4.8 Local Utility of Medicinal Plants

Shoolpaneshwar Wildlife Sanctuary is a good repository of rich biodiversity. During monsoon most of the interior areas of the sanctuary are detached from the main roads for 2-3 months, the inhabitants of the sanctuary depend upon the local resources for all types of their day to day needs, including health. As monsoon season is also coincided with a variety of ailments, elderly people possessing traditional knowledge used to attend the sick and treat them with suitable medicinal plant preparations. These people are often known as Bhuvas (traditional medicinal practitioners) and mostly they make medicines from the plants freshly collected from surroundings or in few cases, they collect the plants in the season and store with them in suitable form. They take adequate care to avoid destructive harvesting of medicinal plants. For easily locating the areas in the forest where rare plants grow, often they keep a pile of stones nearby their occurrence or make a cut or identifying mark on the bark of near by trees. The marking is done when plant is in vegetative growth after monsoon. The material is collected whenever they require, from the marked place without uprooting whole plant from their natural habitat. This is a common and useful practice in locating and collecting the perennial tuberous herbs whose aerial parts are disappear in dry season.

Ethnobotanical drug may be prepared either by crushing or rubbing the useful part of the plant on a stone to make a paste or poultice; my making into ash, boiling to make a decoction etc., and may be administered either orally or topically as per the type and nature of ailment. In some cases, the plant parts or preparation is warmed or roasted and mixed with salt or jaggery. In certain ailments 2-3 drops of the drug is also applied through nostrils. In case of oral administration dose may vary as per the age of the patient. The dosage of liquid/powdered medicine is prescribed in terms of a spoon, cup or glass. Sometimes, drugs are also made in the form of tablets. The mode of drug preparation, application and dose for each ailment is mentioned in the following pages under the head ‘Enumeration of ethnomedicinal plants’. The pictorial descriptions of drug preprations and their application by traditional medicinal practioner are also shown in plates (Plate 37 and 38).

Traditional healers treat different types of ailments such as gastrointestinal disorder, skin diseases, eye/ear ailments, cuts, wounds and pains, gynecological
disorders, respiratory problems, snake/scorpion/insect bites and stings etc. Few of such practitioners also perform or prescribe certain rituals as a part of treatment. The name of traditional healers, from which the ethnobotanical information has been gathered for the study, is given in Appendix V and a reference number is assigned to each one. In the enumeration of ethnomedicinal uses of each plant, these numbers are cited to give the due credit to the corresponding informant/healer.

In the present study ethnomedicinal information for a total 181 plants, which are employed in curing about 85 different kinds of ailments, has been documented. As indicated in figure 8, majority of encountered plants in the investigation are being used in curing gastrointestinal disorders (24.8%) followed by skin ailments (11.7%), pain curing (9.2%), respiratory problem (8.0%), and gynecological disorders (7.1%). Similar order was also reported by Singh and Singh (2009) from Chandauli district of Uttar Pradesh and Rout et al. (2009) from Mayurbhanj District of North Orissa.

Fig. 8: Number of species employed in curing of different ailments

The most commonly used plants against different ailments are: Butea monosperma (10), Tecomella undulata (9), Tectona grandis (9), Cissampelos pareira (8), Helicteres isora (8), Hemidesmus indicus (8), Pterocarpus marsupium (8), Azadirachta indica (7), Dendrophthoe falcata (7), Lannea coromandelica (7), Terminalia arjuna (7), Asparagus racemosus (6), Euphorbia tirucalli (6), Heterophragma quadriloculare (6), Calotropis gigantia (5), Careya arborea (5)
Plate: 38
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RESULTS AND DISCUSSION

*Cocculus hirsutus* (5) and *Oroxylum indicum* (5). Plate 39 and 40 show the pictures of some of these commonly utilized species.

Adapting a previous study in the similar line carried out by Mistry (2005) the 84 ailments, for which ethnobotanical data was collected through the present study, are grouped into 20 categories for the convenience of data analysis (Table 6).

Altogether 435 medicinal uses of 181 plants are reported in the study. When compared these uses with those recorded earlier in the published literature pertaining to Indian ethnobotany, 106 uses of 73 plants are found to be new. Whereas 198 uses of 108 plants are identically claimed either by one or more other studies, and 131 uses of 88 plants fall in broad categories of related ailments.

### Table 6. Broad categories of different ailments

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Complaint/Usage</th>
<th>Equivalent words of tribal language</th>
<th>No. of Species</th>
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<tbody>
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<td>ANTIFERTILITY</td>
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<td>Baccha na thava maate</td>
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<tr>
<td>2</td>
<td>BLOOD</td>
<td>Blood purifier</td>
<td>Lohi saaf Karva maate</td>
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<tr>
<td></td>
<td></td>
<td>Blood Clotting</td>
<td>Lohi Jami Jaaye</td>
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</tr>
<tr>
<td>3</td>
<td>DENTAL</td>
<td>Gum pain</td>
<td>Daadh no dukhaavo</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tooth ache</td>
<td>Daat dukhe tyare</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>ENT</td>
<td>Ear Complaints</td>
<td>Kaan no dukhaavo</td>
<td>13</td>
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<tr>
<td></td>
<td></td>
<td>Stomatistis</td>
<td>Muhna na chaanda</td>
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<tr>
<td></td>
<td></td>
<td>Throat infection</td>
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<tr>
<td>5</td>
<td>EYE AILMENTS</td>
<td>Conjunctivitis</td>
<td>Aakh ave tyare</td>
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<tr>
<td></td>
<td></td>
<td>Eye disease</td>
<td>Ankh no dukhaavo</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>FEVER</td>
<td>Fever</td>
<td>Taav</td>
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<td>Malaria</td>
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<td>Viral fever</td>
<td>Sheet javar</td>
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<td>GASTROINTESTINAL DISORDER</td>
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<td>Antiemetic</td>
<td>Ulti rokva maate</td>
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<td>Colic Pain</td>
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<td>Diarrhoea</td>
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<td>Retention of urine and fasces</td>
<td>Jahdo ane Peshab atki jaye ane pet fuli jaye</td>
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<td>Stomach ache</td>
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<td>Chaanda, Gumda, Fodla</td>
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<td>Insect bite</td>
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<td>Snake sting</td>
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<td>19</td>
<td>WOUND</td>
<td>Wound</td>
<td>Vaagi jaye</td>
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RESULTS AND DISCUSSION

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<th>20</th>
<th>LIVER COMPLAINTS</th>
<th>Jaundice</th>
<th>Pido/kamdo thaye jaye</th>
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<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
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<td>435</td>
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From the taxonomic point of view, most commonly encountered plants are belonging to Fabaceae (17 species, 9.4%) followed by Euphorbiaceae (10 species, 5.5%), Caesalpinia (9 species, 5.0%), Mimosaceae (7 species, 3.9%) and Rubiaceae (6 species, 3.3%). Families like Acanthaceae, Asclepiadaceae, Asteraceae, Bignoniaceae, and Liliaceae are represented by 5 species each, whereas Amaranthaceae, Capparaceae, Combretaceae and Convolvulaceae with 4 species each. Dominant uses of species belonging to Fabaceae was also reflected in the studies of Ganesan et al. (2007) from Alagarkoil Hills (Reserved forest) of Tamil Nadu; Pattanaik et al. (2007) from Malkangiri district of Orissa; Lulekal et al. (2008) from Mana Angetu District of Southeastern Ethiopia; Ragupathy et al. (2008) from Vellangiri holy hills; Addo-Fordjour et al. (2008) from Brong Ahafo region, Ghana; Poonam and Singh (2009) from Terai Arc Landscape of India; However, Sharma et al. (2001); Begossi et al. (2002) reported that the highest number of utilized medicinal plants belong to Asteraceae family followed by Mimosaceae and Verbenaceae in their study conducted in Mizoram, India and Atlantic Forest of Brazil respectively. Whereas in the predominant use of Asteraceae species followed by that of Fabaceae was reported from Tirunelveli hills of Tamil Nadu (Ayyanar and Ignacimuthu 2005).

As shown in figure 9 it is observed in the present survey that tree species (41%) are employed more followed by herbs (31%), climbers (17%) and shrubs (11%) in curing majority of ailments.
Maximum utility of trees was also reported by Caniago and Sibert (1998); Jain et al. (2005); Rijal (2008); Addo-Fordjour et al. (2008); Poonam and Singh (2009); Rout et al. (2009). “The more common a plant in the area, higher the probability of its use” justifies the usage of trees (Akerreta et al., 2007). Availability of the material round the year, in case of trees, might be the reason for this. However, in many studies, herbs were reported to be used in higher degree as compared to the trees. The findings of Ragupathy et al. (2008); Uniyal et al. (2006b); Muthu et al. (2006); Parveen et al. (2007) are few to quote for this. However, in Singh and Singh’s (2009) study shrubs, followed by herbs, were reported to be the most commonly employed in curing majority of ailments.

In traditional medicinal practices, different plants and plant parts are used to treat various diseases, although the modes of preparation and application differ from one healer to another (Okello and Ssegawa 2007). As a whole, root and bark are the most commonly harvested parts used in herbal medicine (Kamatenesi-Mugisha et al. 2008). Regarding the nature of plant parts used for curing ailments, roots (30.4%) are found to be mostly used in the present study as depicted in figure 10. They are followed by bark (19%), leaves (16.5%), seed (4.8%) and the whole plant (4.8%). Plate 41 shows the picture of plant parts used in different ailments.
Plate: 40
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Similar findings are also reflected in the studies conducted by Rijal (2008) in Chepang communities from the Mid-Hills of Nepal Singh and Singh (2009) and Rout et al. (2009) from Mayurbhanj District of North Orissa also report that roots and leaves are the most commonly used plant parts in herbal preparations. However, the study conducted by Sajem and Gosai (2006) on the utility of medicinal plants among the Jaintia tribes highlights that the use of above-ground plant parts was higher than those of underground. The studies conducted on medicinal plants used among the rural community of Thar Desert and Teri landscape by Parveen et al. (2007) and Poonam and Singh (2009) respectively found that leaves are more employed than any other organs, in curing ailments, followed by root, seed and whole plant.
4.9 Enumeration of Ethnomedicinal Plants

Ethnobotanical species for which first hand information on uses collected during the present investigation are enlisted in alphabetical order in the following pages along with a brief note on the mode of preparation, method and dose of administration. As mentioned earlier, a reference number corresponding to the source of information (name of traditional healer) is also indicated. Wherever available, earlier reports on the similar uses are also cited in order to validate the prevalence of such utility in other areas.

*Abelmoschus esculentus* Moench. (Malvaceae)  
‘Bhindi’

Roots are crushed with water and the extract is consumed orally 1-2 times a day for curing jaundice.

Pullaiah (2006) reported the use of fresh seedless tender fruit for catarrhal Jaundice.

*Abrus precatorius* L. (Fabaceae)  
‘Chanothi’

Seeds are crushed into paste and applied on eye to treat eye diseases. By chewing the root, juice is swallowed to treat jaundice.

Use of root in jaundice was also reported from West Africa (Ayenus 1978). From Maharashtra region Janardhanan (1963) and Sharma and Malhotra (1984) report the use of leaves and fruits respectively in eye complaints. Bennet (1985) from Sikkim region report the use of seeds in eye complaints.

*Acacia chundra* Willd (Mimosaceae)  
‘Khair’

Heart wood is grounded with water and about half a cup solution twice a day is consumed orally to get relief from cough. Leaves are crushed to paste and applied on skin irritations.

Duke’s (1994) reports use of this plant in skin ailments.

*Acacia ferruginea* DC. (Mimosaceae)  
‘Baber kher’

1-2 drops of bark extract is poured into the ear to cure pain.

*Acacia nilotica* (L.) Del. (Mimosaceae)  
‘Baival’

Bark paste is applied on stomach to cure stomach ache.
Ethnobotanical uses of this plant for diarrhea and dysentery are well known. Bhalla et al. (1982) report the use of bark in diarrhea and dysentry from Sagar district in Madhya Pradesh; Malhotra and Moorthy (1973) from Maharashtra; Singh and Pandey (1980) from Rajasthan. They also report the use of flower, fruits and gum in dysentery. Singh (1945) reports the use of flower in diarrhea from Delhi.

*Acanthospermum hispidum* DC. (*Asteraceae*) ‘Khatalu’

Root is applied to vagina for abortion\(^{39}\). The abortifacient properties of this species was also known in Africa (Pullaiah 2006).

*Achyranthes aspera* L. var. *aspera* (*Amaranthaceae*) ‘Aghedo’

Root is inserted in the hair during labour pain for easy child birth\(^{42}\).

This is a well known practice in many parts of India. From many parts of Eastern India, it is known through Chaudhuri Rai *et al.* (1975), Majumdar *et al.* (1978), Gupta (1981), Tarafder (1984); and Goel *et al.* (1984). Jain and Tarfader (1970) report the use of whole plant for similar similar purpose in Bihar region.

*Adhatoda vasica* Nees. (*Acanthaceae*) ‘Ardusi’

Leaves are crushed into paste and applied externally to relieve pains\(^{18}\).

Anti-spasmodic properties of flower, fruit and root of this species were reported by Bhalla *et al.* (1982) from Madhya Pradesh. Janardhanan (1963) from Maharashtra state report the use of leaf on swellings. Rajwar (1983) also report similar utility on pains but not specifying any part.

*Adina cordifolia* (Roxb.) Bth. and Hk. (*Rubiaceae*) ‘Haldarvo, Het kalam’

2-3 drops of sap, which oozes out by mechanical injury to bark, is poured into the ear for ear complaints\(^{42}\) and into the eyes to treat eye diseases\(^8\). Leaves (Plate 40 D) are crushed to get 1-2s drops of extract which is poured into the nostrils for scorpion sting\(^{28,35}\).

**Aegle marmelos** (L.) Corr. (*Rutaceae*)  ‘*Bili*’

Bark is crushed to make paste and applied on boils. Leaves are boiled in water and its vapor is inhaled to treat headache. Joshi *et al.* (1980) report the use of leaves on abscess from Dangs region of Gujarat. Parrotta (2001) report that the diluted leaf juice is used to treat catarrh and applied externally to promote healing of abscess. Use of the whole plant on abscess was reported by Kala (2006). Shaankarnanthan *et al.* (2007) reported that methanol extract of this plant is having analgesic property.

**Aerva lanata** (L.) Juss. (*Amaranthaceae*)  ‘*Kumbho*’

Root paste is applied on boils. Ramchandran and Nair (1981) report the use of root for similar purpose from Cannanore district of Kerala state.

**Ailanthus excelsa** L. (*Simaroubaceae*)  ‘*Arduso*’

Leaves are crushed to make a paste and warmed with a pinch of salt. It is applied on chest for 1-2 days for allergic bronchial asthma. Shah and Gopal (1986) report the use of bark for bronchitis among Vasava tribes in Gujarat state.

**Alangium salvifolium** (L) Wang. (*Alangiaceae*)  ‘*Ankol*’

Root is crushed and paste is applied on boils. Saxena and Dutta (1975) report the use of leaves on boils from Orissa.

**Albizia lebbeck** (L.) Bth. (*Mimosaceae*)  ‘*Kalo siris*’

Tender twigs are crushed into paste and applied on boils. Bark is crushed with water to make extract and internally administered as a remedy to snake bite. Use of leaves on boils was reported from Sagar district of Madhya Pradesh region (Bhalla *et al.* 1982). Ram *et al.* (2002) reported the use of fresh soft bark which is ground with water to make about 50 ml of infusion and is administered orally thrice a day for snake bite and scorpion stinger.
Albizia odoratissima (L. f.) Bth. (Mimosaceae) ‘Safed siris’

Leaf paste is applied on stomach and covered with the leaves of Butea monosperma to get relief from stomach ache\(^ {12, 34}\). Kshirsagar and Singh (2007) report the use of bark extract for stomachache.

Albizia procera (Roxb.) Bth. (Mimosaceae) ‘Kilai’

One cupful of bark extract is administered orally to alleviate nausea and vomiting\(^ {26}\). Bark paste is applied once a day for 7 days on boils\(^ {12, 34}\). It is also applied on stomach ache\(^ {48}\).


Allium sativum L. (Liliaceae) ‘Lahsun’

Bulb is crushed and paste is applied to forehead to treat headache\(^ {17}\). Zagari (1992) recorded for hypertension.

Alysicarpus monilifer (L.) DC. (Fabaceae) ‘Himdu’

1-2 cups root extract is administered orally to treat snake bite\(^ {16}\).


Ammannia baccifera L. (Lythraceae) ‘Moiyu’

Whole plant is crushed to make a paste and applied on forehead to treat headache\(^ {18}\).

Amorphophallus commutatus (Roxb.) Bl. (Araceae) ‘Jangali Suran’

Root is ground on a stone and the paste is applied on chest pain and on forehead to treat headache\(^ {26}\).

Ampelocissus latifolia (Roxb.) Planch. (Vitaceae) ‘Jangli Draksh, Dokad vel’

Tubers (Plate 41 H) are crushed and slightly heated with a pinch of salt and the paste is applied on chest for 1-2 days to treat allergic bronchial asthma\textsuperscript{25}. Tubers are roasted with a pinch of salt and taken orally for 2-3 days for tumor\textsuperscript{25}. Tuber is crushed to paste and applied on wounds\textsuperscript{16} (Plate 37 I-K).

Jain and Tarafder (1970) report its utility for pneumonia and on sores, being practiced among Santals tribes. This plant is one of the four Vitaceae species used in Kerala as a source of Ayurvedic drug ‘Amlavesash’ used to treat respiratory disorders (Parrotta 2001). He also report that the juice of the tender leaves is used in Kerala for cleansing indolent ulcers. Saxena and Dutta (1975) from Orissa and Shah \textit{et al.} (1983) from Dhanu forest division in Maharashtra report the use of fruit on wounds.

\textbf{Anacardium occidentale L.} (Anacardiaceae) ‘Kaju’

Gum is directly applied on forehead to treat headache\textsuperscript{29}. Behera \textit{et al.} (2009) also report the same use from Orissa.

\textbf{Annona squamosa L.} (Anonaceae) ‘Sitaphal’

Leaf paste is applied to treat allergic bronchial asthma\textsuperscript{11}. The expectorant properties of the root are documented by Kritikar and Basu (1993).

\textbf{Anogeissus latifolia} Wall. ex. Bedd. (Combretaceae) ‘Dhavdo’

About 2g gum is dissolved in water and half a cup solution is administered twice or thrice a day to get relief from calculus\textsuperscript{35}. Bark is chewed and its juice is swallowed to treat cold\textsuperscript{21}. Bark is chewed to treat cough\textsuperscript{36}.


\textbf{Argemone mexicana L.} (Papaveraceae) ‘Darudi’

A small part of root inserted into hair during labour pain for easy child birth\textsuperscript{40}. Latex is applied directly to eye to treat conjunctivitis\textsuperscript{18}. Leaf paste is applied on joint pains\textsuperscript{19} and stomach ache\textsuperscript{48}.

**Argyreia nervosa (Burm. F.) Boj. (Convolvulaceae) ‘Kumraho na velo, Gugna velo’**

Root tuber is crushed to a paste and applied on boils17. Latex is applied directly on sole cracks30. Leaf paste is warmed and externally applied in stomach ache16. Tubers are crushed and one glass of extract is orally administered to relieve tuberculosis19. Tubers are roasted and eaten for 7 days for curing tumors19. Pal (1980) report the application of leaves on boils in Bengal, Orissa and Bihar region. Parrotta (2001) report leaves are applied externally to treat skin diseases and consumed to cure boils. Use of this plant against stomach ache and sores among Santal tribes was reported by Jain and Tarafder (1970). Yoganarasimhan (1996b) report the use of root tubers in tuberculosis.

**Argyreia sericea Dalz. (Convolvulaceae) ‘Kum raho Na velo’**

Root paste is applied on chest to relieve pain17. Roots are roasted and eaten during labour pains for easy child birth1. About 20 g roots is roasted and given 2-3 times in a day for 3-5 days for curing jaundice11.

**Asparagus gonoclados Baker (Liliaceae) ‘Shatavari, Sasla ni bhurgi, Dhasmuli’**

A cup of root extract is administered twice a day to treat muscular spasm17. Ramachandran and Nair (1981b) report the use of leaves in muscular pains from Kerala.

**Asparagus racemosus Willd. (Liliaceae) ‘Shatavari’**

A cup of tuberous root infusion is administered once a day in amenorrhoea39. Tubers are crushed and soaked in water with ½ spoon sugar for whole night and one cup
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filtrate is consumed twice a day on empty stomach in skin diseases and boils\(^5\). Tubers are crushed to make a cup of extract and administered in dysmenorrhea\(^39\). A cup of tuber extract is taken orally in the morning to relieve stomach ache\(^39\). On account of the Galactagogue property, tubers are mixed with rice and eaten by lactating mothers\(^1\). Tubers are crushed with water and the extract is administered orally twice a day as refrigerant\(^5\).


\textit{Azadirachta indica} A. Juss. (Meliaceae) ‘\textit{Limdo}’

A cup of leaf extract is administered on empty stomach for blood purification\(^22\). Bark paste is applied on boils\(^22\). Bark paste is applied on forehead in headache\(^6\). A glass of leaf extract is taken thrice a day for two days as a remedy for loose motions\(^22\). A cup leaf extract is taken twice a day in malaria\(^43\). Half a cup of bark extract is administered and the paste is applied on scorpion sting\(^21\). Half a cup of bark extract is administered 1-2 times immediately after snake bite\(^12, 34\).


\textit{Azanza lampas} (Cav.) Alef. (Malvaceae) ‘\textit{Ranet bhindo, Rani Bhindo}’

Root is crushed and 2-3 drops of juice is poured into eyes to treat conjunctivitis\(^19\). Root extract is administered orally for curing loose motion\(^19\). Root paste is applied on
Wounds\textsuperscript{19}. A cup of root extract is administered to treat body pains, back pain etc.\textsuperscript{16} (Plate 37 A- E).

\textit{Baliospermum montanum} Muell.-Arg. (Euphorbiaceae) ‘Danti, Dantiyo’

Leaf paste is applied on forehead in headache\textsuperscript{12, 34}. Root extract is administered to treat Indigestion\textsuperscript{39}. Roots are crushed with water and the extract is consumed orally for creating loose motions\textsuperscript{9, 31}.


\textit{Bauhinia purpurea} L. (Caesalpiniaceae) ‘Asitro’

Tender twigs are tied on neck soon after snake bite\textsuperscript{11}. Jain and Tarafder (1970) also report similar use.

\textit{Biophytum reinwardtii} (Zucc.) Klotzsch. (Oxalidaceae) ‘Ukdo, Lajamadio’

2-3 whole plants (Plate 40 N) are crushed with water (ratio of plant and water should be 1:2) and extract is administered, only once, in fits\textsuperscript{16}. Khanna and Kumar (2009) report the use of whole plant in insanity.

\textit{Biophytum sensitivum} (L.) DC. (Oxalidaceae) ‘Sharmalo khad’

Whole plant (Plate 40 M) is crushed with water. This extract is mixed in a bucketful of warm water which is used for bath, twice a day for 3-4 days, to relieve fevers\textsuperscript{16, 46}.

Kharkongor and Joseph (1981) from Meghalaya report the use of leaves in fever. Panda and Pandya (2008) reported that the whole plant is boiled in a bucket of water and children suffering from fever are bathed in it.

\textit{Blepharis maderaspatensis} (L.) Roth. (Acanthaceae) ‘Aagdadiyo’

Root paste is applied on boils\textsuperscript{9}.

Though there are no ethnobotanical reports on this plant, Parrotta (2001) reported that in Ayurvedic medicine it is one of the several plants equated with the drug – Sahacarah used in skin diseases and ulcers.
Boerhavia diffusa L. (Nyctaginaceae) ‘Daar phadiyo, Thikhri, Pathar Fodiyo’

Whole plants (Plate 40 F) is crushed and plastered on abdomen for stomach ache. Root paste is applied on wounds and on boils for 6-7 days.


Bombax ceiba L. (Bombacaceae) ‘Shimlo, Simda’

Bark paste is applied on burns. Leaf paste is warmed and plastered in stomach ache.


Borassus flabellifer L. (Arecaceae) ‘Tad’ (Plate 40 C)

One cupful of root extract is administered 2-3 times a day for abortion. 2-3 drops of the sap is collected by making an incision to the plant at seedling stage, slightly warmed and poured into the ear in ear complaints. Roots are crushed with water and the extract is administered orally to control loose motions.

Jain and Tarafder (1970) also report its utility in ear pains. Maheshwari et al. (1986) report the use of wood pulp as abortifacient by Bhil tribes of Madhya Pradesh.

Boswellia serrata Roxb. (Burseraceae) ‘Guggal’

Gum is dissolved in water so as to make half a cup of infusion which is taken orally as antiemetic agent. Gum is taken orally in obesity.


Bridelia retusa (L.) Spr. (Euphorbiaceae) ‘Asan’ (Plate 39 G)

Thorns are crushed and 2-3 drops of extract is poured into the ear for ear pain. Root is crushed with water to make half a cup of extract which is given 2-3 times a day for 30 days for bone setting in fractures. Bark fusion applied on itching. Bark spine extract is given orally in Jaundice.

**Buchanania lanzan** Spr. (Anacardiaceae) ‘Charoli’

A cup of bark extract is taken as a remedy for cold. Jain and Tarafder (1970) also report the use of this species in cough and bronchitis.

**Butea monosperma** (Lam.) Taub. (Fabaceae) ‘Khakhar’

Leaf (Plate 39 C) paste is applied only once on chest for curing allergic bronchial asthma. Flowers (Plate 39 D) are boiled in water and used to bathe for curing boils. Bark (Plate 39 B) is crushed, soaked in water for an hour to make a cup of extract and is given twice a day for dysmenorrhea. 2-3 drops of bark extract is poured into the eyes for curing eye diseases. Flowers are boiled in water and used to bathe to relive fever. A cup of bark extract is taken thrice a day for 2 days to cure loose motions. Leaf paste is applied for stomach ache. Flowers are boiled in water and used to bathe to protect from sun stroke. Bark paste is applied on Wounds. Gum is dissolved in water and taken orally for curing tumors.


**Butea superba** Roxb. (Fabaceae)  ‘Desi sakariya’

Root tubers are eaten raw as refrigerant. Kritikar and Basu (1993) reported its utility in the heat eruption in children. Leaf juice is given with curd and demerara sugar.

**Caesalpinia crista** L. (Caesalpiniaeae)  ‘Kachka’

Roasted seeds are powdered and consumed with water as vermifuge and in diarrhea, stomach ache.


**Calotropis gigantia** (L.) R. Br. (Asclepiadaceae)  ‘Ankado’

7 leaves are crushed to make a paste and applied on breast for Galactagogues. Similaly 7 leaves should be gently laced up for a shortwhile to infant’s ankle to treat Stomach ache. Castor oil is applied over leaves, slightly heated and tied on the stomach for intestinal disorders. A cup of root extract is taken once a day in Jaundice. Latex is applied directly for removal of thorns.

**Canavalia gladiata DC. (Fabaceae)**  ‘Maniaban’  
Leaf paste is plastered on abdomen for stomach ache\(^{19}\).  
Kritikar and Basu (1993) report the use of seeds in indigestion.

**Capparis spinosa L. (Capparaceae)**  ‘Kali kanthari’
Root paste is applied for tooth ache\(^{19}\).

**Capparis zeylanica L. (Capparaceae)**  ‘Moti Kanthari’
Root paste is applied on boils\(^{19}\). 2-3 roots are crushed with water to make a cup of extract is given orally once to treat colic Pain\(^{42}\). Root paste is applied on breast, only once as galactagogue\(^{19}\). Leaf (Plate 40 B) extract is used to massage on joints for rheumatism\(^{19}\).

**Careya arborea Roxb. (Lecythidaceae)**  ‘Gul Mahudo, Khumbhi, Khumbiyo’
One cup of bark extract is given in amenorrhoea\(^{42}\). A cup of bark decoction is given once as antiemetic\(^{42}\). Bark (Plate 39 I; Plate 41 G) poultice is used to bathe in jaundice\(^{28, 35}\). Bark is crushed and 1/2 cup extract is consumed only once to treat stomach ache\(^{4}\) (Plate 38 A-D). Bark is crushed to a paste, slightly warmed with a pinch of salt and applied on swellings\(^{39}\).
Swain and Dash (2007) and Kshirsagar and Singh (2007) report the use of bark extract in menorrhagia. Pawar and Patil (2008) reported that one spoonful of stem extract mixed with water is consumed after every 2 hours for haemorrhage. Antiemetic properties have been reported by Bhandary et. al. (1995) among Siddis in Uttara Kannada district, Karnataka. Maheshwari et al. (1986) report the use of leaves for swollen face in Jhabua district of Madhya Pradesh.
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Casearia elliptica Willd. (Flacourtiaceae) ‘Manjo’
Latex is applied directly on scorpion bite\textsuperscript{28,35}.

Cassia fistula L. (Caesalpinaceae) ‘Garmalo’
Half a cup fruit extract is consumed 2-3 times in a day for 2-3 days for cold\textsuperscript{22}. Bark (Plate 41 A) is chewed and used as toothpaste to massage the teeth to treat cough\textsuperscript{20}. Seeds are eaten raw as tonic\textsuperscript{42}. Bark paste is applied on wounds\textsuperscript{10}. Leaf paste is mixed with flour and “chapattis” are prepared and eaten to treat indigestion\textsuperscript{36}.


Cassia occidentalis L. (Caesalpinaceae) ‘Vavdi’
Leaf paste is applied as bandage for stomach ache\textsuperscript{8}. Goel \textit{et al.} (1984) report the use of root in gastric complaints from Bihar.

Cassia tora L. (Caesalpinaceae) ‘Kuwadiyo’
Seeds are roasted, powdered, mixed with coconut oil and applied on boils\textsuperscript{25}. Leaves crushed to make 2-3 drops of extract and are poured into eyes for eye diseases\textsuperscript{19}. Root paste is applied on breast as galactagogues\textsuperscript{16}.


Cassine glauca (Rottb.) O. Ktze. (Celastraceae) ‘Bhutaco, Alan, Bhutiya alan’
2-3 drops of sap is obtained by making an incision to the seedling and poured in the nostrils for migraine\textsuperscript{41}. Leaf paste is applied as bandage on sprains and swellings\textsuperscript{28,35}.

Pandey \textit{et al.} (2005) and Pullaiah (2006) report the use of leaves and whole plant in headache. However, CSIR report (1992) states that only leaf powder is useful in
headache. Uniyal and Chauhan (1973) report the use of root bark in swellings from Kangara valley in Himachal Pradesh.

*Cayratia carnosa* (Lam.) Gagnep. (Vitaceae)  ‘Nahkyu’

Root paste is applied on infected nails. Pullaiah (2006) and CSIR (1992) reported its use for skin ailments and boils.

*Celosia argentea* L. (Amaranthaceae)  ‘Lamdo’

Whole plant is crushed and half a cup of extract is given 2-3 times in a day for stomach ache. Pullaiah (2006) reports that the seeds are efficacious in diarrhea.

*Chlorophytum borivilianum* Sant. and Fernad. (Liliaceae)  ‘Dholi Musli’

Tubers are eaten raw by children as a remedy for indigestion. Kakrani and Saluja (2002) report that leaf juice of *C. tuberosum* is digestive, appitiser, half teaspoon to be taken before meal.

*Chrozophora rottleri* (Geis.) Juss. (Euphorbiaceae)

Oil is extracted from crushed seeds by boiling them in water and cooling down. Few drops of this oil are put in the ear for relieving ear complaints. Root is crushed and 1 cup extract is taken twice a day to treat loose motions.

*Cissampelos pareira* L. (Menispermaceae)  ‘Madipanji, Panji, Pahangwale, Panjidyu, Tidi’

Root (Plate 41 K) is directly tied to hair during delivery for easy child birth. Roots are eaten raw to treat cold. Half a cup of root extract is taken orally once in colic pain, one cupful extract is taken 2-3 times in a day for loose motions and paste is applied on scorpion sting and on wounds. Leaves are crushed and massaged on muscle for muscular pains and sprain.

Dangs of Gujarat state for the same purpose. Jain (1965) and Chaudhuri Rai et al. (1980) report the use of root in loose motions. Das et al. (1983) report the use of leaves in inflammation from Jalpaiguri district of West Bengal. Shah et al. (1981) report the use of root on scorpion sting in Saurashtra region of Gujarat. Zamora-martinez, and Pola (1992) reported its utility for sprain in rural populations of Oaxaca, Puebla and Veracruz, Mexico. Use of this plant in wound is reported by many studies but plant part used is different in their study area. Shah et al. (1981) and Majumdar et al. (1978) report the use of leaves in wound in Gujarat and Assam/Meghalaya state respectively. Use of root for wound healing has been reported by Shah et al. (1983) from Maharashtra; Pal (1984) in Arunachal Pradesh; Bedi (1978) in Ratanmalah hills of Gujarat.

*Cissus quadrangularis* L. (Vitaceae)  ‘Hadsakad’

Stem pieces are made into paste and plastered on bone fractures. This use is well known from many parts of India through several studies. Shah and Joshi (1971), Gupta (1981), Singh and Maheswari 1983, Shah et al. (1983), Sen et al. (1984), Maheswari et al. (1986), Goel and Mudgal (1988), Joshi (1995), Rahman (2000), and Tripathi (2000) are few to cite.

*Cissus repanda* Vahl (Vitaceae)  ‘Khajal vel’ (Plate 40 A)

Root tuber is ground to make a paste and applied 1-2 times in a day on boils and pains. Roo tuber paste is externally applied for chest pain. Seeds are ground and applied on scorpion bite.

Sharma et al. (1979) report the use of leaves in curing sores from Dehradun and Siwalik district.

*Cleome gynandra* L. (Capparaceae)  ‘Tammaniyo’

2-3 drops of leaf extract is poured into the ear for ear complaints.

Bhalla et al. (1982) and Chaudhuri Rai and Pal (1976) report the use of leaf in ear complaints from Sagar district of Madhya Pradesh and Midnapur district of West Bengal respectively.
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*Cocculus hirsutus* (L.) Diels. (*Menispermaceae*) ‘Vasan velo, Vasanu’

A cup of root extract is administered orally in the evenings for 2-3 days for inducing abortion\(^{18}\) and also for stomach ache\(^{42}\). 2-3 drops of leaf extract are poured into the eye for eye diseases\(^{19}\). Stem bark is tied on the arm of infant for controlling loose motions\(^{11}\). Leaf juice is applied to eyes as refrigerant\(^{22}\).

Use of roots in urethral discharge was reported by Shah (2007). Pawar and Patil (2008) report that about 10gm seed powder with honey is to be consumed twice a day for 7 days after menstrual period to reduce fertility in woman. Audichya *et al.* (1983) and Bedi (1978) from Gujarat report the use of leaf in eye diseases whereas Shah *et al.* (1983) report the similar use of stem from Dahanu forest division in Maharashtra state. Punjani (2006) reported that one teaspoonful root extract in water is given orally once daily for 2-3 days to cure diarrhea and dysentry. Use of leaves as cooling agent was reported by Bedi (1978) from Ratan mahal hills in Gujarat; Chaudhuri Rai *et al.* (1975) and Saxena *et al.* (1981) from Orissa. Shah *et al.* (1983) report the use of stem for stomach disorders from Maharashtra state.

*Colacasia esculenta* (L.) Schott (*Araceae*) ‘Paydi patra’

Root extract is administered orally 1-2 times in a day in acidity\(^{28,35}\). Similar use was also reported by Rivera and Obon (1995) froms Madeira and Porto Santo Islands.

*Cordia macleodii* Hk. f. and Th. (*Ehretiaceae*) ‘Vadsag’

Leaf paste is applied on boils\(^{8}\). There are no ethnobotanical records found in the literature; hence this can be considered a new report.

*Costus speciosus* (Koening ex Retz.) Sm. (*Zingiberaceae*) ‘Kannaro, Kanur, Pavo’

The whole plant is crushed and 1 cup extract is consumed for dysmenorrhea\(^{11}\). Stem (Plate 40 E) is squeezed to get 2-3 drops of juice and poured into the ear for ear complaints\(^{28,35}\). Roots are crushed, to make a glass of extract and taken with empty stomach one time daily to cure jaundice\(^{16}\).

the juice of fresh rhizome from Bay Island. Rao (1981) and Gopi and Boissya (1984) report the use of root for jaundice in Meghalaya and Assam regions respectively.

*Crateva nurvala* Buch.-Ham. var. nurvala (Capparaceae) ‘Vayvarno’

One cup of seed extract is administered orally to treat arthritis. One cup of bark extract is given orally on empty stomach for curing body ache. Bark is ground to make a paste and applied on chest pain. Fruit and bark are ground on stone and paste is applied on prickles. Fruit is crushed and paste is applied on tooth ache.


*Crincum pratense* Herb. (Amaryllidaceae) ‘Jal Kando’

Tubers are ground to make paste and applied on stomach for 2 days for curing tumors. Ethnobotanical uses of this species are not known from the published literature; hence it becomes a new report.

*Cryptolepis buchanani* (L.) R. and S. (Periplocaceae) ‘Hariyo Na velo’

Latex is applied directly on boils, skin rashes and for tooth ache.

Jain and Tarafder (1970) report the use of this plant for sores. In Orissa region, the latex is used for cuts (Saxena *et al.* 1981). Apparanantham and Chelladupari (1986) documented the use of latex on fissures in Dharamapuri forest division of Tamil Nadu.

*Cucumis callosus* (Rottl.) Cogn. (Cucurbitaceae) ‘Shetu’

Fruit is mashed into pulp, slightly heated and applied on boils; it is also applied to swelling.

Yoganarasimhan (1996a) also report the use of fruit pulp for swelling from Karnataka; while Sebastian and Bhandari (1984) report the use of fruit for skin diseases in Mount Abu, Rajasthan.
**Curculigo orchioides Gaertn. (Hypoxidaceae)**  ‘Kali musli’

Dried root tubers are powdered and given twice a day for calculus\(^ {28,35} \). Tubers (Plate 40 L) are crushed with little amount of water to take extract. One cup of such extract is administered for dysmenorrhea\(^ 1 \). About 2g of tubers mixed with demerara sugar and taken once as refrigerant\(^ 1 \).

The refrigerant properties have also been reported from Orissa and Uttaranchal (Swain and Dash 2007; Shah 2006). Behera et al. (2006) reported that 2-3 teaspoonsful of fresh rhizome decoction is given with one teaspoonful of honey on empty stomach for 21-30 days to cure kidney stones.

**Curcuma amada Roxb. (Zingiberaceae)**  ‘Amba halder’

Rhizome is ground to paste and applied on leprosy\(^ 9 \), gangrene\(^ {16} \) and blood clotting\(^ {45} \).


**Curcuma inodora Blatter (Zingiberaceae)**  ‘Jangli halder’

Rhizome is crushed to get 2-3 drops of extract and poured into the eyes to cure conjunctivitis\(^ {16} \). There is no such report known from ethnobotanical literature; hence it becomes a new report.

**Curcuma longa L. (Zingiberaceae)**

Rhizome powder (tumeric powder) is heated slightly by adding a pinch of salt and taken with water to cure cold\(^ {43} \).

Taraßer (1986) reports the use of leaves for cold in Chhotangpur, Bihar.

**Cyperus rotundus L. (Cyperaceae)**  ‘Gundlo’

Rhizomes are crushed with water and the solution is taken orally for Jaundice\(^ 8 \).

Similar reports are also known from Assam and Meghalaya (Gopi and Boissya , 1984 and Rao 1981).
Dalbergia paniculata Roxb. (Fabaceae)  ‘Patrali Kar’

Leaves are crushed and applied on abdomen to cure stomach ache\textsuperscript{11}. Jain (1965) reports the use of bark for body pains from Bastar.

Dalbergia volubilis Roxb. (Fabaceae)  ‘Golvet vel’

Tender twigs are used as chew to get relief from cold\textsuperscript{19}. While brushing the teeth with twigs, the juice is swallowed to cure jaundice\textsuperscript{19}. Twigs are tied as necklace for relieving neck pain and also goiter\textsuperscript{27}. Half a cup root poultice is consumed twice a day for 2-3 days for curing throat infection.

Kritikar and Basu (1993) report the use of leaves for gargling to cure sore throat.

Datura innoxia Mill. (Solanaceae)  ‘Dhaturo’

Leaf paste is applied for relieving pains on affected parts\textsuperscript{18}.

Duke (2000) reports the analgesic properties of this plant. Sharma et al. (2008) reported that leaves are cooked with rice flour and taken orally to cure rheumatic pains and swelling.

Delonix elata (L.) Gamble (Caesalpiniaceae)  ‘Sandesro’

Bark is crushed to make a smooth paste, slightly heated and applied on fractures\textsuperscript{43}.


Dendrocalamus strictus Nees (Poaceae)  ‘Vans’

Tender parts of culms are crushed to get half a cup of extract and given for cough\textsuperscript{42}. Similar use was also recorded from Pune and Thane districts in Maharashtra (Kamble et al. 2009b) and from Rajasthan (Sebastian and Bhandari 1984). 2-3 drops of sap oozed out on making an incession to the tender culm is used as eye and ear drops as a remedy for eye and ear complaints\textsuperscript{42}. It is also used in nostrils for migraine\textsuperscript{39}.

Use of stem in ear ache was also recorded among the Gonds of Uttar Pradesh (Parrotta 2001). Pandey et. al. (2005) report the use for eye complaints. Kamble et al. (2009a) report the use of leaf infusion with turmeric powder to treat cough among Thakar tribes of Maharashtra.
RESULTS AND DISCUSSION

*Dendrophthoe falcata* (L.f.) Etting. (*Loranthaceae*)  
‘Vanda’

Infusion of this parasite growing on *Grewia* sp. is made by soaking the crushed branches in water for half an hour. One cup of such infusion is taken once as antiemetic. Whereas the twigs of such a parasite are crushed to get one cup of extract and taken for arresting the blood in Urine and paste is applied for 6-7 days on boils. One cup of leaf extract is given in jaundice. Twigs are made in to an infusion by soaking the crushed paste in a cup of water for about an hour and given twice a day for leucorrhoea. The branches and fruit of this parasite growing on *Grewia* sp. are crushed with water and its extract is consumed orally 2 times in a day as refrigerant. The branches of this parasite growing on *Wrightia* sp. is ground to make a paste and applied on wounds.

Parrott (2001) reported that aqueous extract of plant is consumed as antiemetic. Kulkarni and Kumbhojkar (2002) reported that juice of the parasite (*Dendrophthoe falcata* (L.f.) Etting.) on *Mangifera indica* L. or *Tectona grandis* L. is used in urine troubles. Goel *et al.* (1984) report the use of root for skin diseases in Bihar. Rothe (2003) reported that juice of leaves and roots is used for treating leucorrhoea. Pullaiam (2006) reported its bark utility for mensuration troubles. Chaudhuri Rai *et al.* (1975) and Goel and Mudgal (1988) report the use of stem and leaves on wounds used by tribals of Orissa and Bihar respectively. Caniago and Sibert (1998) states that epiphytes and trees restricted to primary forests are particularly important sources for plants used to treat unusual ailments.

*Derris indica* (Lam.) Bennet (*Fabaceae*)  
‘Kanji’

Seed powder is applied to boils. Seeds are roasted, powdered, mixed with coconut oil and applied for itching. Branches are used to chew for treating fever. Seeds are crushed and paste is applied as bandage for stomach ache.

The utility of different parts of plant for skin diseases reported by many studies like Bhalla *et al.* (1982, leaves); Sharma and Singh (1988, fruit). The use of seeds for boils has been reported by Shah (1984); Shah *et al.* (1983); Saxena and Vyas (1983); Janaardhanan (1963); Saxena and Vyas (1986); Shah *et al.* (1981); Bedi (1978) in their respective regions. Tarafder (1986) report the use of seed oil for fever in Bihar. Pandey *et. al.* (2005) reports use of root for digestive disorder.
**RESULTS AND DISCUSSION**

*Desmodium gangeticum* (L.) DC. (Fabaceae)  ‘Vandar chipyu, Ziptu’

Stems (Plate 40 K) are chewed and juice is swallowed for jaundice³. Root is crushed and 1/2 cup extract is taken once for loose motions¹.

Irsad *et al.* (2009) reported that *Desmodium gangeticum* (L.) DC. is one of the constituents of the Dashmoola which is used traditionally for treatment of a number of diseases like jaundice. Kritikar and Basu (1993) reported use of root for dysentry.

*Desmodium triflorum* (L.) DC. (Fabaceae)  ‘Modri’

Roots are chewed for allergic bronchial asthma⁸. Root is crushed and 1/2 cup extract is taken for cough⁴². Roots are crushed and paste is applied for stomatitis¹⁶.


*Dillenia pentagyna* Roxb. (Dilleniaceae)  ‘Kavlo’

Bark is crushed, dipped in water for an hour and 1 cup extract is taken 2 times in a day for 7 days for jaundice²⁹.


*Dioscorea bulbifera* L. (Dioscoreaceae)  ‘Kukad kando, Kadvo kando’

Tubers are roasted and applied to stomach for amenorrhoea¹², ³⁴. Tubers are crushed with water and 1 cup solution is consumed orally for post natal care²⁹. Tuber is crushed and paste is applied on scorpion bite²⁸, ³⁵. Tubers are roasted and applied for stomach ache¹⁸.


*Dioscorea pentaphylla* L. (Dioscoreaceae)  ‘Kuwale wale’

Tubers are roasted and applied locally for menorrhagia¹², ³⁴.

Bhogaonkar and Kadam (2006) reported that 25 g fresh root bark of *Bauhinia racemosa* Lam. and 2 g fresh tuber of *Dioscorea pentaphylla* L. are pounded
together with 100 ml water, filtered and taken twice a day for five days for menorrhagia. Tea is avoided.

*Dioscorea wallichii* Hk. F. (*Dioscoreaceae*) ‘Sariyu vel’

Branches are used as toothbrush for tooth ache\(^{37}\).

*Diospyros melanoxylon* Roxb. (*Ebenaceae*) ‘Timru’

Bark is crushed, dipped in water for an hour and 1 cup extract is taken for diarrhea\(^{28, 35}\). Nodes of branches are crushed and 1 cup extract is consumed for dysmenorrhoea\(^1\) and postnatal\(^1\) care. Unripe Fruit pulp is applied directly on wound\(^{41}\).

Pullaiah (2006) and Kritikar and Basu (1993) reported its bark utility for diarrhea. Venkataratnam and Venkata Raju (2004) reported that during postnatal pain the stem bark/root bark is grounded, boiled and decoction is given orally. Mukherjee and Namhata (1990) reported its utility on wound in Orissa.

*Dolichandrone falcata* Sensu Cooke (*Bignoniaceae*) ‘Mater Singh’

Bark (Plate 41 B) is crushed and 2-3 drops of extract is poured into nostrils for migraine\(^{28, 35}\). Leaves are crushed; paste is heated and applied for stomach ache\(^{21}\).


*Dregia volublis* (L. f.) Bth. (*Asclepiadaceae*) ‘Marchalo’

Root, leaves are crushed and paste is applied on boils\(^{38}\).

Janardhanan (1963) reported uses of leaves for boils in Maharashtra region.

*Echinops echinatus* Roxb. (*Asteraceae*) ‘Goithu, Gathu’

Root is crushed and paste is applied on itching\(^{24}\). Roots are crushed and applied for piles\(^{19}\).

Maheshwari *et al.* (1986) report the use of root for skin diseases in tribals of Mirzapur district.

*Emblica officinalis* Gaertn. (*Euphorbiaceae*) ‘Amla’

Bark is boiled in water and used for bath to treat fever\(^{11}\).
Bhalla et al. (1982) report the use of fruit for fever in Sagar district of Madhya Pradesh.

*Enicostema hyssopifolium* Verdoon (Gentianaceae)  ‘*Tammaniyo’*  
10 gm of whole plant is crushed and 1/2 cup extract is consumed 2 times in a day to treat fever5.

Joshi (1982) report the use of leaves for fever used by Bhils tribe. Singh and Pandey (1980); Mishra and Billore (1983); Saxena (1986) report the use of whole plant for fever used by tribals of Rajasthan, Banswara district of Rajasthan and Madhya Pradesh respectively.

*Ensete superbum* (Roxb.) Cheesm. (Musaceae)  ‘*Jangali Kel’*  
Stem juice is consumed orally for acidity28,35.

Jagpat et al. (2008) reported that seeds are crushed and taken with glass of water to get relief in stomach problems.

*Eranthemum roseum* (Vahl.) R. Br. (Acanthaceae)  ‘*Aagdadiyo’*  
Ash is applied on boils14.

*Eriolaena candollei* Wall. (Sterculiaceae)  ‘*Bhindo’*  
Bark is ground and paste is applied on boils36.

*Erythrina suberosa* Roxb. (Fabaceae)  ‘*Pongaro’*  
2 gm root is crushed, dipped in water for an hour and 1 cup extract is taken to treat jaundice28,35. Branches are used as toothbrush and juice is swallowed for 2 days for viral fever19.


*Euphorbia acaulis* L. (Euphorbiaceae)  ‘*Chhido’*  
Tubers are roasted whole night and paste is applied to stomach for colic pain8.
**Euphorbia hirta** L. (Euphorbiaceae)  ‘Chikyo, Chikyu’

Stem juice is applied to nostrils for sneezing to treat congestion due to cold. Roots are crushed and massage is done with the extract on cyst/tumor on legs. Root extract has several uses such as 2-3 drops of extract is poured into the ear for ear complaints and one cup extract is taken once to treat loose motions. Roots are crushed and paste is applied for stomach ache.


**Euphorbia orbiculata** H.B. K. (Euphorbiaceae)  ‘Modri’

Roots are crushed and 2 spoonful of extract is consumed 2 times in a day to treat fever.

**Euphorbia tirucalli** L. (Euphorbiaceae)  ‘Thor’

Cut stem into 2 halves, add salt, roast and tie as bandage to treat colic pain. Latex is applied directly to neck to treat cough. 1-2 drops of latex is applied for ear complaints. Latex is applied directly 2-3 times in a day for ring worms. Cut stem into 2 halves, add salt, roasted and tie as bandage to treat stomach ache. Latex is applied directly to treat tooth ache.


_Ficus hispida _L. f. (Moraceae) ‘Dedh umaro’

Root is rubbed on stone, paste is dipped in water and 1 cup extract is taken once for loose motions42.


_Ficus racemosa _L. (Moraceae) ‘Umaro’

Root latex is applied directly to the veins of hand of small child to treat allergic bronchial asthma35. Latex is applied directly on boils8. Latex is applied directly to forehead for eye disease19. Roots (prop) are crushed, dipped in water and 1/2 cup extract is taking orally 2 times in a day for fever7.


_Ficus religiosa _L. (Moraceae) ‘Pipal’

Bark is crushed, dipped in water for 1/2 an hour and 1 cup extract is taken 2 times in a day for 7 days, also massage is done with its extract on cyst/tumor11.

Results and Discussion

**Gardenia turgida** Roxb. var. *turgid* (Rubiaceae)  ‘Gogda’

Roots are crushed and paste is applied on insect bite\textsuperscript{16}.

Singh and maheshwari (1983); Maheshwari et al. (1986) report the use of root on scorpion bite in Varanasi and Mirzapur districts respectively. Jain and Tarafder (1970) reported similar use, without specifying any plant part.

**Garuga pinnata** Roxb. (Burseraceae)  ‘Kakad’

Stem of seedling is cut, 2-3 drops of the juice which has oozed out in the stem is poured and applied to conjunctivitis\textsuperscript{28, 35}. Stem of seedling is cut and 2-3 drops of the juice which has oozed out in the stem is poured for blood coagulation in eye disease\textsuperscript{19}. Bark is crushed, slightly heated and applied on fracture, Sprain\textsuperscript{20}. Bark phloem is boiled in water and applied on wounds\textsuperscript{12, 34}.


**Gloriosa superba** L. (Liliaceae)  ‘Nag Vel’  (Plate 40 H)

Root is crushed; paste is applied once on boils\textsuperscript{16}. Whole plant is crushed and 1/2 cup extract is consumed 2 times for 7 days for snake bite\textsuperscript{39}.


**Gomphrena celosioides** Mart. (Amaranthaceae)  ‘Lamdu’

Seeds are powdered and consumed once in a day for calculus\textsuperscript{8}.

Prachi et al. (2009) reported whole plant juice along with four *Piper nigrum* L. and lemon juice twice a day is taken for ten days to cure urolithiasis.

**Grewia hirsuta** Vahl. (Tiliaceae)  ‘Khad dhamni’

Bark is crushed, dipped in water for an hour and 1 cup extract is taken only once for headache\textsuperscript{16}. 

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*Haplanthus verticillatus* (Roxb.) Nees. (*Acanthaceae*)  ‘*Katshalu*’

Leaves are crushed, mixed with milk and paste is applied on burns\(^{19}\).

*Helicteres isora* L. (*Sterculiaceae*)  ‘*Atedi*’

Fruit is crushed with water and 1/2 cup solution is consumed orally 2 times in a day to treat allergic bronchial asthma\(^ {20}\). Branches (Plate 39 F) are used as toothbrush to treat cough\(^ {11}\). Fruit is crushed, and 1 cup extract is taken for diarrhoea\(^ {28, 35}\). Fruit and bark are crushed and 1 cup extract is taken once for curing loose motions\(^ {8}\). Fruit is rubbed on stone, the paste is dipped in water for a while and 1/2 cup solution is consumed for 7 days as vermifuge\(^ {7}\). Fruit is rubbed with oil and paste is applied on pain\(^ {5}\). Bark is tied slightly above the bite for whole night on scorpion sting\(^ {36}\). Bark is crushed and 1/2 cup extract is consumed 2-3 times in a day for stomach ache\(^ {21}\).


*Hemidesmus indicus* (L.) Schult. (*Periplocaceae*)  ‘*Aagudi, Dudhli, Khadudro, Mudiyo*’ (Plate 39 H)

Root is crushed; paste is applied once on boils and pyoderma\(^ {16}\). Roots are crushed with water and 1 cup extract is consumed orally once for emetic\(^ {19}\). Leaves are crushed and 1/2 cup extract is taken as galactagogues\(^ {26}\). Root is crushed, boiled with water and the solution is taken orally for jaundice\(^ {42}\). Root is crushed and paste is
applied on scorpion bite. Roots are crushed, boiled in water and 1/2 cup of this extract is consumed 2-3 times in a day for sprain. Roots are crushed with water, dipped in water and 2 spoon extract is take orally on empty stomach, 2 times in a day for stomach ache. Root is crushed and paste is applied on wound.


*Heterophragma quadrolindiculare* (Roxb.) K. Schum (Bignoniacea) ‘Motu Jhad’

Root is crushed and paste is applied, also 1/2 cup extract is taken 1-2 times in a day for boils. Bark is crushed and paste is applied on chest pain. Bark phloem is crushed without water and applied on cyst/tumor. Bark is crushed and 1/2 cup extract is taken stomach ache. Bark is crushed and paste is applied on fracture and wound.

Joshi et al. (1980) report the use of leaves for sors on toes in Dang region of Gujarat state. Pullaiah (2006) reported a thick fluid like tar extracted in the wood is said to be used for skin diseases. Hussain et al. (2007) states that the family Bignoniaceae contains Lapachol which is a naphthoquinone having wide spectrum of therapeutic activities viz. antitumor, anti-abscess, anti-ulcer, anti-inflammatory etc.

*Hibiscus hirtus* L. (Malvaceae) ‘Majni, Baporui’

2-3 Roots are crushed and 1 cup extract is consumed to treat muscular spam.

*Holarrhena antidisenterica* Wall (Apocynaceae) ‘Dudh kudo, kudo’ (Plate 40 G)

Bark is crushed and 1/2 cup extract is consumed in a day to treat fever. Bark is crushed with water and the extract is consumed orally as refrigerant. Fruits are crushed, mixed with jaggery to make pills to be taken orally once to treat unconsciousness.

**Holoptelea integrifolia Planch. (Ulmaceae)  ‘Kanjo, Punjo’**

Bark is crushed; paste is applied on boils\(^{11}\). Bark is tied to neck for 2-3 days to treat conjunctivitis\(^{11}\). Leaves are crushed and applied on ring worm\(^{42}\).


**Hymenodictyon excelsum (Roxb.) Wall. (Rubiaceae)  ‘Modan’**

Root (Plate 41 I) is crushed and paste is applied for boil\(^{16}\) (Plate 37 F-H).

Jain and Tarafder (1970) report the use of this plant on carbuncle and sores without specifying any plant parts.

**Ipomoea hederifolia L. (Convolvulaceae)**

Whole plant is crushed and applied on pain\(^{19}\).

**Jatropha curcas L. (Euphorbiaceae)  ‘Ratanjyot’**

Bark is ground and paste is applied on boils\(^{21}\).

Jain and Tarafder (1970) reported its use on carbuncle and sores without specifying any plant part. Malhotra and Moorthy (1973) report the use of root on sores in Maharashtra. Das et al. (1983); Gaur et al. (1980) report the use of stem on sores in West Bengal and Garwal hills respectively.
Kirganelia reticulata (Poir.) Baill. (Euphorbiaceae)  ‘Kali limthi, Kamboi’

Leaves are crushed and paste is applied as bandage on chest to treat allergic bronchial asthma\(^8\). Leaves are crushed and massage is done with extract which causes precipitation, take bath after it to treat swelling during pregnancy and after child birth\(^16\). Leaves are boiled in water and bath is taken with this extract to treat fever\(^16\).


Lagerstroemia lanceolata Wall. ex. W. and A. (Lythraceae)  ‘Bhindo/Hino’

Bark is crushed and paste is applied on stomatitis\(^42\).

Lannea coromandelica (Houtt.) Herrill (Anacardiaceae)  ‘Modal’

Bark is ground and paste is applied on boils\(^35\). Branch is crushed and 1-2 drops of extract is poured into the eye to treat eye disease\(^4\). Bark is crushed and 1 cup extract is taken to treat loose motions\(^33\), \(^3\). Bark is chewed and sol. is consumed 2-3 times to treat stomach ache\(^33\), \(^3\). Bark is crushed, slightly heated and applied on swelling\(^8\). Gum is directly applied to tooth ache\(^42\). Branches are crushed and applied on wound\(^4\).


Leea macrophylla Roxb. ex Hornem. (Leeaceae)  ‘Dendo, Dendro’

Root is crushed and paste is applied on boils\(^39\). Roots are rubbed on stone, make pills out of it to keep on tooth to treat tooth ache\(^16\).
Kritikar and Basu (1993) reported the pounded tubers are applied to obstinate sores.

**Leucas aspera** (Willd.) Spr. (Lamiaceae)  ‘Limthu’

Root is crushed, dipped in water for while and 1/2 cup extract is consumed 2 times in a day to treat allergic bronchial asthma.\(^{39}\)


**Leucas cephalotes** (Roxb.) ex Roth) Spr. (Lamiaceae)  ‘Gadhiyu, Moiyu, Kumbhi, Damro’

Root is ground and paste is applied on boils.\(^{14}\) Leaves are crushed, make pills out of it and consumed to treat cough.\(^{9}\) Whole plant is crushed and 2-3 drops of extract is poured into the ear for ear complaints.\(^{12, 34}\) Leaves and root are crushed; paste is applied to treat headache.\(^{28, 35}\) Whole plants are used as vegetable to treat jaundice.\(^{41}\)


**Ludwigia octovalvis** (Mich.) Raven (Onagraceae)  ‘Chintu’

Roots are crushed with water and 1/2 cup extract is consumed orally 2 times in a day to treat paralysis.\(^{39}\)

Parrotta (2001) report the use of leaves poultice for nervous system diseases in Malaysia.
RESULTS AND DISCUSSION

**Madhuca indica J. F. Gmel. (Sapotaceae) ‘Mahuda’**

Seedling is crushed and 2-3 drops of this extract is poured in the nostrils to treat jaundice\(^{28, 35}\). Sapling is cut and 2-3 drops of the juice oozed out in the stem is poured into nostrils to treat migraine\(^{28, 35}\). Liquor of 1 cup is consumed in the evening to treat stomach ache\(^{11}\).

The tribals of Mirzapur district, Uttar Pradesh use the bark to take bath to cure jaundice (Maheswari *et al.* 1986). Singh and Singh (2009) reported that the seed oil is used for cooking food. Its flower is widely used for making local liquor and leaves are used for headache used by tribes of Chandauli District in Uttar Pradesh. Prusti (2007) report the use of this plant for stomachache used by Bondo tribe of Malkangiri district, Orissa. Singh and Pandey (1998) report the use of this plant for biliousness and colic pain. Swain and Dash (2007) report the use of this plant for gastropathy. Singh and Panday (1998) reported that Bhil and Garasia apply hot poultice of leaves to cure abdominal pain.

**Mangifera indica Linn. (Anacardiaceae) ‘Amba’**

Latex is applied directly for not more than one hour to treat tooth ache\(^{16}\).

Maheswari and Singh (1984) reported used of gum for tooth ache in Uttar Pradesh.

**Manilkara hexandra (Roxb.) Dub. (Sapotaceae) ‘Rayan’**

Bark is ground and paste is applied for chest pain\(^{27}\).

Malhotra and Moorthy (1973) report the use of bark for chest pain in Maharastra.

**Marsdenia tenacissima Wight and Arn. (Asclepiadaceae)**

Roots are crushed with water, dipped in water for whole night and 1 cup extract is taken orally 2 times in a day to treat tumor\(^{16}\).

**Marselia minuta L. (Marseliaceae) ‘Chilo’**

Leaves are eaten as vegetable only once for stomach ache\(^{18}\).

**Martynia annua L. (Martyniaceae) ‘Vinchhudo’**

Fruit is ground and applied on scorpion bite\(^{39}\).
Prasad et al. (1996) reported that the seeds are used as an antidote for snakebite and scorpion bite.

**Maytenus emarginata** (Willd.) D.Hou (Celastraceae) ‘Vikalo’

Bark is boiled in water and bath is taken with this extract to treat jaundice\(^{37}\).

Punjani (2006) reported similar use in Aravalli hills in North Gujarat.

**Melia composita** Willd. (Meliaceae) ‘Bakan Limdo, Jangli Nimbaro’

Leaves are crushed and paste is applied for chest pain\(^{18}\). Bark is crushed, dipped in water for an hour and 1 glass extract is taken 2 times in a day for digestion\(^{26}\). Seeds are crushed and paste is applied on headache\(^{18}\).

Jain (1965) report the use of bark as digestive by tribals of Bastar. Jain (1963) reported tribal of Puraliya used this plant as digestive without specifying any plant part.

**Merremia gangetica** (L.) Cufod. (Convolvulaceae) ‘Madri’

Roots are crushed, heated and paste is applied on stomatistis\(^{12, 34}\).

Kritikar and Basu (1993) reported its utility for cooling, gum pain and as antipyretic.

**Mimosa hamata** Willd. (Mimosaceae) ‘Rinjido’

Bark is used to chewed for toothache\(^{11}\).

Pawar and Patil (2008) report the use of stem as toothbrush. The author states that this is new finding till 2008.

**Mitragyna parvifolia** (Roxb.) Korth. (Rubiaceae) ‘Kalam’

Mechanical injury is done to bark and 2-3 drops of the juice which ooze out in the injury is poured to treat conjunctivitis\(^{42}\). Leaves are crushed and 1-2 drop of this extract is poured in the nostrils to treat jaundice\(^{36}\), while 2-3 drops used to treat migraine\(^{42}\) (Plate 38H-I).

Yoganarasimhan (1996b) report the use of bark, seed and fruit for eye disease in Tamilnadu. Yoganarasimhan (1996a) report the use of seed and fruit for eye disease
in Karnataka. Maheswari et al. (1986) report the use of leaves for head ache, to cause sneezing, used by Bhil tribes of Jhabua district in Madhya Pradesh.

**Moghania strobilifera J. St. Hilaire. (Fabaceae)** ‘Modru’

Root is crushed, dipped in water for while and 1/2 cup extract is consumed 2-3 times in a day for chest pain. Root is crushed, dipped in water for whole night and 1/2 cup extract is taken in the early morning to treat jaundice.

Sharma et al. (1979); Sharma and Malhotra (1984) report the use of root in body ache in Uttar Pradesh and Maharashtra respectively.

**Morinda tomentosa Hk. f. (Rubiaceae)** ‘Aal’

Root is crushed and paste is applied to remove clotting of blood. Leaves are crushed and applied on pain (stomach ache and chest pain both) and swelling. Bark is crushed and paste is applied as bandage to treat sprain.

Holdsworth (1975) reported the decoction of the dried bark is taken orally for stomach complaints. Singh (1986) reported the fresh leaves are warmed, covered with oil and used as a poultice for broken bones and sprains. Kamiya et al. (2009) reported bark leaves and fruit have been used as antibacterial, antitumor, analgesic, antiinflammatory.

**Moringa concanensis Nimmo (Moringaceae)** ‘Jangli Sargavo’

Bark is crushed and paste is applied on chest in allergic bronchial asthma and for migraine.

Kritikar and Basu (1993) report the use of root for bronchial asthma. Anbazhakam et al. (2007) report that 1 gm of gum scraped from the bark of *Moringa concanensis* is mixed with breast milk and applied over the forehead. In addition, 1 gm of leaves with 1 gm of leaf paste of *Azadirachta indica* and taken internally twice a day.

**Moringa oleifera Lam. (Moringaceae)** ‘Saragvo’

Fruits are used as vegetable to treat arthritis. Root is used to chewed to treat cold. Roots are eaten raw 2 times in a day to treat stomach ache.

*Mucuna prurita* Baker (Fabaceae) ‘Kaucha’

Leaves are crushed and massage is done with extract to treat fever\(^{21}\). Seeds are ground and applied on scorpion bite\(^{12,34}\).


*Neuracanthus sphaerostachyus* (Nees) Dalz. (Acanthaceae) ‘Dodiylu, Phatu’

Root is crushed and paste is applied on chest for chest pain\(^{42}\). Root hairs are applied directly on wound\(^4\).

*Oroxylum indicum* (L.) Vent. (Bignoniaceae) ‘Tetu’

Bark (Plate 39 K) is crushed with water and the solution is consumed orally 1-2 times in a day for curing allergic bronchial asthma\(^{16}\). Bark is crushed, 1 cup extract is taken and paste is also applied on fracture\(^{16}\). Bark is crushed, dipped in water for an hour and 1 cup extract is consumed to treat snake bite\(^{16}\) and it is taken 3 times in a day for 2 days for jaundice\(^4\). Bark is ground and paste is applied on wound\(^{12,34}\).


*Ougeinia oojeinensis* (Roxb.) Hochreut. (Fabaceae) ‘Tanach’

Bark is used to chewed to treat cold\(^{11}\).

Joshi *et al.* (1980) report the use of stem bark for asthma and bronchitis in Dang region in Gujarat.
Phanera integrifolia (Roxb.) Bth. (Caesalpinaceae) ‘Aval vel’

Bark (Plate 40 I) is crushed and 1 cup extract is consumed on dysmenorrhea and amenorrhea\textsuperscript{16}.

Piliostigma malabaricum (Roxb.) Bth. (Caesalpinaceae) ‘Khat asitro’

Bark is crushed and 1 cup extract is taken to treat loose motions\textsuperscript{42}.

Maheshwari \textit{et al}. (1986) report the use of bark for loose motion used by Jhabua district in Madhya Pradesh.

Plumbago zeylanica L. (Plumbaginaceae) ‘Chitro’

Root is crushed and paste is applied to treat headache\textsuperscript{14}.


Polygonum glabrum Willd. (Polygonaceae) ‘Bohu’

Leaves are crushed and paste is applied to stomach in stomachache\textsuperscript{40}.

Chandel \textit{et al}. (1996) reported the use of leaves for colic.

Psidium guajava L. (Myrtaceae) ‘Jamrukh’

Leaves are eaten raw as antiemetic\textsuperscript{16}.

Borthakur (1976) report the use of leaf and bark as antiemetic used by tribals of Mikir hills.

Pterocarpus marsupium Roxb. (Fabaceae) ‘Biyo’

Stem is crushed with water and 1 glass solution is consumed orally for acidity\textsuperscript{22}. Gum is slightly boiled in water and 1 cup solution is consumed for amenorrhoea\textsuperscript{12, 34, 36} and the same quantity for 2-3 times in a day for loose motions\textsuperscript{36}. Bark (Plate 39 E; Plate 41 E) is crushed, dipped in water for whole night and 1 cup extract is taken early in the morning for diabetes\textsuperscript{32}. Gum is dissolved in water and 1/2 cup solution is taken orally 2 times in a day for infertility \textsuperscript{39}(stoppage of siemens in men). Gum is
dissolved in water and 1 cup solution is taken orally for 2-3 days to treat muscular spam\textsuperscript{32}. Gum is slightly boiled in water and consumed to treat stomach ache\textsuperscript{36}.


\textit{Pueraria tuberosa (Willd.) DC. (Fabaceae)} \textquoteleft Bhono no velo, Bhanu velo, Bhanju vel\textquoteright

Tuber (Plate 41 J) is ground and paste is applied on boils\textsuperscript{36}. Tubers are eaten raw to treat headache\textsuperscript{42} and stomach ache\textsuperscript{11}. Tubers are crushed; paste is heated and applied as bandage to chest to treat jaundice\textsuperscript{12,34}.

Singh and Pandey (1980) report the use of seed for skin diseases in Meghalaya. Kamble et al. (2009a) reported that powder of tuber is consumed with water two times in a day to cure jaundice. D’cruze (2007) reported that use of tubers by Vasava tribe of Dediapada for headache, jaundice and stomachache and these are newly reported uses when comparing with literature. Joshi et al. (1980) report the use of tubers for abdominal pain in Dangs, Gujarat.
RESULTS AND DISCUSSION

**Rhyncosia aurea DC. (Fabaceae)  ‘Mokahimda’**

Leaves are crushed and 10 ml extract is consumed 2 times in a day to treat antiemetic\(^{21}\). Root is crushed and paste is applied on boils\(^{15, 2}\), gum pain\(^{15, 2}\) and swelling of legs\(^{15, 2}\). Root is crushed and 2-3 drops of extract is poured into the ear for ear complaints\(^{15, 2}\).

**Rotala serpyllifoila (Roth) Bremek. (Lythraceae)  ‘Khadi nu ghas’**

Whole plant is crushed; paste is applied on forehead to treat migraine\(^{18}\).

**Schleichera oleosa (Lour.) Oken (Sapindaceae)  ‘Kusum’**

Uses: Bark is crushed, slightly heated with pinch of salt and paste is applied for 1-2 days for chest pain\(^{20}\).

Jain and Tarafder (1970) report the use of this plant for pneumonia without specifying any plant part.

**Sida retusa L. (Malvaceae)  ‘Chioydiyo’**

Leaves are crushed and applied on wound\(^{16}\).

**Solanum surattense Burm. F. (Solanaceae)  ‘Bhoringni, Jangli Ringdi’**

Fruit is roasted and pulp is applied to boils\(^{38}\). Fruit is kept on paining area to treat gum pain\(^{42}\) and tooth ache\(^{11}\).

**RESULTS AND DISCUSSION**

*Solenia heterophylla* Lour. (*Cucurbitaceae*)  *‘Tanghola’*

Tubers are crushed, dipped in water for an hour and 1 cup extract is taken 3 times in a day for 7 days to treat joint disease\(^\text{16}\).

Kritikar and Basu (1993) reported its utility for Inflamations.

*Soymida febrifuga* (Roxb.) A. Juss. (*Meliaceae*)  *‘Jangli Rayan’*

Bark (Plate 41 F) is crushed and paste is applied on chest in chest pain\(^\text{42}\) and 1 cup extract of this is taken for loose motions\(^\text{11}\).


*Sphaeranthus indicus* L. (*Asteraceae*)  *‘Phato’*

**Uses:** Whole plant is crushed, dipped in water and 1-2 spoons of extract is consumed in a day for 5-6 months old child to treat retention of urine and faeces\(^\text{39}\).


*Sterculia urens* Roxb. (*Sterculiaceae*)  *‘Kadaya’*

Bark (Plate 41 D) is crushed, dipped in water and 1/2 cup extract is taken during labour pain for easy child Birth\(^\text{22}\).

**RESULTS AND DISCUSSION**

*Stereospermum personatum* Chatt. (Bignoniaceae)  
‘Adhashishi, Padal’

Bark is crushed; paste is applied on boils\(^{36}\). Fruit pulp is tied to ear for ear complaints\(^{42}\). Fruit is tied as necklace for a day to treat migraine\(^{28,35}\).

Pullaiah (2006) reported that juice of leaves is boiled with oil for use for disease of ear.

*Tamarindus indica* L. (Caesalpiniaceae)  
‘Amli’

Leaves are crushed and extract is consumed as refrigerant\(^{11}\). Seeds are ground and applied on scorpion sting\(^{5}\).


*Teomella undulata* (Sw.) Seem (Bignoniaceae)  
‘Ragat Rohido’

Bark is crushed, dipped in water for 1/2 an hour and 1 cup extract is taken 3–4 times in a day till abortion\(^{29}\). Bark is crushed, dipped in water for an hour and 1 cup extract is taken 2 times in a day for 2 days for amenorrhoea\(^{29}\), dysmenorrhoea\(^{22}\) and menorrhagia\(^{22}\), 1 cup extract is consumed before sleep and going to toilet is avoided for whole night to treat calculus\(^{32}\), and the same quantity of this extract is taken during labour pain for easy child birth\(^{22}\) and treatment of sun stroke\(^{22}\). Bark is crushed and paste is applied on clotting of blood\(^{28,35}\). One cup extract of crushed bark in water is taken orally on empty stomach for curing tumor\(^{28,35}\).

Bhatt and Sabnis (1987) report the use of bark as abortifacient in Khedbrahma region of North Gujarat. The tribals of Udiapur prepare a remedy for inducing abortion by powdering its roots with the roots of *Sapindus margaritus* (Ritha) and take it orally for 2 to 3 days (Singh and Pandey 1998). Ishtiaq and Khan (2008) documented that bark powder is taken with hot milk for few days for abortion; seeds crushed with *Pinus* leaf extract and taken for to cure haemorrhoids. Hussain *et al*. (2007) states that Bignoniaceae family contains Lapachol which is a naphthoquinone having wide spectrum of therapeutic activities viz. antitumor, anti-abscess, anti-ulcer, anti-inflammatory etc.
Tectona grandis L.f. (Verbenaceae) ‘Sag’ (Plate 39 J)

Tender leaf paste is plastered on chest and covered with Helicteres isora L. leaves for treating bronchitis. Leaf extract is also orally administered for bronchities. Bark is used to chewed for diarrhoea, respiratory problems, cough, and stomachache. Seeds are crushed and half a cup of extract is given 3 times in a day for calculus. Root powder is taken only once by male as an antifertility agent. Bark is crushed, dipped in water for half an hour and paste is applied on body parts to get relief from pains. Bark paste is applied on Snake bite/scorpion sting. Dry leaf powder is applied on wounds.


Telosma pallida (Roxb.) Craib. (Asclepiadaceae) ‘Nani siri’

Root is crushed and 1 cup extract is consumed once for indigestion.

Terminalia arjuna (Roxb.) W. and A. (Combretaceae) ‘Arjun Sadad, Safed sadad’

Bark paste is applied on boils and joint diseases. Bark is crushed, slightly heated and applied on chest pain and back pain. Half a cup of bark extract is taken in a day for stomachache and 1 cup is taken 2-3 times a day for amenorrhoea and 1 cup of this extract is taken once a day as an antiemetic agent. Tender stems are used as toothbrush for cold.

Pandit and Bhakat (2009) reported that 2 gm stem bark paste with honey and water is given twice a day after food for 21 days to cure leucorrhoea, menorrhagia, spermatorrhoea, etc. Pullaiah (2006) reported that the decoction of the sapling is used...

**Terminalia bellirica (Gaertn.) Roxb. (Combretaceae)**  ‘Behado’

Bark is chewed and the paste is used to massage the teeth to treat fever\(^3\). Three spoonfuls of fruit powder is mixed in water and consumed once a day for 2 days for indigestion\(^1\).

Bhalla et al. (1982) report the use of fruit for fever from Sagar district in Madhya Pradesh. Jain and De (1966) report the use of bark for fever in Purulia district in West Bengal. Jain and Tarafder (1970) reported utility of this plant for fever. The tribals of eastern Rajasthan used the seed for gastric complaints (Singh and Pandey 1980).

**Terminalia crenulata Roth. (Combretaceae)**  ‘Sadad’

Bark (Plate 41 C) is crushed, soaked in water and used to bathe to treat allergy\(^2\). It is also boiled in water used for bathe to treat fever\(^3\). Bark paste is applied on back pain\(^2\). Half a cup of bark extract is taken twice a day for two days to cure dysmenorrhoea\(^1\).

Kshirsagar and Singh (2007) report the use of bark and stem juice for chest pain.

**Tridax procumbens L. (Asteraceae) ‘Badkyu, Lilu’**

The whole plant is crushed and applied on wounds\(^8\); while the root paste is applied on boils\(^2\). Wound healing properties of its leaf, for blisters and boils, have been reported by several studies. Goel and Mudgal (1988) among the tribals of Santal Pargana, Bihar; Maheshwari et al (1986) from Mirzapur district in Uttar Pradesh; Prasad and Abraham (1984) state its use among Naydis tribes of North Kerala Ramchandran and

*Tylophora fasciculata* Buch.-Ham. ex Wight (*Asclepiadaceae*)  ‘*Siri*’

Roots are crushed and 1 cup extract is consumed only once a day in the morning to treat stomachache\(^{45}\).

Pandey et al. (2005) report the use of root for abdominal diseases.

*Ventilago denticulata* Willd. (*Rhamnaceae*)  ‘*Asad vel*’

Leaves (Plate 40 J) are crushed and applied for back pain and stomachache\(^{28,35}\).

Kirtikar and Basu (1993) reported that powdered root bark is used for stomachache.

*Viscum articulatum* Burm.f. (*Loranthaceae*)  ‘*Vanda*’

Half a cup of root extract of the parasite growing on Indian butter tree (*Madhuca indica* J. F. Gmel.) is taken twice a day for fever\(^4\).

Sharma et al. (1979) report the use of whole plant for fever from Dehradun and Siwalik districts.

*Vitex negundo* L. (*Verbenaceae*)  ‘*Nagod, Limihu*’

Leaf paste is applied for headache\(^{18}\).

Das et al. (1983), Sharma et al. (1979), Singh (1945), Shah et al. (1983); report the use of leaves for curing headache from Jalpaiguri district in West Bengal, Dehradun and Siwalik districts, Delhi, Dahanu forest division in Maharashtra, respectively.

*Woodfordia fruticosa* (L.) Kurtz. (*Lythraceae*)  ‘*Peshri*’

Half a cup of leaf and root extract is orally administered and the paste is applied as bandage to treat allergic bronchial asthma\(^{28,35}\). One cup of root extract is consumed to treat muscular sprain\(^{42}\).
According to a report published by CSIR (1998) the paste of flowers is used for cough used by tribals in Madhya Pradesh. Without specifying any plant part, Jain and Tarafder (1970) report the use of this plant for muscular pains.

**Wrightia tinctoria R. Br. (Apocynaceae)** ‘Kudi’

Latex is applied on wounds.

Similar use has been reported by shah *et al.* (1983) from Dhanu forest division in Maharashtra; Joshi *et al.* (1980) from Dangs region of Gujarat and Goel and Mudgal (1988) from the tribal area of santal Pargana, Bihar.

**Xanthium strumarium L. (Asteraceae)** ‘Saliyu’

Tender inflorescence (Plate 40 O) parts are crushed and half a cup extract is consumed on the last day of menstruation as female contraceptive.

**Xeromphis spinosa (Thunb.) Keay (Rubiaceae)** ‘Gal’

Unripe fruit is crushed to paste and applied as bandage to treat allergic bronchial asthma. Fruit is laced to the neck for curing the cold. Unripe fruit is ground and the paste is applied, 1-2 times in a day to treat gums pain and toothache. Crushed fruits are mixed with water and one glass of such solution is consumed only once a day to treat throat infection.

Kirtikar and Basu (1993) reported that fruits are used for chronic bronchitis. They also reported antipyretic properties of the fruit.

**Zizyphus xylopyra (Retz.) Willd. (Rhamnaceae)** ‘Ghatbor’

Gum is slightly boiled in water and applied on bone fractures.