits	Hydrophobia, convulsion, neuralgia, rheumatic swelling, sciatica, dog bite, asthma
<i>Datura stramonium</i> Sieber ex Bernh. [Solanaceae]; <i>Dhutro</i> ; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> 624	Fruits	Asthma, whooping cough, parkinsonism, bronchial and gastro intestinal problems, indigestion, neuralgia, rheumatic pain
<i>Dillenia indica</i> Linnaeus [Dilleniaceae]; <i>Chalta</i> ; <i>Murti</i> , <i>Goutam</i> & <i>A.P. Das</i> 373	Barks, leaves, fruits	Stomachache, fever, cough, astringent, laxative
<i>Dioscorea alata</i> Linnaeus [Dioscoreaceae]; <i>Chuprialu</i> ; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> 652	Tubers	Diuretic, anthelmintic, diabetes, leprosy, gonorrhoea, strangury, contraceptive
<i>Dioscorea bulbifera</i> Linnaeus [Dioscoreaceae]; <i>Chuprialu</i> ; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> 653	Tubers	Alternative, tonic, aphrodisiac, stomachic, expectorant, anthelmintic; dyspepsia, urinary discharge, bronchitis, leucoderma, piles, tumours, strangury, asthma, ulcers
<i>Dioscorea pentaphylla</i> Linnaeus [Dioscoreaceae]; <i>Pachpata alu</i> ; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> 656	Tubers, shoot	Used in dropsy, rheumatism, anti- inflammable

Scientific Name [Family]; Local name; Exsiccate	Used Parts	Uses
<i>Drymaria cordata</i> Willd. <i>ex</i> Roemer & Schultis [Caryophyllaceae]; <i>Abhijalo</i> ; <i>Gorumara</i> , <i>Goutam & A.P. Das 664</i> , <i>Goutam & A.P. Das 691</i>	Whole plant	Used in sinus, headache, cold, snake bite, fever, asthma, diphtheria, pneumonia, throat pain
<i>Eclipta prostrata</i> (Linnaeus) Linnaeus [Asteraceae]; <i>Kesut</i> ; <i>Gorumara</i> , <i>Goutam & A.P. Das 693</i> , <i>Murti</i> , <i>Goutam & A.P. Das 353</i> , <i>Goutam & A.P. Das 378</i>	Whole plant	In skin diseases, wounds, ulcers, leprosy, fever, jaundice; good for blackening and strengthening hair
<i>Eleusine coracana</i> (Linnaeus) Gaertner [Poaceae]; <i>Gorumara</i> , <i>Goutam & A.P. Das 712</i>	Grains	Astringent, coolant, purgative; blood disease, small pox, pneumonia
<i>Enydra fluctuans</i> DC. [Asteraceae]; <i>Helancha</i> ; <i>Dhupjhora</i> , <i>Goutam & A.P. Das 164</i> , <i>Gorumara</i> , <i>Goutam & A.P. Das 611</i>	Young twigs	Eaten as a vegetable; blood purifier
<i>Entada rheedii</i> Sprengel [Fabaceae]; <i>Gila</i> ; <i>Dhupjhora</i> , <i>Goutam & A.P. Das 166</i>	Seeds	In mumps, body pain, cold; oral contraceptive, astringent, emetic, narcotic
<i>Equisetum debile</i> Roxburgh [Equisetaceae]; <i>Gorumara</i> , <i>Goutam & A.P. Das 625</i>	Aerial parts	In nose bleeding, wounds, gonorrhea, bleeding urinary tract; astringent
<i>Eupatorium cannabinum</i> Linnaeus [Asteraceae]; <i>Kalobanmara</i> ; <i>Gorumara</i> , <i>Goutam & A.P. Das 657</i> , <i>Murti</i> , <i>Goutam & A.P. Das 353</i>	Roots, leaves	Emetic, purgative, antiseptic in cuts and burns
<i>Euphorbia hirta</i> Linnaeus [Euphorbiaceae]; <i>Murti</i> , <i>Goutam & A.P. Das 319</i>	Whole plant	In asthma, bronchitis and other respiratory disorders
<i>Euphorbia pulcherrima</i> Willdenow [Euphorbiaceae]; <i>Lalpata</i> ; <i>Murti</i> , <i>Goutam & A.P. Das 354</i>	Leaves, flowers	Laxative, anticancerous; skin disease
<i>Euphorbia royleana</i> Boiss [Euphorbiaceae]; <i>Gorumara</i> , <i>Goutam & A.P. Das 655</i>	Latex	Anthelmintic, cathartic
<i>Ficus benghalensis</i> Linnaeus [Moraceae]; <i>Bot</i> ; <i>Murti</i> , <i>Goutam & A.P. Das 377</i>	Whole plant	Astringent, tonic; ulcers, vomiting, fever, inflammation, leprosy, piles, diseases of nose, gonorrhea, syphilis, dysentery, liver problems, rheumatism, toothache, diabetes
<i>Ficus benjamina</i> Linnaeus [Moraceae]; <i>Murti</i> , <i>Goutam & A.P. Das 320</i> , <i>378</i>	Leaves, milky juice	Ulcers, complaints of cornea
<i>Ficus religiosa</i> Linnaeus [Moraceae]; <i>Pankur</i> ; <i>Gorumara</i> , <i>Goutam & A.P. Das 626</i> , <i>Murti</i> , <i>Goutam & A.P. Das 370</i>	Whole plant	Blood diseases, leucorrhoea, burning sensation, foul test, ulcers, bone fracture, urine discharge, asthma, inflammation, vomiting, gonorrhea; laxative, astringent, alterative, antibacterial
<i>Ficus semicordata</i> Smith [Moraceae]; <i>Murti</i> , <i>Goutam & A.P. Das 371</i>	Milky latex, fruits, roots	Ulcers, colic pain, leprosy, bladder complaints
<i>Glinus oppositifolius</i> A. DC. [Molluginaceae]; <i>Gima</i> ; <i>Khunia</i> , <i>Goutam & A.P. Das 069</i>	Whole plant	Stomachic; juice applied to itch and other such skin troubles; a popular vegetable
<i>Gynocardia odorata</i> R. Brown [Achariaceae]; <i>Chalmogra</i> ; <i>Gorumara</i> , <i>Goutam & A.P. Das 653</i>	Fruits, seeds	Anthelmintic; fever, piles, ulcers, bronchitis, diabetes, skin disease, leprosy, rheumatism
<i>Hedychium coronarium</i> Koenig [Zingiberaceae]; <i>Dolonchampa</i> ; <i>Budhiram</i> , <i>Goutam & A.P. Das 1347</i>	Rhizomes	Carminative, stimulant; applied to sprains
<i>Hedyotis scandens</i> Roxburgh [Rubiaceae]; <i>Dhupjhora</i> , <i>Goutam & A.P. Das 169</i>	Roots, whole plants	Eye disease, colic pain, sprains, boils, problems during childbirth

Scientific Name [Family]; Local name; Exsiccate	Used Parts	Uses
<i>Holarrhena pubescens</i> (Buchanan- Hamilton) Wallich ex DC. [Apocynaceae]; <i>Kuchila</i> ; Gorumara, Goutam & A.P. Das 627	Bark, stem latex	Dysentery, lung diseases, tumour, skin eruption, irritation
<i>Houttuynia cordata</i> Thunbergh [Saururaceae]; <i>Ashtani</i> ; <i>Murti</i> , Goutam & A.P. Das 357	Whole plant	Stomach disorder, irregular menstruation, ophthalmia, hemorrhoids
<i>Imperata cylindrica</i> (Linnaeus) Rausch [Poaceae]; <i>Kush</i> ; <i>Murti</i> , Goutam & A.P. Das 358	Whole plant	Good in fever, cough, jaundice, kidney problems, internal bleeding, nasal bleeding, lung problems; antiviral, anticancer
<i>Ipomoea aquatica</i> Forsskal [Convolvulaceae]; <i>Kolmi</i> ; <i>Khunia</i> , Goutam & A.P. Das 064	Young twigs	A good vegetable; used for women suffering from nervous and general debility
<i>Justicia adhatoda</i> Linnaeus [Acanthaceae]; <i>Basak</i> ; <i>Indong</i> , Goutam & A.P. Das 112, <i>Khunia</i> , Goutam & A.P. Das 056	Leaves	Piles, bronchial asthma, bronchitis, pyorrhea, cough, ulcers, menorrhagia, tuberculosis
<i>Justicia gendarussa</i> Burman f. [Acanthaceae]; <i>Dhupjhora</i> , Goutam & A.P. Das 171,	Leaves, roots	Chronic rheumatism, facial paralysis, cough, bronchitis, arthritis, intermittent fever
<i>Kalanchoe pinnata</i> Persoon [Crassulaceae]; <i>Pathorkuchi</i> ; <i>Murti</i> , Goutam & A.P. Das 321	Leaves	Fresh leaves used to treat burns, wounds, impetigo, ulcer and other external applications
<i>Lasia spinosa</i> Thwaites [Araceae]; <i>Kantakochu</i> ; Gorumara, Goutam & A.P. Das 648	Leaves, inflorescence	Plant recommended for colic, rheumatism, and intestinal diseases
<i>Lepidagathis incurva</i> Buchanon Hamilton ex D. Don [Acanthaceae]; <i>Murti</i> , Goutam & A.P. Das 369	Leaves and young twig	Leaves and young twig chewed to relieve cough
<i>Leucas indica</i> R. Brown [Lamiaceae]; <i>Murti</i> , Goutam & A.P. Das 379	Leaves, young twig	Leaf juice highly recommended in diabetes, useful as nasal drop
<i>Litsea glutinosa</i> Robinson [Lauraceae]; <i>Pipal</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 173,	Leaves	Mucilaginous bark used in diarrhea and dysentery, rheumatic gout joints
<i>Mallotus philippensis</i> (Lamarck) Mueller [Euphorbiaceae]; <i>Sindure</i> ; Gorumara, Goutam & A.P. Das 647	Leaves and fruits	Improving appetite, ulcers, wounds, tumour, bladder stone, bronchitis, enlarged spleen, scabies, ringworm, skin diseases; vermifuge, purgative, anthelmintic, carminative
<i>Manihot esculenta</i> Crantz [Euphorbiaceae]; <i>Shimultarul</i> ; <i>Murti</i> , Goutam & A.P. Das 367	Root	Ulcers
<i>Melastoma malabathricum</i> Jack [Melastomataceae]; <i>Dantrangi</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 174	Bark and leaves	Skin troubles
<i>Mimosa pudica</i> Linnaeus [Fabaceae]; <i>Lajjabati</i> ; <i>Murti</i> , Goutam & A.P. Das 325	Leaves, roots and seeds	Toothache, leprosy, dysentery, vaginal and uterine complaints, inflammation, leucoderma, fatigue, asthma, blood diseases, bilious fevers, jaundice, leprosy, ulcers, small pox, piles
<i>Momordica charantia</i> Descourt [Cucurbitaceae]; <i>Uchchhe</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 177,	Fruits	Leprosy and malignant ulcers, stomach worms, fever, hypertension, dysentery, diabetes
<i>Momordica dioica</i> Roxburgh ex Willdenow [Cucurbitaceae]; <i>Kakrol</i> ; <i>Murti</i> , Goutam & A.P. Das 383	Roots	Bleeding piles and urinary complaints
<i>Morinda angustifolia</i> Roxburgh [Rubiaceae]; <i>Haldikath</i> ; <i>Murti</i> , Goutam & A.P. Das 391	Leaves, bark, fruits, roots	Roots cathartic. Leaves febrifuge, tonic; used to cure ulcers, dysentery, diabetes, asthma

Scientific Name [Family]; Local name; Exsiccate	Used Parts	Uses
<i>Morus australis</i> Poiret [Moraceae]; <i>Tut</i> ; <i>Murti</i> , Goutam & A.P. Das 359	Leaves, bark, roots, fruits.	Burning sensation, scabies; laxative, aphrodisiac, diuretic, anthelmintic, purgative, astringent
<i>Mucuna pruriens</i> (Linnaeus) DC. [Fabaceae]; <i>Gorumara</i> , Goutam & A.P. Das 645	Seeds, roots	Nerve tonic, anthelmintic, purgative; fever, cholera, scorpion stings
<i>Musa balbisiana</i> Colla [Musaceae]; <i>Kala</i> ; <i>Murti</i> , Goutam & A.P. Das 392	Fruits, stem, roots	Anthelmintic, tonic, astringent; menstrual disorder, blood disease, leprosy, diabetes, dyspepsia, strangury, urinary discharge, bronchitis, inflammation, diabetes, diarrhoea
<i>Mussaenda roxburghii</i> Hooker f. [Rubiaceae]; <i>Dhupjhora</i> , Goutam & A.P. Das 178	Leaves, flowers, roots	Jaundice, leprosy, asthma, internal fever, dropsy, ulcers; diuretic
<i>Ocimum tenuiflorum</i> Linnaeus [Lamiaceae]; <i>Tulsi</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 198	Leaves, seeds and roots	Tonic; gastritis, throat trouble, digestive problems, ring worm, skin disease, malaria fever; leaves insect repellent
<i>Oroxylum indicum</i> (Linnaeus) Ventenat [Bignoniaceae]; <i>Totala</i> ; <i>Khunia</i> , Goutam & A.P. Das 63	Bark, seeds	Diabetes, rheumatic swellings, fever, bronchitis, vomiting, dysentery, leucoderma, asthma, piles, heart trouble, inflammation; anthelmintic, stomachic, tonic, carminative, purgative, appetizer
<i>Oxalis corniculata</i> Linnaeus [Oxalidaceae]; <i>Ambalisak</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 179	Plants	Dysentery, diarrhea, piles, asthma, skin disease; refrigerant, appetizer
<i>Paederia foetida</i> Linnaeus [Rubiaceae]; <i>Gondhopata</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 199	Leaf, stem	Tooth decay, digestive problems, inflammation, piles, fever, eye disease; laxative, tonic
<i>Phlogacanthus thyrsoiflorus</i> (Roxburgh) Nees [Acanthaceae]; <i>Rambhang</i> ; <i>Murti</i> , Goutam & A.P. Das 327	Leaves, bark, flowers	Cough and cold, leprosy, vomiting, urinary discharge, asthma, bronchitis, piles; astringent, tonic, antipyretic
<i>Phyllanthus emblica</i> Linnaeus [Euphorbiaceae]; <i>Amlaki</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 180	Fruits, leaves, barks, roots	Indigestion, leprosy, vomiting, constipation, asthma, bronchitis; astringent, tonic, laxative, antipyretic, carminative
<i>Phyllanthus urinaria</i> Linnaeus [Euphorbiaceae]; <i>Gorumara</i> , Goutam & A.P. Das 644	Whole plant	Used in constipation; stomachic
<i>Phyllanthus virgatus</i> Forster f. [Euphorbiaceae]; <i>Budhira</i> , Goutam & A.P. Das 1237	Roots	Fresh roots used to treat viral hepatitis
<i>Physalis minima</i> Linnaeus [Solanaceae]; <i>Bon Tepari</i> ; <i>Murti</i> , Goutam & A.P. Das 362	Whole plant	Colic, ulcers, cough, bronchitis
<i>Piper betleoides</i> C. DC. [Piperaceae]; <i>Bhote Pan</i> ; <i>Gorumara</i> , Goutam & A.P. Das 674	Leaves, roots	Leaves antibacterial; wounds, burns, eczema; topically applied on chest to cure cough and asthma, and to breasts in arrested lactation. Roots used in rheumatism
<i>Piper longum</i> Linnaeus [Piperaceae]; <i>Pipul</i> ; <i>Murti</i> , Goutam & A.P. Das 393	Fruit	Menstrual disorder, enlarged spleen, tumour, liver problems, gout, jaundice; carminative, anthelmintic, diuretic, digestive
<i>Piper peepuloides</i> Roxburgh [Piperaceae]; <i>Pipul</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 181,	Fruit	Cough & cold and, gastralgia, dyspepsia; digestive. tonic, carminative, stimulant
<i>Plantago erosa</i> Wallich [Plantaginaceae]; <i>Jangli Isabgul</i> ; <i>Murti</i> , Goutam & A.P. Das 363	Plants, leaves, roots	Toothache, fever, dysentery, rheumatism; stimulant, tonic.

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<i>Plumbago zeylanica</i> Linnaeus [Plumbaginaceae]; <i>Chita</i> ; <i>Budhiram</i> , <i>Goutam</i> & <i>A.P. Das 1348</i>	Roots	Ulcers, rheumatism, paralysis, syphilis, leprosy, various skin problems; stimulants
<i>Pouzolzia zeylanica</i> Bennet [Urticaceae]; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das 675</i>	Roots	Roots eaten to cure dysentery, cough and asthma
<i>Premna latifolia</i> Roxburgh [Verbenaceae]; <i>Ginari</i> ; <i>Murti</i> , <i>Goutam</i> & <i>A.P. Das 395</i>	Leaves, tender shoot	Eaten in curries as diuretic, blood purifier and in dropsy
<i>Psidium guajava</i> Linnaeus [Myrtaceae]; <i>Peyara</i> ; <i>Budhira</i> , <i>Goutam</i> & <i>A.P. Das 1238</i>	Leaves, bark, fruits	Dysentery, ulcers, bronchitis, colic, diarrhea, toothache; astringent, tonic, laxative
<i>Pterospermum acerifolium</i> (Linnaeus) Willdenow [Sterculiaceae]; <i>Dhuojhora</i> , <i>Goutam</i> & <i>A.P. Das 183</i>	Leaves, flowers	Ulcers, leprosy, urinary discharge, tumours; tonic, anthelmintic, laxative
<i>Rauvolfia serpentina</i> (Linnaeus) Benth [Apocynaceae]; <i>Swarpagandha</i> , <i>Chando</i> ; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das 638</i>	Roots	Hypnotic, sedative, snake bite, blood pressure, insomnia, scorpion sting.
<i>Rhus chinensis</i> Miller [Anacardiaceae]; <i>Bhalay</i> ; <i>Budhiram</i> , <i>Goutam</i> & <i>A.P. Das 1349</i>	Fruits	Dysentery, indigestion, diarrhoea, colic, galls, swelling and wounds, paralysis.
<i>Ricinus communis</i> Linnaeus [Euphorbiaceae]; <i>Rerhi</i> , <i>Bharenda</i> ; <i>Garati</i> , <i>Goutam</i> & <i>A.P. Das</i> <i>88</i>	Bark and Seeds	Seed oil is used as a purgative. Bark is used to treat skin inflammations and rashes.
<i>Rungia pectinata</i> Nees [Acanthaceae]; <i>Dhupjhora</i> , <i>Goutam</i> & <i>A.P. Das 198</i> , <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das 1389</i>	Whole plants	Juice of plants is applied as febrifuge.
<i>Sapindus rarak</i> DC. [Sapindaceae]; <i>Ritha</i> ; <i>Budhiram</i> , <i>Goutam</i> & <i>A.P. Das 1257</i>	Fruits	Fruits saponaceous, used like soapnuts as a detergent to falling of hair.
<i>Sauropus compressus</i> Mueller [Euphorbiaceae]; <i>Chipti</i> ; <i>Murti</i> , <i>Goutam</i> & <i>A.P. Das 396</i> , <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> <i>1387</i>	Leaves	The fresh leaves are used for the treatment of retained Placenta. A mouth-wash made of the juice of fresh leaves and honey and applied to the tongue.
<i>Schima wallichii</i> (DC.) Korthals [Theaceae]; <i>Chilaoni</i> ; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> <i>1386</i>	Bark	Anthelmintic, vermicide, gonorrhoea.
<i>Scoparia dulcis</i> Linnaeus [Scrophulariaceae]; <i>Misti pata</i> ; <i>Dhupjhora</i> , <i>Goutam</i> & <i>A.P. Das</i> <i>184</i>	Plants	Piles, diuretic, hyperthermia, cough, sore throat, boils, menorrhagia.
<i>Semecarpus anacardium</i> Linnaeus f. [Anacardiaceae]; <i>Budhiram</i> , <i>Goutam</i> & <i>A.P.</i> <i>Das 1350</i>	Bark, fruits	Skin disease, dysentery, fever, piles, tumour, ulcers, urinary discharge, inflammation, laxative, carminative, paralysis, epilepsy, nervous disease, tonic.
<i>Shorea robusta</i> Gaertner [Dipterocarpaceae]; <i>Sal</i> ; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das 637</i>	Resin and leaves	Diarrhoea, astringent, dysentery, fumigating, incense.
<i>Sida acuta</i> Burmann f. [Malvaceae]; <i>Jharugachh</i> ; <i>Khunia</i> , <i>Goutam</i> & <i>A.P. Das 62</i>	Leaves and Roots	Leaves and roots used in stomachic and antipyretic, used in nervous and urinary disorders.
<i>Sida cordata</i> (Burmann f.) Borss. [Malvaceae]; <i>Dhuojhora</i> , <i>Goutam</i> & <i>A.P. Das</i> <i>197</i>	Roots	The roots are useful in fever and arthritis. The leaves are good for diarrhoea.
<i>Sida cordifolia</i> Forskal [Malvaceae]; <i>Berala</i> ; <i>Budhira</i> , <i>Goutam</i> & <i>A.P. Das 1239</i>	Tender shoots	The plants are used for fever, fits, leucorrhoea, colic and nervous disorders.
<i>Sida rhombifolia</i> Linnaeus [Malvaceae]; <i>Jharugachh</i> ; <i>Khunia</i> , <i>Goutam</i> & <i>A.P. Das 47</i>	Leaves and Roots	The roots and leaves are used in rheumatism and colic.

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<i>Solanum americanum</i> Miller [Solanaceae]; <i>kalabegun</i> ; <i>Budhira</i> , Goutam & A.P. Das 1243, <i>Gorumara</i> , Goutam & A.P. Das 1376	Tender shoots	The plant is useful in rheumatism, swellings, cough, asthma, bronchitis, wounds, ulcers, vomiting, leprosy, skin diseases and fever.
<i>Stephania glabra</i> (Roxburgh) Miers [Menispermaceae]; <i>Tamarke</i> ; <i>Murti</i> , Goutam & A.P. Das 398	Root tuber	Jaundice, diabetes, asthma, dysentery, tuberculosis, fever.
<i>Stephania japonica</i> Miers [Menispermaceae]; <i>Tamarke</i> ; <i>Murti</i> , Goutam & A.P. Das 359	Root tuber	Jaundice, diabetes, fever, astringent, dyspepsia, diarrhoea, piles, urinary discharge.
<i>Syzygium cumini</i> Skeels [Myrtaceae]; <i>Jam</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 188, <i>Gorumara</i> , Goutam & A.P. Das 1377	Bark, leaves and fruits	The bark is carminative, diuretic, digestive. The tender leaves are used for vomiting. The fruits and seeds are used in diabetes.
<i>Terminalia belirica</i> (Gaertner) Roxburgh [Combretaceae]; <i>Kathbadam</i> , <i>Boira</i> ; <i>Gorumara</i> , Goutam & A.P. Das 1383	Fruits and bark	One of the ingredients of the triphala of ayurvedic medicine, anaemia, leuco-derma, astringent, pungent, laxative, bronchitis, acrid, anthelmintic, inflammation, disease of eye and nose, problems of bladder and piles.
<i>Terminalia chebula</i> Retzius [Combretaceae]; <i>Haritaki</i> ; <i>Murti</i> , Goutam & A.P. Das 360	Fruits	Used in stomachic, expectorant, carminative, anthelmintic, tonic, alterative, astringent, dysentery, vomiting, anaemia, elephantiasis, disease of eye, hiccups, tonic.
<i>Terminalia myriocarpa</i> Haurck & Mueller [Combretaceae]; <i>Pucca saj</i> ; <i>Murti</i> , Goutam & A.P. Das 399	Bark	Cardiac stimulant and diuretic.
<i>Thysanolaena maxima</i> (Roxburgh) O. Kuntze [Poaceae]; <i>Jharu</i> ; <i>Gorumara</i> , Goutam & A.P. Das 636	Stems and roots	Boils and used in mouth wash.
<i>Tinospora cordifolia</i> (Willdenow) Miers ex Hooker f. & Thomson [Menispermaceae]; <i>Gulancga</i> ; <i>Dhupjhora</i> , Goutam & A.P. Das 189,	Leaves, stems and aerial roots	Ear pain, infection, fever, jaundice, vomiting, skin disease, piles.
<i>Toona ciliata</i> M. Roemer [Meliaceae]; <i>Toon</i> ; <i>Budhira</i> , Goutam & A.P. Das 1353	Bark	Dysentery, ulcers, menstrual disorder, astringent.
<i>Trichosanthes cordata</i> Roxburgh [Cucurbitaceae]; <i>Vitechhara</i> ; <i>Khunia</i> , Goutam & A.P. Das 51, <i>Gorumara</i> , Goutam & A.P. Das 1379	Young twig	The young twig is used in burning sensation, dyspepsia, flatulence, intermittent fevers, chronic fevers, Vomiting and skin diseases.
<i>Trichosanthes lepiniana</i> Cognius [Cucurbitaceae]; <i>Vitechhara</i> ; <i>Gorumara</i> , Goutam & A.P. Das 633	Young twig and fruits	The unripe fruit and the tender shoots used as vegetable to improve appetite and digestion.
<i>Tridax procumbens</i> Linnaeus [Asteraceae]; <i>Gorumara</i> , Goutam & A.P. Das 1378	Whole plants	Leaf juice is insecticidal, also used to check hemorrhage of wounds.
<i>Typhonium trilobatum</i> Schott [Araceae]; <i>Khakroni</i> ; <i>Budhira</i> , Goutam & A.P. Das 1253	Whole plants	The rhizome is used with effect for treat in sore throat, headache, gastric ulcer, cough asthma.
<i>Urtica dioica</i> Linnaeus [Urticaceae]; <i>Sisnu</i> ; <i>Budhira</i> , Goutam & A.P. Das 1250	Flowers, plants and roots	High blood pressure, anthelmintic, diuretic, jaundice, carminative, complaints of lungs and internal organs, sciatica, heart troubles, cough, rheumatism.
<i>Vallis solanacea</i> Kuntze [Apocynaceae]; <i>Dhupjhora</i> , Goutam & A.P. Das 193	Latex and bark	Latex and bark is applied to wounds and sores.
<i>Vitex negundo</i> Linnaeus [Verbenaceae]; <i>Nishinda</i> ; <i>Budhira</i> , Goutam & A.P. Das 1249	Leaves, roots and plant	Toothache, asthma, bronchitis, leucoderma, tonic, rheumatism, antidote to venom and scorpion sting, fever, febrifuge, enlargement of spleen, astringent, anthelmintic.
<i>Woodfordia fruticosa</i> (Linnaeus) Kurz [Lythraceae]; <i>Murti</i> , Goutam & A.P. Das 361	Flowers and bark	Dysentery, astringent tonic, sores and boils, piles, leprosy, disease of blood, toothache, leucorrhoea, menorrhagia, dysentery.

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<i>Wrightia arborea</i> (Dennstied) Mabberley [Apocynaceae]; <i>Khira</i> ; <i>Gorumara</i> , <i>Goutam</i> & <i>A.P. Das</i> 629, <i>Budhira</i> , <i>Goutam</i> & <i>A.P. Das</i> 1245	Bark	Dried bark is used in dysentery.
<i>Zanthoxylum acanthopodium</i> DC. [Rutaceae]; <i>Timbur</i> ; <i>Khunia</i> , <i>Goutam</i> & <i>A.P.</i> <i>Das</i> 49	Aerial parts	Used in eye and ear disease, brain disease, purity of blood, fever, dyspepsia, cholera, toothache, stomachache, anthelmintic, carminative, mouth freshener.
<i>Zanthoxylum rhetsa</i> DC. [Rutaceae]; <i>Timbur</i> ; <i>Dhupjhora</i> , <i>Goutam</i> & <i>A.P. Das</i> 194	Fruits	Fruits used in toothache and mouth freshener.
<i>Zizyphus mauritiana</i> Lamarck [Rhamnaceae]; <i>Kul</i> ; <i>Dhupjhora</i> , <i>Goutam</i> & <i>A.P. Das</i> 195, <i>Budhira</i> , <i>Goutam</i> & <i>A.P. Das</i> 1244	Leaves, bark, fruits and root	Dysentery, diarrhoea, blood disease, eye disease, ulcers, strangury, fever, antipyretic, headache, boils, leicorrhoea, asthma, wounds.

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