Phytodiversity of Ganpur forest, Birbhum District, West Bengal, India with reference to their Medicinal properties

Nisith Ranjan Sarkar, Subrata Mondal and Sudhendu Mandal*

UGC-DRS Department of Botany, Visva-Bharati, Santiniketan- 731235, India
*Corresponding author

A B S T R A C T

The present study deals with the observation on phytodiversity including its uses, distribution and occurrence to achieve the current strategic plan for biodiversity conservation. The plants are enumerated according to the alphabetical order of the plant names along with local names and their uses. During this investigation 229 plant species were collected from the forest under 81 families and 184 genera, among them 193 species belong to dicots with 70 families and 154 genera, and the 11 families 30 genera and 36 species of monocots. Local healers and healers from neighboring state like Jharkhand identified Gonpur forest as one of the major threats to vegetation and flora of the forest.

Keywords
Phytodiversity, conservation, biodiversity, Birbhum district, Gonpur forest

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Introduction

The Birbhum district is one of the lateritic belt district of West Bengal. It is situated between 23°32’30” to 24°35’00” North latitude and 87°5’25” to 88°2’ East longitude, total area of the district is about 4550.94 sq.km (5.10% of the state area). The climate of Birbhum district may be said as “dry sub-humid mega thermal” (Thornthwaite, 1948). Maximum temperature rise up to 44°c-46°c during April-May and goes down to 6°-7°c during December-January. Rainfall is moderate, maximum of 350 mm during July. The present study area Ganpur forest range situated between 24°04’37.0”- 24°04’37.5”latitude and 087°40’59.1” to 087°41’004” longitude.

It is one of the most species rich forests in this district that is still unexplored. Few scattered works on the flora of Birbhum district have been published by Basak, 1968 & 75; Guha, 1968; Basak and Guha Bakshi, 1977; Chowdhury and Mandal, 1999. Few works on ethno-medicinal plants and phytosociological study of plant species has been done from this district (Rahman and Mandal,1999; Bhattacharyya et al.,2003; Rahaman et al, 2008 & 2015). The medicinal uses of plant species reported by the tribes were compared and thoroughly screened with important works such as Kirtikar and Basu (1933), Chopra et al. (1969,1956), The wealth of India(1948-1976) and Jain(1991).
It has been found that different tribal communities like Santhal, Konra, etc. live in the village named Choubata, Kanta Pahari, Oal Pahari, Kolai Pahari, Ghanga etc. attached to the forest. Various valuable medicinal plants are found here and tribal people of the surrounding area are very much familiar with those plants as they use those plants to produce their herbal medicines for treatment of various diseases. Not only that, healers from Jharkhand and the local healers come to the forest during Monsoon for harvesting huge amount of medicinally important plant specimen and sell them in the market. The plant bank reports to know the health of the forest and the uses of the plant from this forest for medicinal purposes and other purposes which are important for the benefit of humankind. This work will also document the different plant species of the from the conservation point of view.

Materials and Methods

Extensive surveys for a period of three years (April 2012 to March 2015) in the forest have been made at regular intervals. The plant specimens were collected and identified by using standard monographs and flora (Prain 1903, Hooker 1897) and consultation from the Visva-Bharati Herbarium (VBH), Santiniketan as well as from Central National Herbarium (CAL), Sibpur, Howrah. The collected plant specimens are properly processed and herbarium sheets have been made and preserved as herbarium specimen following the standard method (Jain and Rao, 1977). Various information regarding the uses of the plant parts have been collected on the basis of frequent interviews with the tribal guru to know the practicing indigenous knowledge of medicine and documented in the field note book and confirmed repeated interviews at other places (Table-2). Vegetation pattern survey was carried out during April 2012 to March 2015 by laying 10m x 10m quadrates at 50 spots and was sampled through quadrates placed randomly; number of each species has been noted.

Results and Discussion

229 plant species of 81 families represented by 184 genera have been enumerated and documented in alphabetical order of the plant names (Table-1). The medicinally important plants as per information given by the Tribal Gurus are also enumerated (Table-2). Collected plant specimens are statistically classified and found 193 Dicotyledonous species under 70 families and 36 Monocotyledonous species under 11 families (Table-5). Collected species are properly processed for herbarium and labelled them properly with collection Number, Field No. etc. arranged according to the classification system of Bentham and Hooker (1887-97) and deposited in the Visva Bharati Herbarium(VBH) of Botany Department, Visva-Bharati, Santiniketan, West-Bengal, India.

Ganpur forest is dominated by Shorea robusta Gaertn.f. (Dipterocarpaceae), Madhuca indica J.F. Gmel.(Sapotaceae), Terminalia bellirica Roxb.(Combretaceae), Acacia auriculiformis (Mimosaceae) etc. Eleven most dominant families in the Gonpur forest are Fabaceae (18.75% ) with 15 taxa in the first under 11 genus, followed by Acanthaceae (17.5% ) with 14 taxa under 9 genus, Poaceae (20.0%)with 16 taxa under13 genus, Euphorbiaceae (14.8% ) with 12 taxa under 8 genus ,Asteraceae (13.6% ) with 11 taxa under 11 genus, Rubiaceae (13.6% ) with 11 taxa under 11 genus, Scrophulariaceae (11.1% ) with 9 taxa under 6 genus, Caesalpiniaceae (7.4%) with 6 taxa under 3 genus, Lamiaceae (7.4% ) with 6 taxa under 5 genus,
Apocynaceae (6.1%) with 5 taxa under 5 genus, Amaranthaceae (6.1%) with 5 taxa under 4 genus, Verbenaceae (6.1%) with 5 taxa under 5 genus and Convovulaceae (6.1%) also recorded 5 taxa under 4 genus, Amaranthaceae (6.1%) with 5 taxa under 5 genus, Verbenaceae (6.1%) with 5 taxa under 5 genus and Convovulaceae (6.1%) also recorded 5 taxa under 4 genus, Amaranthaceae (6.1%) with 5 taxa under 5 genus and Convovulaceae (6.1%) also recorded 5 taxa under 4 genus (Table-3);(Fig-1). Analysis of the life form composition shows that herbaceous taxa of 116 occupied 50.66 % of the flora, 55 taxa of trees (24.02%), 42 taxa of shrubs (18.34 %) and 16 taxa of climbers (6.99%) (Table-4) (Fig-2).

### Table 1: Plant species enumeration of Ganpur forest, Birbhum District

| Sl. No. | Scientific name of the plants | Habits | Family | Local name | Availability | Flowering & Fruiting time |
|---------|-------------------------------|--------|--------|------------|--------------|--------------------------|
| 1.      | Abrus precatorius L.          | S      | Fabaceae | Kunch      | Less common  | Aug.-Sep.                |
| 2.      | Abutilon indicum (L.)         | S      | Malvaceae | Bon kapas  | Common       | May-Aug.                 |
| 3.      | Acacia auriculiformis A.Cunn | T      | Mimosaceae | Sonajhuri/Akashmoni | Common    | Sep.-Nov.                |
| 4.      | Acacia nilotica              | T      | Mimosaceae | Babla      | Common       | Aug.-Mar.                |
| 5.      | Achyranthes aspera L.         | H      | Amaranthaceae | Apang   | Common       | Aug-Feb.                 |
| 6.      | Adina cordifolia (Roxb.)      | T      | Rubiaceae | Chakalata  | Not common   | May.-Aug.                |
| 7.      | Aegle marmelos (L.) Correa    | T      | Rutaceae  | Bel        | rare         | Apr.-Jul.                |
| 8.      | Aerva lanata (L.) Juss.ex Schult. | H      | Amaranthaceae | Jaya phul/daya phul | Common | Jul.-Apr.                |
| 9.      | Agave americana L.            | S      | Agavaceae | Konga      | Less common  | Dec.-Jan.                |
| 10.     | Ageratum conyzoides Sieber ex Steud. | H      | Asteraceae | Not known | Common       | Jun.-Jan.                |
| 11.     | Alangium salvifolium (L.f.) Wangerin | T      | Alangiaceae | Ankor | Common       | Mar.-May                 |
| 12.     | Albizia lebbek (L.) Benth.    | T      | Mimosaceae | Sirish     | Common       | Apr.-Mar.                |
| 13.     | Alstonia scholaris (L.) R.Br. | T      | Apocynaceae | Chhatim   | Less common  | Dec.-Apr.                |
| 14.     | Alysicarpus monilifer (L.) DC. | H      | Fabaceae  | Not known  | Less common  | Aug.-Apr.                |
| 15.     | Amaranthus spinosus. L.       | H      | Amaranthaceae | Kantanotey | Common       | Whole year               |
| 16.     | Amaranthus viridis Pollich ex Moq. | H      | Amaranthaceae | Notey  | Common       | Whole year               |
| 17.     | Anacardium occidentale L.      | T      | Anacardiaceae | Kaju badam | Less common  | Feb.-Apr.                |
| 18.     | Andrographis paniculata Nees. | H      | Acanthaceae | Kalmegh   | Common       | Sep.-Dec.                |
| 19.     | Anisomeles ovata R.Br.        | S      | Lamiaceae  | Apang      | Less common  | Sep.-Dec.                |
| 20.     | Annona reticulata Vell.       | T      | Annonaceae | Nona-Ata   | Less common  | May-Jul.                 |
| 21.     | Antigonon leptopus Hook.&Arn. | CL     | Polygonaceae | Anantalata | Common       | Jul.-Nov.                |
| 22.     | Argyreia nervosa (Burm.f.)Bojer | CL     | Convovulaceae | Gogul    | Not common   | Sep.-Jan.                |
| 23.     | Aristida setacea Retz.        | H      | Poaceae    | Not known  | Common       | Sep.-Jan.                |
| 24.     | Aristolochia indica L.        | H      | Aristolochiaceae | Iswarmul | Less common  | Jun.-Oct.                |
| 25.     | Asparagus racemosus Willd.    | CL     | Liliaceae  | Satamuli   | Common       | Sep.-Oct.                |
| 26.     | Azadirachta indica A.Juss.    | T      | Meliaceae  | Neem       | Common       | Mar.-May                 |
| 27.     | Barleria cristata Lam.        | S      | Acanthaceae | Janti     | Not common   | Sep.-Jan.                |
| 28.     | Barleria prionitis L.         | S      | Acanthaceae | Kantanotey | Not common   | Sep.-Apr.                |
| 29.     | Bixa orellana L.              | T      | Bixaceae   | Latkan     | Less common  | Jul.-Oct.                |
| 30.     | Blumea oxyodonta DC.          | H      | Asteraceae | Not known  | Common       | Dec.-Mar.                |
| 31.     | Boerhavia diffusa Engehm.& A.Gray | H      | Nyctaginaceae | Punornova | Common       | Oct.-Apr.                |
| 32.     | Borassus flabellifer L.       | T      | Areceaceae | Tal        | Common       | Feb-Apr..                |
| No. | Common Name                        | Genus                  | Family     | Scientific Name                                      | Habitat        | Notes     |
|-----|-----------------------------------|------------------------|------------|-----------------------------------------------------|----------------|-----------|
| 33  | Borreria articulare               | F.N. Williams          | Rubiaceae  | Not known                                          | Common         | Jul.-Jan. |
| 34  | Bridelia retusa                   | Spreng.                | Euphorbiaceae | Bhalas/ Geio                                      | Common         | Aug.-Nov. |
| 35  | Bryophyllum calycinum              | Salisb.                | Crassulaceae | patharkuchi                                        | Not common     | Mar.-Apr. |
| 36  | Buchanania lanzan                 | Spreng.                | Anacardiaceae | Piyal                                              | Less common    | Jan.-Feb. |
| 37  | Butea monosperma                  | (Lam.) Taub.           | Fabaceae   | Lal palash                                         | Common         | Feb.-Jun. |
| 38  | Butea superba                     | Roxb. ex. Wild.        | Fabaceae   | Latano-palash                                      | Rare           | Feb.-July |
| 39  | Canescra diffusa                  | R.Br.                  | Gentianaceae | Not known                                          | Common         | Oct.-Jan. |
| 40  | Cardiospermum halicacabum         | L.                     | Sapindaceae | Sibghul                                            | Common         | Whole year|
| 41  | Carissa spinarum                  | Lodg. ex. A.DC.        | Apocynaceae | Buno karamcha                                      | Common         | Mar.-May. |
| 42  | Cassia fistula                     | L.                     | Caesalpiniaceae | Bandarlathi/A malus                               | Common         | Apr.-May  |
| 43  | Centella asiatica                 | Urb.                   | Apliaceae  | Thankuni                                           | Common         | Apr.-Jul. |
| 44  | Chenopodium album                 | Bosc. ex. Moq.        | Chenopodiaceae | Bethosak                                          | Common         | Nov.-Mar. |
| 45  | Chrysopogon accutatus             | Trin.                  | Poaceae    | Chorkanta                                          | Common         | Aug.-Oct. |
| 46  | Chrysopogon lancearius            | Haines.                | Poaceae    | Not known                                          | Common         | Sep.-Oct. |
| 47  | Cissus quadrangularis             | L.                     | Vitaceae   | Harjora                                            | Common         | Feb.-Oct. |
| 48  | Cleome viscosa                    | L.                     | Capparidaceae | Harhura                                           | Common         | Jul.-Sep. |
| 49  | Clerodendrum petasites            | S.Moore                | Verbenaceae | Not known                                          | Common         | Jan.-Mar. |
| 50  | Coccinia grandis                  | (L.) Voigt             | Cucurbitaceae | Telakucha                                         | Common         | Aug.-Oct. |
| 51  | Coix lacryma-jobi                 | L.                     | Poaceae    | Garagra                                            | Rare           | Sept.-Oct.|
| 52  | Colocasia esculenta               | (L.)Schott             | Araceae    | Kachu                                              | Common         | July.-Nov.|
| 53  | Commelina benghalensis            | L.                     | Commelinaceae | Kanshira                                          | Very common    | Jul.-Nov. |
| 54  | Corchorus aescuums                | Herb. Madr. ex. Wall.   | Tiliaceae  | Tita-pat                                           | Less common    | Jul.-Aug. |
| 55  | Corchorus aescuums                | Lam.                   | Tiliaceae  | Jangli-pat                                         | Less common    | Jul.-Sep. |
| 56  | Costus speciosus                  | (J. Koemig.) Sm.       | Zingiberaceae | Not known                                          | Common         | Jul.-Sep. |
| 57  | Crotalaria prostrata              | Rottler.               | Fabaceae   | Jhunjhuni                                          | Common         | Sep.-Dec. |
| 58  | Crotalaria retusa                 | L.                     | Fabaceae   | Atasi                                              | Common         | Whole year|
| 59  | Crotalaria verrucosa              | L.                     | Fabaceae   | Bon-son                                            | Not common     | Oct.-Jan. |
| 60  | Curculigo orchoides               | Gaertn.                | Hypoxideae | Kali Musali                                       | Not common     | Aug.-Nov. |
| 61  | Curcuma aromatica                 | Salisb.                | Zingiberaceae | Bon Halud                                         | Rare           | May.-Jun. |
| 62  | Cuscuta reflexa                   | Roxb.                  | Cuscutaceae | Swarnalata                                         | Less common    | Oct.-Feb. |
| 63  | Cyanotis tuberosa                 | (Roxb.) Schult. f.     | Commelinaceae | Not known                                          | Less common    | Jul.-Oct. |
| 64  | Cymbopogon martini                | Staeft.                | Poaceae    | Not known                                          | Rare           | Oct.-Dec. |
| 65  | Cynodon dactylon                  | Pers.                  | Poaceae    | Durba                                              | Common         | Sep.-Feb. |
| 66  | Cyperus dorsiformis               | (L.)                   | Cyperaceae  | Not known                                          | Common         | Aug.-Dec. |
| 67  | Cyperus monocephalus              | Baker.                 | Cyperaceae  | Not known                                          | Common         | Jun.-Jan. |
| 68  | Cyperus rotundus                  | Kunth.                 | Cyperaceae  | Mutha                                              | Common         | Jun.-Jan. |
| 69  | Dactyloctenium egypiticum         | (L.) K. Richt.         | Poaceae    | Not known                                          | Common         | July.-Dec.|
| 70  | Dalbergia stissao                 | Roxb.                  | Fabaceae   | Sissu                                              | Common         | Mar.-Aug. |
| 71  | Dendrophthoe falcata              | Blume.                 | Loranthaceae | Banda                                              | Common         | Nov.-Mar. |
| 72  | Dentella repens                   | J.R. Forst & G. Forst. | Rubiaceae  | Not known                                          | Common         | Sep.-Feb. |
| 73  | Desmodium gangeticum             | (L.) DC.               | Fabaceae   | Salpani                                            | Common         | May.-Jan. |
| No. | Species Name                                      | Family      | Common Name | Distribution |
|-----|--------------------------------------------------|-------------|-------------|--------------|
| 74  | Desmodium triflorum (L.) DC.                     | Fabaceae    | Kudali      | Sep.-Apr.    |
| 75  | Digitaria ciliaris (Retz.) Koeler.               | Poaceae     | Makur-jali  | Common Aug.-Oct. |
| 76  | Dillenia pentagyna Roxb.                         | Tiliaceae   | Bon chalta  | Rare Mar.-Jun. |
| 77  | Dioscorea alata L.                               | Dioscoreaceae| Khamalu     | Not common July-Oct. |
| 78  | Dioscorea bulbifera L.                           | Dioscoreaceae| Kukuralu    | Less common Sep-Oct. |
| 79  | Diospyros melanoxylon Hiem.                      | Ebenaceae   | Kend        | Rare Apr.-Jun. |
| 80  | Diplocarthus prostratus (Poir.)                  | Acanthaceae | Not known   | Common Jun.-Oct. |
| 81  | Drosera burmanni DC.                             | Droseraceae  | Surjasisir  | Rare Oct.-Jan. |
| 82  | Echinocloa colona (L.) Link                      | Poaceae     | Not known   | Very common Jul.-Oct. |
| 83  | Eclipta prostrata (L.)                           | Asteraceae  | Bhringaraj/keshute | Common Whole year |
| 84  | Elephantopus scaber L.                           | Asteraceae  | Hastipod    | Rare Sep.-Dec. |
| 85  | Eleusine indica (L.)Gaertn.                      | Poaceae     | Sursuri ghas| Common Aug.-Nov. |
| 86  | Emilie sonchifolia (L.) DC.                      | Asteraceae  | Sadimodi    | Less common Nov.-Feb. |
| 87  | Eragrostis coarctata Stapf                       | Poaceae     | Not known   | Common Aug.-Feb. |
| 88  | Eragrostis tenella Benth.                        | Poaceae     | Sursuri ghas| Common Jul.-Jan. |
| 89  | Eriocaulon quinquangulare L.                     | Eriocaulaceae| Not known   | Common Sept-Jan. |
| 90  | Eucalyptus citriodora Hook.                      | Myrtaceae   | Eucalyptus  | Common Sep.-May. |
| 91  | Eupatorium odoratum L.                           | Asteraceae  | Not known   | Common Nov-Jan. |
| 92  | Euphorbia antiquorum E.Mey.                      | Euphorbiaceae| Teshare monsa| Rare Dec.-Jan. |
| 93  | Euphorbia hirta L.                               | Euphorbiaceae| Barokarni  | Common Whole year |
| 94  | Evolulus alsinooides L.                          | Convolvulaceae| Not known | Common July-Nov. |
| 95  | Evolulus nummularius (L.) L.                     | Convolvulaceae| Not known | Common Whole year |
| 96  | Ficus benghalensis L.                            | Moraceae    | Bot         | Common Apr-Jul. |
| 97  | Ficus hispida L.                                 | Moraceae    | Dumur       | Common Feb-Mar. |
| 98  | Ficus racemosa Wall.                             | Moraceae    | Jagnya dumur| Not common Apr-Jul. |
| 99  | Ficus religiosa Decne.ex Miq.                    | Moraceae    | Aswaththa   | Common Apr-May & Oct-Nov. |
| 100 | Fimbrytis teragona R.Br.                         | Cyperaceae  | Not known   | Less common Sep-Jan. |
| 101 | Flacourtia jaungmas (Lour.) Raeusch.             | Flacourtia ceae| Bainchi   | Rare Mar-May |
| 102 | Flacourtia indica (Burm.f.) Merr.                | Flacourtia ceae| Bainchi   | Common Jan-Mar. |
| 103 | Glinus oppositifolius (L.) Aug.DC.              | Aizoaceae   | Gima        | Common Jul-Oct. |
| 104 | Globa bulbifera Roxb.                            | Zingiberaceae| Not known  | Not common Aug-Sep. |
| 105 | Glochidion lanceolarium Voigt.                   | Euphorbiaceae| Not known  | Not common Feb-Mar. |
| 106 | Gloriosa superba L.                              | Liliaceae   | Ulat-chandal| Less common Jun-Sep. |
| 107 | Gnaphalium lateo-album L.                        | Asteraceae  | Not known   | Common Mar-Jun. |
| 108 | Gomphrena celosioides Mart.                      | Amaranthaceae| Not known | Common Mar-Sep. |
| 109 | Grewia hisute Roxb.                              | Tiliaceae   | Kukurbicha  | Less common Jul-Sep. |
| 110 | Gymnema sylvestre (Retz.) R.Br.ex Sm            | Asclepiadaceae| Guirmari  | Rare Aug-Oct. |
| 111 | Hedysotis pinfolia Wall.                         | Rubiaceae   | Not known   | Not common Jul-Feb. |
| 112 | Heliotropium indicum L.                          | Boraginaceae| Hatisur     | Common May-Dec. |
| 113 | Hemidesmus indicus (L.) R.Br.                    | Asclepiadaceae| Anantamul | Common Aug-Dec. |
| 114 | Hemigraphis hirta T.Anderson                    | Acanthaceae | Not known   | Rare Aug-Sep. |
| 115 | Holarrhena antidysenterica (L.) Wall             | Apocynaceae | Kurchi      | Common May-Aug. |
| No. | Scientific Name | Family | Common Name | Frequency | flowering Period |
|-----|----------------|--------|-------------|-----------|-----------------|
| 116. | Holoptelea integrifolia (Roxb.) Planch. | Ulmaceae | Chhalla | Not common | Feb.-Mar. |
| 117. | Hybanthus enneaspermus (L.) F.Muell. | Violaceae | | Not known | Common | Whole year |
| 118. | Hygrophila salicifolia (Vahl) Nees in Wall. | Acanthaceae | | Not known | Not common | Aug.-Nov. |
| 119. | Hygrophila auriculata (Schumch.) Heine | Acanthaceae | Kulekhara | Very common | Sept.-Feb. |
| 120. | Hygrophila difformis (L.f.) Blume | Acanthaceae | | Not known | Not common | Sep.-Feb. |
| 121. | Hygrophila polyserpa T. Anderson | Acanthaceae | | Not known | Not common | Oct.-Feb. |
| 122. | Hyptis suaveolens (L.) Ooit. | Lamiaceae | Bilati tulsi | Not common | Nov.-Apr. |
| 123. | Ichnocarpus frutescens Naves. | Apocynaceae | Shyamalata | Common | Aug.-Feb. |
| 124. | Indigofera tinctoria L. | Fabaceae | | nil | Rare | Jan.-Mar. |
| 125. | Ipomoea obscura Guill. | Convolvulaceae | | Not known | Common | Sep.-Dec. |
| 126. | Isora arborea Lod. | Rubiaceae | | Not known | Common | Feb.-Mar. |
| 127. | Jatropha curcas L. | Euphorbiaceae | Birbhadra | Not common | Mar.-May. |
| 128. | Jatropha gossypifolia L. | Euphorbiaceae | Lal-bharenda | Not common | Jul.-Sep. |
| 129. | Justicia diffusa Wild. | Acanthaceae | | Not known | Common | Jul.-Feb. |
| 130. | Justicia gendarussa Burm.f. | Acanthaceae | Jagat madan | Not common | Mar.-May. |
| 131. | Lagerstroemia speciosa Pers. | Lythraceae | Jarul | Common | May.-Sep. |
| 132. | Lannea coromandelica (Houtt.) Merr. | Anacardiaceae | Jio | Less common | Dec.-Apr. |
| 133. | Lantana camara (L.) | Verbenaceae | | Not known | Common | Whole year |
| 134. | Leonotis nepetifolia Schimp. ex Benth. | Lamiaceae | | Not known | Not common | Oct.-Feb. |
| 135. | Leucas cephalotes Sperng. | Lamiaceae | | Not known | Common | Sep.-Dec. |
| 136. | Lindenbergia macrostachya Benth. | Scrophulariaceae | Basanti | Not common | Aug.-Jan. |
| 137. | Lindernia antipoda (L.) Alston | Scrophulariaceae | | Not known | Common | Aug.-Mar. |
| 138. | Lindernia ciliata (Colsm.) Pennell. | Scrophulariaceae | | Not known | Common | Aug.-Dec. |
| 139. | Lindernia crustacea (L.) F.Muell. | Scrophulariaceae | | Not known | Common | Jun.-Jan. |
| 140. | Lindernia oppositifolia (L.) Mukherjee | Scrophulariaceae | | Not known | Common | Sep.-Oct. |
| 141. | Lippia geminata Kunth | Verbenaceae | | Not known | Not common | Mar.-Dec. |
| 142. | Ludwigia adscendens (L.) Hara | Onagraceae | Kesardam | Common | Sep.-Jan. |
| 143. | Madhuca indica J.F. Gmel. | Sapotaceae | Mahua | Common | Mar.-Jun. |
| 144. | Martynia annua (L.) | Martyniaceae | Bagh nokh | Less common | Aug.-Oct. |
| 145. | Mazus pumilus (Burm.f.) | Scrophulariaceae | | Not known | Less common | Sept.-Feb. |
| 146. | Mecardonia procumbens Small. | Scrophulariaceae | | Not known | Not common | Feb.-Apr. |
| 147. | Melochia corchorifolia Wall. | Scrophulariaceae | | Not known | Not common | Feb.-Apr. |
| 148. | Merremia tridentata (L.) Hallier f. | Convolvulaceae | | Not known | Less common | Jul.-Feb. |
| 149. | Meyna spinosa Roxb. ex Link. | Rubiaceae | Moinakanta | Common | Mar.-May. |
| 150. | Micrococa mercurialis Benth. | Euphorbiaceae | | Not known | Not common | Dec.-Feb. |
| 151. | Mikania micrantha Kunth. | Asteraceae | | Not known | Rare | Dec.-Jan. |
| 152. | Mimosa pudica Mill. | Mimosaceae | Laijaabati | Common | Aug.-Mar. |
| 153. | Mitragyna Parvifolia Korth. | Rubiaceae | Keli kadam | Not common | May.-Jul. |
| 154. | Mitrasacme alsinoides R.Br. | Loganiaceae | | Not known | Common | Aug.-Oct. |
| 155. | Mollugo pentaphylla L. | Aizoaceae | Khet papra | Common | Sep.-Dec. |
| 156. | Momordica dioica Wall. | Cucurbitaceae | Bon karala | Common | Aug.-Oct. |
| 157. | Morinda tomentosa B.Heyne | Rubiaceae | Haridra | Less common | May.-Jan. |
| 158. | Nicotiana plumbaginifolia Wild. | H | Solanaceae | Bon-tamak | Rare | Jun.-Oct. |
| 159. | Occhna pumila Buch- Ham.ex D.Don | T | Ochnaceae | Makal | rare | Mar.-Jun. |
| 160. | Ocimum americanum Auct.ex Benth. | S | Lamiaceae | Bantalushi | Not common | Aug.-Mar. |
| 161. | Ocimum sanctum L. | S | Lamiaceae | Tulshi | Common | Oct.-Feb. |
| 162. | Oldenlandia corymbosa Herb.Madr.ex Wight.&Arn. | S | Rubiaceae | Not known | Common | Sep.-Apr. |
| 163. | Oxalis corniculata L. | H | Oxalidaceae | Amrul | Very common | Oct-Jun. |
| 164. | Paederia scandens (Lour.)Merr. | T | Rubiaceae | Gandalpata | Less common | Sep.-Nov. |
| 165. | Pandanus fascicularis Lam. | S | Pandanaceae | Keya | Less common | Aug.-Oct. |
| 166. | Passiflora foetida Vell. | H | Passifloraceae | Jhumkolata | Common | Jul.-Dec. |
| 167. | Pavetta indica L. | CL | Rubiaceae | Not known | Less common | Apr.-Aug. |
| 168. | Peltophorum pterocarpum (DC.) Baker ex K.Heyne. | T | Caesalpiniaeae | Radhachura | Common | Jun.-Apr. |
| 169. | Peperomia pellucida Kunth | H | Piperaceae | Not known | Not common | Oct-Feb. |
| 170. | Pergularia daemia (Forssk.) Chiov. | H | Asclepiadaceae | Chagaibati | Common | May.-July. |
| 171. | Peristrophe biclyculata Nees. | H | Acanthaceae | Not known | Not common | Sep.-Mar. |
| 172. | Phoenix acaulis Buch-Ham.ex Roxb. | T | Arecaeae | Khejur | Common | Jan-May. |
| 173. | Phyllanthus noliflora Greene | H | Verbenaceae | Not known | Less common | Aug.-Mar. |
| 174. | Phyllanthus emblica L. | T | Euphorbiaceae | Amlaki | Not common | Feb-Jun. |
| 175. | Phyllanthus fraternus G.L.Webster | H | Euphorbiaceae | Bhuin amla | Common | July-Nov. |
| 176. | Phyllanthus reticulatus Lodd. | S | Euphorbiaceae | Panjuli | Not common | Sep-Oct. |
| 177. | Physalis minima L. | H | Solanaceae | Not known | Less common | Aug-Jan. |
| 178. | Plumbago zeylanica L. | H | Plumbaginaceae | Chitrik | Not common | Aug-Sep. |
| 179. | Polygala chinesis L. | H | Polygalaceae | Not known | Common | Oct-Feb. |
| 180. | Polygonum hydropiper L. | H | Polygonaceae | Panimirich | Common | May-Dec. |
| 181. | Polygonum plebeium R.Br. | S | Polygonaceae | Chemti sak | Less common | Jan-Jun. |
| 182. | Pongamia pinnata (L.)Pierre. | T | Fabaceae | Karanj | Less common | May-Aug. |
| 183. | Portulaca quadrifida L. | H | Portulacaceae | Chotonunia | Very common | Whole year |
| 184. | Pouzolzia zeylanica (L.)Benn. | H | Urticaceae | Not known | Not common | Aug-Nov. |
| 185. | Pterocarpus marsupium Roxb. | T | Fabaceae | Pia sal | Less common | Mar-Jun. |
| 186. | Rauvolfia tetraphylla L. | S | Apocynaceae | Sarpagandha | Rare | Apr-Oct. |
| 187. | Ruellia tuberosa L. | H | Acanthaceae | Chatpati | Common | Jul-Dec. |
| 188. | Rangia pectinata Nees. | H | Acanthaceae | Not known | Common | Aug-Mar. |
| 189. | Saccharum spontaneum L. | H | Poaceae | Kash | Common | Sept-Dec. |
| 190. | Salacia malabarica Schott.& Endl. | T | Bombacaceae | Simul | Common | Jan-Mar. |
| 191. | Sapindus emarginatus Hort.Alger. | T | Sapindaceae | Ritha | rare | Sep-Dec. |
| 192. | Scoparia dulcis L. | H | Scrophulariaceae | Bon dhane | Common | Jun-Nov. |
| 193. | Sena siamea (Lam).H.S.Irwin& Bameby | T | Caesalpiniaeae | Minjiri | Common | Sep-Mar. |
| 194. | Sena alata L. | S | Caesalpinaceae | Dadmardan | Less common | Apr-Mar. |
| 195. | Sena occidentalis (L) Link. | S | Caesalpinaceae | Kalkasunda | Common | Jul-Apr. |
| 196. | Sena tora (L.) Roxb. | S | Caesalpinaceae | Not known | Common | Sep-Nov. |
| 197. | Setaria glauca (L.) P.Beauv. | H | Poaceae | Not known | Less common | Jul-Nov. |
| 198. | Setaria verticillata (L.)P.Beauv. | H | Poaceae | Dora-byara | Less common | Aug-Nov. |
| 199. | Shorea robusta C.F.Gaertn. | T | Dipterocarpaceae | Sal | Common | Feb-Apr. |
| Entry | Species Name                                      | Family       | Common Name | Growth Form | Season   |
|-------|--------------------------------------------------|--------------|-------------|-------------|----------|
| 200.  | *Sida acuta* Burm.f.                             | Malvaceae    | kureta      | Common      | Aug.-Jan.|
| 201.  | *Sida cordifolia* L.                             | Malvaceae    | Swet-Berela | Common      | Aug.-Nov.|
| 202.  | *Sida rhombifolia* L.                            | Malvaceae    | Berela      | Common      | Oct.-Dec.|
| 203.  | *Smilax macrophylla* Griseb.                     | Smilacaceae  | Ramdaton    | Common      | Jul.-Oct.|
| 204.  | *Solanum sisymbriifolium* Lam.                  | Solanaceae   | Sad kantikari | Common      | July-Oct |
| 205.  | *Solanum surattense* Burm.                      | Solanaceae   | kantikari   | Less common | Whole year|
| 206.  | *Solanum torvum* Buch.-Ham.ex Wall.              | Solanaceae   | Titabegun   | Rare        | Dec.-Apr.|
| 207.  | *Sporobolus diander* P.Beauv.                     | Poaceae      | Bena-joni   | Common      | Jul.-Nov.|
| 208.  | *Sreblus asper* Lour.                            | Moraceae     | Saora       | Common      | Jan.-May.|
| 209.  | *Striga angustifolia* (D.Don) Saldanha           | Scrophulariaceae | Not known | Rare        | Sep.-Dec.|
| 210.  | *Suregada multiflora* Baill.                     | Euphorbiaceae | Not known   | Not common  | Mar.-May.|
| 211.  | *Tectona grandis* L.f.                           | Verbenaceae  | Shegun      | Common      | July-Oct.|
| 212.  | *Terminalia arjuna* (Roxb.ex DC)Wight.& Arn.    | Combretaceae | Arjun       | Common      | Apr.-Oct.|
| 213.  | *Terminalia bellirica* (Gaertn.) Roxb.          | Combretaceae | Bahera      | Rare        | Mar.-Jan.|
| 214.  | *Terminalia chebula* Retz.                       | Combretaceae | Haritaki    | Rare        | Apr.-Dec.|
| 215.  | *Tinospora cordifolia* Miers                    | Menispermaceae | Gulancha-lata | Very common | Aug.-Dec.|
| 216.  | *Tragia involucrata* L.                          | Euphorbiaceae | Bichuti     | Common      | Jan.-Apr.|
| 217.  | *Tridax procumbens* L.                           | Asteraceae   | Not known   | Common      | Whole year|
| 218.  | *Triumfetta rhomboidea* Lindl.                  | Tiliaceae    | Bon okhra   | common      | Aug.-Nov.|
| 219.  | *Turnera ulmifolia* Sesse & Moc.                | Turneraceae  | Not known   | Common      | Aug-Dec  |
| 220.  | *Uraria picta* (Jacq.)Desv.                     | Fabaceae     | Sibjata     | Less common | Jul.-Oct.|
| 221.  | *Urena lobata* L.                                | Malvaceae    | Ban-bhenda  | Common      | Sep.-Dec.|
| 222.  | *Utricularia stellaris* L.f.                    | Lentibulariaceae | Not known | Less common | Oct.-Dec.|
| 223.  | *Vernonia cinerea* (L.) Less.                   | Asteraceae   | Not known   | Common      | Whole year|
| 224.  | *Wahlenbergia gracilis* (G.Forst.) A.DC.        | Campanulaceae | Not known   | Common      | Whole year|
| 225.  | *Wedelia chinensis* Merr.                       | Asteraceae   | Not known   | Not common  | Apr.-Oct.|
| 226.  | *Zingiber montanum* Link ex A.Dietr.             | Zingiberaceae | Bon Ada     | Not common  | Aug.-Sep.|
| 227.  | *Ziziphus mauritiana* Lam.                      | Rhamnaceae   | Kul         | Less common | Aug.-Oct.|
| 228.  | *Ziziphus oenoplia* (L.) Mill.                  | Rhamnaceae   | Shiakul     | Common      | Aug.-Nov.|
| 229.  | *Zornia gibbosa* Span.                          | Fabaceae     | Not known   | Common      | Aug.-Oct.|

**Abbreviation used:** H=Herb, S= Shrub, Cl=Climber, T=Tree, Jan.= January, Feb.= February, Mar.= March, Apr.= April, Jun.=June, Jul.=July, Aug.=August, Sep.=September, Oct.=October, Nov.=November, Dec.=December.
Table 2: Folk medicinal importance of some plant species of Ganpur forest, Birbhum District

| Sl. No. | Scientific name of the plants | Ailments | Parts Used | Mode of use |
|---------|--------------------------------|----------|------------|-------------|
| 1. | *Abrus precatorius* L. | Cough, cold, colic pains, anti-tumour | Root, leaf, seed | Root and leaf decoction is act as diuretic, seed extract by boiling is used in nervous disorder and antitumor |
| 2. | *Ahuition indicum* (L.) Sweet | demulcent, laxative, diuretic, sedative, intestinal worm infestation. | Whole plant | Leaf and fruit is taken orally. |
| 3. | *Acacia nilotica* Delile. | dysentery. | bark, leaves, | Bark-juice & leaf-juice is eaten. |
| 4. | *Achyranthes aspera* L. | Insect poisoning, diarrhoea, diuretic | Leaves paste, root decoction | Leaves paste are applied to the bite place and decoction of root is given to the diarrhoea patient. |
| 5. | *Aegle marmelos* (L.) Correa. | Chronic dysentery, constipation, dyspepsia, diabetes | Fruit, leaf | Ripe fruit is eaten or un-ripe fruit also been boiled and eaten. Tender leaf juice about 10ml mixed with 2-3 drops of honey is eaten in empty stomach to control diabetes. |
| 6. | *Aerva lanata* (L.) Juss.ex Schult. | Asthma | Flower with leaf juice | 5ml juice with few drops of honey for one month |
| 7. | *Agave americana* L. | diuretic | root | root-juice is eaten |
| 8. | *Alangium salviifolium* (L.f.) Wangerin | Hydrophobia | Root | 50 gm root crushed are administered on the wound made by dog bite |
| 9. | *Albizia lebbeck* (L.) Benth. | Arthritis | Seed | Seed-paste is used on the affected site. |
| 10. | *Alstonia scholaris* (L.) R.Br. | Diarrhea, dysentery, ulcers, sores, rheumatic inflammation | Bark, latex | Dried bark is taken for diarrhea, dysentery and latex is used in ulcers, sores and rheumatic inflammation. |
| 11. | *Alysicarpus monilifer* (L.) DC. | Inflammation, pain, jaundice | Leaf, root | Leaf extract is used as pain reliever, root extract is used for jaundice and pain. |
| 12. | *Amaranthus spinosus* L. | Diuretic, abscess, buboes | Root, whole plant | Root crushed are used as diuretic and juice of the whole plant is used in buboes and abscess |
| 13. | *Anacardium occidentale* L. | Influenza, diarrhoea, Blood pressure | Fruit, bark, seed | Fruit juice is used for influenza, bark decoction is used for controlling diarrhoea, seed is eaten for controlling blood pressure |
| 14. | *Andrographis paniculata* Nees. | Dyspepsia, liver trouble | Whole plants | one dried small pill made from leaves paste taken in empty stomach |
| 15. | *Annona reticulata* Vell. | Anthelmintic Anti-dysenteric, Astringent | Fruit, bark | Unripe fruit are eaten, bark-juice is eaten |
| 16. | *Argreia nervosa* (Burm.f.)Bojer | Nervous disorder, eczema | Root, leaf | Root is boiled in water and taken a cup of decoction, leaf-paste is applied on eczema. |
| 17. | *Aristolochia indica* L. | Snake bite, food poisoning in cows | Bark, root juice | one cup juice daily till cure |
| 18. | *Asparagus racemosus* Willd. | Anti-diarrhoea, diuretic, anti-dysenteric, nutritive | Root | Juice of fasciculate roots or boiled roots are eaten. |
| 19. | *Azadirachta indica* A.Juss. | Antiseptic, blood purifier, small pox, | Leaf, seed, bark, flower | Leaf-juice 1 tea spoon is eaten or plants are eaten by cooking for blood purifier oil from seed is used as antiseptic. Leaf-paste is used in small pox |
| 20. | *Barleria cristata* Lam. | Cough, swellings | Leaves, roots | Leaf juice 2 tea spoon are taken, Root paste is applied on the swelling site. |
| 21. | *Barleria prionitis* L. | Fever, respiratory disease, tooth ache | Leaves and bark | Leaf juice are taken for fever and respiratory disease, bark is used to for curing tooth ache |
| 22. | *Bixa orellana* L. | Purgative, astringent, jaundice | Fruit, seed | fruit is eaten as purgative and astringent, leave juice is taken to cure jaundice |
| 23. | *Boerhavia diffusa* Engehm. & A.Gray | Laxative, diuretic, expectorant, anaemia, jaundice, skin diseases | Whole plant | Decoction of plant 1-2 tea spoonful is eaten. |
| 24. | *Bridelia retusa* Spreng. | Astringent, causing infertility | Root, bark | Root pest are taken every alternate day. |
| 25. | Bryophyllum calycinum Salisb. | Kidney & urinary bladder stone, cuts | Plant Juice. Leaf | Plant-juice is eaten till the stone is cleared; leaf-juice is externally use in cuts. |
| 26. | Buchanania lanzan Spreng. | Wound | Root | Root extract is used for wound healing, |
| 27. | Butea monosperma (Lam.) Taub. | Anti-fertility, piles, diarrhoea, dysentery, diuretic | Seed, flower, gum, bark | Seeds and flowers are used as ant fertility, gum is used to control diarrhoea, bark is used in piles and tumours. |
| 28. | Butea superba Roxb.ex.Wild. | Weakness | Root | Root extract is used for mental and physical weakness |
| 29. | Cardiospermum halicacabum L. | Rheumatism, diuretic, nerve diseases | Root | Root-juice is eaten. |
| 30. | Carissa spinarum Lodd.ex.A.DC. | Purgative | Root | Root-paste are eaten. |
| 31. | Cassia fistula L. | Arthritis | Fruit | One table spoon powder of fruit is taken orally for 7 days. |
| 32. | Centella asiatica Urb. | Diuretic, blood purifier, leprosy | Leaf, stem | Leaves and stem juice is taken in the empty stomach 5 days at asteach. |
| 33. | Cissus quadrangularis L. | Setting fractured bone, anthelmintic, blood purifier, scurvy | Stem, root | Stem and root paste is used in setting fractured bones, stem juice is used as anthelmintic, blood purifier and in scurvy. |
| 34. | Cleome viscosa L. | chronic rheumatism, ear ache | Seed paste, leaf juice | seed paste are applied on the joint pain, leaf juice is taken for earache |
| 35. | Corchorus aescuans Herb.Madr.ex.Wall. | Anaemia, pre delivery trouble of Pregnant women. | Leaf, root. | Leaves’ decoction used for treating anaemia; root extract mixed with that of Sida rhombifolia root is taken once daily by pregnant women to relieve from pre delivery trouble. |
| 36. | Corchorus fascicularis Lam. | Ulcer in mouth, impotence | Whole plant | Whole plant is dried and made powder and taken orally |
| 37. | Costus speciosus (J.Koenig .) Sm. | Purgative, anthelmintic. | Rhizome, root | Rhizomes are cooked and eaten as purgative, roots are used as anthelmintic. |
| 38. | Crotalaria prostrata Rottler. | Rheumatism, | Seeds | Seeds are eaten within a banana |
| 39. | Crotalaria verrucosa L. | Skin allergies, Rheumatism | Leaf | Leaf extract is applied to the affected areas |
| 40. | Curculigo orchioides Gaertn. | vitality, vigour and Strength of anticancer | Root | Root decoction is taken for one month. |
| 41. | Curcuma aromatica Salisb. | Sprains | Rhizomes | Rhizomes paste is used in sprain |
| 42. | Cuscuta reflexa Roxb. | Loose motion in cows | Stem juice | Fed to the cows thrice daily till cure |
| 43. | Dendrophthoe falcata Blume | Wounds, skin diseases, antitumor potential | Aerial part, leaf | Paste is applied in the affected site |
| 44. | Desmodium gangeticum (L.) DC. | Anti-tumour | Fruit | Fruit paste applied on tumour |
| 45. | Desmodium triflorum (L.) DC. | Epilepsy | Root | Root extract is given orally |
| 46. | Dillenia pentagyna Roxb. | antitumor | bark | Bark juice is taken with honey. |
| 47. | Dioscorea alata L. | Ulcers, piles, dysentery, syphilis | Tubers, leaves | Tubers are taken raw and the leaves pests are used to prevent the disease. |
| 48. | Dioscorea bulbifera L. | Ulcer, piles, dysentery | Tuber | Dried tubers are powdered and applied on ulcer, also taken to cure dysentery and piles. |
| 49. | Drosera burmanni DC. | Rubefacient action | whole plant | Paste is applied in the affected site |
| 50. | Eclipta prostrata (L.) | Hair tonic, tooth-ache, jaundice, purgative, spleen enlargement | Leaf, plant | Leaf-juice is used as black hair- dye , plant-juice is used in spleen disease, purgative . |
| 51. | Eupatorium odoratum L. | Wounds, cuts | Leaf | Leaf-paste is used in the affected area. |
| 52. | Ficus benghalensis L. | Diarrhoea, dysentery, diabetes, rheumatism | Bark, latex | Infusion of bark is used for Diarrhoea, dysentery, diabetes. latex is used for rheumatism |
| No. | Species                                      | Parts Used                                                        | Uses                                                                 |
|-----|--------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------|
| 53. | *Flacourtia jangomas* (Lour.) Raesch.       | Fruit, bark, root                                                 | Fruit is eaten as Diuretic, digestive, appetizer; bark is used for spleen enlargement, urine problem. |
| 54. | *Flacourtia indica* (Burn.f.)Merr.          | Stem & bark paste                                                 | Paste is applied in the wound                                        |
| 55. | *Gloriosa superba* L.                      | Root, leaf                                                       | Tubar paste is used in leprosy, gonorrhoea purgative, leaf-juice in piles and use to kill lice in hair. |
| 56. | *Grewia hirsute* Roxb.                     | Leaf                                                             | Decoction of leaf and root is used in urticaria, root decoction is used in fever and cough. |
| 57. | *Gymnema sylvestre* (Retz.) R.Br.ex Sm     | Leaf, root                                                       | 5ml leaf-juice daily for one month                                   |
| 58. | *Hemidesmus indicus* (L.) R.Br.             | Leaf                                                             | Roots are put into water overnight and the decoction taken 1 cup daily for a month or root paste 1 tea spoon can be taken for a week/rubbed on skin. |
| 59. | *Hemigraphis hirta* T.Anderson             | Whole Plant                                                      | Whole Plant with banana root is made a paste and eaten thrice a day for a month. |
| 60. | *Holarrhena antidysenterica* (L.) Wall      | Bark                                                             | Bark-juice is eaten.                                                 |
| 61. | *Hybanthus enneaspermus* (L.) F.Muell.      | Leaf, root                                                       | Decoction of leaf and root is used for the puposes.                  |
| 62. | *Hygrophila auriculata* (Schumch.) Heine   | Whole plant                                                      | Root-juice is eaten or plants are eaten by cooking.                   |
| 63. | *Hyptis suaveolens* (L.) Ooit.              | Leaf                                                             | Decoction of leaves is used.                                         |
| 64. | *Ichnocarpus frutescens* Naves.            | Root                                                             | Roots are made paste and externally apply, shoot extract is used in gum. |
| 65. | *Jatropha curcas* L.                        | Latex                                                            | Latex smeared on the wound, cut, tooth-ache                          |
| 66. | *Jatropha gossypifolia* L.                  | Root, shoot                                                      | Roots are made paste and externally apply, shoot extract is used in gum. |
| 67. | *Lannea coromandelica* (Houtt.)Merr.       | Bark                                                             | Bark is used for skin disease, Tender leaf and root is used for sprain and ulcer. |
| 68. | *Leonotis nepetifolia* Schimp.ex Benth.    | Seed                                                             | Seed is made paste and applied on the burn site.                     |
| 69. | *Lannea coromandelica* (Houtt.)Merr.       | Bark, Tender leaf and root                                        | Seed is made paste and applied on the burn site.                     |
| 70. | *Martynia annua* (L.)                      | Leaf, fruit                                                      | Decoction of leaf and root is used for the puposes.                  |
| 71. | *Mimosa pudica* Mill.                      | Leaf, inflorescence                                              | Leaf-juice is eaten or plants are eaten by cooking.                   |
| 72. | *Ochra pumila* Buch-Ham.ex D.Don            | Root                                                             | Flower is dried to make powder and use in epilepsy, leaf and bark paste is used in menstrual problem and asthma. |
| 73. | *Ocimum americanum* Auct.ex Benth.         | Leaf                                                             | Decoction of leaves is used.                                         |
| 74. | *Oxalis corniculata* L.                    | Leaf                                                             | Leaves 8-10 with 2 inflorescence is boiled with ginger and decoction is mixed with 1tea-spoon of honey and eaten in empty stomach. |
| 75. | *Peristrophe bicalyculata* Nees.           | Whole plant                                                      | Fresh Plant crushed are eaten with rice infusion.                    |
| 76. | *Phyllanthus emblica* L.                   | Fruit                                                            | Raw fruits are eaten or dried fruits also eaten.                      |


| Plant Name                  | Common Name                                      | Part Used                      | Treatment                                                                 |
|----------------------------|--------------------------------------------------|--------------------------------|--------------------------------------------------------------------------|
| **106. Uraria picta**      | Hysteria                                         | Leaf                           | Leaf paste is applied on whole body                                       |
| **88. Senna occidentalis** | Snake bite, diabetes mellitus                     | Root/leaf crushed              | one cup of paste during vomiting                                           |
| **98. Solanum surattense** | Spleen enlargement, guinea worm                   | Leaf, whole plant              | Boil leaf in water and eaten ½ cup daily                                  |
| **72. Smilax macrophylla**  | Blood dysentery, night wetting                    | Root juice, leaf juice         | 1/2 cup juice is taken daily till complete cure, water kept in the leaf   |
| **96. Solanum sisymbriifolium** | Gastric trouble                               | Fruit                          | Fruit juice is eaten                                                      |
| **78. Polygonum hydropiper** | Stimulant, diuretic, haemostatic                | Root, whole plant              | Root paste/dried root powder is eaten diuretic; infusion of plant is used |
Table 3: Eleven dominant families of flowering plants of Ganpur forest:

| Sl.No. | Family         | Genera | Species |
|--------|----------------|--------|---------|
| 1      | Poaceae        | 15     | 16      |
| 2      | Fabaceae       | 11     | 15      |
| 3      | Acanthaceae    | 9      | 14      |
| 4      | Euphorbiaceae  | 8      | 12      |
| 5      | Asteraceae     | 11     | 11      |
| 6      | Rubiaceae      | 11     | 11      |
| 7      | Scrophulariaceae| 6      | 9       |
| 8      | Caesalpiniaeae | 3      | 7       |
| 9      | Lamiaceae      | 5      | 6       |
| 10     | Apocynaceae    | 5      | 5       |
| 11     | Verbenaceae    | 5      | 5       |
|        | **TOTAL**      | **89** | **111** |

Figure 1: Ten dominant families of flowering plants
Photographs of plants and forest

*Smilax macrophylla* (Smilacaceae)

*Coix lacryma-jobi* (Poaceae)

*Buchanania lanzan* (Anacardiaceae)

At Gonpur Forest
Table 4 Life form composition of Ganpur forest

| Sl.No. | Lifeform | Total Number of Taxa | % |
|--------|----------|----------------------|---|
| 1      | Herbs    | 116                  | 50.66 |
| 2      | Shrubs   | 43                   | 18.34 |
| 3      | Trees    | 54                   | 24.02 |
| 4      | Climbers | 16                   | 6.99 |
| Total  |          | 229                  |     |

Figure 2 Life form composition of Ganpur Forest

Table 5 Statistics of the floristic composition of Ganpur forest

| Group             | Families No. | Families % | Genera No. | Genera % | Species No. | Species % |
|-------------------|--------------|------------|------------|----------|-------------|----------|
| Dicotyledons      | 70           | 86         | 154        | 84       | 193         | 84       |
| Monocotyledons    | 11           | 14         | 30         | 16       | 36          | 16       |

Among these the following plant species are gradually became rare due to rapid deforestation caused by over harvesting and exploitative trade of medicinal plants in the forest, like *Gloriosa superba* L. (Liliaceae), *Gymnema sylvestre* R.Br. (Asclepiadaceae), *Curculigo orchidoides* Gaertn. (Hypoxideae), *Aegle marmelos* (L.) Corr. (Rutaceae), *Buchanania lanzan* Spreng. (Anacardiaceae), *Dioscorea bulbifera* L. (Dioscoreaceae), *Phyllanthus emblica* L. (Euphorbiaceae), *Plumbago zeylanica* L.(Plumbaginaceae), etc.

The present investigation has recommended to conclude that among the 229 plant species most dominating species belong to Poaceae family and dominating trees in the Ganpur forest are *Shorea robusta* Gaertn.f. (Dipterocarpaceae), *Madhuca indica* J.F.Gmel. (Sapotaceae), *Terminalia bellerica* Roxb. (Combretaceae), and *Acacia auriculiformis* (Mimosaceae). Among the collected species 112 species are recognized as medicinally important to the villagers and those species gradually became threatened.

The study also concludes that the persistency of the ethnomedicine practices in the surrounding villages of the forest is still dependent on indigenous knowledge for their health care that are providing a
cheaper and accessible alternative to the high cost pharmaceutical remedies. Ethno-medicinal knowledge of the tribal people of the surrounding areas of the forest are very rich but it has also been noticed that only the aged people are able to describe the mode of use of the traditional plant medicine. Therefore, it can be concluded that the young generations are not interested to cultivate the indigenous knowledge of preparing medicine from different plants. So, it is a great threat for nature to maintain the balance of biodiversity and as well as for conservation of the different plant species. The tribes who depend on forest wealth are the real custodians that safeguard the medicinal plants till now. Rapid deforestation caused by over harvesting and exploitative trade of medicinal plants has significantly reduced the availability of the medicinal plants in the forest. Local healers and healers from neighbouring state Jharkhand is identified as one of the major threats to vegetation and flora of the forest.

The main purposes of the study was to document and to prepare a database for the use of the plant species in the forest as well as the diversity of the forest. Now it is very much necessary that the Government should take an important role to nurture the traditional knowledge of preparation ethno-medicine from plants for different diseases, and then only it will be possible to save lots of plant species for future benefit of the nation.

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