



Ethnobotanical Studies of the Tarai Region of Kumaun, Uttarakhand, India

Anjali Mathur and Hema Joshi

Research

Abstract

An ethnobotanical study was conducted during 2008–2010 in the central **tarai** region of Kumaun (also known as Kumaon) Himalaya in Northern India to highlight the uses of the diverse flora. The study sites included Lalkuan in Nainital district and Kichha Tehsil (covering Pantnagar) of district Udham Singh Nagar, as these occupy the major part of central **tarai** and have undergone massive development and settlement of people of diverse culture. The entire study area consisted of three sites and eight communities. Interviews were conducted with knowledgeable persons in the study area. A total of 206 angiosperm species recorded in this study were found to be used for medicinal, economic (aromatic, timber, spices, fuel, condiments, cosmetics, etc.), fodder, firewood, timber, food, spiritual, or some other purpose. The information was collected both from migrant and local people.

Introduction

The state of Uttarakhand (erstwhile Uttaranchal or Uttar Pradesh hills), comprised of Kumaun and Garhwal divisions, represents the Indian part of Central Himalaya and includes overlapping western and eastern Himalayan floras (Stainton 1972). The **tarai** region is a water-logged alluvial plain with gentle southeast slope and deep and fertile, moist loamy soil, forming marshy land free from boulders and gravel. Studies have shown that altitude primarily dictates the vegetational strata (Champion & Seth 1968) and livelihood patterns of the regional people. In Kumaun division, the **bhabar** and **tarai** lie in the southeast and southwest regions and are surrounded by somewhat tropical and sub-tropical vegetation dominated by *Shorea robusta* Gaertn., *Dalbergia sissoo* DC., *Acacia catechu* (L. f.) Willd., *Albizia lebbek* (L.) Benth., *Albizia amara* (Roxb.) B. Boiv., *Albizia procera* (Roxb.) Benth. (Cham-

pion & Seth 1968), and *Phragmites-Saccharum-Imperata* grassland (Dabadghao & Shankarnarayan 1973). In the Kumaun region of Central Himalaya, compared to eastern and western parts, the central **tarai** includes a higher diversity of angiosperm vegetation, both natural and planted. Due to profound developmental activities—especially in the post-independence period, as evident in the form of conversion of natural forests to human-controlled mono-species plantations of industrial and non-industrial uses, extensive and intensive agriculture, and more recently industrialization—the central **tarai** region has experienced anthropogenic influences that have also affected the flora of the area. The region is also characterized now with settlements of people of different cultures from eastern Uttar Pradesh, Bihar, West Bengal, adjacent Nepal, and independence war refugees besides the **Kumauni** migrants from districts Nainital, Pithoragarh, Almora, and Bageshwar prominently. These people have interacted with flora and vegetation of the region in characteristically different ways based on their traditional culture, beliefs, and use values and utilized even the same natural species for di-

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Figure 1. Study area in the **tarai** region of Kumaun hills, Uttarakhand, India. Study sites: 1) Pantnagar; 2) Kichha Tehsil; 3) Lalkuan.

verse ethnobotanical purposes. Additionally, they have added to the native flora of the region through introduction of economic species from their respective native places.

Documentation of the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources (Muthu *et al.* 2006). Therefore, establishment of the local names and indigenous uses of plants has significant potential societal benefits (Bağcı 2000). If a plant is used to treat the same disease in different places across the world then its pharmacologic effect could be accepted. It would be beneficial to conduct pharmacologic studies on such plants. Therefore, it is suggested that such studies may make contributions to indigenous ethnobotanical knowledge as well as studies of the sourcing of raw materials for development of commercial pharmaceuticals (Cakilcioglu & Turkoglu 2010, Cakilcioglu *et al.* 2011).

Notable contributions were made by different workers in the field of ethnobotany from different parts of India, such as Graham (1839), Nairne (1894), Cooke (1901–1908), Blatter (1926), Elwin (1950), Santapau (1953), Vartak (1959a, 1959b), Jain (1963a, 1963b), Datar and Vartak (1975), Gadgil and Vartak (1976), Vartak and Mandavgane (1981), Vartak and Kulkarni (1987), Tosh *et al.* (1988), and Tosh (1993, 1996, 1997). They recorded wild useful plants used for different purposes by the local inhabitants in their floristic studies and ethnobotanical works. Some notable ethnobotanical studies are available for the mountainous region of Indian Central Himalaya (Chandra *et al.* 2005, Kala 2004, 2005, 2007, Negi *et al.* 1993, Pande *et al.* 2005, Samant *et al.* 1998a, Shah & Joshi 1971). A perusal of published literature indicates almost complete absence of ethnobotanical investigations for the foot-hill region in general and **tarai** in particular. The present study is an effort to document the ethnobotanical aspects of the angiosperm flora of the central **tarai** region.

Materials and Methods

The study was conducted in the central **tarai** region of Kumaun Himalaya in Lalkuan (Nainital district) and in Kichha Tehsil and Pantnagar of district Udham Singh Nagar, as these comprise a major part of the central **tarai**. Geographically, the area is located approximately between 28°41'–29°05'N latitude and 79°18'–79°31'E longitude with altitude ranging from 200 to 256 m amsl (Figure 1). Udham Singh Nagar is basically an industrial district, and many industry-related professions are prevalent here; it is a perfect example of “Unity in Diversity” for which India is so widely known—different cultures, religions, and life styles are blended in absolute harmony. The fertile land lends itself to different forms of agriculture, giving rise to agriculture-related activities and industry and making this land a green place which has resulted in prosperity all around. The Lalkuan site starts just after the **bhabar** of the foot-hill region. Lalkuan is well known for its paper mill and timber industries. Due to the paper mill industry there is a monoculture plantation occupying the major part of the study area. Between Lalkuan and Kichha, G B Pant University of Agriculture and Technology is situated at Pantnagar, and agricultural and farm land is there in almost complete majority. The whole **tarai** area is water-logged alluvial plain with a gentle southeast slope. The water is very close to ground surface, only 30 cm deep at some places (Melkania 1988).

The entire study area was divided into three sites (site 1, Pantnagar; site 2, Kichha; site 3, Lalkuan), and in each site eight communities were studied: natural forest (NF), planted (P), agriculture field (Ag F), grassland vegetation (GL), savanna land (Sav.), waste land (WL), road side (RS), and amphibious site (Amph.). In all the above locations respondents were interviewed individually. It was observed that mainly the women were associated with the work of collecting plants for fodder, fuel, and food value for their own uses. They were found always willing to share their knowledge in this regard; therefore they gave their consents very easily.

The respondents were interviewed in their own houses and in nearby places falling within the study area where they would normally go to collect fodder, fuel, etc. A total of 135 people, of which 80 women and 55 were men, were interviewed. Out of these respondents 25 were young people below the age of about 30 years, of which 15 were females and 10 were males. The gender-wise distribution of respondents is shown in Figure 2. Deep patience and familiarization with inhabitants and their behavior was a prerequisite for collecting real information about the ethnobotanical aspect of biological species. Regular informal visits were made seasonally to colonies of the site-specific people where open and frank meetings were organized. In a few cases the respondents could not provide any vernacular name of the ethnobotanically useful spe-

cies but called them by the general terms **jangali poudh** and **jangali jhar** (wild herb and wild shrub). After achieving a workable status, the ethnobotanical study was started. The format used for collecting the ethnobotanical information during the survey is given below.

People of both genders, different age groups, economy class, and activity (like laborer, serving person, landless wager, etc.) and migrants and nonimmigrants were interviewed on availability and occurrence of species, use values, part(s) used, seasonality of ethnobotanical use(s), and mode of utilization (see Appendix 1 for general format of survey questionnaire). Each respondent was shown the species collected and asked for precise recognition and actual use value(s). The language of communication was Hindi. The vernacular names were selected as mentioned by two or more of the people. The information, thus collected, was used to express species diversity for each plant community type. The species so collected were preserved for taxonomic identification following Jain and Rao (1977) and identified following Gupta (1968) and research publications. The identified specimens were further confirmed by comparing them with reference specimens preserved in the herbaria of Kumaun University, Nainital; Forest Research Institute, Dehradun and Northern Circle of Botanical Survey of India, Dehradun. Voucher specimens were submitted in the Department of Botany, Kumaun University Nainital, Almora Campus (Uttarakhand).

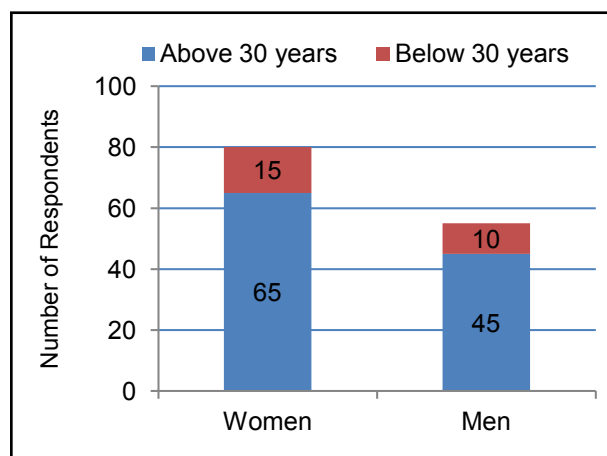


Figure 2. Gender-wise distribution of respondents of ethnobotanical knowledge interviews in the **tarai** region of Kumaun, Uttarakhand, India.

Results

The eight community types and the number of ethnobotanical plant species collected for each were as follows: natural forest (95), planted (73), agriculture field

(18), grassland (41), savanna land (15), wasteland (86), road side (119), and amphibious community (36). Many plant species were found in more than a single community. During the research it was found that the traditional knowledge was equally distributed between migrant and local inhabitants. It was also observed that traditional knowledge was greater in the age group of 30 to 60 years than below 30 years. Again the knowledge is associated more with women. A total of 206 angiosperm species and 66 families were recorded from the study sites, predominantly comprised of dicotyledonous herbs, followed by tree species. The detailed information of the plant species including taxa, vernacular names, plant parts used, and their ethnobotanical uses is presented in Appendix 2.

Discussion

Plants recorded from the study sites were used for medicinal, economic (aromatic, timber, spices, fuel, condiments, cosmetics, etc.), fodder, firewood, food, spiritual value, and for other purposes. Use of plants or plant parts for various diseases by the locals and migrants in the **tarai** region is a common practice. The results show that gender and age class differ with regard to their traditional knowledge of ethnobotanical plants reported from the study area. It was found that women of age group of above 30 years had more traditional knowledge than men about ethnobotanical plants and their uses. This may be attributed to the fact that mainly the women were associated with collecting plants for fodder, fuel, and food value for their own use. In most of the cases the older people were noted as being better respondents, and the reason for this may be their personal experience of using these species for many years. Respondents below the age of 30 years were less aware about the traditional knowledge than older people who gathered their knowledge by their day-to-day practices. The reduced number of knowledgeable young people may be due to their attraction to or the influence of modern facilities and lifestyle of big cities and a diminished belief in their traditional knowledge.

Uses of ethnobotanical plant species

Relative to similar taxa of comparable regions, the utilization of species within the **tarai** region was variable. Several aged persons from the study area told of detailed use of *Terminalia arjuna* (Roxb. ex DC.) Wight & Arn. in treating asthma: "Prepare a fine powder of the bark of *T. arjuna* and store it in a well corked bottle. The patient wishing to take up the treatment should fast on a full moon day. At night a dish of milk and rice (**kheer**) should be prepared and put at a place where the moon light falls upon it for the whole night. Sprinkle the powder over the dish and it should be taken by patient for fast recovery in asthma." Another told about the interesting use of twigs of *Achyranthes aspera* L., wherein a pregnant woman should tie it around her vest for easy delivery.

It was found during the study that the species *Abrus precatorius* L. was used as a purgative, to stimulate vomiting, to increase sexual excitement, and also used to treat nervous disorders. These ethnic uses of this plant were very different from the uses reported by Singh and Narain (2009) from the district Mirzapur where it was used to treat rheumatism, leukorrhea, and sciatica. The other plant *A. catechu* was used for inflammation, eruption, bronchial infection, boils, chronic ulceration, diarrhea, dysentery, gum disorder and mouth diseases, epistaxis, hemoptysis, hemorrhage, otorrhea, and sore nipples. Ranjan (2004) reported the same use of this plant in Nepal. Sharma and Trivedi (2004) reported the same plant was used in Rajasthan in difficult child birth, while Singh and Narain (2009) reported its use in rheumatism. The herb *A. aspera* was widely (more than 60% of respondents) used in the study area as taken for body pain, toothache, cut wounds, easy delivery, inflammation, headache, and gangrene and was used orally or applied locally in crushed form and as an extract. Its root paste is externally used in snake bite whereas its leaf juice is useful in vomiting due to indigestion, malaria, and boils and is also used as eye drops. Crushed leaf of this herb mixed with cooking oil is applied on the wound as a paste. Almost the same uses of this herb were reported by Bhatt and Joshi (2004) in Kutch district of Gujarat, and while Sharma and Trivedi (2004) reported its use for cough, Misra (2004) reported the uses of this herb in Orissa for skin diseases and for piles. *Albizia lebbek* is abundant in the study area, and it was reported as widely used for various purposes. Medicinally it was used for piles, tuberculosis, snake bite, eye diseases, and asthma; it is also used for making furniture and printing paper and as fodder. Singh and Narain (2009) reported its use for piles and body pain, but Bhatt and Joshi (2004) reported its use for color blindness in Gujarat. The herb *Asparagus curillus* Buch.-Ham. ex Roxb. is used for diabetes in the study area, and the same use was reported by Singh and Narain (2009) also, but it is differently used by local people of Orissa for headache and jaundice (Misra 2004). The plant *Calotropis procera* (Aiton) Dryand. is reported for use against Parkinson disease in the study area and is also used for cholera, malaria, and fever, but in other regions it was reported for body heat and asthma by Singh and Narain (2009), Sharma and Trivedi (2004), and Bhatt and Joshi (2004). *Dalbergia sissoo* is used for various purposes in this region medicinally; it is reported for use as an expectorant and to enrich blood and in treating eye diseases, skin diseases, ulcers, leucoderma, dysentery, indigestion, fever, urinary infection, and cancerous growth of lips. Singh and Narain (2009) reported its use for jaundice and liver disorder, and it was reported as being used as a stimulant in Rajasthan (Sharma & Trivedi 2004). *Nyctanthes arbor-tristis* L. is used for indigestion, fever, rheumatism, and sciatica in the study area, while in other regions it is reported for migraines and animal ulcers (Singh & Narain 2009). *Rauvolfia serpentina* (L.) Benth. ex Kurz is used for treating insanity and controlling blood pressure in the study area and reported for the

same use by Singh and Narain (2009), Ranjan (2004), and Sharma and Trivedi (2004). Many other plants are reported for treating veterinary diseases in the study site, like hoof-rot disease in milch cattle treated by *Lawsonia inermis* L. and *Tridax procumbens* L. The same plants were reported by Sharma and Trivedi (2004) in Rajasthan for similar uses. Many plants are used for spiritual and religious purposes in the study area such as *Aegle marmelos* (L.) Corrêa, *Butea monosperma* (Lam.) Taub., *Datura alba* Rumph. ex Nees, and *Mangifera indica* L. The same uses were reported by Sharma (2004) in Rajasthan also.

Species with economic potential

During the study period it was found that the plants *Justicia adhatoda* L., *A. curillus*, *Boerhavia diffusa* L., *Sida cordifolia* L., *Sida rhombifolia* L., and *A. aspera* grew in wild conditions. These plants have great medicinal and economic value, and if these plants are propagated wisely, they would be of great monetary and employment value. Many other medicinally and economically valuable tree species are present in the study area such as *A. lebbeck*, *A. procera*, *Bombax ceiba* L., and *B. monosperma*. These plants may be used to raise the economy of the area. *Cleome viscosa* L., which is used in different ailments and has seeds, locally called **jakhia**, which are used as spices, grows in wild conditions. If it is cultivated it would have great trade value. *Tinospora cordifolia* (Willd.) Miers and *Cannabis sativa* L. are abundant in study area. They may be used to raise the economic status of the **tarai** region as well as of the state. Further it was found during the study period that plants *Argyreia nervosa* (Burm. f.) Bojer and *Colocasia esculenta* (L.) Schott occupied a larger area in the study site than previously assumed. Our study suggested further research on biochemical investigation of these plants.

Conservation

Recently, concern for conservation measures has been voiced for plants of ethnobotanical uses in Uttarakhand, and a large number of medicinal plant species has been reported as endangered, rare, or vulnerable along with effective strategies for their conservation, protection, and planned exploitation (Biswas 1988, Joshi *et al.* 1990, 1993, Pandey *et al.* 1994, Pangtey & Samant 1988, Singh 1992, Singh & Ali 1998, Sinha 1975). However, there is lack of information reported from the **tarai** region of Kumaun where profound developmental activities have taken place and where there have been remarkable anthropogenic influences. Conservation and plant introduction are urgent necessities in these regions. Some important species of this category which need to be conserved as cited in Samant *et al.* (1998a), Ved *et al.* (2003), Srivastava and Singh (2005), and Singh and Ali (1998) are presented in Table 1.

Conclusion and Suggestions

The ethno-medicinal survey of the study area indicates that currently the local people use these plant species for non-commercial purposes only (i.e., for their own consumption). It was also analyzed that in a majority of the species, the flower, seed, leaf, and root are the source of raw material for medicines. Further, there is no standardization of the dose of the active principle, and most of the doses are recognized on trial and error basis. It may therefore be concluded that wise use of these plant species on a sustainable basis for folk medicines and agronomic and biochemical investigations are needed. Species richness and anthropogenic pressure govern the prioritization of species, communities, and habitats (Pant & Samant 2008). The **tarai** region is rich in biodiversity, and to conserve this it is necessary to create public awareness

Table 1. Important plant species for conservation within the **tarai** region of Kumaun, Uttarakhand, India (Samant *et al.* 1998a, Singh & Ali 1998, Srivastava & Singh 2005, Ved *et al.* 2003).

Species	Category
<i>Viola odorata</i> L.	Endangered
<i>Helicteres isora</i> L.	Threatened
<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	Threatened
<i>Zanthoxylum budrunga</i> Wall. ex DC.	Threatened
<i>Artemisia nilagirica</i> (C.B. Clarke) Pamp.	Vulnerable
<i>Asparagus curillus</i> Buch.-Ham. ex Roxb.	Vulnerable
<i>Cheilocostus speciosus</i> (J. König) C. Specht	Vulnerable
<i>Dioscorea dodecaneura</i> Vell.	Vulnerable
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Vulnerable
<i>Tinospora cordifolia</i> (Willd.) Miers	Vulnerable

about conservation of wild ethnobotanical plants. It is suggested that (1) additional areas like wastelands should be extended for cultivation and plantation of some of the species widely used in local medicine; (2) precious germ-plasm of rare species should be collected and maintained under protected conditions in the field plantation, botanical and herbal gardens, clonal repositories, gene banks, or plant tissue culture repositories; (3) collection should be done by trained and experienced plant collectors who can identify the ethnobotanical plants properly and are aware of the methodology of preservation of plants and their parts used; (4) during the collection of leaves, flowers, and fruits, the whole plant should not be uprooted; and (5) a complete ban by the forest authorities should be imposed on the collection of rare and endangered species.

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Appendix 1. Format used for survey of ethnobotanical plants and their uses.

1. Survey No. _____
2. Date:
3. Site Location:
4. Site Habitat:
5. Name of the Respondent:
6. Age:
7. Gender:
8. Occupation:
9. Native Place of Respondent:
10. Local Name of the Plant:
11. Parts Used:
12. Ethnobotanical Uses:
13. Procedure of Use:
14. Botanical Name of the Plant:
15. Vernacular / English Name :
16. Family:
17. Occurrence:
18. Habit:
19. Any Other Information:

Appendix 2. Ethnobotanical plant species of the tarai region, Kumaun, Uttarakhand, India. Vernacular names are in Hindi.

Taxa	Vernacular name(s)	Plant part used and uses
ACANTHACEAE		
<i>Andrographis paniculata</i> (Burm. f.) Nees	kiryat, kalmedh	Whole plant is used as tonic in the treatment of fever, worms, and dysentery. Juice from the leaves is useful for children suffering from fever and stomach complaints. People use flower juice to keep slim and trim.
<i>Barleria prionitis</i> L.	piya basa	Leaf is used for tooth and gum disorders, cough, diarrhea, conception, swelling, ulcers, boils, scrofula, and joint inflammation.
<i>Blepharis maderaspatensis</i> (L.) B. Heyne ex Roth	katahwa	Whole plant is used for urine problems.
<i>Dicliptera chinensis</i> (L.) Juss.	jangali poudh	Whole plant is used to improve the functioning and feeling of well being.
<i>Justicia adhatoda</i> L.	basak, arusa, adulasa	Leaves are used mainly as an expectorant in the form of juice, syrup, or decoction and bring relief for bronchitis. Leaves also possess anthelmintic and herbicide properties. Roots, leaves, and flowers yield oil which is effective against tubercle bacilli. It is also a promising insecticide against pests of storage.
<i>Lepidagathis cristata</i> Willd.	katera	Plant is used to improve the feeling of well being and is applied to itchy infections of the skin. Leaves are chewed to relieve cough and are used as fodder.
ACORACEAE		
<i>Acorus calamus</i> L.	gorbach, vacha	Branched, aromatic rhizomes are used medicinally as a carminative, a stimulant to the central nervous system, and as a tonic. It relieves flatulence, acts as an expectorant, and is useful in treating diarrhea and dysentery. Leaves and rhizomes are used to expel intestinal worms. Alcohol extracts have sedative and analgesic effects and cause moderate depression in blood pressure. Leaves and root stock are used in the preparation of perfumes, hair powders, and liquor flavoring and are used as an insecticide for the control of household pests and of insects attacking field crops, stored grains, and woolens. Fresh root stock is used in confectionery and as a substitute for ginger.
AMARANTHACEAE		
<i>Achyranthes aspera</i> L.	latjeera, chirchira	Root decoction is taken for body pain, toothache, cut wounds, easy delivery, inflammation, headache, and gangrene orally or applied locally in crushed form and as an extract. Root paste is externally used for snake bite. Leaf juice is useful for vomiting due to indigestion, malaria, and boils and also used as eye drops. Crushed leaf mixed with cooking oil is applied on wounds as a paste. Pregnant women tie twigs round the vest for easy delivery. Ash of the plant is used in dyeing and for washing clothes. Seeds are cooked and eaten. Leaves are used as fodder for goats.
<i>Aerva sanguinolenta</i> (L.) Blume	gorakh boonti	Root is used for dysentery.
<i>Alternanthera sessilis</i> (L.) R. Br. ex DC.	jangali poudh	Herb is used as a vegetable and fodder plant.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Amaranthus blitum</i> L.	chaulai	Leaves are used for strangury and gonorrhoea, to remove stones of urinary bladder, kidney, or liver and are also used as a good skin tonic. Leaves are used as a vegetable, and whole plants are used as fodder.
<i>Amaranthus polygamus</i> L.	bari chaulai, lal sag	Whole plant has properties to contract tissue and is used for diarrhoea, dysentery, and hemorrhage. Externally it is used in ulcerated conditions of the throat and mouth and as a wash for ulcers. Leaves and young stems are used as a vegetable.
<i>Amaranthus spinosus</i> L.	kateli chaulai, goja	Whole plant is used as a vegetable and as fodder for cattle.
<i>Celosia argentea</i> L.	safed murga	Stem and twigs are used as a vegetable.
<i>Digera muricata</i> (L.) Mart.	latmahuria, lesua	Tender twigs and inflorescence are used as a vegetable.
ANACARDIACEAE		
<i>Mangifera indica</i> L.	aam	Seed paste is used for dysentery, and leaf juice is used for earache. Unripe fruit is used to check vomiting, heat stroke, and improve digestion. The wood is moderately strong, hard, and quite durable underwater; it is used for piles completely immersed in water and cheap furniture dugouts. Leaves are strung and used with dry wood for havan in Hindu religious ceremonies. Fruit is eaten raw, pickled, preserved, or made into chutneys.
<i>Semecarpus anacardium</i> L.f.	bhela, bhilawan	Juice extracted from the rind of the drupe has medicinal, domestic, and industrial uses. Seed oil is used as a preservative against white ants and as a lubricant for wooden axles of carts.
ANNONACEAE		
<i>Annona squamosa</i> L.	sharifa	Ripe fruit is valued as a dessert; a refreshing drink is prepared from the pulp. Fruit is used for intestinal complaints and is a good tonic that enriches the blood and increases muscular strength and is used as a stimulant and expectorant (though the seeds are indigestible and abortifacient, cause fever and furunculosis, and produce eye ulcers). It is good to destroy head lice. Root is used as a drastic purgative and is given for acute dysentery. It is also taken internally for depression and spinal diseases. Bark is used for diarrhoea, dysentery, and digestive upset. Fiber is used for rough sacking and sewing gunny bags. Stalks are used for making printing and writing paper. Leaves and tender parts of the plant are useful as fodder.
<i>Miliusa tomentosa</i> (Roxb.) J. Sinclair	kari, kirua	Wood is used for cabinet work and carving. Fruit is edible.
APIACEAE		
<i>Apium graveolens</i> L.	ajmud, karas, salari	Seeds are used as a stimulant, relieve flatulence, are associated with colic, and are used as a nervine sedative and tonic. Seed oil is used to flavor food products, liquors, and soups. Fruits are used as an antispasmodic, a nerve stimulant, and to treat rheumatism. Dried ripe fruits are used as a spice. Long leaf-stalk is consumed as a vegetable.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Centella asiatica</i> (L.) Urb.	brahmi, brahma, manduki	Leaves and stems are used to restore health, increase feelings of well being, and used for proper urination. It is also useful in diseases of the nervous system and skin.
APOCYNACEAE		
<i>Alstonia scholaris</i> (L.) R. Br.	chatian, saptaparna, shaitan	Bark is used as a tonic to improve health and to treat snake bite, asthma, and cardiac troubles. Leaves are used for beri-beri, dropsy, and congested liver. Latex is applied to ulcers, sores, tumors, and rheumatic swellings. Wood is lustrous, light, and not durable; it is used for boxes, light furniture, carving, and pencils.
<i>Asclepias curassavica</i> L.	kakatundi	Whole plant is poisonous and used for pulmonary tuberculosis. Root stimulates vomiting and is used as a purgative and to treat gonorrhoea. Leaves induce sweating and are used to treat hemorrhage and gonorrhoea. Leaf, root, and flower are used to treat piles, intestinal worms, dysentery, cancer, and wounds.
<i>Calotropis gigantea</i> (L.) Dryand.	ak, mandara, rui	Flowers are used as a tonic, appetite stimulant, bechic, and antiasthmatic. Milk juice is used as a purgative and gastrointestinal irritant. Valuable fiber is extracted from the plant. Silky floss from the seed is used for stuffing pillows.
<i>Calotropis procera</i> (Aiton) Dryand.	aak, madar	Ground root is used for cholera. Flower bud is used for treating malarial fever. Latex in combination with oil is used for Parkinson disease symptoms. Stem fiber is made into cordage, and floss from seeds is used as stuffing material.
<i>Carissa carandas</i> L.	karonda	Crushed root is used to heal wounds. Fruit is an astringent and reduces fever, lessens thirst, and treats biliousness and loss of appetite. It is useful in diseases of the brain but causes indigestion, makes one lethargic, and diminishes sexual power. Edible berries are sour and are used for preparing preserves, pickles, jam, and chutneys. Wood is hard and smooth; it is used for making combs, spoons, and household utensils and as fuel.
<i>Cascabela thevetia</i> (L.) Lippold	pilikaner	Kernels are useful to treat heart diseases, and latex is highly poisonous.
<i>Catharanthus roseus</i> (L.) G. Don	sada sawagan	Root and thick basal stem has medicinal properties which are used in cancer therapy.
<i>Cryptolepis dubia</i> (Burm. f.) M.R. Almeida	karanta, medhasing	Leaves are toxic. Whole plant is used for rickets and yields fiber (floss) of local importance.
<i>Nerium oleander</i> L.	lal kaner	Plant is externally applied on swellings, leprosy, and skin diseases. Root paste is applied to cancers and ulcers and used for treating worms. Fresh juice of young leaves is dropped in the eye. Oil of roots and bark is used for leprosy. Root bark and seeds are toxic; leaves, flowers, bark, and woody parts show cardio-tonic potency at a lethal dose. Wild plants are more poisonous than garden plants. Wood can be used for making hookah tubes and in the manufacture of rat poisons.
<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	sarpgandha	Root powder is used to treat insanity, intestinal disorders, and poor blood pressure.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Tabernaemontana divaricata</i> (L.) R. Br. ex Roem. & Schult.	chandni	Milky juice of leaf is used for eye diseases. Root is used to increase appetite and relieve local pain and is chewed to relieve toothaches. Red pulp around seeds is used as a dye. Flowers are made into garlands and offered in worship. Women use garlands as hair ornaments.
ARACEAE		
<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson.	jamikand	Tuber is used to improve appetite and as a vegetable.
<i>Colocasia esculenta</i> (L.) Schott	arvi, jangali ghuiyan	Juice of the petiole is applied to stop bleeding, used as a stimulant, and removes redness of skin. Juice of the corm is used for baldness and scorpion stings. Sap gives permanent black stain to cloth. Rhizomes are starchy and edible. Young leaves are used as a vegetable.
ARECACEAE		
<i>Calamus tenuis</i> Roxb.	bet	Stems are used for walking sticks, mats, screens, and baskets.
ASPARAGACEAE		
<i>Asparagus adscendens</i> Roxb.	safed musli	Root has a slippery, mucilaginous fluid which induces the flow of milk and improves the functioning of the body. Root is useful for diarrhea, dysentery, and general debility.
<i>Asparagus curillus</i> Buch.-Ham. ex Roxb.	shatavar	Powdered root is used for diabetes.
ASTERACEAE		
<i>Artemisia capillaris</i> Thunb.	barma	Infusion of plant is used as a purgative. Whole plants are used for earaches and burns. Plant contains essential oils. Twigs are made into brooms for cleaning.
<i>Artemisia nilagirica</i> (C.B. Clarke) Pamp.	kirmani ajvain	Chief use of the plant is for expulsion of stomach worms (i.e., threadworms and roundworms). It is also useful against fevers and dropsy and as a stimulant. Essential oil is used in flavoring liqueurs.
<i>Bidens biternata</i> (Lour.) Merr. & Sherff	jangali poudh	Plant is used to reduce fever. Leaf is an antidote for snake venom.
<i>Bidens pilosa</i> L.	kateeli	Whole plant has anticancer and antipyretic properties.
<i>Blumea lacera</i> (Burm. f.) DC.	kakronda	Leaf juice is used for intestinal worms, proper urination, fever reduction, and as a stimulant. Leaf juice is used on the wounds of children.
<i>Echinops echinatus</i> Roxb.	untkatera, utkanta	Whole plant is used for proper urination, as a nerve tonic, and as a treatment for cough, hysteria, indigestion, tuberculosis of bone or lymph glands, and inflammation of the eye, including conjunctivitis. Powdered root is applied to wounds in cattle to destroy maggots and lice.
<i>Eclipta prostrata</i> (L.) L.	bhangra, mokchand	Whole plant juice is used for jaundice and as a hair oil.
<i>Launaea procumbens</i> (Roxb.) Ramayya & Rajagopal	gobi	Leaves are used to treat fever. Whole plant is used as fodder.
<i>Matricaria chamomilla</i> L.	babuna	Whole plant is used medicinally as a tonic and gastric stimulant. Essential oil is used in perfumery.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Parthenium hysterophorus</i> L.	gajar ghans	Whole plant is used to improve the functioning of the body, increase the feeling of well being, reduce fever, and stimulate menstruation. Decoction of root is used for dysentery.
<i>Sonchus oleraceus</i> L.	dudhi, dadak	Whole plant is used to induce the flow of milk and treat liver troubles. Leaves and roots are used for indigestion and fever and to induce the feeling of well being. Root is used to expel intestinal worms. Stem is used to induce the feeling of well being and as a sedative.
<i>Spilanthes paniculata</i> Wall. ex DC.	para ghans	Leaves are chewed to relieve toothache and afflictions of the throat and gums. Plant boiled in water is given for dysentery, and fresh flower-tops are effective against mosquito larvae. Decoction of flower is used for proper urination and treating scabies and psoriasis (chhal rog). Flower is used to treat tongue paralysis and stammering in children. Root is used as a purgative.
<i>Tridax procumbens</i> L.	gujrati	Leaves are used for bronchial catarrh, dysentery, and diarrhea. Leaf juice is insecticidal and piscicidal and is used to check hemorrhage of wounds.
<i>Vernonia cinerea</i> (L.) Less. var. <i>cinerea</i>	sahdevi	Whole plant is used to increase the secretion of urine, promote perspiration during fever, treat bladder spasms, and relieve strangury. Infusion of herb is used for incontinence and piles. Root is used for dropsy and intestinal worms and as an appetite stimulant. Root decoction is used against diarrhea, cough, gastric and intestinal gas, leucoderma, psoriasis, and other skin diseases.
<i>Xanthium strumarium</i> L.	leptua, banokra	Whole plant is useful for chronic malaria and urinary troubles. Fruit is rich in vitamin C and used for small pox. Buds improve the functioning of the body and are used for proper urination and as a sedative. Seeds are used for resolving inflammatory swellings and seed oil for bladder afflictions. Leaves are used to contract the tissues and for proper urination. Root improves the functioning of the body and is also used to treat cancer. Root extract is applied to ulcers, boils, and abscesses. Seed oil is edible and employed in various industries.
BASELLACEAE		
<i>Basella alba</i> L.	poi	Whole plant is fleshy and spurious and is used for making dye, including dyes used for jellies and sweets. Leaves and tender stems are used as a vegetable. Whole plant is used as fodder.
BIGNONIACEAE		
<i>Jacaranda mimosifolia</i> D. Don	nili gulmohur	Bark and leaves are used in the treatment of syphilis and in increasing appetite.
<i>Oroxylum indicum</i> (L.) Kurz	sonpatha	Decoction of bark is used for boils in mouth, bronchial asthma, cough, joint pain, and to increase appetite.
BIXACEAE		
<i>Bixa orellana</i> L.	latkan, sendri	Seeds, enclosed in a red pulp, are used for coloring cotton and silk and for making butter, cheese confectionery, hair oils, shoe polishes, floor polishes, and pharmaceutical ointments. Pulp is an insect repellent. Bark yields a fiber suitable for cordage.

Taxa	Vernacular name(s)	Plant part used and uses
BORAGINACEAE		
<i>Cordia dichotoma</i> G. Forst.	lasora	Fruits are used for intestinal worms, ringworm, proper urination, inflammation (especially of mucous membranes), and as an expectorant. Bark is used for indigestion and fever. Leaves are applied to ulcers and used for headaches. Wood is strong, fibrous, light, moderately hard, and is used for boats, gunstocks, and agricultural implements. Fruits are eaten either raw or pickled.
CACTACEAE		
<i>Nopalea cochinellifera</i> (L.) Salm-Dyck	nagfani	Mucilaginous joints are useful as a poultice in cases of articular rheumatism, inflammation, burns, skin diseases, earache, and toothache. Fruit is used for gonorrhoea and is edible. Stem is used for whooping cough. Latex is used as a purgative. Whole plant is used to treat snake bites.
CANNACEAE		
<i>Canna indica</i> L.	sabbajaya	Roots are used for proper urination and to treat fever. Tuberous rhizomes are used as a vegetable. Hard black seeds are made into necklaces and rosaries.
CANNABACEAE		
<i>Cannabis sativa</i> L.	bhang	Inflorescence is used for stomachache. Seed oil is used for treating tetanus. Plant yields a strong, durable, water-resistant fiber that is used for making ropes, cables, nets, sail cloth canvas, tarpaulin, carpets, sandals, sheets, etc. Seeds are often roasted and eaten by the Himalayan villagers. Kumauni migrants make chutney of fruits.
CAPRIFOLIACEAE		
<i>Lonicera parviflora</i> Lam.	jangali jhar	Wood is used for making walking sticks. Fruits are edible and used as fuel.
CLEOMACEAE		
<i>Cleome viscosa</i> L.	hurur, jakhiya	Both seeds and leaves are used medicinally. Seeds are a stimulant and carminative and are used in curries and as a spice.
COLCHICACEAE		
<i>Gloriosa superba</i> L.	kalihari	Tubers are used for elimination of intestinal worms. Leaf juice is used to kill head lice.
COMBRETACEAE		
<i>Combretum indicum</i> (L.) DeFilippis	maltilata	Tender shoots are edible.
<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	arjun	Bark is an astringent, cardiac tonic, anti-dysenteric, and expectorant. It is used to treat diabetes, leukorrhoea, anaemia, heart ailments, fatigue, bronchitis, tumours, asthma, external hemorrhages, inflammations, and hypertension. Bark is also used for fever, fractures, and contusions. Timber is used for agricultural implements and boat-building.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	behada	Fruit is bitter and used as an astringent, tonic, laxative, and antipyretic. It is also used for piles, dropsy, diarrhea, leprosy, biliousness, dyspepsia, and headache. Half-ripe fruit is used as a purgative. Wood is hard but not durable and is used for packing cases. Wood pulp is suitable for wrapping paper. Fruit is used for dyeing cloth and leather and making inks.
COMMELINACEAE		
<i>Commelina benghalensis</i> L.	kanchara, kanteri	Young leaves are eaten as a vegetable and used as fodder.
<i>Cyanotis axillaris</i> (L.) D. Don ex Sweet	kana ghans	Whole plant is used as fodder.
CONVOLVULACEAE		
<i>Cuscuta reflexa</i> Roxb.	akashbel, kasoos	Seeds increase the secretion of urine and are used as a tonic, to relieve flatulence and associated colic, remove intestinal worms, and restore health. Whole plant is a purgative, externally used for itching and internally for fevers and liver complaints. Infusion of plant is used for sores.
COSTACEAE		
<i>Cheilocostus speciosus</i> (J. König) C. Specht	keu	Root is used as a purgative and improves the functioning of the body. It is also used for the elimination of intestinal worms, to increase the appetite, as an astringent, depurative, stimulant, and a treatment for snake bite. Tuberous root stocks are used as raw material for sex hormones and oral contraceptives.
CUCURBITACEAE		
<i>Coccinia grandis</i> (L.) Voigt	kundaru	Root is used to treat kidney stones. Green fruits are eaten as a vegetable.
CUPRESSACEAE		
<i>Thuja occidentalis</i> L.	morpankhi, mayurpankh	Leaves yield an essential oil used to restore health, promote proper urination, and reduce fever. Stems are used to increase appetite and reduce periodic return of diseases and fever. Infusion of stem powder is used to restore health and induce sexual excitement. Starch from roots and stems are used as a nutrient and to treat chronic diarrhea and dysentery. Juice of fresh plants is a diuretic also used for gonorrhoea. Stem and leaves yield tannin.
DILLENIACEAE		
<i>Dillenia indica</i> L.	chalta	Wood is used for packing-cases, railway-sleepers, and plywood. Fruits are made into jams and jellies. Dispersal of seeds is helped by elephants, which are fond of fruits.
DIOSCOREACEAE		
<i>Dioscorea dodecaneura</i> Vell.	gaithi, ratala	Tuber is used for piles, dysentery, syphilis, and ulcers. Leaf is used in reducing fever.
EUPHORBIACEAE		
<i>Acalypha indica</i> L.	khokali kuppi	Whole plant is used for asthma, pneumonia, bronchitis, and rheumatism.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Baliospermum solanifolium</i> (Geiseler) Suresh	danti	Roots are used for dropsy and jaundice, proper urination, and rheumatism and also used as a purgative. Leaf juice is used to relieve cough of pulmonary tuberculosis and asthma. Bark is used as an expectorant. Seeds are a purgative, producing watery evacuation, and are also used for rheumatism.
<i>Croton bonplandianus</i> Baill.	ban tulsi	Twig extract has antitumor properties, and leaf extract is used as a mosquito repellent.
<i>Euphorbia hirta</i> L.	laldudhi	Whole plant is used to treat worms in children, bowel complaints, stomach upset, asthma, and cough. Plant promotes formation and flow of milk in women and is useful against gonorrhea and other urinogenital complaints. Root is taken to treat vomiting. Large doses of the drug cause stomach irritation, nausea, and vomiting. Milky juice of the plant is applied on warts. Plants are used as fodder.
<i>Euphorbia nerifolia</i> L.	sheund, sehund	Crushed leaf juice is used to treat cough. Cooked vegetable is given to treat bronchitis and bronchial asthma.
<i>Jatropha curcas</i> L.	jamalgota, jungali arandi, safed arandi	Seeds are used as a purgative, and tender twigs are used for cleaning teeth. Oil extracted from decorticated seeds burns without emitting smoke and is used for manufacturing candles, soap, lubricant, and for illumination.
<i>Mallotus philippensis</i> (Lam.) Müll. Arg.	kampilya, kambila, sindhur, rohini	Glands and hair of the fruit (red powder) increase appetite and stop bleeding and are used in destruction of worms and as a purgative. Wood is hard, moderately tough, and heavy; it is not an important timber. The most valuable part of the tree is the glandular pubescence of the ripe fruit as a source of a dye (kamala) used for dyeing silk and wood a yellow or flame color. Powder is used as kumkum or shendur by Kumauni migrants.
<i>Ricinus communis</i> L.	arandi, andi	Seed paste is applied to sores, boils, and rheumatic swellings. Seeds are used as a purgative and a fish poison and are used to treat scorpion sting. Crushed leaf is applied to relieve headaches and as a poultice for boils. Local people used this oil in the wounds and boils of children. Castor oil from the seeds is mainly used as a lubricant but is also used for transparent soap, textile soap, typewriter-inks, varnishes, and paints. Castor oil is used to prepare phenyls used to make hair oils, hair fixers, and aromatic perfumes and is an ingredient in hair lotions and lipsticks. Writing and printing papers are made of wood pulp. Extract of seeds is used as a clarifying agent in preparation of gur . Seed/oil cake is used as a valuable fertilizer. Powdered leaves are used as insecticide. Roasted seeds are used in veterinary practice.
<i>Trewia nudiflora</i> L.	khamara, pindara	Wood is used for agricultural implements, toys, picture frames, pencils, and match boxes. Wood pulp is suitable for writing and printing paper. Fruits are edible.
FABACEAE		
<i>Abrus precatorius</i> L.	chanoti, ghungchi, rati	Seed is poisonous and is used as a tonic and a purgative, stimulates vomiting and sexual excitement, and is useful for nervous disorders. Root is used as a purgative. Seeds are used for making bracelets, necklaces, rosaries, etc. Stem fibers are woven into baskets.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Acacia auriculiformis</i> A. Cunn. ex Benth.	Australian baool	Wood is suitable for preparing writing and printing paper.
<i>Acacia catechu</i> (L. f.) Willd.	khayer, khair, kattha	Bark and flower-tops are anti-inflammatory and externally applied to boils and skin eruptions. It is useful against bronchial infections, chronic ulcerations, diarrhea and dysentery, diseases of the mouth and gums, epistaxis, hemoptysis, hemorrhage, otorrhea, and sore nipples. Wood is strong, hard, and valuable timber used for bridge and building construction and agricultural implements.
<i>Acacia nilotica</i> (L.) Willd. ex Delile	babool, keeker	Leaf juice is used to reduce irritation and soothe inflammation. Twigs are used for cleaning teeth. Gum is used extensively in sweetmeats. Bark is one of the most widely used tanning substances. Twigs are used for making baskets. Pods, tender shoots, and leaves are used as fodder.
<i>Aeschynomene indica</i> L.	didhen, phulan	Soft wood is used for making sola-hats. Leaf is used as fodder.
<i>Albizia amara</i> (Roxb.) B. Boiv.	lallei	Stem, bark, and fruits are used for piles. Seeds are an astringent and used to treat piles, diarrhea, and leprosy. Wood is used for fuel and making tool handles. Dried leaves are used as a soap substitute and a green manure.
<i>Albizia lebbeck</i> (L.) Benth.	kala siris	Seeds are used to treat piles, tuberculosis, and snake bite. Leaves are used for eye diseases. Bark and flower decoction is an anti-asthmatic. Wood is decorative and excellent for high quality furniture; wood pulp is suitable for printing paper. Leaves and twigs are used as fodder.
<i>Albizia procera</i> (Roxb.) Benth.	safed siris	Leaves are poisonous and are applied to ulcers and used in a poultice mixed with turmeric to kill insects and larvae. Wood is used for making writing-papers and compressed-wood furniture.
<i>Bauhinia variegata</i> L.	kachnar	Bark is used to restore health and improve the functioning of the body, contract tissue, and treat skin diseases, ulcers, and tuberculosis of bone or lymph gland. Dried buds are used for dysentery, diarrhea, and piles. Root is used to relieve gastric and intestinal distention and associated colic, indigestion, and as an antidote to snake venom. Flowers are a laxative. Bark is used for dyeing and tanning. Leaves and flowers-buds are eaten as a vegetable.
<i>Butea monosperma</i> (Lam.) Taub.	palash, tesu	Bark is used as an aphrodisiac, laxative, and anthelmintic and is useful in fractures of the bone, diseases of the anus, dysentery, and hydrocele. Gum is used to cure leprosy and burning of skin. Bark and seeds are given in case of snake bite. Bark ash in combination with other drugs is prescribed in case of scorpion sting. Powdered seed is quite effective against hook worms. Wood is used for rough packing cases, well-curbs, piles, water scoops, and cheap board wood. Fiber from roots is used for making rustic sandals. Flowers, known as tessu , yield a brilliant yellow evanescent dye which is much used for domestic purposes. Flowers are a constituent of gual or abir , the powder popularly used at the time of Holi festival.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Cajanus scarabaeoides</i> (L.) Thouars	bankulthi	Whole plants are used for reducing fever, relieving pain, treating anemia, and as an antidropsical. Seeds are taken to destroy tape worms.
<i>Campylotropis macrostyla</i> (D. Don) Miq.	jangali poudh	Whole plant is used for fodder.
<i>Cassia fistula</i> L.	amaltas	Fruit pulp is a laxative and in large quantities causes purging, nausea, and griping. It is also used in a mixture with senna leaves. Fruit pulp stimulates vomiting, reduces fever, and is useful in treating boils, pustules, leprosy, ring worm, colic, griping, flatulence, constipation, indigestion, fever, and heart diseases. It possesses anti-bacterial and antifungal action. Wood is used for furniture, decorations, paneling, and fine carving.
<i>Clitoria ternatea</i> L.	gokarni, aparjit	Seeds are used as a purgative. Roots are used as a cathartic and purgative.
<i>Crotalaria juncea</i> L.	san, sunn	Stem fiber is used for upsized twine, fishing nets, cot stringing, matting coarse canvas, bags, and ropes. Flowers are eaten as vegetables. Pakauri is made from the yellow flowers.
<i>Dalbergia sissoo</i> DC.	shisham	Leaf juice is used for eye diseases. Bark is used as an expectorant and is used to treat skin diseases, ulcers, leucoderma, and dysentery. Decoction of wood enriches blood and is used to treat eye and nose diseases, burning sensation of the body, scalding urine, syphilis, and stomach troubles. Decoction of leaf is given in the cut stage of gonorrhoea. Wood is hard, strong, and durable and used for high class furniture, cabinet wood, and construction and general utility requirements.
<i>Desmodium elegans</i> DC.	samber	Roots relieve flatulence and associated colic and bilious complaints. They are also used as a tonic and to encourage proper urination. Aerial parts are used as a spasmolytic.
<i>Desmodium gangeticum</i> (L.) DC.	sarivan	Root is used as an agent which contracts the tissue as well as a treatment for diarrhea, digestive upset, cough, vomiting, asthma, snake bite, scorpion-sting, and fever. It improves the functioning of the body and increases the flow of urine.
<i>Desmodium oojeinense</i> (Roxb.) H. Ohashi	sandan, timsa, timas	Bark is used in reducing fever and also as a fish poison. Wood is mottled, handsome, hard, tough, and elastic. It is one of the finest woods for larger beer casks and hog sheds. Bark fiber is used for making ropes.
<i>Desmodium triflorum</i> (L.) DC.	kudaliya	Whole plant is used as fodder.
<i>Ehretia acuminata</i> R. Br.	gual	Fruits are edible and also pickled.
<i>Indigofera tinctoria</i> L.	neel, sakina	Root is used for cough and chest pain. Leaves yield the valuable, light- and water-fast dye indigo used for textiles and painting.
<i>Leucaena leucocephala</i> (Lam.) De Wit	subabul, vilaitibaval	Young fruits and seeds are edible. Leaves and pods are fed to cattle, sheep, and goats.
<i>Medicago polymorpha</i> L.	jangali poudh	Leaves are rich in vitamin C, grown as green manure, and used as fodder.
<i>Melilotus albus</i> Medik.	khagaria	Whole plant is used as fodder.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Mimosa himalayana</i> Gamble	shiahkanta, aila	Leaves are used for piles, bruises, and burns. Powdered root is given to the patient who in weakness vomits his food.
<i>Mucuna pruriens</i> (L.) DC.	kawanch, alkusi	Seeds stimulate sexual excitement, improve the feeling of well-being, and are used for scorpion sting. Pods are used for the elimination of intestinal worms. Root is used as a purgative and treatment for dropsy. It improves health and is used for proper urination, bringing menstruation, and treating diseases of the nervous system and renal infections. It is useful as green manure and a cover crop.
<i>Pongamia pinnata</i> (L.) Pierre	karanja	Stem bark is used for malarial fever and piles. Flower is used for toothache. Seed is used for cough, skin diseases, and boils. Seed oil is used in soap making, as an illuminant, and as manure. Fruits are edible.
<i>Saraca indica</i> L.	sita ashok	Bark is used as an astringent, in excessive menstruation, and as a uterine sedative.
<i>Senna tora</i> (L.) Roxb.	banaad	Decoction of leaves and aqueous seed paste are both used for ringworm and itching. Decoction of leaves and fruit pulp for three days is also used as laxative in fever. Root is used for snake bite. Seeds are used in preparation of sweets.
<i>Tamarindus indica</i> L.	imli	Fruit pulp is used as a refrigerant and a laxative and relieves flatulence and associated colic. It is also recommended for fever and digestive upset. Wood is extremely hard, heavy, tough, durable, and resistant to insect attack. Seeds are extensively used in jam and jelly industries. Fruit pulp is used for souring curries, sauces, chutneys, and certain beverages.
LAMIACEAE		
<i>Callicarpa macrophylla</i> Vahl	dala, daya	Leaves are heated and applied to rheumatic joints. Oil from root is used for stomach disorders.
<i>Clerodendrum infortunatum</i> L.	kuro	Fresh leaves are used for destruction or elimination of intestinal worms. Root bark also has medicinal properties.
<i>Clerodendrum viscosum</i> Vent.	bhant	Leaves and roots are used for tumors and other skin diseases. Leaf juice is used to expel intestinal worms and to increase the feeling of well being, reduce fever in malaria, increase the flow of bile in the intestine, and as a laxative. Leaves and flowers are used to treat scorpion sting. Sprouts are used for snake bite.
<i>Leucas cephalotes</i> (Roth) Spreng.	goma, mota pati	Flowers as a syrup are used for cold and cough. Whole plant is a stimulant and increases the secretion of urine. Fresh juice is used for scabies.
<i>Pogostemon benghalensis</i> (Burm. f.) Kuntze	pacholi	Oil is extensively used in perfumery. Dried leaves and branches are commonly used to scent shawls, linen, and other textiles. Oil possesses antibacterial properties.
<i>Pogostemon pubescens</i> Benth.	vanjeera	Aerial parts are antifungal and a diuretic. Leaf is antibacterial.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Tectona grandis</i> L. f.	sagwan	Oil obtained from wood is used for eczema and, in the form of powder and plaster, is used for headaches and for swelling. For dyspepsia, stomach burning, and intestinal worms, it is taken internally. Oil from kernels is used for scabies and to promote hair growth. Flowers are used to treat digestive upset, bronchitis, and urinary discharges. Flower and seed are used for proper urination. Bark is used to contract tissue and for bronchitis. Different grades of plywood and blackboards are made of the wood. Wood waste is converted into various types of boards: particle board, fiber board, plastic board, and chip board. Leaves yield a dye which is used for wool and silk.
<i>Vitex negundo</i> L.	nirgandi, samhali	Leaves are considered a tonic and applied to rheumatic swellings of joints. Leaves are also aromatic and used to restore health and to expel intestinal worms. Dried leaves are smoked to relieve headache and catarrh. Branches are used for manufacturing baskets.
LINDERNIACEAE		
<i>Lindernia crustacea</i> (L.) F. Muell.	jangali poudh	Whole plant is used for gonorrhoea and as a poultice for boils, sores, ringworm, and itches.
LYTHRACEAE		
<i>Lagerstroemia indica</i> L.	phurush	Bark, leaves, and flowers are used as a purgative for watery evacuation of the bowel.
<i>Lawsonia inermis</i> L.	mehandi	Leaves are used for renal colic, burning sensation, fever, and baldness. Infusion of leaves is used for dyeing cotton fabrics a light reddish-brown. Dye stains skin orange-red and is used by women for decoration on festive occasions.
<i>Punica granatum</i> L.	anar	Dried fruit helps to improve digestion and treat diarrhea. Dry powdered exocarp is used for irregular menstruation. Fresh fruit improves weakness. Delicious beverages are made from the seeds. Fruit is valued both as food and dessert.
MALVACEAE		
<i>Abelmoschus esculentus</i> (L.) Moench	bhindi	Infusion of root powder in water improves vitality. Fruits are used as a vegetable and also used to clarify sugar in sugar factories.
<i>Abutilon hirtum</i> (Lam.) Sweet	kanghi	Leaf has slippery, mucilaginous fluid which soothes inflammation and increases the flow of urine. Root is used for fever and stimulates sexual excitement. Stem, on retting, yields fiber used for making ropes. Seeds yield semi-drying oil.
<i>Bombax ceiba</i> L.	semur, simul	Gum is used to induce sexual excitement. Flowers and fruits are used to treat snake bite. Fruits are sweet, cooling, and digestible. Silky floss, obtained from inner wall of fruit, is used for stuffing pillows and mattresses. Gum or dried juice from trunk is used as an adhesive. Wood is used namely for making plywood packing cases. Flowers and fleshy calyx are edible. Seeds are used as fodder.
<i>Gossypium hirsutum</i> L.	kapas	Fiber obtained from seeds is utilized in manufacture of textiles, fabrics, and other woven products. Seed-oil is edible. Cotton-seed and seed cake are used as fodder.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Helicteres isora</i> L.	bhendu, jonkphal, marorphali, mrigashinga	Bark is used for diarrhea, dysentery, and digestive upset. Fruits are used for intestinal complaints and as an astringent. Root is used as a demulcent as well as for treating stomach infections, diabetes, and snake-bite, and it reduces the flow of milk. Fiber is used for rough sacking, for sewing gunny bags and cattle harnesses and is also used for making container bags for rice. Leaves and tender parts of the plant are useful as fodder.
<i>Hibiscus rosa-sinensis</i> L.	deviphool, gurhal	Decoction of leaves is used as a lotion for fever. Decoction of root is recommended for venereal diseases and fever. Decoction of flowers is used for bronchial catarrh. Flowers fried in ghee are used for menorrhagia. Paste made from flowers is applied for burning sensation and inflammation. Flowers yield dark, purplish dye used for making shoe polishes. Flowers are also used in worship of goddess.
<i>Kavalam urens</i> (Roxb.) Raf.	katila, karai pandruk	Wood is soft and used for toys and musical instruments. Stems are the source of gums used as a thickening agent in preparation of printing pastes for textile industry. Bark fiber is suitable for making ropes. Plant is also used as an ingredient of dressing and spreads in food, baking, and dairy industries. Seeds are roasted and eaten.
<i>Malvastrum coromandelianum</i> (L.) Garcke	kangi, bariar	This is a pungently aromatic, antibacterial herb useful in aiding digestion, relaxing spasms, reducing inflammation, and increasing perspiration rate. It is used for cough, cold, fever, and pain relief and suppresses lactation. Leaves are applied to inflamed sores and wounds for cooling and healing. Decoction of the plant is given for dysentery. Fiber from the stem is used for making brooms.
<i>Sida cordifolia</i> L.	kungyi, bala	Seeds possess a slippery, mucilaginous fluid and have laxative properties also used for bowel complaints. Juice of plant with water is given for spermatorrhoea. Leaves are used to reduce fever; root juice is used for healing wounds. Seeds are used to increase sexual excitement and also used to treat gonorrhoea, colic, and painful ineffectual straining to empty the bowel or bladder. Stems yield fiber and are also used for brooms.
<i>Sida rhombifolia</i> L.	sehdevi, mahabala	Whole plant is useful for rheumatism and tuberculosis. Stems abound in mucilage used to reduce irritation, soothe inflammation, and soften and soothe skin. Stems are also used to aid proper urination and to reduce fever. Pounded leaves are applied on swellings and root is used for rheumatism. Stem fiber is used for rope and twine.
<i>Urena lobata</i> L.	vanbhendi, bachata	Root is used to aid proper urination and is used externally for rheumatism. Decoctions of stem and roots are used for flatulent colic. Flowers are used as an expectorant; their infusion is used for aphthae (small grey areas surrounded by a ring of erythema) and sore throat. Plant yields fiber used for making cordage, coarse cloth, and tough paper. It is also used as goat fodder.

Taxa	Vernacular name(s)	Plant part used and uses
MARTYNIACEAE		
<i>Martynia annua</i> L.	hathajori, bichu, junka muli	Leaves are used for epilepsy and are applied to tubercular glands of the neck. Juice is used as a gargle for sore throat. Plants are used to treat scorpion sting, and fruit is useful against inflammation.
MELIACEAE		
<i>Melia azedarach</i> L.	bakain	Young fruits are eaten directly to treat skin diseases. Leaf juice is used for the elimination of intestinal worms, and seeds are used for rheumatism. Twigs in powdered form are used for skin diseases. Flowers and leaves are used to relieve headache. Wood is tough, moderately hard, durable and not attacked by white ants. Fruit is used in the manufacture of insecticides and flea powders.
<i>Toona ciliata</i> M. Roem.	toon	Flowers yield dye used for dyeing cotton. Wood is used for furniture. Bark is used to tan other materials.
MENISPERMACEAE		
<i>Cocculus villosus</i> DC.	tilphara, titri, amtikibel, khareta ki bel	Root is useful for treating chronic rheumatism and venereal diseases. Extract of stems and roots is a sedative, hypertensive, cardiotonic, and spasmolytic.
<i>Tinospora cordifolia</i> (Willd.) Miers	gilo, giloe	Stem is used to increase the appetite, prevent the periodic return of diseases, and reduce fever. Infusion of powdered stem is used to restore health and stimulates sexual excitement. Starch from roots and stems are nutrients and are used against chronic diarrhea and dysentery. Juice of a fresh plant increases the flow of urine and is used for gonorrhea.
MORACEAE		
<i>Artocarpus heterophyllus</i> Lam.	kathal, kanthal	Unripe fruits are useful for cough. Ripe fruits enrich blood and are used as a tonic for leprosy and ulcers. Seeds are sweet and anti-constipating. Young leaves are applied to boils and wounds to dry them and are also used in fomentation on boils. Wood is strong, durable, and resistant to white ants. Fruit is sweet with a pleasant taste. Unripe fruits are used as vegetables. Leaves are eaten by cattle.
<i>Artocarpus lakoocha</i> Wall. ex Roxb.	barhal	Seeds are used as a purgative. Wood is very durable, even underwater, and is resistant to white ants and rot. It is used for construction work, furniture, and boat building. Bark contains tannin. A dye is extracted from the roots. Fruits are edible.
<i>Ficus racemosa</i> L.	gular	Unripe receptacles are eaten to treat menorrhagia. Milky juice of the tree is used for dysentery (blood dysentery). Wood is soft and very light; it is not durable but lasts fairly well underwater and is used for well curbs and cheap furniture. Fruits are edible, and the leaves are used as fodder for cattle.
<i>Ficus rumphii</i> Blume	pakar, gagjiara	Fruits are edible. Leaves and branches are used as fodder.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Morus alba</i> L.	shahtoot	Fruit is a tonic for kidneys and liver. It is beneficial against urinary incontinence, tones up the liver, and helps treat chronic hepatitis. Fruit promotes the overall vitality of the body, are helpful for anemia, and are also good in getting relief from debilitating symptoms like dizziness, insomnia, and palpitations. Fruit is used to make jam, sauces, squashes, and puddings. Ripe fruit is very fragile. Wood is used for making hockey sticks. Wood pulp is suitable for writing and printing paper.
MORINGACEAE		
<i>Moringa oleifera</i> Lam.	shahjan, sejna	All parts of the tree are useful. It is used in treatment of ascites, venomous bites, and as a cardiac and circulatory stimulant. Roots are used to treat epilepsy, intermittent fever, fainting, and as an abortifacient. Leaves are used for scurvy, and catarrhal affection stimulates vomiting. Flowers are used to restore health and for proper urination. Fruit is used for paralysis and for diseases of the liver, spleen, and articular parts. Oil obtained from the fruit is used for gout and in acute rheumatism. Gum is used for dental caries; seed is used for venereal diseases. Oil obtained from seed is used in perfumes and in preparation of cosmetics and hair dressings. Pods, tender leaves, and flowers are used as a vegetable. Leaves and twigs are used for fodder.
MYRTACEAE		
<i>Psidium guajava</i> L.	amrud, jamphal	Leaves have astringent properties, are used for bowel troubles, wounds, and ulcers, and their decoction is used for cholera and for stopping vomiting and diarrhea. Fruits are a laxative and a tonic and are used for colic and bleeding gums. Bark and leaves are used for tanning and dyeing. Wood is made into spear-handles and special instruments. Fruits are edible.
<i>Syzygium cumini</i> (L.) Skeels	jamun	Bark is very astringent and is used for sore throats, bronchitis, asthma, ulcers, and dysentery. It is also given for purifying blood and as a gargle. Blossoms are an important source of honey. Bark is used in dyeing and tanning, preparation of gargles, and mouth washes. Wood is moderately hard, tough, and fairly durable, even underwater. Fruits are edible while leaves and seeds are used for fodder.
NYCTAGINACEAE		
<i>Boerhavia diffusa</i> L.	punarnava	Plant is used for dropsy, jaundice, and asthma and is used as both a diuretic and laxative. Large doses can cause vomiting. Tender shoots are eaten as pot herb.
<i>Boerhavia erecta</i> L.	gandha purna	Whole plant has antimalarial properties and protects liver from toxic effect.
<i>Mirabilis jalapa</i> L.	gulababbas	A poultice (prepared by heating the leaves with haldi (<i>Curcuma longa</i>) over flames) is applied on wounds. Powdered seeds are used in cosmetics.

Taxa	Vernacular name(s)	Plant part used and uses
OLEACEAE		
<i>Jasminum multiflorum</i> (Burm. f.) Andrews	chameli, kandaphul	Leaves are used in a poultice for indolent ulcers. Flowers stimulate vomiting. Root is an antidote to cobra venom. Extract of aerial parts increases the flow of urine. White fragrant flowers are used for making attars and perfumed hair oils and are used by women to decorate their hair.
<i>Nyctanthes arbor-tristis</i> L.	harsingar, sephalika, paarijaat, shivli	Leaves are used for digestive upset, fever, rheumatism, sciatica, and as an expectorant. An orange dye, obtained from the flowers, is used for coloring silk and cotton. Flowers are used in worship and are strung and worn as hair ornaments and necklaces.
OXALIDACEAE		
<i>Oxalis acetosella</i> L.	khata metha	Plant is used for proper urination and has anti-scorbutic properties. It is used for liver and digestive disorders, fever, urinary infections, and catarrh and to remove cancerous growths from the lips. Leaves possess a refreshing flavor and are used in salad and as a rich source of vitamin C.
<i>Oxalis corniculata</i> L.	amrul, anboti, chalmori	Whole plant is used to reduce fever, increase appetite, treat dysentery, diarrhea, scurvy, and skin diseases and is also used as an astringent, diuretic, and refrigerant. Externally it is used to remove warts and opacities of the cornea. Leaves and seeds are edible and a good source of vitamin C.
PAPAVERACEAE		
<i>Argemone mexicana</i> L.	satyanasi	Seeds are a laxative and are used for earache. Yellow sap is used for dropsy, jaundice, cutaneous afflictions, asthma, and itches. Leaf is used for eye complaints and ringworm. Root is used for chronic skin diseases. Seeds are a narcotic. Oil cake is useful as a fertilizer.
<i>Fumaria officinalis</i> L.	pitpara	Whole plant is an efficient liver tonic and recommended for hepatic ailments.
<i>Fumaria parviflora</i> Lam.	jangali poudh	Whole plant is used as an astringent, laxative, diuretic, and for indigestion. It is also used for skin diseases, increased secretion of urine, and stimulates bowel evacuation.
PHYLLANTHACEAE		
<i>Bischofia javanica</i> Blume	paniala	Wood is hard and durable and used for timber, boats, wells, wheels, and furniture.
<i>Phyllanthus embelica</i> L.	amalaka, amla	Fruit is used as a laxative and a treatment for liver troubles, piles, stomach complaints, eye pain, poor appetite, thirst, and nasal hemorrhage. Fruits are a good liver tonic and purify the humors of the body. Fermented liquor made from the fruit is considered useful against indigestion, anemia, jaundice, certain heart complaints, cold in nose, and for promoting urination. Dried fruits are useful for diarrhea and dysentery and are pickled to cure asthma and stomach disorders. Wood is hard and mottled; it is used for agricultural implements, cheap building, and turnery. Fruit is edible and is used as murabba which is very good for digestion.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Phyllanthus fraternus</i> G.L. Webster.	jarmala, bhuianvalah	Plant is used for stomach-ache, diarrhea, dysentery, and urinogenital disorders. Fresh roots are used for jaundice. Infusion of whole plant is used as liver tonic. Stems and leaves are used for dyeing cotton black.
PIPERACEAE		
<i>Piper longum</i> L.	pipali, pipar, piplamul	Unripe fruits are able to restore health and improve the functioning of the body. Ripe fruits, having the power to relieve flatulence and associated colic, are applied to the skin by gentle friction for pains and paralysis. Root is used for proper urination as a stimulant and increases sweating. Ripe fruit and root are used to increase appetite, relieve pain, prevent inflammation, and lessen functional activity. They are also used as an antidyenteric, antiepileptic, an antidote for snake bite, and used for expulsion of a non-viable fetus. Plant is also used for diseases of respiratory tract and is cultivated for fruits, which are used as a spice and condiment.
PLANTAGINACEAE		
<i>Bacopa monnieri</i> (L.) Wettst.	brahmi	Plant is a nerve tonic used for asthma, epilepsy, insanity, and hoarseness and is also used for proper urination and stimulating evacuation of the bowel. Stems and leaves are used for snake bite.
<i>Plantago ovata</i> Forsk.	isaphgol	Seeds are used for treatment of dysentery and disorders of the digestive system.
<i>Veronica anagallis-aquatica</i> L.	jangali poudh	Whole plant is an antiscorbutic, and root is used in preparation of gargles. Leaves are edible.
PRIMULACEAE		
<i>Anagallis arvensis</i> L.	jonkmari	Herb is used for gout, cerebral infections, hydrophobia, leprosy, dropsy, snake bite, and epilepsy and is used as a fish poison, expectorant, stimulant, and to increase the secretion of urine.
PROTEACEAE		
<i>Grevillea robusta</i> A. Cunn. ex R. Br.	silver oak	Raw material of the plant is used for pulp and paper industry. Wood is hard and light and is used for cabinet-work, decorative paneling, fine carving, jute mill bobbins, violins and other musical instruments, and tennis and badminton rackets.
PUTRANJIVACEAE		
<i>Putranjiva roxburghii</i> Wall.	putranjeeva	Leaf and fruits are used medicinally for colds and fevers. Seed oil is used for burning purposes. Leaves are used as fodder. Hard stone of the fruits are made into rosaries and placed around the necks of the children to keep them in good health.
RANUNCULACEAE		
<i>Clematis gouriana</i> Roxb. ex DC.	ghatiyali	Extract of aerial parts is an antiviral and spasmolytic.
<i>Clematis montana</i> Buch.-Ham. ex DC.	mirchalagli	Extract of aerial parts is a spasmolytic and diuretic and prevents inflammation.

Taxa	Vernacular name(s)	Plant part used and uses
RHAMNACEAE		
<i>Ziziphus mauritiana</i> Lam.	ber	Leaves are a laxative and given for throat troubles. Fruits have a cooling effect and relieve pain and chest troubles and are used in restoring health. Kernels are used to stop vomiting. In the form of paste it is used for abdominal pain in pregnancy. It is also used as an antidote to aconite poisoning. Seeds are used for diarrhea, while leaves have an astringent property and increase the secretion of urine. Fruits are edible and a rich source of vitamin C and sugars. Leaves are given as fodder.
<i>Ziziphus xylopyrus</i> Willd.	bhander, kattiber	Wood is hard, durable, and tough and is used for carts, wheels, construction of cheap houses, agricultural implements, tool handles, etc. Ripe fruits are edible. Leaves are used as fodder.
ROSACEAE		
<i>Fragaria vesca</i> L.	banaphal	Fruit is used as an astringent and for proper urination. Infusion of leaves is given for diarrhea and urinary infections. Fruits are edible.
<i>Prunus persica</i> (L.) Batsch	aru	Fruits are edible. Oil obtained from seeds is used for cooking and as an illuminant.
RUBIACEAE		
<i>Hymenodictyon orixense</i> (Roxb.) Mabb.	bhulan, bhrammar chhallika	Wood is used for toys, scabbards, palanquins, box planking, rollers and bobbins for jute milling, and cheap furniture. Bark is used for tanning. Leaves are used for dyeing and as cattle fodder.
<i>Ixora coccinea</i> L.	rangan, rokmani rajana	Roots are a sedative and appetite stimulant and are used for diarrhea and dysentery. Flowers are used for treating dysentery, leukorrhea, and catarrhal bronchitis.
<i>Mitragyna parvifolia</i> (Roxb.) Korth.	kaddam	Bark and root are used for severe pain in abdomen and fever. Bark fiber is used for cordage, and wood is used in furniture, agricultural implements, and for turned and carved articles. Wood pulp is suitable for wrapping paper.
<i>Neolamarckia cadamba</i> (Roxb.) Bosser	kadam, kadamba	Bark is used as a tonic and used to reduce fever. Wood is used for dugouts, canoes, carving, turnery, veneering, cheap boarding, packing cases, match boxes and splints, cheap paper, furniture, beams, and tea chests. Fruits are edible.
RUTACEAE		
<i>Aegle marmelos</i> (L.) Corrêa	bel	Fruit pulp is used to treat dysentery and diarrhea alternating with spells of constipation. Sweet drink prepared from the fruit pulp is useful as a soothing agent for intestine of patients who have just recovered from bacillary dysentery. Unripe fruits improve appetite and digestion. Wood is hard, lustrous, aromatic, and suitable for house building. It is also used in cart construction and agricultural implements. Pulp has detergent properties and is used for washing clothes; it is also used as a varnish. Gum that exudes from the trunk makes a good adhesive. Fruit pulp is nutritious; a sherbet is made from it. Widespread sacred belief is related to the leaves, which are used in worship of Hindu deity Shiva, particularly in savan (rainy season).

Taxa	Vernacular name(s)	Plant part used and uses
<i>Citrus aurantiifolia</i> (Christm.) Swingle	neebu	Dried rind is used for cholera, powdered exocarp is used as tooth powder, and fruit juice is used for epistaxis. Juice with sugar is used for mammary gland infection in cattle. Plant is commonly used for fresh juice and as flavoring for foods.
<i>Murraya koenigii</i> (L.) Spreng.	mitha neem, kadhi patta, curry	Leaves aid digestion and improve functioning of the stomach. It helps in recovering loss of appetite and improving sense of taste after fever. Leaf juice is effective for heart burn. Paste of leaves with honey is useful for dysentery, diarrhea, and nausea. It is useful for treating excessive vomiting in women during pregnancy. Chewing 4–5 leaves with a little water is good for freshness of mouth. Leaf is boiled in 500 ml of coconut oil, until the leaves turn black, to create an herbal tonic for hair, and regular application of this oil to the scalp stimulates the growth of hair and stops premature graying of hair. Leaves are aromatic, slightly bitter in taste, and are used as a seasoning for adding aroma and flavor to the food.
<i>Murraya paniculata</i> (L.) Jack.	kamini, marchulla	Leaves and root-bark increase appetite. Leaves are used for diarrhea, vomiting, dysentery, snake bite, and reducing fever and also used for the discoloration of the skin in injury. Root juice is used to relieve renal pain. Bark and root stimulant are externally used to treat eruptions and bites of poisonous animals. Wood is hard and durable underwater, and fruits are edible.
<i>Zanthoxylum budrunga</i> Roxb.	tirmara	Fruits are used for heart troubles, asthma, rheumatism, and toothache. Oil obtained from fruits is antiseptic and a disinfectant. Timber is excellent for turnery and carving. Plant possesses a peculiar aroma and is used as a spice and condiment for flavoring food.
SALICACEAE		
<i>Populus ciliata</i> Wall. ex Royle	tilaunja, pahari peepal	Bark is used to improve the feeling of well being. Wood is used for match splints and writing and printing paper.
SAPINDACEAE		
<i>Cardiospermum halicacabum</i> L.	kanputi	Whole plant is used for stiffness of limbs and rheumatism, and leaf juice is used to treat earache.
<i>Litchi chinensis</i> Sonn.	leechi	Seeds relieve nerve pain and inflammation of the testicles, improve the functioning of the body, and increase the feeling of well being. Edible portion of fruit is the aril covering the dark brown seed; fleshy and juicy with fine flavor, it is generally eaten fresh and also canned in syrup.
SOLANACEAE		
<i>Datura alba</i> Rumph. ex Nees	kala dhatura	Leaf juice kills lice and other vermin. Leaves and corolla are used to treat swellings. Seeds, leaves, and shoots are used for insanity, cerebral complications, and skin diseases. Leaves and seeds are used for asthma. Corolla is an anesthetic. Poultice of leaves treats inflammation of breast caused by excessive milk formation. Flowers, fruits, and leaves are used as a religious offering to Shiva.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Datura stramonium</i> L.	dhatura	Fruits have anti-dandruff properties and are useful in treating bronchitis and controlling salivation. Inhalation of smoke from burning leaves relieves asthmatic attacks. Leaf juice is used for stomach pain, skin diseases, and inflammations of painful piles. Flowers are dried, roughly powdered with or without leaves, and rolled into cigarettes for relief of asthma. Leaves and seeds are narcotic. Flowers, fruits, and leaves are used as a religious offering to Shiva.
<i>Nicandra physalodes</i> (L.) Gaertn.	apple of Peru	Whole plant is used for proper urination and for elimination of intestinal worms.
<i>Physalis divaricata</i> D. Don	papotan	Whole plant is used as a vegetable and fodder.
<i>Physalis angulata</i> L. var. <i>angulata</i>	tulatipati	Fruits are edible, and leaves are used as fodder.
<i>Solanum americanum</i> Mill.	barikatai, brihhta	Root is used for treating cough, catarrhal affections, colic, and nasal ulcers. Half-ripe fruits are used in curries and chutneys, and ripe fruits are edible.
<i>Solanum khasianum</i> C.B. Clarke	leptua	Dry and powdered fruit is used to treat tooth decay.
<i>Solanum virginianum</i> L.	kantkari, kateli	Root is an expectorant and is used for cough, asthma, and chest pain. Fruit juice and berries are used for sore throat, and leaf juice mixed with black pepper is recommended for rheumatism. Stem, flowers, and fruits relieve flatulence and associated colic. Plant is used to encourage proper urination, stimulate appetite, and treat dropsy, gonorrhoea, and burning feet.
VERBENACEAE		
<i>Duranta erecta</i> L.	durenta	Fruit juice is used to kill mosquito larvae and can be used as larvicide in ponds and swamps.
<i>Lantana indica</i> Roxb.	kuri	Leaves are used for snake bite and are boiled and applied for swellings and body pains. Bark is an astringent and is used as a lotion for impetiginous eruptions, leprosy ulcers, and obstinate ulcers. Stalks are used as raw material for paper pulp which is used for wrapping, writing, and printing paper.
<i>Lippia alba</i> (Mill.) N.E. Br. ex. Britton & P. Wilson	jangali jhar	Leaves are used as an appetite stimulant and a nervine. Plant is used as sage in cookery, and leaves are eaten as a vegetable.
VIOLACEAE		
<i>Viola odorata</i> L.	banafshan	Flower is used medicinally for inflammation, biliousness, and lung troubles. Fresh flowering herb is used for skin, eye, and ear diseases and is also used as a blood purifier. Flowers are used in perfumery.
VITACEAE		
<i>Cissus quadrangularis</i> L.	hadjora	Juice of stem is used to hasten healing, particularly for fractured bones.

Taxa	Vernacular name(s)	Plant part used and uses
<i>Leea aequata</i> L.	kakajangha	Leaves and twigs possess antiseptic properties and are used for poulticing wounds. Plant possesses antitubercular properties.
URTICACEAE		
<i>Pouzolzia zeylanica</i> (L.) Benn. & R. Br.	khotasunu	Leaf poultice is applied to sores and boils and is used relieve stomachache. Whole plant is used for syphilis, gonorrhea, and snake bite. Leaves are used to heal wounds and ulcers. Leaf juice or decoction is used to induce the flow of milk. Roots are edible.
XANTHORRHOEACEAE		
<i>Aloe vera</i> (L.) Burm. f.	ghikanvar	Whole plant is used as a tonic and purgative. It is used to bring on menstruation and treat stomachache, piles, and intestinal worms. Mucilage is anti-inflammatory. Root is used for colic pain. Pulp is used in menstrual suppressions and induces sexual excitement. It is also useful for eye diseases, skin diseases, tumors and enlargement of the spleen, vomiting and fever due to bronchitis, erysipelas, liver complaints and biliousness, and is useful to relieve flatulence and associated colic (as a tonic and digestive). Leaves are good for piles and biliousness. Pulp is edible as confection, vegetables, and pickles.
ZINGIBERACEAE		
<i>Curcuma longa</i> L.	haldi, turmeric	Plant has many medicinal properties. It is a carminative, antiseptic, digestive, and a stimulant. It is believed to destroy cancerous cells. It is used as a paste on bone fractures, swellings, and muscular inflammations and is given in powdered form with milk for muscular or body pains. It is an antidote for snake bite. It is used in stomachache, as a tonic, blood purifier, and antiseptic. It is also applied to sprains and wounds. Juice of fresh rhizomes is used for skin diseases. It has anti-bacterial properties and is used in the antiseptic skin creams to treat pimples and boils. In weddings, a haldi ceremony is held before marriage. A tilak of haldi on the forehead is considered very auspicious. It is an aromatic spice and bright yellow in color. It is a key ingredient of spice mixtures and is used in curries, daals , vegetables, and pickles and in other food for flavor and color.
ZYGOPHYLLACEAE		
<i>Tribulus terrestris</i> L.	chotta gokhru	Fruit are used for proper urination and to restore health. It is also used for abnormal concretion and painful urination. Leaf paste is used in treating bladder stones. Roots are used to stimulate evacuation of bowel and also used to restore health.

