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## INDIAN HERBAL MEDICINE AS HEPATOPROTECTIVE AND HEPATOCURATIVE: A REVIEW OF SCIENTIFIC EVIDENCE

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### **ABSTRACT:**

The use of plants, or their primary and secondary metabolites for curing human and/ animal diseases has long being in existence in India from the ancient times. Liver injury treatments are among the most important of today's research domains, because with every passing year there is a more acute need for liver transplants. At modern time human beings have taken many allopathic drugs, toxic influence and food hazards which lead to some form of liver disorder. That is why today's attention is drawn to the potentials of a few miracle plants that have the ability to reduce or cure liver damage. As many as 792 species belonging to 533 genera under 156 families have been recorded in the present database on hepatoprotective and hepatocurative plants of India. Of these, category-wise statistics reveals that 1 species of the genus *Parmelia* belongs to lichens; 16 species of 10 genera to Pteridophytes; 6 species of 5 genera to Gymnosperms and 769 species to angiosperms of which 99 species of 69 genera are monocots and the remaining 670 species under 448 genera to 122 dicotyledonous families. Their properties are used in many liver disorders, and in the recent studies they are tested for their microbiological and hepatic curative actions.

**KEYWORDS:** *Hepatoprotective plants; Hepatocurative plants; Herbal medicine; India*

## **INTRODUCTION:**

Liver, one of the most vital organs in the body, plays a pivotal role in the biotransformation of food, drugs, endogenous and exogenous substances. Profuse supply of blood and the presence of many redox systems (e.g., cytochromes and various enzymes) enable liver to convert these substances into different kinds of inactive, active or toxic metabolites (Ansari *et al.* 2011). Besides, it helps in the formation of red cells, blood clotting, carbohydrate and fat storage and in heat regulation (Ahsan *et al.* 2009). The role played by this organ in the removal of substances from the portal circulation makes it susceptible to first and persistent attack by offending foreign compounds, culminating in liver dysfunction (Bodakhe and Ram 2007).

Liver diseases or hepatopathy have become one of the major causes of morbidity and mortality in man and animals (Nadeem *et al.* 1997). The various liver ailments are due to viral infections, bacterial invasion, fungi (aflatoxins) malnutrition, alcoholism, chemical change within the body and autoimmune disorder. Liver damage is commonly associated with cellular necrosis, increase in tissue lipid peroxidation, oxidative damages and depletion & elevation of many biochemical markers like SGOT, SGPT, triglycerides, cholesterol, bilirubin, alkaline phosphatase (Dianzani *et al.* 1991).

Herbal medicines are known to play a vital role in the management of liver diseases. Many herbs have been proven to be effective as hepatoprotective agents while, many more are claimed to be hepatoprotective. They are used world widely through traditionally by herbalists and indigenous healers (Dhiman and Chawla 2005; Agarwal 2001). In India, more than 87 medicinal plants are being used in different combinations in the preparation of 33 patented herbal formulations (Handa *et al.* 1996; Evans 1996; Sharma *et al.* 1991). About 600 commercial herbal formulations with classified hepatic protective activity are being marketed worldwide (Trease and Evans 20002). The active hepatoprotective principles of these herbs play a vital role as a hepatoprotective and hepatocurative acitivity. In the last couple of decades, development of plant based hepatoprotective drugs has been given importance in the global market as modern medicine (Hikino and Kiso 1988). Numerous medicinal plants and their formulations are used for liver disorders in ethnomedical practice as well as traditional system of medicine in India. Many of these claims are anecdotal and very few have received adequate medicinal and scientific evaluation (Vadivu *et al.* 2008). Present study deals with sustainable uses of herbal medicine which are acute need of modern time for pharmaceuticals sectors. On this view, the present study showed that preliminarily data useful for screening, evaluation and documentation of the haptoprotective drugs.

## **MATERIALS AND METHODS:**

### ***Collection of Data***

For collecting data of interest on the ethnic herbal resources of India for hepatoprotection and hepatocuration, the research methodology as outlined by Schultes (1962), Jain (1964, 1973) and Parabia

and Reddy (2002) was adopted to scrutinize the old literature (herbals, books, floras, compendia, material medica, monographs, ancient treatises, research publications ; Atkinson 1882; Watt 1889-1896; Anonymous 1948-1976; Nadkarni 1954; Agarwal 1986; Ambasta 1986; Nayar *et al.* 1989; Maheshwari 2000; Singh, 1996; Kumar, 1999; etc.).

### **Enumeration**

The present database includes information pertaining to botanical names of the plants arranged in alphabetical order along with their synonyms, if available and respective families. Other details given are English, Hindi and Sanskrit names, distribution, reproductive cycle, part(s) used, folk use(s), active constituents and relevant references. For convenience of reference and understanding, the text has been illustrated with the help of 5 histograms and 2 pie-charts.

### **RESULTS:**

As many as 792 species belonging to 533 genera under 156 families have been recorded in the present database on hepatoprotective and hepatocurative plants of India (Table 1). Of these, category-wise statistics reveals that 1 species (1 genus: *Parmelia*) belongs to lichens; 16 species (10 genera : *Adiantum*, *Asplenium*, *Athyrium*, *Diplazium*, *Drynaria*, *Equisetum*, *Lygodium*, *Nephrolepis*, *Selaginella*) to Pteridophytes; 6 species (5 genera: *Ephedra*, *Juniperus*, *Pinus*, *Taxus*, *Thuja*) to Gymnosperms; and 769 species to angiosperms of which 99 species (69 genera: *Acorus*, *Agave*, *Agropyron*, *Allium*, *Alocasia*, *Aloe*, *Alpinia*, *Amomum*, *Amorphophallus*, *Ananvsas*, *Aneilema*, *Areca*, *Arenga*, *Asparagus*, *Bambusa*, *Borassus*, *Calamus*, *Caryota*, *Cautleya*, *Ceratophyllum*, *Chlorophytum*, *Cocos*, *Colchicum*, *Commelina*, *Costus*, *Crinum*, *Crocus*, *Curculigo*, *Curcuma*, *Cymbopogon*, *Cynodon*, *Cyperus*, *Desmostachya*, *Dioscorea*, *Echinochloa*, *Eleusine*, *Eleutherine*, *Flickingeria*, *Gloriosa*, *Habenaria*, *Hackelochloa*, *Hedychium*, *Helminthostachys*, *Homalomena*, *Hordeum*, *Hygroryza*, *Iris*, *Lilium*, *Lodoicea*, *Malaxis*, *Manisuris*, *Monochoria*, *Musa*, *Nervilia*, *Orchis*, *Oryza*, *Pandanas*, *Panicus*, *Paspalum*, *Pennisetum*, *Phoenix*, *Polygonatum*, *Rhaphidophora*, *Saccharum*, *Tacca*, *Triticum*, *Vetiveria*, *Zea*, *Zingiber*) are monocots and the remaining 670 species under 448 genera to 122 dicotyledonous families (Figs. 1 & 2).

Statistically, the comparative ratio of species, genera and families between monocots and dicots is 1:6.77, 1:6.49 and 1:5.81 respectively and that of genera and species 1:1.43 and 1:1.50. Imperatively, the dicotyledonous taxa predominate in their usage.

Present study revealed that distribution, predominate usage of 792 species, in which 74 species found in Entire Himalaya, 69 species in north-western and western Himalaya, 56 species in Peninsular India (Ghats, Coastal Plains, Deccan Plateau), 33 species in North-East and Eastern Himalaya, 23 species in Central Highlands and Plains of India and 22 species in tropical forests of India (Table 2). Evidently, the hepatoprotective and hepatocurative plants are being used by all ethnic communities located in various eco-geographical regions of India.

Amongst the 122 families of dicotyledonous angiosperm, 82 species of family Fabaceae is highly used in hepatoprotection and hepatocuration followed by 43 species of Asteraceae, 31 species of Euphorbiaceae, 25 species of Rubiaceae, 21 species of Cucurbitaceae, 18 species of Lamiaceae, 17 species of Apiaceae, 15 species each of Rutaceae and Malvaceae, 14 species of Moraceae, Ranunculaceae and Solanaceae, 13 species of Apocynaceae, Asclepiadaceae and Acanthaceae, 12 species of Berberidaceae, Rosaceae and Verbenaceae, 10 species of Amaranthaceae, Convolvulaceae, Gentianaceae and Scrophulariaceae etc., (Table 3). In similar way, for monocots 22 species of family Poaceae followed by 14 species of Liliaceae, 14 species of Zingiberaceae, 10 species of Arecaceae, etc. (Table 4). Undeniably, the size of families naturally has a strong relationship with the above statistics.

Perusal of information highlighted in Tables 3 & 4 showed that the relative percentage in taxa of predominant hepatoprotective and hepatocurative dicotyledonous families varies from 10.35 (Fabaceae) to 00.13 (Alangiaceae, Aquifoliaceae, Aristolochiaceae, Basellaceae, Betulaceae, Bixaceae, Cactaceae, Campanulaceae, Caricaceae, Casuarinaceae, Dilleniaceae, Dipsaceae, Dipterocarpaceae, Elaeagnaceae, Elatinaceae, Ericaceae, Erythroxylaceae, Hamamelidaceae, Hippocastanaceae, Hippocrateaceae, Lobeliaceae, Magnoliaceae, Malpighiaceae, Melastomaceae, Menyanthaceae, Monimiaceae, Myrsinaceae, Nelumbonaceae, Nyctaginaceae, Nyctanthaceae, Olacaceae, Pedaliaceae, Plantaginaceae, Polygalaceae, Portulacaceae, Primulaceae, Punicaceae, Salvadoraceae, Schisandraceae, Tamarindaceae, Trapaceae) and for monocots it is 2.78 (Poaceae) to 0.13 (Agavaceae, Amaryllidaceae, Bromeliaceae, Ceratophyllaceae, Hypoxidaceae, Musaceae, Ophioglossaceae, Pandanaceae, Pontederiaceae, Taccaceae).

Presently, most promising Indian genera with a maximum number of species are: *Ficus* (11 species), followed by *Berberis* (9 species), *Citrus*, *Curcuma*, *Terminalia* (7 species each), *Cassia*, *Ipomoea*, *Phyllanthus*, *Prunus*, *Vigna* (6 species each), etc. (Fig. 3). Thus, the presented information holds great value in screening of plant material for use in drug discovery, offering valuable base for potential drugs against hepatic ailments.

Of the generated information on organ-wise analysis (Fig. 4), plant parts commonly consumed for hepatoprotection and hepatocuration are whole plant (22%), followed by root (18%), leaves (15%), fruit (13%), bark (9%), stem (8%), seed (7%), inflorescence (5%), aerial parts (2%) and wood (1%). However, mode of usage varies from oral administration to external application sometimes supported by certain rituals.

It is hoped that chemical analysis of these plants and their pharmacotherapeutics will provide much needed lead for further researches and new drug development against hepatic ailment. The use of plants, or their extracts for curing human and/ animal diseases has long been in existence in India from the ancient times.

### CONCLUSION:

From the Indian perspective, the earlier credit to document the scientific study of indigenous drugs goes to many workers such as Chopra and Chopra (1955); Jain et al. (1984); Jain and Srivastava (2001); Jain

(2002). Of the information on plant drugs for liver disorders, review of literature revealed considerable number of publications describing experimental evaluation of hepato-restorative and protective effects of some plants and all of these have been summarized systematically by Chaudhary *et al.* (2010). Contrarily, literature available on traditional uses of plants in the treatment of liver diseases is scanty, and limited to a handful of few publications as evidenced from the works of Chandra Sekar and Srivastava (2005); Chhetri *et al.* (2006); Sing and Lal (2008); Kachre and Suryawanshi (2010) and Basha *et al.* (2011). Moreover, information on various other aspects relating to plant drugs for liver disorders management (Doreswamy and Sharma 1995), natural products and plants as liver protecting drugs (Handa 1986; Hikino and Kis, 1988), development of phytomedicines for liver diseases (Subramoniam and Pushpangadan, 1999), development of hepatoprotective formulations from plant sources (Agarwal 2001), herbal medicines for liver diseases in India (Radha and Yogesh 2005; Stickel and Schuppan 2007) and hepatoprotective activity of some indigenous plants (Sharma and Sharma 2009) have also augmented the literature. However, contributions of Gupta *et al.* (1972) and Jayaram (1992) highlighted the various types of treatment in infectious hepatitis and other liver disorders. In recent years, efforts have also been made to compile data on promising phytochemicals from medicinal plants that have been tested in hepatotoxicity models using modern scientific system and herbal hepatoprotective leads that may be useful to the health professionals, scientists and scholars working in the field of pharmacology and therapeutics to develop evidence-based alternative medicine to cure different kinds of liver dysfunctions (Ansari *et al.* 2011). In the absence of any comprehensive account from Indian perspective, an urgent need was felt to consolidate over widely scattered large mass of data on herbal-based therapeutics for liver dysfunctions accounting for morbidity and mortality in man and animals word over, for which no attempt has been made so far. Therefore, this attempt though belated, will fill the gap adequately.

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**Table 1: Traditional uses of hepatoprotective and hepatocuritive plants name, family, distribution and part used and folk uses from India**

Sr. No	Plant Name/Family	Distribution	Parts Used	Folk Uses
1.	<i>Abrus precatorius</i> L./ Fabaceae	Common throughout India	Leaf, Root, Seed	Leaves sweetish in taste and used in biliousness. Roots also used in preparations for jaundice. Powdered seeds (two) given with water to cattle to treat liver disorders.
2.	<i>Abutilon indicum</i> (L.) Sweet/ Malvaceae	Hotter parts of India and in the sub- Himalayan tract up to 1,200m.	Leaf	One teaspoon of leaf decoction taken twice a day for five day to cure jaundice.
3.	<i>Acacia leucophloea</i> Willd./ Mimosaceae	Dry region of country, especially in Rajasthan, Punjab.	Bark	Cures biliousness.
4.	<i>A. nilotica</i> (L.) Willd. ex Delile./ Mimosaceae	Dry - moist inland habitats throughout India from Punjab-West Bengal southwards.	Bark, Root	Bark is used to cure biliousness and roots useful in liver complaints.
5.	<i>A. pennata</i> (L.) Willd./ Mimosaceae.	Central & Eastern Himalaya up to 1,500m.	Bark	Bark cures diseases of blood biliousness.
6.	<i>A. sinuata</i> (Lour.) Merr./ Mimosaceae.	Abundantly in forests, especially in Indian Peninsular states.	Pods, Leaf, Bark	Bark and fruit decoction antibilious. Leaves also useful in jaundice.
7.	<i>Acalypha ciliata</i> Forssk./ Euphorbiaceae.	Western Himalaya: 1,000-2,000m	Whole Plant	Paste of the whole plant with roots of <i>Luffa acutangula</i> (taroi) taken internally with water to cure jaundice.
8.	<i>Acalypha fruticosa</i> Forssk./ Euphorbiaceae.	Throughout the Deccan Peninsula.	Leaf	Leaf paste used internally to cure jaundice.
9.	<i>Achyranthes aspera</i> L. / Amaranthaceae	Throughout India up to 900m.	Root, Whole plant	10g fresh root extract in ½ glass of cow's milk with sugar candy given for 2 weeks for curing jaundice. Whole plant also used in liver complaints.
10.	<i>A. bidentata</i> Bl./ Amaranthaceae.	Temperate & sub-tropical Himalaya.	Leaf	Extract of leaves taken internally to cure jaundice.
11.	<i>Aconitum heterophyllum</i> Wall. ex Royle/ Ranunculaceae.	Common in the sub-alpine & alpine zones of the Himalaya from Indus - Kumaon	Root	Roots are useful in liver problems.
12.	<i>A. napellus</i> L. /Ranunculaceae.	Alpine & sub-alpine belt of the Himalaya.	Root	Roots useful in vitiated conditions of pitta.
13.	<i>Acorus calamus</i> L./ Araceae.	Wild or cultivated throughout India, ascending to 2,000m.	Rhizome	Juice of rhizomes (10ml) with a little sugar or honey and black pepper ( <i>Piper nigrum</i> ) given twice daily for 3-4 days in dyspepsia associated with abdominal pain in chronic liver disorders.
14.	<i>Actaea spicata</i> L. /Ranunculaceae.	Temperate Himalaya.	Fruit	Fruits useful in biliousness.
15.	<i>Adansonia digitata</i> L./ Bombacaceae.	Occasionally cultivated in many parts of India.	Fruit	Fruits useful in biliousness.
16.	<i>Adenantha pavonina</i> L. /Fabaceae.	Deciduous forests, throughout India; also cultivated.	Seed	Seeds useful in vitiated conditions of pitta.
17.	<i>Adensoma indianum</i> (Lour.) Merr. /Scrophulariaceae.	Outer lower Himalaya from Kumaon - Sikkim, Bengal & Assam.	Whole Plant	Whole plant excepting roots useful for the treatment of jaundice and viral hepatitis.
18.	<i>Adiantum capillus-veneris</i> L. /Adiantaceae.	Common in Tamil Nadu, Maharashtra, Punjab.	Whole Plant, Aerial Parts	Aerial parts good against jaundice. Plant boiled with wine given in case of hard tumours of liver.
19.	<i>A. incisum</i> Forsk. / Adiantaceae.	Maharashtra, Rajasthan, Punjab.	Leaf.	Aqueous extract of 5 leaves is given thrice a day for 15 days to treat jaundice.
20.	<i>A. venustum</i> G. Don./ Adiantaceae.	Kashmir, Shimla & N.E. Himalaya.	Whole Plant	Plant useful in biliousness.

Sr. No	Plant Name/Family	Distribution	Parts Used	Folk Uses
21.	<i>Aegle marmelos</i> Corr. /Rutaceae.	Found in the plains & submontane regions of India.	Leaf, Fruit, Root	Consumption of ripe fruit helps to eliminate the ailments caused by excessive bile. Roots useful in jaundice. 'Sharbat' (squash) of fresh leaves given in jaundice.
22.	<i>Aerva lanata</i> (L.) Juss. ex Schult. /Amaranthaceae.	Throughout India up to 900m.	Root.	Grounded root given with curd for treating jaundice.
23.	<i>Aesculus hippocastanum</i> L. /Hippocastanaceae.	North India; occasionally cultivated in other places as an ornamental plant.	Whole Plant	Plant very useful in liver.
24.	<i>Aglaia diepenhorstii</i> Miq. / Meliaceae.	Wild in Konkan, Karwar and other places in Maharashtra, Gujarat, Karnataka.	Root, Seeds	Roots given to cure pitta. Seeds remove biliousness.
25.	<i>Aganosma calycina</i> A. DC. /Apocynaceae	Sub-Himalayan regions.	Whole plant	Plant useful in diseases of bile.
26.	<i>A. dichotoma</i> (Roth.) K. Schum. / Apocynaceae.	Bihar, Karnataka, lower Ganga belt, Maharashtra, Orissa.	Leaf	Leaves useful in biliousness.
27.	<i>Agave cantula</i> Roxb./Agavaceae.	Grown as an ornamental plant in tropical & sub-tropical areas.	Whole plant	Employed to treat jaundice and liver diseases.
28.	<i>Agropyron repens</i> Beauv. /Poaceae.	Kashmir, Ladakh, Zanskar; upto 4,500m.	Root	Juice from the roots of couch grass advocated for treating cirrotic liver, jaundice and other liver complaints.
29.	<i>Alangium salviifolium</i> (L. f.) Wang. /Alangiaceae.	Drier parts of India growing vigorously in the forests of South India.	Whole Plant, Bark	Plant useful in biliousness. Decoction of bark mixed with jaggery consumed orally for curing jaundice.
30.	<i>Albizia lebbek</i> (L.) Willd. /Mimosaceae.	Throughout India, ascending to 2,000m & in Andamans.	Bark	Bark useful vitiated conditions of pitta.
31.	<i>A. procera</i> (L.) Bth. / Mimosaceae.	Sub-Himalayan tract from Jamuna eastwards to Bengal & extends to South India.	Stem, Bark	Stem bark used for treating jaundice.
32.	<i>Alchemilla vulgaris</i> L. /Rosaceae.	Kashmir: 2,700 - 3,000m.	Root	Root thought to act as a liver decongestant.
33.	<i>Alhagi maurorum</i> Medik./ Fabaceae.	Wastelands & near river beds in Kurukshetra, Fatehbad & Yamunanagar.	Whole Plant	Plant considered antibilious.
34.	<i>Allium cepa</i> L. / Liliaceae.	Extensively cultivated throughout India.	Bulb	Onion cooked with vinegar given in jaundice.
35.	<i>A. humile</i> Kunth. /Liliaceae.	Temperate Himalaya from Kumaon westwards: 2,700 - 4,000m.	Whole Plant	Its regular use as a condiment reported to be good for the patients suffering from jaundice.
36.	<i>A. sativum</i> L. /Liliaceae.	Wild as well as cultivated.	Cloves	A necklace of 7 - 21 cloves tied with a sacred thread for a week to cure jaundice. Paste of 5-6 cloves with fresh leaves (20g) of <i>Leucas plukenetii</i> mixed in a glass of warm water prescribed twice daily for 5 days with a small ripe banana in acute hepatitis associated with dyspepsia and loss of appetite.
37.	<i>A. stracheyi</i> Baker /Liliaceae.	W. Himalaya: Kashmir - Kumaon (3,300 - 4,000m)	Whole Plant	Its regular use as a condiment reported to be good for patient suffering from jaundice.
38.	<i>A. wallichii</i> Kunth. / Liliaceae.	Temperate Himalaya: 2,700-4,350m	Rhizome	Boiled rhizomes taken in bile complaints.
39.	<i>Alocasia macrorrhiza</i> (L.) G. Don./ Araceae.	Occurs both wild & under cultivation in many tropical parts of the country.	Rhizome	Paste of about 1g rhizome with capsicum ( <i>Capsicum annum</i> ) kept inside a ripe banana given once daily for 4 days for hepato-gastric ailments in adults only.

Sr. No	Plant Name/Family	Distribution	Parts Used	Folk Uses
40.	<i>Aloe barbadensis</i> Mill./Liliaceae.	Naturalised in many parts of India; many varieties found in a semi wild states.	Leaf	Fresh leaf pulp or its juice taken internally on empty stomach cures chronic jaundice within 1 or 2 months. Juice obtained from fresh leaves (5ml) diluted with 25ml water and 4-5 drops of juice of <i>Acorus calamus</i> leaves also given twice daily for 4 days in hepatomegaly associated with jaundice.
41.	<i>Alpinia galangal</i> Willd./Zingiberaceae.	East Himalyas, Western Ghats, West Bengal.	Dried Rhizome	Used in inflammation of liver.
42.	<i>Alstonia scholaris</i> (L.) R. Br. /Apocynaceae.	Sub-Himalayans tract, Bihar, Peninsular India, Andamans.	Leaf	Decoction of leaves used in congestion of liver.
43.	<i>Alternanthera sessilis</i> (L.) R. Br. ex De /Amaranthaceae.	Moist places, throughout India upto 2,100m.	Whole Plant, Leaf	Paste of entire plant (20-30g) with 1-2 cloves of <i>Allium cepa</i> and powder of 1-2 black peppers given twice daily for a week as an effective restorative preparation for chronic liver disorders. 2 teaspoonful leaf juice mixed with 2-3 black peppers taken orally twice a day for chronic liver disorders.
44.	<i>Althaea officinalis</i> L. /Malvaceae.	Kashmir.	Leaf	Leaves prescribed for irritation of biliary system.
45.	<i>Altingia excela</i> Nor. /Hamamelidaceae.	Assam.	Resin	Resin given to cure biliousness.
46.	<i>Alysicarpus monilifer</i> (L.) DC. / Fabaceae.	Himalayas through India proper.	Aerial Parts	Paste of the aerial parts given along with milk to control jaundice.
47.	<i>A. rugosus</i> var. <i>heyneanus</i> (Wight & Arn.) Baker/Fabaceae.	Himalayas upto 1,650m, Western Peninsula.	Root, Leaf	Useful in jaundice.
48.	<i>Amaranthus blitum</i> L. /Amaranthaceae.	Cultivated in India & elsewhere in warm regions.	Whole Plant	Useful in biliousness.
49.	<i>A. paniculatus</i> L. /Amaranthaceae.	Cultivated throughout India & up to 3,000m in the Himalaya.	Leaf, Seed	Useful in biliousness.
50.	<i>A. spinosus</i> L./Amaranthaceae.	Wastelands throughout India.	Whole Plant	1g dry leaf powder mixed with 1 cup of goat's milk taken early in the morning on empty stomach to cure jaundice.
51.	<i>A. tricolor</i> L. /Amaranthaceae.	Cultivated throughout India.	Whole Plant	Used to treat bilious disorders.
52.	<i>Ammannia baccifera</i> L. /Lythraceae.	Marshy places throughout India	Whole Plant	Plant useful in vitiated conditions of pitta.
53.	<i>Amomum aromaticum</i> Roxb. / Zingiberaceae.	Indigenous to West Bengal, Assam and surrounding areas.	Seeds	Seeds useful in the congestion of liver.
54.	<i>A. subulatum</i> Roxb. / Zingiberaceae.	Eastern Himalaya.	Seed	Seeds considered as good liver tonic.
55.	<i>Amorphophallus paeaniifolius</i> (Dennst.) Nicolson. / Araceae.	Cultivated, throughout India.	Corm	Boiled corms given to treat liver enlargement.
56.	<i>Ampelocissus latifolia</i> (Roxb.) Planch. /Vitaceae.	Throughout most of India upto 1,200m in the sub-Himalayan hills & W. Ghats.	Root	Roots useful in liver diseases.
57.	<i>Anabasis aphylla</i> L./Chenopodiaceae.	Temperate India.	Stem	Yellow exuded juice from damaged plant used externally in jaundice.
58.	<i>Anagallis arvensis</i> L. /Primulaceae.	West Bengal, ascending upto 1,500m, Central India, Nilgiri hills.	Aerial Parts	Plant useful in liver chirroisis.

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59.	<i>Ananas cosmosus</i> L. Merrill. / Bromeliaceae.	Throughout India, cultivated.	Fruit	Ripe fruit useful in vitiated conditions of pitta.
60.	<i>Andrographis paniculata</i> (Burm. f.) Wall. ex Nees./Acanthaceae.	Plains & hills throughout India.	Stem, Leaf, Inflorescence, Whole Plant	Decoction of shoot (10g) given twice daily for 4-5 days in acute jaundice due to hepatitis associated with hepatomegaly. Stem and leaves used for sluggishness of liver, jaundice and infective hepatitis.
61.	<i>Aneilema scapiflorum</i> Wight /Commelinaceae.	Temperate & tropical Himalaya; from the upper Gangetic plain westwards - Travancore	Root	Root useful in jaundice.
62.	<i>Anethum graveolens</i> L. /Apiaceae.	Cultivated throughout tropical & sub-tropical India.	Seed	Seeds used for hepatopathy.
63.	<i>Anethum sowa</i> Roxb. /Apiaceae.	Throughout tropical and sub-tropical India.	Fruit	Fruit good for liver.
64.	<i>Angelica glauca</i> Edgeen./Apiaceae.	West Himalaya; 2,700-3,000m.	Root	Roots used in biliousness.
65.	<i>Anisochilus carnosus</i> (L.) Wall. / Lamiaceae.	Western Himalaya, Central & South India.	Leaf	Fresh juice given to check liver disorder.
66.	<i>Annona hexapetala</i> L. f./Anonaceae.	Native of South India, cultivated in India.	Flower	Flowers useful in biliousness.
67.	<i>A. squamosa</i> L. /Anonaceae.	Found as an escape in the fields.	Fruit	Fruit lessens the tendency of biliousness.
68.	<i>Anogeissus latifolia</i> Bedd. / Combretaceae.	Throughout deciduous forests in India.	Fruit, Bark, Root	Decoction of bark and roots given in case of biliousness. Fruit useful in vitiated condition of pitta.
69.	<i>Anthocephalus chinensis</i> (Lam.) Rich ex Walp./Rubiaceae.	Wet places throughout the Western Ghats.	Bark	Bark useful in vitiated condition of pitta (liver).
70.	<i>Antidesma acidum</i> Retz. / Euphorbiaceae.	Tropical Himalaya (Shimla – Bhutan) & southwards to Sri Lanka.	Leaf	Leaves given for bile complaints.
71.	<i>Aphanamixis polystachya</i> (Wall.) Parkar. /Meliaceae.	Sub-Himalayan tract from Gonda– Sikkim, Assam, Andamans.	Flower, Stem, Bark	Paste of flower along with honey used for diseases caused by imbalance of bile. Decoction of stem bark used in diseases of liver.
72.	<i>Apium graveolens</i> L. /Apiaceae.	Foot of North West Himalaya, hilly region of Uttar Pradesh, Punjab, South India.	Seed	Seeds used in liver diseases.
73.	<i>Aporosa lindleyana</i> (Wight) Baill. /Euphorbiaceae.	Western Peninsula.	Root	Decoction of root given for the treatment of jaundice.
74.	<i>Aquilegia vulgaris</i> L. /Ranunculaceae.	Temperate & Sub-alpine Himalaya.	Seed	Seeds used for jaundice.
75.	<i>Areca catechu</i> L. /Arecaceae.	Cultivated in the coastal regions of India.	Root, Fruit	Root decoction or the raw fruits given to treat liver disorders.
76.	<i>Arenga wightii</i> Griff. /Arecaceae.	Travancore, Mysore.	Stem pith.	Flour obtained from the stem pith mixed with roots of <i>Thottea siliquosa</i> given as remedy for jaundice.
77.	<i>Argemone mexicana</i> L./ Papaveraceae.	Throughout India specially from Bengal - Punjab and Shimla.	Whole Plant, Latex, Leaf	Yellow sap of the plant used for jaundice. Small doses of latex and leaves given internally to treat jaundice.
78.	<i>Argimonia eupatorium</i> L. /Rosaceae.	Temperate Himalaya.	Whole Plant	Powdered plant cures liver disorders.
79.	<i>Aristolochia indica</i> L. / Aristolochiaceae.	Found throughout the sub-continent.	Seed	Seeds used in biliousness.

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80.	<i>Artanema longifolia</i> (L.) Merrill. / Scrophulariaceae.	Deccan Peninsula; from the Konkan southwards.	Seed	Seeds cure biliousness.
81.	<i>Artemisia absinthium</i> L. /Asteraceae.	Kashmir & Kumaon: 1,600-2,400m.	Leaf	Infusion of leaf used for dispersing the yellow bile. Small doses of Damara may be used to stimulate bile secretion.
82.	<i>A. annua</i> L./Asteraceae.	Orient; The Punjab, Peshawar - Wuzuristan.	Whole Plant	Plant used in jaundice.
83.	<i>A. capillaries</i> Thunb. /Asteraceae.	Distributed throughout India, ascending upto 3,657m in the Himalaya.	Whole Plant	P-OH-acetophenone said to promote secretion of bile and bile salts. Plant considered good against liver ailments.
84.	<i>A. pallens</i> Wall. ex DC./Asteraceae.	Kashmir Valley, Uttranchal, Nainital valley and Nilgiris.	Whole Plant	Used in jaundice.
85.	<i>A. siversiana</i> Ehrh. ex Willd. / Asteraceae.	Western Himalaya (Kashmir – Lahaul): 2,700 - 3,500m.	Whole Plant	Plant useful in jaundice.
86.	<i>Artocarpus communis</i> / Moraceae.	Cultivated throughout India.	Whole Plant	Plant useful vitiated conditions of pitta.
87.	<i>A. heterophyllus</i> Lamk./Moraceae.	Cultivated throughout the hotter parts of the country mainly in Kerala, Bihar.	Unripe fruit	Unripe fruit useful in biliousness.
88.	<i>A. hirsutus</i> Lam. /Moraceae.	Evergreen forests of the Western coast.	Fruit	Ripe fruit useful in vitiated conditions of pitta.
89.	<i>Asparagus officinalis</i> L. /Liliaceae.	Native to temperate regions in Asia, cultivated worldwide as a vegetable.	Root, Berries	Decoction of the fasciculated roots given in checking congestion of the liver. Berries used in liver disorders.
90.	<i>A. racemosus</i> Willd. /Liliaceae.	Throughout India in the areas upto 1,400m.	Roots	Powdered tubers given with honey for jaundice. Juice of roots (10ml) with equal quantity of milk given twice daily for a fortnight in chronic liver disorders associated with alcoholism and loss of appetite.
91.	<i>Asplenium adiantoides</i> C. Chr. /Aspleniaceae.	Andamans & Nicobar.	Whole Plant	Whole plant used to treat jaundice.
92.	<i>A. adiantum-nigrum</i> L. /Aspleniaceae.	Kashmir & Himachal Pradesh	Aerial parts	Used generally in disorders of liver.
93.	<i>A. ceterach</i> L. /Aspleniaceae.	Kashmir & Himachal Pradesh	Whole Plant	Plant useful in jaundice.
94.	<i>A. lunulatum</i> Sw./Aspleniaceae.	Mt. Abu of Rajasthan.	Leaf	Decoction of the leaves used in jaundice.
95.	<i>Atropa acuminata</i> Royle /Solanaceae.	Western Himalaya (2,000 - 3,650m): Kashmir - Shimla.	Whole Plant	Plant has an excellent action on pain in liver.
96.	<i>Athyrium falcatum</i> Bedd. /Athyriaceae.	North Western Himalaya.	Leaf	One teaspoonful extract of leaves taken thrice a day for 15 days to treat jaundice.
97.	<i>Averrhoa carambola</i> L./Oxalidaceae.	Throughout the hotter Indian sub-continent as a garden plant.	Fruit	Juice of ripe fruit (250ml) given 4-5 times daily for acute viral hepatitis. Powder of dried ripe fruit along with that of <i>Dillenia indica</i> in equal parts (about 3g each) given daily for a week for chronic liver disorders.
98.	<i>Azadirachta indica</i> A. Juss. (Pl. 2B) / Meliaceae.	Widely planted all over India as roadside tree & also in crop fields;	Bark Leaf	Leaves and bark useful in vitiated conditions of hepatopathy. One teacup of leaf extract taken empty stomach in early morning by Yeravas for 3 days for jaundice.

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99.	<i>Bacopa monnieri</i> (L.) Penell. /Scrophulariaceae.	Marshy, damp & wet areas throughout India.	Leaf, Shoot	About 5g fresh juice of the leaves boiled with ghee and 2.5g root of <i>Aplotaxis auriculata</i> and honey prescribed internally in bilious disorders. Paste of its shoot alongwith shoots of <i>Centella asiatica</i> and <i>Alternanthera sessilis</i> in equal parts (10-15g each) given twice daily on empty stomach in both chronic and acute liver disorders associated with hepatomegaly.
100.	<i>Baeckea frutescens</i> L./Myrtaceae.	Grows wild on arid soils in the mountains & the midlands.	Whole Plant	Plant good for jaundice.
101.	<i>Balanites aegyptica</i> (L.) Delile. /Simarubaceae.	Species native to India; distributed in Bihar, Punjab, Delhi, Sikkim & Deccan Peninsula.	Fruit	Mixture of its powdered fruit with soap nut cardamom, ginger and clove used for curing jaundice. Also, fruit extract applied on the eye to cure jaundice.
102.	<i>Baliospermum montanum</i> (Willd.) Muell.-Arg. /Euphorbiaceae.	Throughout the sub-Himalayan tract from Kashmir	Root	Roots used to treat jaundice.
103.	<i>Bambusa arundinacea</i> (Retz.) Willd./Bambusaceae.	Throughout India, in areas upto 2,100m.	Root, Stem, Leaf, Seed.	Roots, manna (siliceous deposits found in the hollow stalks), stem, leaves and seeds used to treat biliousness.
104.	<i>B. balcooa</i> Roxb./Bambusaceae.	Bengal from the Gongra eastward to Bihar & Assam.	Shoot.	Supernatant of the macerated pieces of 10-15 days older tender shoots fermented for 1-2 months in a clean container given in the morning on empty stomach for a week for both acute and chronic liver disorders.
105.	<i>Barleria cristata</i> L. /Acanthaceae.	Throughout India.	Whole Plant	Plant useful in biliousness.
106.	<i>B. strigosa</i> Willd./Acanthaceae.	Bengal, Orissa, Chota Nagpur, Sikkim, Assam; much cultivated in India.	Root	50ml decoction prepared by boiling 10g root, 20g 'sunthi' (dried rhizomes of ginger), 7 black peppers, 3-5 small cardamoms and 10g 'kala jeera' ( <i>Nigella sativa</i> ) given twice daily for 7 days for bile troubles.
107.	<i>Barringtonia actangula</i> (L.) Gaertn. /Lecythidaceae.	Common in Meghalaya, Assam, W. Bengal, Bihar, Orissa, M.P. & Deccan.	Bark, Fruit Seed	Extract of the bark used in jaundice. Fruits and seeds useful in vitiated condition of pitta.
108.	<i>B. racemosa</i> L. /Lecythidaceae.	Sundarbans, Karnataka, Andamans.	Kernel	Kernel of fruit mixed with milk used in jaundice and other bilious diseases.
109.	<i>Basella alba</i> L. /Basellaceae.	Assam, West Bengal, Orissa, South India.	Whole Plant	Plant reduces the ailments caused by bile (pitta).
110.	<i>Bauhinia acuminata</i> L./Caesalpiniaceae.	Almost throughout India.	Bark, Leaf	Useful in biliousness.
111.	<i>B. purpurea</i> L./Caesalpiniaceae.	Sub-Himalayan tract ascending upto 1,300m, Assam, Meghalaya & W. Peninsula.	Leaf	Leaves useful in jaundice.
112.	<i>B. tomentosa</i> L. /Caesalpiniaceae.	North Western regions & throughout India.	Root bark	Decoction of root bark used in inflammation of the liver.
113.	<i>B. variegata</i> L. /Caesalpiniaceae.	Throughtout India, in areas upto 1,800m.	Bark	Bark is useful in liver complaints.
114.	<i>Begonia palmata</i> D.Don /Begoniaceae.	Sikkim, ascending upto 2,300m; Meghalaya.	Root	Roots used in liver complaints.
115.	<i>B. roxburghii</i> DC./Begoniaceae.	Common in Assam & Meghalaya ascending upto 1,300m.	Root stock	Crushed rootstock taken in bile dysentery.

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116.	<i>Benincasa hispida</i> (Thunb.) Cogn. /Cucurbitaceae.	Cultivated in the plains of the entire Indian sub-continent.	Fruit	Fruit juice used in jaundice and bile disorder.
117.	<i>Berberis aquifolium</i> Pursh./Berberidaceae.	Himalayas & Nilgiri Hills.	Root	Considered good against bilious disorders.
118.	<i>B. aristata</i> DC. /Berberidaceae.	Temperate Himalaya: 2,000-3500m (Kullu-Kumaon), Nilgiri hills.	Root, Whole Plant	Fruits and root good for checking enlargement of liver associated with malaria and in jaundice.
119.	<i>B. asiatica</i> Roxb.ex DC./ Berberidaceae.	Pachmarhi & Amarkantak Himalaya, Nilgiri hills.	Root	Roots used in treatment of liver disorders and jaundice.
120.	<i>B. jaeschkeana</i> Sch. /Berberidaceae.	Jammu & Kashmir, Sikkim.	Root	Roots useful in jaundice.
121.	<i>B. kumaoensis</i> Sch./Berberidaceae.	Garhwal Himalaya: 3,000 – 4,500m.	Root	Roots used to treat jaundice.
122.	<i>B. lycium</i> Royle /Berberidaceae.	Sub-Tropical & Temperate regions between 800-2,500m.	Root	Roots used in enlargement of liver and jaundice.
123.	<i>B. petiolaris</i> Wall.ex G Don./Berberidaceae.	Western Himalaya upto 4,000m.	Root Bark	Root bark antibilious.
124.	<i>B. vulgaris</i> L./Berberidaceae.	Himalaya.	Whole Plant	Plant preparation used for jaundice and congestion of liver.
125.	<i>B. wallichiana</i> DC. /Berberidaceae.	Temperate Himalaya: 2,700-3,500m; Khasia hills: 1,700-2,000m.	Root Bark	Useful in jaundice.
126.	<i>Bergenia ciliata</i> (Haw.) Stemb. /Saxifragaceae.	Foothills of Himalaya, Khasia Hills (1,300m) - Kashmir (2,300-3,100m).	Root	Roots useful in liver complaints.
127.	<i>Beta vulgaris</i> L. /Chenopodiaceae.	Cultivated in many parts of India.	Leaves.	Useful in liver disorders for stimulating the liver, bile duct and gall bladder.
128.	<i>Betula utilis</i> D.Don. /Betulaceae.	Kashmir (2,300-4000m) - Sikkim (3,000-4,600m).	Bark.	Bark useful in jaundice and bilious fever.
129.	<i>Biophytum sensitivum</i> (L.) DC. /Oxalidaceae.	Throughout the hotter parts of India; as weeds in moist shady places.	Whole Plant.	Useful in bilious fever.
130.	<i>Bixa orellana</i> L. /Bixaceae.	Cultivated throughout India as an ornamental.	Whole Plant. Leaf.	Plant antibilious and used in jaundice. 4 teaspoonful of leaf decoction taken in jaundice thrice daily for 3 days.
131.	<i>Blepharis asperima</i> Nees. /Acanthaceae.	W. Deccan Peninsula; Konkan & Canara.	Leaf. Seed.	Leaves and seeds used in liver disorders.
132.	<i>B. linariaefolia</i> Pers. /Acanthaceae.	Punjab, Rajputana desert, Gujarat & Sindh.	Root.	1 teaspoonful of powdered roots along with honey given twice a day to cure liver disorders.
133.	<i>Blumea lacera</i> (Burm. f.) DC. /Asteraceae.	Throughout India up to 600m.	Whole Plant.	Plant used as liver tonic in vitiated condition of pitta.
134.	<i>B. lanceolaria</i> (Roxb.) Druce /Asteraceae.	Sikkim Himalaya; Assam.	Leaf	Decoction of leaves taken to cure liver ailments.
135.	<i>B. mollis</i> (Don.) Merr./Asteraceae.	Throughout plains of India, ascending to 1,500m.	Whole Plant	Whole plant extract used for bile regulation.
136.	<i>Boerhaavia diffusa</i> L./Nyctaginaceae.	Throughout India, ascending the hot Himalayan valleys up to 2,300m.	Leaves, Shoot	Fresh leaf juice mixed with milk taken internally in mild cases of jaundice and for controlling cirrhosis of liver. Paste of shoots (20-25g) given twice daily before meals for a week in jaundice associated with loss of appetite.

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137.	<i>Bombax ceiba</i> L./Bombacaceae.	Throughout India in forests up to 1,500m; also rose in plantations.	Roots	Roots used in vitiated conditions of pitta.
138.	<i>Borassus flabellifer</i> L. /Arecaceae.	Dry zones along the coasts of Deccan Peninsula, Orissa, Bihar, West Bengal.	Fruit, Inflorescence	Consumption of ripe fruit helps to eliminate bile (pitta). Ash obtained by burning the inflorescence considered useful in bilious fever and applied for enlarged liver.
139.	<i>Borreria articularis</i> (L. f.) F. N. Will. / Rubiaceae.	Throughout India upto 900m in the hills & on dry land as a weed.	Whole Plant	Plant useful in vitiated condition of pitta.
140.	<i>Boswellia serrata</i> Roxb. Coleb. /Bursaceae.	Common on dry hills throughout the greater parts of India (except Assam).	Bark	Oleo-resin given to treat jaundice. Bark good for vitiated condition of pitta.
141.	<i>Brassica juncea</i> (L.) Czern & Coss. /Brassicaceae.	Cultivated throughout India.	Whole Plant	Removes imbalance of bile (pitta).
142.	<i>B. oleracea</i> L. / Brassicaceae.	Cultivated on hill-tops of India.	Leaf	Leaves useful in vitiated conditions of pitta.
143.	<i>Bridelia retusa</i> (L.) Sprengel. /Euphorbiaceae.	Widely distributed throughout India.	Leaf	Leaves used to cure jaundice.
144.	<i>B. scandens</i> (Roxb.) Willd. / Euphorbiaceae.	Along the foothills of the Himalaya from Kashmir-W. Bengal, Deccan Peninsula.	Tender leaves	Useful in jaundice.
145.	<i>Bryophyllum pinnatum</i> (Lam.) Oken/ Crassulaceae.	Tropical plains of India, from the base of Himalaya-Sri Lanka, lower Bengal.	Leaf	5ml of leaf juice or paste of fresh leaves (about 100g) given twice daily for a week in acute jaundice.
146.	<i>Buchanania lanzan</i> Spreng. /Anacardiaceae.	Deciduous forests, throughout India upto 900m.	Root, Fruit	Root and fruit useful in vitiated conditions of pitta.
147.	<i>Bupleurum.gracillimum</i> Kl. & Garcke/ Apiaceae.	Himalaya; 1,000-4,000m.	Root	Roots useful in hepatitis.
148.	<i>B. hamiltonii</i> Balakr. /Apiaceae.	Kashmir – Sikkim: 300-2,700m, common in W. Himalaya & in the lower hills.	Root	Roots used in liver complaints.
149.	<i>B. longicaule</i> Wall. ex DC./Apiaceae.	Himalaya: 2,400-3900m (Kashmir-Sikkim).	Root	Roots used in liver complaints.
150.	<i>B. swatianum</i> Nasir./Apiaceae.	Kashmir; Budrawur, 2,300m.	Root	Roots used in liver troubles.
151.	<i>Butea monosperma</i> (Lam.) Taub. (Pl. 2D)/ Fabaceae.	Deciduous forests, throughout India upto 1,200m; and in open areas.	Flowers, Stem, Bark, Leaves.	Bark and flowers useful in vitiated conditions of pitta. Extract of its leaves mixed with tender leaves of <i>Ricinus communis</i> given for 3 days to cure jaundice. Bath with flowers boiled in water, twice in a day, good for curing jaundice.
152.	<i>Caesalpinia bonduc</i> (L.) Roxb. / Caesalpinaceae.	Hotter parts of India particularly along the sea coasts & upto 830m, W.Bengal and S. India.	Leaves	Two teaspoonfuls of extract of its tender leaves pounded with those of <i>Ocimum tenuiflorum</i> and <i>Azadirachta indica</i> (1:1:1 proportion) and little castor oil given early morning on empty stomach for 7 days by Jenukuruvas for jaundice.



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153.	<i>C. decapetala</i> (Roth.) Alston./ Caesalpiniaceae.	Commonly found wild throughout Peninsular India in open habitat & thickets to 1,800m.	Whole Plant, Leaves	Decoction of plant used as a bath in case of jaundice. Bruised leaves useful in treating biliousness
154.	<i>C. sappans</i> L./ Caesalpiniaceae.	Wild in Shan hills; E. & W. Peninsula.	Wood	Wood cures biliousness.
155.	<i>Cajanus cajan</i> (L.) Huth. /Fabaceae.	Cultivated throughout India.	Leaf, Seeds	Leaf juice or its decoction (immature leaves) given with sugar in jaundice (regularly in morning) for about 1 month. Seeds useful in vitiated conditions of pitta. Juice of 2-4 seeds also given twice daily for 4-5 days for acute viral hepatitis.
156.	<i>Calamus rotang</i> L. /Arecaceae.	Dry tract in C. & S. India upto 450m.	Root	Roots useful in vitiated conditions of pitta.
157.	<i>Calamus travancoricus</i> Bedd. ex Hook. f. /Arecaceae.	Deccan Peninsula from Malabar-Travancore.	Leaf	Tender leaves used in biliousness.
158.	<i>Callicarpa macrophylla</i> Vahl. /Verbenaceae.	Bengal, Assam & sub-Himalayan tracts up to 1,800m.	Flowers, Fruits	Flowers and fruits useful in vitiated conditions of pitta
159.	<i>C. tomentosa</i> (L.) Murr. / Verbenaceae.	Konkan, North Kanara, W. Ghats of Bombay	Bark, Root	Decoction of the bark and root used for removing hepatic obstructions and hepatic eruptions.
160	<i>Calotropis gignentia</i> (L.) R. Br. ex Ait. / Asclepiadaceae.	Distributed throughout India.	Leaf, Root, Latex	Three drops of latex diluted with a teaspoonful of water given once daily for a week in enlarged liver. One cup of root decoction given on empty stomach to cure jaundice. 2 young leaves chewed with salt twice a day for 7 days to cure jaundice.
161.	<i>C. procera</i> R. Br. /Asclepiadaceae.	Throughout India, ascending to 1,350m.	Stem, Bark, Flower	Stem bark mixed with common salt, ginger and black pepper used in the treatment of jaundice. Gynostegium of the flower chewed with sweetmeat made of condensed milk for curing jaundice.
162.	<i>C. floribunda</i> (Roxb.) Lam. /Combretaceae.	Deciduous forests upto 750m, as well as along the water courses & wastelands in M.P., Orissa, Assam.	Fruit.	Fruit useful in jaundice.
163.	<i>Canavalia gladiata</i> (Jacq.) DC. /Fabaceae.	Cultivated throughout India.	Fruit.	Fruit useful in vitiated condition of pitta.
164.	<i>C. virosa</i> (Roxb.) Wight & Arn./Fabaceae.	East Himalayas - Sri Lanka.	Fruit	Decoction of fruit given to treat bile.
165.	<i>Canscora decusata</i> (Roxb.) Roem. & Schult. /Gentianaceae.	Common throughout India on moist, Grassy sites in fields throughout India. Sal-dominant forest, upto 1,600m in Himalaya and to 900m in South India.	Whole Plant	Whole plant given for treating liver disorder.
166.	<i>C. diffusa</i> (Vahl.) R. Br./ Gentianaceae.	Distributed throughout India.	Whole Plant	10-15ml decoction of the whole plant given along with old jaggery (5g) to cure jaundice.
167.	<i>Canthium dicoccum</i> (Gaertn.) Merril./ Rubiaceae.	Grows in E. Himalaya & S. India.	Leaf	Leaf decoction given for body swelling and oedema due to bile problems.

Sr. No	Plant Name/Family	Distribution	Parts Used	Folk Uses
168.	<i>Capparis deciduas</i> (Forsk.) Edgew. /Capparidaceae.	Dry areas throughout India.	Fruit, Bark	Bark used in affections of the liver. Fruit useful in biliousness.
169.	<i>C. spinosa</i> L./Capparidaceae.	North Western Himalaya, Rajasthan, plains of Indus & Jhelum, salt range, Maharashtra.	Whole Plant	Major ingredient of Liv-52 – a drug useful in cirrhosis of liver.
170.	<i>Capsicum annum</i> L. /Solanaceae.	Cultivated in India.	Fruit	Aqueous extract prepared by Keeping its 10-15g splitted deseeded fruits in 100-150ml water for 3-4 hours prescribed against jaundice.
171.	<i>Cardiospermum halicacabum</i> L. / Sapindaceae.	Commonly found as a weed throughout India upto 1,200m.	Whole Plant	The medicinal oil prepared by boiling the whole plant in oil rubbed over the body in bilious affections.
172.	<i>Carduus heteromallus</i> D. Don. /Asteraceae.	Kashmir – Bhutan: 700-2,350m.	Whole Plant.	Plant used in liver troubles.
173.	<i>Carica papaya</i> L./Caricaceae.	Widely cultivated throughout India; frequently naturalized throughout the warmer parts of India.	Leaf. Fruit. Seed. Latex.	Leaf extract, juice of the seeds taken orally for liver disorders. Juice of the seeds and ripe fruits good for chronic liver ailments. Latex (3-4ml) obtained from fresh fruit mixed with thrice the quantity of honey given twice daily for 4-5 days in chronic liver disorders with weak digestion.
174.	<i>Carissa congesta</i> Wight./Apocynaceae.	Hilly regions of India.	Fruit.	Unripe fruits cure biliousness or congestion of liver.
175.	<i>C. carandas</i> L./ Apocynaceae.	Dry forests throughout India, also cultivated.	Unripe Fruit.	Fruit useful in vitiated condition of pitta.
176.	<i>Carthamus tinctorius</i> L. / Asteraceae.	Cultivated throughout the greater part of India, mainly Karnataka, Maharashtra.	Flower.	Flowers useful in jaundice.
177.	<i>Caryota urens</i> L. / Arecaceae.	Throughout India from sea level to 1,200m.	Leaves	Tender leaves useful in vitiated condition of pitta.
178.	<i>Casearia elliptica</i> Willd. / Flacourtiaceae.	Moist, hilly locations upto 900m from the foothills of the Himalaya	Root Bark	Root bark considered good for stimulating liver function.
179.	<i>C. graveolens</i> Dalz. / Flacourtiaceae.	Found throughout most of India from H.P. eastwards to Assam & in northern peninsular India to Maharashtra, Karnataka.	Root	Root juice taken internally to treat jaundice.
180	<i>Casearia zeylanica</i> (Gaertn.) Thied./ Flacourtiaceae.	Maharashtra, Karnataka, other places of Western Coast.	Root	Decoction of roots given in liver troubles.
181.	<i>Cassia absus</i> L. / Caesalpiniaceae.	Dry wastelands & open areas in forests throughout India.	Seeds	Seeds useful in vitiated conditions of pitta.
182.	<i>C. alata</i> L. / Caesalpiniaceae.	Grows wild in wet places; also cultivated for it's ornamental foliage and showy flowers.	Leaves, Stem	Leaves and stem prescribed for hepatitis.
183.	<i>C. fistula</i> L. / Caesalpiniaceae.	Common in Himalaya upto 1,400m.	Fruit, Seed, Root bark.	Fruits used in liver complaints. Seeds emetic and used in jaundice. Root bark often combined with tamarinds regarded as a good purge for adust bile.
184.	<i>C. obtusifolia</i> L./ Caesalpiniaceae.	Plant more or less naturalized in India.	Leaf, Seed	Leaves cure biliousness. Equal amount of leaf and seed paste given to treat jaundice.
185.	<i>C. occidentalis</i> L./ Caesalpiniaceae.	Throughout India.	Whole Plant, Root	Decoction of the root effectively used in enlarged liver.

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186.	<i>C. senna</i> L./ Caesalpiaceae.	Cultivated in S. India, Rajasthan & Gujarat.	Leaf	Leaf infusion given to treat jaundice, hepatomegaly and hepatopathy.
187.	<i>Cassytha filiformis</i> L. /Lauraceae.	Throughout the greater part of India, especially near the sea coast.	Tender Twigs	Tender twigs pounded with garlic and pepper given orally twice in a day for one week for liver expansion and bilious affections.
189.	<i>Catharanthus roseus</i> L./Apocynaceae.	Grown as a crop in Karnataka, Maharashtra, Gujarat, Assam.	Leaves	Vinblastin obtained from leaves used to treat cancer attacking liver.
190.	<i>Catunaregam nutans</i> (DC.) Triuv. /Rubiaceae.	Sub-tropical Himalaya from Jammu eastwards; Sikkim upto 1,330m.	Rootstock	Juice of the root stock used in the treatment of jaundice.
191.	<i>C. spinosa</i> (Thunb.) Tiruv./Rubiaceae.	Deciduous forests throughout India upto 1,350m.	Fruit	Fruits useful in vitiated condition of pitta.
192.	<i>C. uliginosa</i> (Retz.) Sivarajan /Rubiaceae.	Occurring naturally in the sub-Himalayan hill forests from the Yamuna eastwards.	Root	Roots used to treat biliousness.
193.	<i>Cautleya gracilis</i> (Sm.) Dandy. / Zingiberaceae.	Sikkim, E. Himalaya.	Rhizome	Decoction of fresh rhizome (20-25ml) or its infusion (40-50ml) taken 2 times daily for 7-15 days in case of liver trouble.
194.	<i>Ceiba pentandra</i> (L.) Gaertn. / Bombacaceae.	Widely distributed in hotter areas of W. & S. India.	Whole Plant Gum	Whole plant useful in the diseases caused by bile. Gum cures diseases of the liver.
195.	<i>Celastrus paniculatus</i> Willd. / Celastraceae.	Common all over the hilly parts of the country.	Root	Root paste applied all over the body to cure jaundice.
196.	<i>Celosia argentea</i> var. <i>cristata</i> Haines. /Amaranthaceae.	Grown in gardens; also found as an escape.	Whole Plant.	Plant useful in biliousness.
197.	<i>Centaurea cyanus</i> L./ Asteraceae.	Grows wild in all temperate regions.	Petal.	Petals possibly support the liver.
198.	<i>Centella asiatica</i> (L.) Urban. /Apiaceae.	Wild in wet places.	Whole Plant. Root. Leaf	Decoction of the root (half teaspoonful) taken internally in jaundice. Leaf also given in liver complaints. Sharbat of whole plant with sugar candy paste (15-20g) with 1-2 cloves of <i>Allium sativum</i> given twice daily for a week for chronic liver disorders associated with loss of appetite.
199.	<i>Ceratophyllum demersum</i> L. / Ceratophyllaceae.	Cosmopolitan; in still waters throughout India.	Whole Plant.	Plant useful in biliousness.
200.	<i>Chelone glabra</i> L./Scrophulariaceae.	Wetlands of India.	Whole Plant.	Considered useful for complaints specifically liver affections with pain or soreness of left lobe of the liver, extending downwards.
201.	<i>Chenopodium album</i> L. /Chenopodiaceae.	Cultivated or wild throughout India upto 4,267m.	Seed.	Seeds prescribed in hepatic diseases.
202.	<i>C. botrys</i> L. /Chenopodiaceae.	Himalaya (Kashmir-Sikkim) upto 4,750m.	Whole Plant	Plant useful in liver complaints.
203.	<i>Chimaphila umbellata</i> (L.) Barton. /Ericaceae.	Temperate India	Whole Plant	Plant useful in hepatic dropsies.
204.	<i>Chlorophytum borivillianum</i> Santapau. / Liliaceae.	Plenty in forest area of C. India.	Dry Tubers	Used to treat jaundice.

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205.	<i>Chloroxylon swietenia</i> DC. /Meliaceae.	Dry deciduous forests throughout the Indian Peninsula.	Stem Bark	Bath with decoction of the stem bark together with that of <i>Mangifera indica</i> , <i>Madhuca longifolia</i> and leaves of <i>Holoptelea integrifolia</i> and <i>Dendrocalamus strictus</i> said to cure jaundice.
206.	<i>Chonemorpha fragrans</i> (Moon) Alston. /Apocynaceae.	Throughout India; moist forests in Andaman Island.	Whole Plant	Plant useful in jaundice.
207.	<i>Cicca disticha</i> L./ Euphorbiaceae.	Cultivated in India.	Fruit	Fruit useful in biliousness.
208.	<i>C. arietinum</i> L. /Fabaceae.	Native to South West Asia, now cultivated extensively in most parts of India.	Stem, Seed	Stem and seeds useful in vitiated conditions of pitta.
209.	<i>C. microphyllum</i> Benth. / Fabaceae.	Western Himalaya, Temperate & Alpine region; 3,000-5,000m.	Whole Plant	Plant useful in jaundice.
210.	<i>Cichorium endivia</i> L. /Asteraceae.	Cultivated mainly in N. India.	Whole Plant Fruit	Whole plant and fruit useful in bilious complaints and jaundice.
211.	<i>Cichorium intybus</i> L. /Asteraceae.	Sub-Himalayan forests of northeastern U.P.	Leaf, Whole Plant	Juice of its leaves and that of <i>Solanum nigrum</i> consumed with a little honey in the treatment of sluggish liver. Decoction of its entire plant and that of <i>Euphorbia hirta</i> , leaves of <i>Solanum nigrum</i> and <i>Tephrosia purpurea</i> (Sarphonka) given with honey in the treatment of jaundice. Dried roots used in homeopathy for liver ailments. Plant acts as liver tonic.
212.	<i>Cinnamomum bejolghota</i> (Buch.-Ham.) Sweet./Lauraceae.	E. Himalaya; Sikkim, ascending to 2,350m.	Stem Bark, Root bark	20-30ml decoction of the stem bark taken once a day as a liver tonic. Root bark used in liver complaints.
213.	<i>C. verum</i> J.S. Presl. /Lauraceae.	Wet coastal and lower montane forests of S. W. India from Karnataka through Kerala.	Bark, Oil	Oil considered tonic to the liver. Bark used to treat biliousness.
214.	<i>Cirsium arvense</i> (L.) Scop. / Asteraceae	Bengal & Gangetic plains, from the Sunderbans north-westward to the Punjab. W. Himalaya from Kashmir- Kumaon.	Root	Aqueous extract of root (1 teaspoon, 3 times a day for 7 days) given for the treatment of liver disorders.
215.	<i>Cissampelos pareira</i> L. /Menispermaceae.	Throughout India, usually in tropical & sub-tropical India upto 2,000m.	Leaf	Juice of fruit (10-15ml) mixed with an equal quantity leaf juice of <i>Murraya koenigii</i> given twice a day for a fortnight in chronic liver disorders associated with alcoholism and dyspepsia. Leaves also useful in jaundice.
216.	<i>Citrullus colocynthis</i> (L.) Schrad. /Cucurbitaceae.	Wild & cultivated throughout India.	Root	5ml root extract taken once a day for 5-7 days in case of jaundice.
217.	<i>C. lanatus</i> (Thunb.) Matsumara & Nakai. /Cucurbitaceae.	Cultivated throughout India.	Fruit	Water melon used in the treatment of hepatitis and hepatic congestion.
218.	<i>Citrus aurantifolia</i> (Christm.) Swingle/ Rutaceae.	Cultivated in all parts of India.	Fruit	Juice of the fruit consumed after diluting with water to check biliousness or congestion of the liver.
219.	<i>C. aurantium</i> L. var. <i>bigaradia</i> Hook. f. /Rutaceae.	Dehradun, Garhwal, Kumaon, Sikkim, Khasia hills, Manipur, mountain forests of the Peninsula.	Fruit	Fruit removes biliousness.
220.	<i>C. bergamia</i> Risso. & Poit./Rutaceae.	Penninsular India.	Lime	juice used in checking bilious vomiting.

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221.	<i>C. limetta</i> Risso. / Rutaceae.	Wild in Kumaon, Pachmarhi (C.P.), Sikkim, Garo Hills, W. Ghats.	Fruit	Fruit extensively used as a refrigerant in jaundice and biliousness.
222.	<i>C. medica</i> L./ Rutaceae.	Wild in Kumaon, Pachmarhi (C.P.), Sikkim, Garo Hills, W. Ghats.	Seed, Root	Seeds good for biliousness. Roots used in the treatment of jaundice and congestion of liver.
223.	<i>C. reticulata</i> Blanco./Rutaceae.	Cultivated in Assam, Sikkim, West Bengal.	Rind, Fruit	Useful in bilious disorders and as liver tonic.
224.	<i>C. sinensis</i> (L.) Osbeck. /Rutaceae.	Cultivated in many parts of India.	Fruit	Juice useful in bilious affections and bilious diarrhoea.
225.	<i>Clematis hexapetala</i> Pall. /Ranunculaceae.	Occurs in the ranges between 2,000-2,350m.	Root	Considered useful in acute hepatitis.
226.	<i>C. tribola</i> Heyna ex Roth. / Ranunculaceae.	Western Regions of Peninsular India from southwards.	Whole Plant	Plant stimulates secretion of bile.
227.	<i>Cleome gynandra</i> L. /Capparidaceae.	Throughout the warmer parts of India.	Whole Plant	Plant cures ailments caused by bile.
228.	<i>C. icosandra</i> L. /Capparaceae.	Throughout the greater part of India upto 1,524m.	Seed	Seeds useful in liver diseases.
229.	<i>Clerodendron infortunatum</i> L. /Verbenaceae.	Throughout India.	Whole Plant	Plant useful in biliousness.
230.	<i>Clerodendron serratum</i> (L.) Spreng./ Verbenaceae.	Himalaya from the Satluj to Assam ascending to 1,700m; Khasia Hills, Nilgiris.	Tender shoot	Decoction of young plant part is given in jaundice.
231.	<i>Clerodendrum kaempferi</i> (Jacq.) Sieb ex Steud./ Verbenaceae.	Wildly cultivated in Sikkim, Assam, Khasia; upto 1,350m.	Whole Plant	Considered useful in jaundice.
232.	<i>Clitoria ternatea</i> L. /Fabaceae.	Widely cultivated; sometime found in hedges and on walls.	Leaf, Root	Paste of roots mixed with one glass of cow's milk given internally to cure jaundice. Roots also useful in biliousness.
233.	<i>Coccinia grandis</i> (L.) Voight. / Cucurbitaceae.	Throughout the Indian subcontinent; cultivated as well as wild.	Leaf, Root	Fruit and leaf of bitter variety used as liver tonic. Roots useful in jaundice.
234.	<i>Cocculus hirsutus</i> (L.) Diels. / Menispermaceae.	Central India, common in open habitats.	Root	Roots rubbed with seeds of <i>Caesalpinia crista</i> and ginger and sugar given for curing bilious dyspepsia.
235.	<i>Cocos nucifera</i> L. /Arecaceae.	Cultivated in hot, damp regions of India, especially near the sea.	Root	Decoction of leaves given in liver complaints.
236.	<i>Codonopsis javancia</i> (Blume) Hook. f. /Campanulaceae.	Meadows & wastelands or at forest edge in mountainous area.	Root	Recommended in jaundice.
237.	<i>Colchicum luteum</i> Baker. /Liliaceae.	W. Himalaya (Kashmir – Chamba): 1,000-3,000m.	Corm	Corm used in diseases of liver.
238.	<i>Coleus amboinicus</i> Lour. /Lamiaceae.	Throughout India, cultivated in gardens.	Leaf	Leaves used as liver tonic and in hepatopathy.
239.	<i>Commelina clavata</i> C.B. Clarke. / Commelinaceae.	Deccan Peninsula from the Konkan southwards, ascending to 2,000m in the Nilgiris.	Whole Plant	1g plant paste consumed with honey (siruthene) twice a day for 7 days for jaundice.

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240	<i>C. obliqua</i> Ham./Commelinaceae.	Throughout India, from the base of Himalaya to 2,000m; Western Ghats.	Root	Root useful in bilious affections.
241.	<i>Commiphora mukul</i> (Hook. ex Stocks) Engl. /Burseraceae.	Arid, rocky tract of Rajasthan; dry forests of A. P., Karnataka, rarely in Kerala & T. N.	Stem Gum	Paste of stem gum pounded in calcium carbonate applied externally on tumours of liver. Roots useful in vitiated conditions of pitta and infective viral hepatitis.
242.	<i>C. myrrha</i> (Nees.) Engl./Burseraceae.	Grown as a garden plant in Temperate India.	Gum	Gum useful in vitiated conditions of pitta.
243.	<i>Coptis teeta</i> Wall./ Ranunculaceae.	East of Assam & Temperate regions of India.	Rhizome	Decoction of dried rhizomes (1g) given twice daily for 4-5 days for infective hepatitis.
244.	<i>Corbichonia decumbens</i> (Forssk.) Excel./Aizoaceae.	Drier regions of India.	Root	Root paste given orally, thrice a day for three days for the treatment of yellow and white jaundice; its infusion also taken for biliousness.
245.	<i>Corchorus capsularis</i> L. /Tiliaceae.	Widespread in parts of India; cultivated in West Bengal.	Leaf	Infusion of dried leaves used in liver disorders, mild jaundice and bilious trouble. Juice of tender leaves (15-20ml) diluted with equal volume of water given twice daily for acute jaundice.
246.	<i>Cordia dichotoma</i> Forst. f. / Boraginaceae.	Wild & cultivated throughout warmer regions of India.	Bark, Fruit, Leaves	Bark, fruit and leaves useful in jaundice.
247.	<i>Cordia macleodii</i> Hook. f. & Thoms. / Boraginaceae.	Mainly in moist & dry deciduous forests upto 1,200m in Peninsular India.	Bark	Bark used by the Santhalis to treat jaundice.
248.	<i>Cordia subcordata</i> Lam. /Boraginaceae.	Coastal areas; Andamans.	Whole Plant	Plant useful in the treatment of hepatic infections and cirrhosis of the liver.
249.	<i>Coriandrum sativum</i> L./Apiaceae.	Cultivated in India; naturalized weedy species throughout the warmer region.	Leaf, Seed	Fruit, Leaves and fruits useful in jaundice and vitiated conditions of pitta.
250.	<i>Corydalis govaniiana</i> Wall. / Fumariaceae.	Western Himalaya: 2,650-4,000m; (Kumaon – Kashmir).	Root, Plant	Whole Decoction of the root (15-20ml) taken 1-2 times daily for 2-3 months as a liver tonic. Plant useful in liver complaints.
251.	<i>Cosciniium fenestratum</i> (Gaertn.) Colebr. / Menispermaceae.	Maharashtra, Karnataka, T.N., Kerala, other places.	Stem	Stem useful in jaundice.
252.	<i>Costus speciosus</i> (Koenig.) Smith. / Zingiberaceae.	Uttar Pradesh - Sikkim; upto 500m.	Rhizome	Decoction of rhizome along with that of <i>Cyperus rotundus</i> and bark of <i>Azadirachta indica</i> considered an effective remedy for jaundice; sometimes a bath also given with this decoction. Juice of rhizome (10-15ml) given twice a day followed by decoction of its dried rhizome powder (30ml) twice daily for four days for a week in infective hepatitis as a very potent remedy.
253.	<i>Crataeva magna</i> (Lour.) DC. / Capparidaceae.	Evergreen tree growing widely in all parts of India.	Bark	Bark useful for its stimulating action on the liver.
254.	<i>Cressa cretica</i> L. / Convolvulaceae.	Along sandy shores throughout India.	Whole Plant	Whole plant used in vitiated conditions of pitta.
255.	<i>Crinum asiaticum</i> L./Amaryllidaceae.	Throughout tropical India.	Tuberous Bulb	Tuberous bulbs useful in biliousness.

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256.	<i>Crocus sativus</i> L. / Iridaceae.	Cultivated in Kashmir.	Stigma	Saffron useful in enlargement of liver and biliousness.
257.	<i>Crotalaria verrucosa</i> L. /Fabaceae.	Moist localities near the deserted fields of Chitri.	Leaf	Leaves cure biliousness.
258.	<i>Croton roxburghii</i> Balak. /Euphorbiaceae.	North East India from eastern Uttar Pradesh - Assam, Chota Nagpur (Bihar).	Bark	Bark taken internally and applied locally for treating enlarged liver.
259.	<i>Cryptolepis buchananii</i> Roem. & Schult. /Asclepiadaceae.	Throughout India, ascending to 1,350m.	Root	Decoction of the root taken internally for a period of week's time for checking jaundice.
260.	<i>Cucumis melo</i> L. /Cucurbitaceae.	Cultivated throughout N. India.	Seed, Fruit	Seeds useful in hepatopathy. Fruits used in vitiated conditions of pitta.
261.	<i>Cucumis sativus</i> L. /Cucurbitaceae.	Cultivated throughout India; Wild in the Himalaya from Kumaon - Sikkim.	Fruit	Fruit useful in jaundice.
262.	<i>Cucumis trigonus</i> Roxb. / Cucurbitaceae.	Dry areas throughout India.	Fruit, Seed	Fruit used as liver tonic. Seeds useful in vitiated conditions of pitta.
263.	<i>Cuminum cyminum</i> L. /Apiaceae.	Widely cultivated in India.	Fruit	Fruit useful in biliousness.
264.	<i>Curculigo orchoides</i> Gaertn. /Hypoxidaceae.	Khasi & Kumaon hills, sub-tropical Himalaya, Assam, Western Bengal, Bihar, Chattishgarh, Maharashtra, Karnataka.	Root Tubers	One teaspoon powdered tuber given orally with water in early morning for 7 days as a liver tonic for jaundice.
265.	<i>Curcuma amada</i> Roxb. / Zingiberaceae.	Cultivated throughout India. Bengal, Malay Peninsula, Western Peninsula.	Rhizome	Rhizome useful in vitiated conditions of pitta.
266.	<i>C. angustifolia</i> Roxb. / Zingiberaceae.	Forests of Madha Pradesh, Chattishgarh& bottom range of Himalaya.	Rhizome.	Powdered rhizome given along with tamarind to treat jaundice. About 50g rhizome of <i>Curcuma longa</i> and <i>C. angustifolia</i> Roxb. ('ban halldhi') mixed in 1 litre of arrack, 20ml each of cow's urine and castor oil and a pinch of rock salt given to elephants twice daily till cure for enlarged liver.
267.	<i>C. caesia</i> Roxb. /Zingiberaceae.	Cultivated to some extent in Bengal.	Rhizome.	Rhizome juice used in the treatment of jaundice
268.	<i>C. leucorhiza</i> Roxb. /Zingiberaceae.	Bihar; Jungles south of Bhagalpore.	Rhizome.	Rhizome useful in enlarged liver.
269.	<i>C. longa</i> L./ Zingiberaceae.	Widely cultivated in West Bengal & other parts of India.	Rhizome.	Rhizome highly effective in jaundice particularly in children. Paste of rhizome in water is taken internally or its juice mixed with that of the 'Nelli-Kai' ( <i>Emblica officinalis</i> ), given in jaundice for improving action of liver. Juice of fresh rhizome (20-30ml) diluted with equal volume of lukewarm water or cow's milk given twice daily for the same.
270.	<i>C. pseudomontana</i> Grah./Zingiberaceae.	Concan & the Circars.	Tuber	Tuber extract given for jaundice.
271.	<i>C. zedoaria</i> Roxb. /Zingiberaceae.	North-East India, C. India.	Rhizome	Juice of rhizome mixed with that of <i>Curcuma longa</i> L. in equal parts given in jaundice (50ml thrice daily for 3 weeks).
272.	<i>Cuscuta epithimum</i> (L.) Murr. / Cuscutaceae.	Throughout India.	Aerial parts	Herb considered valuable for problems affecting the liver.
273.	<i>C. europaea</i> var. <i>indica</i> /Cuscutaceae.	Temperate Himalaya; 1,700-4,000m.	Whole Plant	Useful in jaundice.

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274.	<i>C. reflexa</i> Roxb. /Cuscutaceae.	Throughout India, ascending upto 2,600m.	Whole Plant	15-20ml of the plant juice taken with jaggery two times daily for 7 days to cure jaundice.
275.	<i>Cyamopsis tetragonoloba</i> (L.) Taub. / Fabaceae.	Cultivated in many parts of India.	Pod	Pods (fruit) removes biliousness.
276.	<i>Cyclea peltata</i> (Lamk.) H. f. & Thomas/ Menispermaceae.	Konkan ascending to 3,000m.	Root	Roots useful in jaundice.
277.	<i>Cymbopogon citrates</i> (DC.) Stapf. /Poaceae.	Grown in gardens in Punjab, Bombay & Baroda.	Leaf	Leaves given in case of jaundice.
278.	<i>C. jwarancusa</i> Schult. /Poaceae.	Outer hill zone of Kumaon, Garhwal, Jodhpur, Jaisalmer, Bihar.	Whole Plant	Grass useful in biliousness.
279.	<i>C. maritimi</i> (Roxb.) Watson/ Poaceae.	Drier regions of the country; common in Maharashtra.	Whole Plant	Infusion of grass used to treat bilious vomiting.
280.	<i>Cynara scolymus</i> L. /Asteraceae.	Warm Temperate regions.	Root	Roots stimulate bile secretion.
281.	<i>Cynodon dactylon</i> (L.) Pers. /Poaceae.	Throughout the Indian plains, ascending upto 1,600m.	Whole Plant	Cures irregularities of bile.
282.	<i>Cyperus distans</i> L. f. /Cyperaceae.	All warm regions of India, ascending upto 1,000m.	Whole Plant	Plant useful in jaundice.
283.	<i>C. esculentus</i> L./Cyperaceae.	Punjab & Niligiri hills.	Tubers	Tubers useful in vitiated conditions of pitta and bilious fevers.
284.	<i>C. rotundus</i> L. /Cyperaceae.	All warm regions of India, ascending upto 2,000m.	Root	Roots useful in liver diseases.
285.	<i>C. scariosus</i> R. Br. /Cyperaceae.	West Bengal.	Root	Roots useful in biliousness.
286.	<i>C. triceps</i> Endl. /Cyperaceae.	Tropical herb, common on moist shores.	Root	Used for curing liver disorders.
287.	<i>Cythula prostrata</i> (L.) Blume. /Amaranthaceae.	Throughout India, shady and moist localities.	Root	Roots useful in vitiated conditions of pitta.
288.	<i>Dalbergia lanceolaria</i> L. f. /Fabaceae.	Scattered practically throughout India.	Bark.	30-40ml decoction of the bark of this plant along with that of <i>Oroxylum indicum</i> , <i>Albizia lebbek</i> and <i>Pterocarpus marsupium</i> (in same proportion) given twice a day.
289.	<i>Datura metel</i> L./ Solanaceae.	Wastelands throughout India.	Seeds	Purified seeds used in low doses for jaundice.
290.	<i>D. stramonium</i> L. /Solanaceae.	Kashmir - Sikkim upto 2,700m, hilly districts of Central & S. India.	Seeds	Seeds useful in biliousness and jaundice.
291.	<i>Daucus carota</i> L. var. <i>sativa</i> DC. / Apiaceae.	Naturally grows in Kashmir & Western Himalaya between 1,700 - 3,000m;	Tap root	Tap root useful in liver complaints.
292.	<i>Decalepis hamitonii</i> Wight & Arn. /Asclepiadaceae.	Peninsular India upto 1,400m; common in forest areas of the W. Ghats.	Root	Root used as a substitute for the plant drug <i>Sariva</i> to treat jaundice.
293.	<i>Delphinium denudatum</i> Wall. ex Hook. f. & Thoms./Ranunculaceae.	W. Temperate Himalaya (Kashmir-Kumaon): 2,440-3,600m, particularly in grassy slopes.	Root	Roots useful in jaundice and hepatic ulcers.
294.	<i>D. stapeliosum</i> Bruhl ex Huth. /Ranunculaceae.	Himalaya, Meghalaya (upto 2,000-3,000m).	Whole Plant.	Plant useful in jaundice.



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295.	<i>D. zalil</i> Ait. & Hemsl. /Ranunculaceae.	Throughout India.	Flower	Flowers mixed with the fragments of its flowering axis and stalks employed in jaundice.
296.	<i>Dendrathera indicum</i> (L.) Des Moue/Asteraceae.	Grows in Indian garden.	Flower.	Flowers used in biliousness.
297.	<i>Dendrocnide sinuata</i> (Bl.) Chew. / Ulmaceae.	Throughout India upto 1,200m.	Root.	Decoction of roots taken for jaundice.
298.	<i>Derris indica</i> (Lamk.) Bennet / Fabaceae.	Throughout India upto 1,200m.	Flowers.	Infusion of flowers take care of biliousness or congestion of the liver.
299.	<i>Desmodium elegans</i> DC./Fabaceae.	All along the Himalaya, ascending upto 3,000m.	Root.	Roots diuretic in bilious complaints.
300.	<i>D. gangeticum</i> L. / Fabaceae.	Lower Himalayan region upto 1,600m & throughout the Indian plains.	Roots.	Roots chewed to cure jaundice.
301.	<i>D. laxiflorum</i> DC./Fabaceae.	Temperate & tropical regions from Gharwal & Kumaon - Assam, ascending to 2,000m in Sikkim & Kumaon.	Root.	50ml extract of decoction of 50-100g of its roots taken daily for 10-15 days after mixing with powder of three fruits of Piper longum L. to cure jaundice.
302.	<i>D. pulchellum</i> Benth. ex Baker/Fabaceae.	E. Himalaya, plains of India.	Flowers.	Flowers given in biliousness.
303.	<i>D. triflorum</i> (L.) DC. /Fabaceae.	Throughout India upto 900m.	Whole Plant.	Plant useful in vitiated conditions of pitta.
304.	<i>Desmostachya bipinnata</i> Stapf. / Poaceae.	Hot & drier parts throughout India.	Whole plant	20-25ml of root extract taken once a day for 2-3 weeks in biliousness.
305.	<i>Dillenia indica</i> L. /Dilleniaceae.	Sub-Himalayan tract from Garhwal - Assam, Arunachal Pradesh, Manipur, Tripura.	Fruit.	Fruit removes bile.
306.	<i>Dioscorea alata</i> L. /Dioscoreaceae.	Cultivated throughout India.	Tubers.	Tubers useful in vitiated conditions of pitta.
307.	<i>D. bulbifera</i> L./Dioscoreaceae.	Outskirts of forests throughout India, ascending upto 2,000m.	Tuber.	Tubers useful in jaundice.
308.	<i>D. pentaphylla</i> L. /Dioscoreaceae.	Throughout India ascending to 1,850m in the Himalaya & Andaman Islands.	Tuber.	Tubers used in bile.
309.	<i>Diospyros exsculpta</i> Buch.-Ham. / Ebenaceae.	Deciduous forests of the C. India, Chota Nagpur, Bihar.	Fruit.	Ripe fruit cures biliousness.
310.	<i>D. malabarica</i> (Desr.) Kostel./Ebenaceae.	Throughout India.	Bark. Fruit.	Useful in vitiated conditions of pitta.
311.	<i>D. paniculata</i> Dalz. /Ebenaceae.	Moist deciduous to evergreen forests.	Fruit.	Decoction of fruit treats biliousness.
312.	<i>Diplazium esculentum</i> (Retz.) Sw./ Polypodiaceae.	Almost throughout India, being common in the plains & on the hills upto 1,000m.	Fronds.	Useful in jaundice.
313.	<i>Diploclisia glaucescens</i> (El.) Diels./ Menispermaceae.	Khasi hills & W. Ghats from Konkan southwards upto 2,000m.	Leaf.	Powdered leaves taken with milk as a cure for biliousness.
314.	<i>Diplocyclos palmatus</i> (L.) Jeffrey /Cucurbitaceae.	On hedges & bushes throughout India upto 1,200m elevation.	Whole Plant.	Plant useful in vitiated conditions of pitta.
315.	<i>Dipsacus japonicus</i> Miq. /Dipsaceae.	Common weed of Savannah at an altitude of 1,000m & above.	Root.	Roots useful in hepatic hypofunctions.

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316.	<i>Dolichos biflorus</i> Ham.-Hook. /Fabaceae.	Widely distributed in India, ascending upto 1,000m in Sikkim.	Seed.	Soup prepared from seeds beneficial in enlarged liver.
317.	<i>Dregea volubilis</i> Benth. ex Hook. f./ Asclepiadaceae.	Bengal, Assam, Deccan.	Whole Plant.	Plant cures biliousness.
318.	<i>Drynaria quercifolia</i> J. Smith. / Polypodiaceae.	Plains & lower elevations of mountains throughout India.	Stolon.	Pounded mass of stolon along with rice gruel or coconut milk administered internally thrice daily for 4 days for chronic jaundice.
319.	<i>Drypetes roxburghii</i> (Wall.) Huresawa. / Euphorbiaceae.	Shady valleys throughout India upto 900m.	Whole Plant.	Plant useful for deranged bile.
320.	<i>Ecbolium viride</i> (Forsk.) Merrill. /Acanthaceae.	Maharashtra, Karnataka.	Root.	Roots prescribed in jaundice.
321.	<i>Echinochloa colona</i> Link. /Poaceae.	Himalaya upto 2,150m.	Whole Plant.	Plant useful in biliousness.
322.	<i>Echinops echinatus</i> Roxb. /Asteraceae.	Almost throughout India upto 1,500m.	Whole Plant.	Used for treating biliousness.
323.	<i>Eclipta alba</i> (L.) Roxb. /Asteraceae.	Hotter parts throughout India, ascending upto 2,000m.	Whole Plant.	Fresh plant juice applied with sesame oil in affections of liver. Stem decoction or leaf juice (5-10ml) or its decoction (20ml) taken 3 times a day for 7-10 days in jaundice and liver enlargement. Juice of fresh rhizomes (20-30ml) diluted with equal volume of lukewarm water or cow's milk given twice daily for a week in acute hepatitis associated with pain and hepatomegaly.
324.	<i>Elaeagnus caudata</i> Schlecht ex Mamiyama. / Elaeagnaceae.	Sub-tropical & Temperate Himalaya (600-2,300m) – Sikkim (1,600-2,700m).	Whole Plant.	100ml of its extract mixed with Piper longum L. taken daily for 2-3 weeks to cure jaundice and other liver troubles.
325.	<i>Elaeocarpus sphaericus</i> (Gaertn.) Schum./ Elaeocarpaceae.	Native to various parts of India. Assam, Maharashtra.	Fruit Stone.	Used for diseases caused by bile (pitta) and as liver tonic.
326.	<i>E. tuberculatus</i> Roxb. /Elaeocarpaceae.	Maharashtra, Karnataka, Kerala, T.N., Nilgiris, Pulney & Annamalai hills.	Bark.	Decoction of bark given in biliousness.
327.	<i>Elephantopus scaber</i> L. /Asteraceae.	Throughout hotter parts of India.	Root.	Roots used in liver complaints and hepatopathy.
328.	<i>Eleusine coracana</i> (L.) Gaertn. /Poaceae.	Throughout India, upto 1,500m.	Whole Plant.	Plant useful in biliousness.
329.	<i>E. indica</i> (L.) Gaertn. /Poaceae.	Throughout the low country of India (ascending to 1,700m in the Himalaya).	Whole Plant. Root.	Plant considered good for the liver. Root juice rescribed for jaundice.
330.	<i>Eleutherine subaphylla</i> Gegenep. /Iridaceae.	Grows wild but also cultivated everywhere.	Bulb.	Bulbs used in the treatment of jaundice.
331.	<i>Embelia ribes</i> Burm. f./ Myrsinaceae.	Throughout India upto 1,750m in hilly regions.	Whole Plant.	Plant used for cirrhosis of liver.
332.	<i>Emblica officinalis</i> Gaertn. / Euphorbiaceae.	Common in the mixed deciduous forests of India, ascending upto 1,500m; often cultivated in gardens & homeyards.	Whole Plant. Fruit. Seeds.	Plant beneficial in the burning sensation caused by deranged bile and useful in enlarged liver. Fruits considered good liver tonic. Fruit juice smeared on head to cure jaundice by Jenukurubas. Seeds given internally as a cooling remedy in bilious affections.
333.	<i>Emilia sonchifolia</i> DC./Asteraceae.	Commonly in cultivated fields & waste places almost throughout India.	Whole Plant.	Used in liver diseases.

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334.	<i>Enicostema hyssopifolium</i> (Willd.) Verd./Gentianaceae.	Coastal areas throughout India upto 450m.	Whole Plant.	Plant used as liver tonic. Powdered dried leaves taken with water to cure jaundice.
335.	<i>Entada pursaetha</i> DC. /Fabaceae.	Central & E. Himalaya upto 1,300m, Sikkim, Bihar, Orissa, Maharashtra.	Seed.	Seeds used in liver troubles.
336.	<i>Enydra fluctuans</i> Lour./Asteraceae.	Throughout E. India.	Whole Plant. Leaf.	Plant beneficial in the diseases caused by deranged bile (pitta). Leaves antibilious.
337.	<i>Ephedra gerardiana</i> Wall./Ephedraceae.	Drier regions of Temperate & Alpine Himalaya from Kashmir.	Root.	Roots used in hepatic diseases.
338.	<i>Epilobium angustifolium</i> L. /Onagraceae.	Western Himalaya from Kashmir.	Whole Plant.	Plant used in hepatic complaints.
339.	<i>Equisetum arvense</i> L. /Equisetaceae.	Found at high altitudes in the Himalaya.	Whole Plant.	One cup aqueous extract of fresh plant taken thrice a day for 15 days to treat liver diseases.
340.	<i>Ervatamia coronaria</i> Stapf. /Apocynaceae.	Upper Gangetic Plains, Garhwal, Khasia hills, Assam.	Root.	Root useful in biliousness.
341.	<i>E. heyneana</i> Wall/Apocynaceae.	Open forests of W. Ghats, from Konkan southwards to Travancore upto 1,000m.	Latex.	Latex mixed with lemon juice given to treat jaundice.
342.	<i>Erythraea centaurium</i> Pers. /Gentianaceae.	Temperate regions of India.	Aerial Parts.	Employed for increasing bile production.
343.	<i>Erythrina stricta</i> Roxb./Fabaceae.	Western Peninsula, common.	Bark.	Powdered bark form used to treat biliousness.
344.	<i>E. suberosa</i> Roxb. /Fabaceae.	Deciduous forests of Madha Pradesh, Maharashtra.	Bark.	Bark given in liver troubles.
345.	<i>E. variegata</i> L. /Fabaceae.	Wild in deciduous forests throughout the mainland of India & in Andamans.	Flowers. Stem Bark.	Flowers alleviate trouble caused by pitta. Juice of leaves and bark rubbed on body to check itching and swelling due to excitement of owing bile in children by Bettakubas.
346.	<i>Erythroxylum monogynum</i> Roxb. / Erythroxylaceae.	Dry evergreen forests of Peninsular India upto 925 m.	Leaf.	Leaf juice administered orally in the treatment of jaundice.
347.	<i>Euodia hortensis</i> Fostr. /Rutaceae.	Cultivated & naturalized in forest margins and thickets, from sea level - 500m.	Bark.	Fluid from bark used in jaundice.
348.	<i>Euonymus atropurpureus</i> Jacq. / Celastraceae.	Temperate Himalaya.	Bark.	Wahoo bark prescribed for biliousness and liver problems.
349.	<i>Eupatorium cannabinum</i> L. /Asteraceae.	Temperate Himalaya: 1,000-3,500m; Meghalaya: 1,000-2,000m.	Whole Plant.	Plant used in jaundice. Leaves recommended for liver complaints. Hot infusion of its leaves prompt relief at the onset of bilious catarrh.
350.	<i>E. odoratum</i> L. /Asteraceae.	Sub-Himalayan plains & foot hills, covering extensive areas in Assam & Bengal.	Whole Plant.	Ash of the burnt plant applied over abdomen to cure liver trouble.
351.	<i>Euphorbia antiquorum</i> L. /Euphorbiaceae.	Hotter parts of India & upto 600m.	Whole Plant	Plant useful in deranged pitta (bile).
352.	<i>E. heyneana</i> Sprengel. /Euphorbiaceae.	Common throughout the plains in India.	Whole Plant.	Plant pacifies deranged pitta (bile).
353.	<i>E. hirta</i> L. /Euphorbiaceae.	Sub-Himalayan forests of northeastern U.P.	Whole Plant.	Whole plant paste with roots of <i>Diplazium esculentum</i> , <i>Musa bulbisiana</i> Colla. and <i>Phyllanthus fraternus</i> given in jaundice (25g once daily for three weeks).

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354.	<i>E. ligularia</i> Roxb. /Euphorbiaceae.	Rocky sites throughout W. Peninsular India.	Latex. Whole Plant.	Useful for treating jaundice and enlarged liver.
355.	<i>E. tirucalli</i> L. /Euphorbiaceae.	Naturalized in the drier parts of India; elsewhere largely cultivated as hedges and fuel plants.	Whole Plant.	Latex mixed with decoction of long pepper given for treating jaundice.
356.	<i>Euphrasia simplex</i> D. Don. / Scrophulariaceae.	Temperate Himalaya from Kashmir-Kumaon: 1,500-4,000m & Sikkim 3,200-4,000m.	Whole Plant.	Fresh juice of the plant used internally to treat jaundice.
357.	<i>Euryale ferox</i> Salisb. /Nymphaeaceae.	Occurs in fresh water tanks of Kashmir, Rajasthan, Assam, Tripura, Manipur.	Seed.	Seeds helpful in deranged bile.
358.	<i>Evolvulus alsinoides</i> L. /Convolvulaceae.	Throughout India; Himalaya upto 2,000m.	Whole Plant.	Plant useful in biliousness.
359.	<i>Feronia limonia</i> (L.) Swingle /Rutaceae.	Indigenous to South India, cultivated in many parts of India.	Bark. Leaf. Unripe Fruit.	Decoction or powder of bark mixed with honey effective in biliousness. Juice of the leaf given in jaundice or applied externally to the skin eruption caused by biliousness. Unripe fruits useful in vitiated conditions of pitta.
360.	<i>Ferula narthex</i> Boiss./Apiaceae.	Grows in North West Himalaya.	Stem.	Stem given as a tonic for liver.
361.	<i>Ficus arnottiana</i> Miq. /Moraceae.	Mostly in rocky hills of the Deccan Peninsula upto 1,350m.	Bark.	Bark beneficial in the vitiated conditions of pitta.
362.	<i>F. bengalensis</i> L. /Moraceae.	Throughout India upto 1,200m.	Whole Plant. Fruit.	Alleviates trouble caused by deranged pitta (bile). Fruits useful in vitiated conditions of pitta.
363.	<i>F. carica</i> L./Moraceae.	Commonly found in Hissar, Bhiwani, Ambala, Nijampur.	Whole Plant.	Useful in the diseases of liver.
364.	<i>F. dalhousiae</i> Miq. /Moraceae	Nilgiris.	Leaf. Bark.	Leaves and bark used in liver complaints
365.	<i>F. exasperata</i> Vahl. /Moraceae.	C. India & Deccan Peninsula-ascending upto 1,000m.	Stem. Bark.	Stem juice and bark used in enlargement of liver.
366.	<i>F. hispida</i> L. f. /Moraceae.	Throughout India.	Whole Plant.	Plant beneficial in the disorder of pitta (bile).
367.	<i>F. microcarpa</i> L. f. /Moraceae.	Base of East Himalaya, Khasia hills, Maharashtra, Karnataka, Andamans.	Bark.	Bark useful in liver complaints.
368.	<i>F. racemosa</i> L. /Moraceae.	Throughout India upto 2,000m.	Whole Plant. Unripe Fruit.	Powdered young leaves mixed with honey given in bilious affection. Decoction of the unripe fruit given to check congestion of liver.
369.	<i>F. religiosa</i> L. /Moraceae.	Widely cultivated in the Himalaya upto 1,400m.	Bark.	Powder of aqueous extract of the bark soaked in water over night and taken in the morning daily as a useful drug for jaundice. Fresh bark (15-20g) from the eastern side of a mature plant boiled in cow's milk (200ml) given twice a day for a week in chronic liver disorders.
370.	<i>F. semicordata</i> var. <i>conglomerata</i> Roxb./Moraceae.	Sub-Himalayan forests.	Leaf.	Decoction of leaves in combination with those of <i>Byttneria pilosa</i> and <i>Phyllanthus fraternus</i> and bark of <i>Callicarpa corborea</i> taken internally for jaundice and hepatitis.

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371.	<i>F. virens</i> Ait. /Moraceae.	North India & Peninsular India; frequently planted as an avenue and ornamental tree.	Leaf. Seed. Whole Plant.	Plant useful in biliousness.
372.	<i>Flacourtia indica</i> (Burm. f.) Merr. / Flacourtiaceae.	Gregarious in sub-Himalayan tract & outer Himalaya	Fruit. Bark. Leaf.	Fruit, bark paste and juice of the fresh leaves used to cure jaundice.
373.	<i>F. jangomas</i> (Lour.) Raeusch. /Flacourtiaceae.	Manipur, Assam, W.Bengal, Bihar, Orissa, Eastern Ghats.	Fruit. Bark.	Fruit and bark recommended for biliousness and other liver complaints.
374.	<i>Flaveria trinervia</i> (Spreng.) C. Mohr. / Asteraceae.	Kerala, Karnataka.	Whole Plant. Leaf.	Plant extract or leaf given in case of jaundice
375.	<i>F. macrophylla</i> (Willd.) Merrill. / Fabaceae.	Throughout the hotter parts of India.	Roots.	Used for jaundice.
376.	<i>F. strobilifera</i> (L.) R. Br. / Fabaceae.	Himalaya (Shimla – Kumaon), ascending to 2,700m.	Root.	Roots useful in jaundice.
377.	<i>Flickingeria fimbriata</i> (Bl.) Hawkes./ Orchidaceae.	Western Ghats.	Whole Plant.	Plant useful in biliousness.
378.	<i>Flueggea virosa</i> Baill. /Euphorbiaceae.	Throughout India, ascending upto 2,000m in hills & Andaman Island.	Whole Plant.	Plant good in biliousness.
379.	<i>F. virosa</i> Miller. /Apiaceae.	Cultivated throughout India upto 2,000m, often appearing wild.	Whole Plant.	Cure diseases caused by deranged bile.
380.	<i>Fumaria indica</i> (Harsk.) Pugsley. / Fumariaceae.	Indo-Ganetic plains, lower Himalaya upto 3,500m, Nilgiris.	Whole Plant.	Plant useful in hepatic troubles.
381.	<i>F. officinalis</i> L. /Fumariaceae.	Found at high altitudes in Nilgiris & Salem	Whole Plant.	Herb has a stimulated action on liver.
382.	<i>Garcinia indica</i> (Roxb.) Jessop. / Clusiaceae.	Forests of W. Ghats.	Fruit.	A syrup from the fruit given to treat bilious disorders.
383.	<i>G. morella</i> Desrous. /Clusiaceae.	E. Bengal, Khasi hills, evergreen forests of N. Kanara.	Whole Plant.	Plant removes burning inflammation due to pitta.
384.	<i>Garcinia xanthochymus</i> Hook. f. ex T. Aders. /Clusiaceae.	Distributed widely in the lower hill forests of East Himalaya, Meghalaya, Sikkim.	Fruit.	Fruit used as the cooling drink to treat biliousness.
385.	<i>Gardenia angusta</i> Merrill./Rubiaceae.	Widely cultivated in Indian gardens.	Fruit.	1-3 powdered fruits prescribed with cow's milk, twice a day for 8-10 days for liver disorders.
386.	<i>Gelonium multiflorum</i> A. Juss. / Euphorbiaceae.	West Bengal, Sikkim Himalaya, Karnataka, Maharashtra.	Whole Plant.	Plant used as purgative in hepatic troubles.
387.	<i>Gendarussa vulgaris</i> Nees. /Acanthaceae.	Throughout India.	Leaf.	Leaf extract given to treat jaundice.
388.	<i>Gentiana kurroo</i> Royle /Gentianaceae.	Kashmir & North-Western Himalaya: 1,500-4,000m.	Whole Plant.	Used effectively for bile disorder, jaundice and liver disorder.
389.	<i>Gentianella moorcroftiana</i> (Wall.) / Gentianaceae.	Northern parts of India upto 6,000m.	Whole Plant.	Plant used in jaundice.

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390.	<i>Geranium nepalense</i> Sweet. /Geraniaceae.	Throughout the temperate Himalaya between 1,700-3,000m, Khasia hills, Nilgiri, Pulney hills.	Root.	Roots useful in jaundice.
391.	<i>G. robertianum</i> L. /Geraniaceae.	W. Temperate Himalaya: 2,000-8,000m, (Kashmir-Garhwal).	Whole Plant.	Employed in jaundice.
392.	<i>Glinus lotoides</i> L./Aizoaceae.	Commonly found in sandy sites, along dry riverbeds and on open degraded sites throughout the plains of India.	Whole Plant.	Dried plant used to treat bilious attacks.
393.	<i>G. oppositifolius</i> (L.) A. DC. /Aizoaceae.	Throughout India specially in Assam, W. Bengal, Deccan Peninsula.	Whole Plant.	Plant useful in jaundice and deranged bile (pitta).
394.	<i>Gloriosa superb</i> L. /Liliaceae.	Throughout tropical India, ascending upto 2,000m on the hills.	Whole Plant.	Excites pitta.
395.	<i>Glycine max</i> (L.) Merr. /Fabaceae.	Foot hills of India.	Seed.	Paste of seeds cooked given in jaundice.
396.	<i>Glycosmis arborea</i> (Roxb.) DC. /Rutaceae.	Throughout India.	Bark. Leaf.	Bark used in jaundice and hepatic problems. Juice of leaves used in liver complaints.
397.	<i>Glycyrrhiza glabra</i> L. /Fabaceae.	Grown in J.&K., Punjab & sub-Himalayan tracts and in some parts of South India.	Whole Plant. Root.	Root removes biliousness. Plant useful in the treatment of chronic hepatitis and liver cirrhosis.
398.	<i>Gmelina arborea</i> Roxb. /Verbenaceae.	Throughout India; lower ranges of Himalaya upto 1,000m.	Fruit.	Beneficial for the diseases caused by pitta. Drupes used in the bilious affections.
399.	<i>Gossypium herbaceum</i> L. /Malvaceae.	Cultivated in India.	Whole Plant. Flower.	Plant allevates pitta (bile). Flowers remove biliousness.
400.	<i>Gouania tiliaefolia</i> Lamk. /Rhamnaceae.	Meghalaya, Assam - Kumaon, ascending upto 1,300m.	Leaf.	Leaves useful in jaundice.
401.	<i>Grewia asiatica</i> L. /Tiliaceae.	Cultivated in W. Ghats, sub-Himalayan region upto 1,350m.	Ripe Fruit. Bark.	Ripe fruits used for fever caused by vitiated bile. Bark cures biliousness.
402.	<i>G. tiliaefolia</i> Vahl./Tiliaceae.	Hot dry forests throughout W. India, sub-Himalayan regions.	Whole Plant.	Plant beneficial in troubles caused by pitta (bile).
403.	<i>Gymnema sylvestre</i> R. Br. ex Schult. / Asclepiadaceae.	Mainly in Deccan Peninsula, also found in Maharashtra, Rajasthan.	Root. Leaf.	Root induces liver to function properly. Paste of its three leaves ground with betel leaves given orally for three days for jaundice.
404.	<i>Habenaria edgeworthii</i> Hook. f. ex Collett. / Orchidaceae.	Himachal Pradesh at about 2,500m.	Whole Plant. Tuber.	Useful in ailments caused by vitiated pitta (bile).
405.	<i>Hackelochloa granularis</i> O. Kuntze. / Poaceae.	Throughout Tropical & sub-Tropical India upto 1,200m.	Whole Plant.	Plant useful internally in enlarged liver.
406.	<i>Haldina cordifolia</i> (Roxb.) Ridsdale. /Rubiaceae.	Deciduous & semi-evergreen forests throughout India, Karnataka & Kerala.	Bark.	Bark useful in vitiated conditions of pitta.

Sr. No	Plant Name/Family	Distribution	Parts Used	Folk Uses
407.	<i>Hedychium acuminatum</i> Rosc. /Zingiberaceae.	Grows in sub-Tropical Himalaya upto 2,000m.	Root.	Roots useful in liver complaints.
408.	<i>Hedyotis auricularia</i> L./Rubiaceae.	Almost all over India, especially in N.E. India & Deccan Peninsula.	Whole Plant.	Boiled extract of plant prescribed for jaundice.
409.	<i>H. corymbosa</i> (L.) Lam. /Rubiaceae.	Both on dry & wetlands throughout India.	Whole Plant.	Decoction of the plant prescribed in remittent fever with gastric irritability and nervous depression caused by deranged bile, jaundice and other liver troubles.
410.	<i>H. diffusa</i> Willd./Rubiaceae.	Throughout India.	Whole Plant.	Powdered herb or it's decoction used for biliousness.
411.	<i>Hedyotis scandens</i> Roxb./Rubiaceae.	Tropical & sub-Tropical Himalaya: 750-2,000m.	Root.	Roots useful for jaundice.
412.	<i>Helianthus annuus</i> L. /Asteraceae.	Cultivated in India.	Seed. Flower.	Extract of oil from dehusked seed reduced serum and hepatic cholesterol. Flower useful in hepatopathy and vitiated conditions of pitta.
413.	<i>Helictis isora</i> L. /Sterculiaceae.	Common in dry forests throughout India, especially in Bihar, M.P., Maharashtra, Gujarat & Jammu.	Whole Plant.	Plant cures vitiated tridosha (collective designation for wind, bile and phlegm).
414.	<i>Heliotropium indicum</i> L. /Boraginaceae.	Throughout India.	Whole Plant. Leaf.	Juice extracted by pounding the plant with fruit of <i>Averrhoa carambola</i> L., <i>Ananas comosus</i> (L.) Merr. & stem of <i>Saccharum officinarum</i> L., alkali solution prepared from <i>Musa bulbisiana</i> Colla. & Saltpeter in equal parts given against in jaundice.
415.	<i>Helminthostachys zeylanica</i> (L.) Hook. /Ophioglossaceae.	Western Ghats of South India upto 1,000m, Andamans.	Root.	Roots useful in jaundice.
416.	<i>Hemidesmus indicus</i> (L.) Br. /Asclepiadaceae.	A climber of N. India from Banda to Oudh & Sikkim, & southwards to Travancore.	Roots. Stem.	Stem useful in hepatopathy. Juice of roots (10-15ml) mixed with a glass of lukewarm water given twice daily for 10 days in chronic liver problems related with dyspepsia and weak digestion.
417.	<i>Heracleum lanatum</i> Michx./Apiaceae.	Kashmir – Kumaon: 2,000-4,000m.	Whole Plant.	Plant useful in liver complaints.
418.	<i>Hibiscus aculeatus</i> Roxb./Malvaceae.	Hotter parts of India upto 900m.	Root. Leaf.	Used in vitiated bile.
419.	<i>H. cannabinus</i> L. /Malvaceae.	Extensively cultivated in Central India.	Flower.	10g of juice of its flowers mixed with a small quantity of sugar, 3 or 4 crushed black peppers prescribed as a popular remedy for biliousness with acidity.
420.	<i>H. rosa-sinensis</i> L./Malvaceae.	Throughout India; Cultivated.	Whole Plant. Flower.	Plant beneficial in deranged bile. Juice of the flower considered useful medicine for biliousness.
421.	<i>H. sabdariffa</i> L. /Malvaceae.	Cultivated in the hotter parts of India.	Leaf. Calyx.	Slightly warmed juice extracted from the fresh leaves used to cure jaundice. Infusion of calyces useful in bilious condition.
422.	<i>Hiptage benghalensis</i> (L.) Kurz. /Malpighiaceae.	Throughout India in forests upto 1,800m.	Whole Plant. Leaves. Bark.	Bark, leaves and flower remove biliousness.

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423.	<i>Holarrhena pubescence</i> (Buch.-Ham.) Wall. ex DC. /Apocynaceae.	Major parts of India upto 1,500m in the Himalaya.	Whole Plant. Seed. Bark.	Decoction of the bark, seed and plant take care of biliousness and congestion of the liver.
424.	<i>Holoptelea integrifolia</i> (Roxb.) Planch. /Ulmaceae.	Deciduous forests throughout India.	Bark. Leaf.	Useful in vitiated conditions of pitta.
425.	<i>Holostemma ada-kodien</i> Schult. / Asclepiadaceae.	Tropical Himalaya, Sikkim: 1,000 – 1,700m and W. Peninsula.	Whole Plant.	Plant cures vitiated bile.
426.	<i>Homalomena aromatica</i> (Roxb.) Scott. /Araceae.	North East India.	Root.	Roots useful in jaundice.
427.	<i>Hordeum vulgare</i> L. /Poaceae.	Cultivated chiefly in N. India; Widely cultivated in temperate regions.	Grains.	Useful in vitiated condition of pitta.
428.	<i>Humboldtia vahliana</i> Wight. /Fabaceae.	Along watercourse of semi-evergreen - evergreen forests; Nilgiris.	Bark.	Bark useful for treating biliousness.
429.	<i>Hybanthus enneaspermus</i> (L. f.) Muell. / Violaceae.	Scattered in India; West Bengal, Gujarat.	Flower.	Flower useful in liver complaints.
430.	<i>Hydrastis canadensis</i> L. /Ranunculaceae.	Temperate Himalaya.	Rhizome. Leaf.	Used to treat liver disorders, dyspepsia with hepatic symptoms.
431.	<i>Hydrocotyle javanica</i> Thunb./Apiaceae.	Anamalai Hills of Tamil Nadu.	Leaf.	100ml leaf juice administered orally thrice a day for three days.
432.	<i>Hydrocotyle rotundifolia</i> Lam. / Apiaceae.	Found throughout India.	Root.	Roots chewed in liver complaints. About half a cup comprising 4teaspoonful of sap of its roots and that of <i>Musa sapientum</i> L. with a small amount of candy or sugar and 2-3 tablespoons of unboiled milk administered to a jaundice patient in the forenoon.
433.	<i>Hygrophila auriculata</i> (Schum.) Heine. / Acanthaceae.	Sub-Himalayan forests of northeastern U.P.	Leaves. Whole Plant. Root.	Decoction of leaves as well as that of root employed in jaundice. Whole plant also used in jaundice.
434.	<i>Hygrophila salicifolia</i> (Vahl.) Nees. /Acanthaceae.	Throughout India.	Whole Plant.	Plant extract used in jaundice.
435.	<i>Hygroryza aristata</i> (Retz.) Nees ex Wight & Arn. / Poaceae.	Gangetic plains, Assam, Deccan.	Whole Plant	Useful in vitiated conditions of pitta.
436.	<i>Hymenodictyon orixense</i> (Roxb.) Mabb. / Rubiaceae.	Garhwal eastwards, ascending upto 800m.	Bark	Bark pounded with asafoetida, applied externally to treat liver ailments.
437.	<i>Hyoscyamus niger</i> L. /Solanaceae.	Kashmir - Garhwal: 3,000 – 4,000m.	Leaves. Seeds.	Employed for hepatodynia.
438.	<i>Hypericum japonicum</i> Thunb. ex Murr. / Hypericaceae.	Temperate & Sub-Tropical Himalaya.	Whole Plant.	Plant useful in acute or chronic hepatitis.
439.	<i>H. perforatum</i> L. /Hypericaceae.	Western Himalaya: 1,000-3,500m.	Whole Plant.	Plant useful in liver ailments.
440.	<i>Ichnocarpus frutescens</i> (L.) R. Br. /Apocynaceae.	Common twiner on hedges & bushes of forests throughout India.	Roots.	Roots useful in vitiated conditions of pitta.



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441.	<i>Ilex aquifolium</i> L. /Aquifoliaceae.	Grown occasionally in gardens at hill stations.	Leaf. Fruit.	Fruit and leaves consumed to treat jaundice.
442.	<i>Indigofera caerulea</i> Roxb. /Fabaceae.	Plains of Banda & W. Peninsula.	Leaf.	2-3 spoonful of leaf paste, mixed with boiled cow's milk or curd given on empty stomach for 15-30 days in jaundice.
443.	<i>I. glandulosa</i> Willd. /Fabaceae.	Plains of W. Peninsula & Bundelkhand.	Whole Plant.	Plant used in the treatment of liver afflictions.
444.	<i>I. linifolia</i> (L. f.) Retz. /Fabaceae.	Common in the Indian plains ascending the Himalaya.	Whole Plant.	Plant used in various liver diseases.
445.	<i>I. oblongifolia</i> Forsk. /Fabaceae.	Throughout the plains of India.	Whole Plant.	Plant useful in the enlargement of liver.
446.	<i>I. tinctoria</i> L. /Fabaceae.	Sporadically in all parts of India.	Leaf. Root.	Extract of root and leaves given along with honey to treat jaundice.
447.	<i>Indoneesiella echioides</i> (L.) Sreem. /Acanthaceae.	Throughout India; common in S. India.	Whole Plant.	Juice of the herb or its decoction used for treating liver disorders.
448.	<i>Inula racemosa</i> Hook. f. /Asteraceae.	Western Himalaya: 1,500-4,200m.	Root.	Roots useful in hepatalgia.
449.	<i>Ipomoea aquatica</i> Forsk./Convolvulaceae.	Common throughout India, especially abundant on the surface of tanks in Bengal.	Whole Plant.	Plant juice useful in liver complaints.
450.	<i>I. batatas</i> (L.) Lam. /Convolvulaceae.	Throughout India, cultivated.	Roots.	Roots useful in vitiated conditions of pitta.
451.	<i>I. hispida</i> Vahl. / Convolvulaceae.	Throughout India, upto 1,350m.	Corm.	Tablets of the pounded corm with 'gur' taken twice a day to cure jaundice.
452.	<i>I. mauritiana</i> Jacq. /Convolvulaceae.	Deciduous & evergreen forests & coastal tracts throughout India.	Tuberous Roots.	Roots useful in liver troubles.
453.	<i>I. pre-caprae</i> (L.) R. Br. /Convolvulaceae.	Throughout India, especially along sea-shores	Whole Plant.	Plant useful in vitiated condition of pitta.
454.	<i>I. sepiaria</i> Roxb. /Convolvulaceae.	Hedges near streams and tanks upto 150m throughout India.	Whole Plant.	Plant useful in vitiated condition of pitta.
455.	<i>Iris germanica</i> L. / Iridaceae.	Met within cultivation in Kashmir.	Rhizome.	Rhizome useful in bilious obstruction.
456.	<i>I. ensata</i> Thunb./Iridaceae.	Western Himalaya: 1,700-3,000m.	Root.	Used in liver complaints.
457.	<i>I. versicolor</i> L. /Iridaceae.	In swamps.	Rhizome.	Given for biliousness and liver dysfunction.
458.	<i>Ixora coccinea</i> L./Rubiaceae.	Occurs naturally in forests along the W. Indian coast.	Root.	Roots reported to stimulate bile.
459.	<i>Jasminum arborescens</i> Roxb. /Oleaceae.	Forests throughout India upto 1,200m.	Leaf.	Leaves useful in vitiated conditions of pitta.
460.	<i>J. grandiflorum</i> L. /Oleaceae.	In forests throughout India upto 2,500m; also extensively cultivated.	Whole Plant.	Plant useful in vitiated condition of pitta.
461.	<i>J. malabaricum</i> Wight /Oleaceae.	W. Ghats from Konkan southwards to Malabar and Nilgiris upto 1,600m.	Leaf.	Leaves used to cure jaundice.

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462.	<i>J. multiflorum</i> (Burm. f.) Andr. / Oleaceae.	Forests of W. Ghats & sub-Himalayan tract upto 1,500m.	Flower.	Flowers useful in vitiated condition of pitta.
463.	<i>J. sambac</i> (L.) Ait./Oleaceae.	Throughout India, cultivated.	Flower.	Flowers useful in vitiated conditions of pitta.
464.	<i>Jatropha curcas</i> L./Euphorbiaceae.	Grown in India.	Fruit. Seed.	Fruit and seed considered useful for treating biliousness.
465.	<i>Juglans cinerea</i> L. / Juglandaceae.	Temperate Indian regions.	Inner Bark.	Promotes the clearance of waste products by the liver.
466.	<i>J. regia</i> L. /Juglandaceae.	Temperate Himalaya, cultivated in Khasia hills.	Dried Bark.	Used for checking hepatic constipation.
467.	<i>Juniperus recurva</i> Buch.-Ham. ex D. Don. /Cupressaceae.	Temperate & Alpine Himalaya: 2,500 - 5,000m.	Fruit.	Decoction of two fruits taken two times a day for 7 days as tonic in liver diseases.
468.	<i>Justicia adhatoda</i> L./Acanthaceae.	Throughout the sub-Himalayan tracts upto 1,219m.	Leaf. Shoot. Stem bark.	About 10ml of leaf decoction with a small amount of sugar candy prescribed twice daily in the treatment of jaundice. One cup juice extracted from fresh stem bark given to the patient twice a day for 1 week in chronic liver disorders.
469.	<i>J. procumbens</i> L. /Acanthaceae.	Plant distributed in Bihar, Aravalli Hills	Whole Plant.	Infusion of plant given in jaundice.
470.	<i>Kalanchoe integra</i> (Medik.) Ktze. /Crassulaceae.	Tropical Himalaya: Bhutan - Kashmir.	Leaf.	Powdered leaves (1-3g) recommended for liver disorders.
471.	<i>Lactuca scariola</i> L./Asteraceae.	West Himalaya; 2,000-4,000m.	Leaf.	Leaves cure biliousness.
472.	<i>Lagenaria siceraria</i> (Molina) Standlay./Cucurbitaceae.	Indigenous to India; cultivated extensively throughout India.	Leaf. Fruit. Root	Decoction of leaves and root mixed with sugar given in jaundice. Fruit antibilious.
473.	<i>Lagerstroemia speciosa</i> (L.) Pers. / Lythraceae.	Distributed more or less throughout India; especially in Assam, Bengal & Deccan Peninsula.	Root.	Decoction of root taken for jaundice.
474.	<i>Lantana camara</i> L./ Verbenaceae.	Naturalized in many parts of India as a troublesome prickly weed.	Leaf. Flowering Top.	Infusion of leaves good for bilious fever. Decoction of flowering tops used for jaundice.
475.	<i>L. indica</i> Roxb. /Verbenaceae.	Throughout India in the warmer parts; on the river banks of Bengal.	Fruit.	Ripe berries considered efficacious medicine in treating liver complaints.
476.	<i>Lathyrus sativus</i> L. /Fabaceae.	Cultivated in many parts of India-	Leaf.	Leaves remove biliousness.
477.	<i>Launaea acaulis</i> (Roxb.) Kerr./Asteraceae.	Throughout India.	Latex.	Latex of the plant dropped in eyes in jaundice once a day for a few days.
478.	<i>L. procumbens</i> (Roxb.) / Asteraceae.	Throughout India.	Leaf. Whole Plant.	Leaf juice given in jaundice. Ash of the whole plant supposed to be more efficacious for jaundice.
479.	<i>Lavandula angustifolia</i> Mill. /Lamiaceae.	Cultivated in several places in Kashmir.	Flower.	Flowers used for liver.
480.	<i>Lawsonia inermis</i> L. /Lythraceae.	Cultivated & naturalized all over India.	Bark. Leaf. Root.	Decoction of bark used to treat liver problems. Leaves and roots used as liver tonic and in vitiated condition of pitta.

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481.	<i>Leea aequata</i> L. /Sapindaceae.	Sikkim Himalaya, Assam, E. Bengal, Andamans.	Root.	Root useful in biliousness.
482.	<i>L. alata</i> Edgew. /Sapindaceae.	Tropical Himalaya; Gharwal - Sikkim 1,000-1,700m.	Root.	Bath with decoction of roots given in case of jaundice.
483.	<i>Lens culinaris</i> Medikus /Fabaceae.	Throughout the colder parts of India, cultivated.	Seed.	Seeds useful in vitiated conditions of pitta. Decoction of 50g seeds of <i>Lens culinaris</i> boiled with ripe fruit of <i>Averrhoa carambola</i> in equal quantity along with roots of <i>Musa balbisiana</i> given thrice or even more daily till cure. Use of salt and lemon prohibited during the course of treatment.
484.	<i>Lepianthus umbellata</i> (L.) Rafin /Piperaceae.	W. Ghats (100-1,000m).	Leaf.	Vegetable soup of fresh leaves taken internally for enlarged liver.
485.	<i>Lepidium sativum</i> L. /Brassicaceae.	Plant indigenous to India.	Leaf.	Leaves useful for liver diseases.
486.	<i>Leucas cephalotes</i> (Roxb.) Spr. /Lamiaceae.	Himalayas: Kashmir - Sikkim upto 1,828m & southwards throughout India.	Whole Plant.	Extract of the plant used as 'anjan' in eye against jaundice.
487.	<i>L. indica</i> L./Lamiaceae.	Plains of Assam & Bengal.	Leaf.	Leaf decoction with honey drunk to treat jaundice.
488.	<i>L. plukenetii</i> Spreng. / Lamiaceae.	Plant distributed in the plains of India, extending from Sikkim & Bihar.	Whole Plant.	Infusion or fresh juice or 30-40g paste of the whole plant taken three times in meal for curing jaundice.
489.	<i>Lilium polyphyllum</i> D. Don./Liliaceae.	Western Temperate Himalaya, upto 3,600m.	Bulb.	Bulbs useful in vitiated conditions of pitta.
490.	<i>Linaria vulgaris</i> Mill. /Scrophulariaceae.	North India.	Aerial Parts.	Useful in treating jaundice.
491.	<i>Lindernia crustacea</i> (L.) f. Muell. /Scrophulariaceae.	Found throughout India; upto 1,600m in the Himalaya.	Whole Plant.	Used to treat bilious affections.
492.	<i>Linum usitatissimum</i> L. /Linaceae.	Cultivated throughout India upto 6,000m.	Seed.	Seeds remove biliousness.
493.	<i>Litsea glutinosa</i> (Laur.) Robinson /Lauraceae.	Throughout the hotter parts of India and lower Himalaya.	Root.	Root beneficial in biliousness.
494.	<i>Lobelia inflata</i> L. /Lobeliaceae.	Does not occur in India, but has been grown in Darjeeling.	Aerial Parts.	Useful in catarrhal jaundice.
495.	<i>Lodoicea maldivica</i> (Poir.) Pers. /Arecaceae.	Cultivated in coastal parts of India.	Water of Green Fruit.	Water of the green fruit and it's kernel useful in vitiated conditions of pitta.
496.	<i>Ludwigia adscendens</i> (L.) Hara. /Onagraceae.	Plains, Marshes, ponds & river banks throughout India.	Young Twigs.	100ml decoction of 200-300g young twigs boiled in water taken orally for 15-20 days to cure jaundice.
497.	<i>Luffa acutangula</i> (L.) Roxb. /Cucurbitaceae.	Cultivated throughout the greater part of India.	Fruit.	Dried fruit used as a snuff in jaundice.
498.	<i>L. aegyptica</i> Mill. /Cucurbitaceae.	Throughout India, Wild in wastelands especially along the coastal areas & also cultivated.	Fruit. Stem. Leaf.	Fruits useful in vitiated condition of pitta. Decoction of the stem and leaves used for liver diseases.

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499.	<i>L. echinata</i> Roxb. /Cucurbitaceae.	Sindh, Gujarat, Deccan, Dehradun.	Root. Fruit.	Root cures jaundice. Fruit snuff given in jaundice. Infusion of the fruit also given in biliary colic. Water filled and kept overnight in dried fruit given orally in the morning for 7 days to cure jaundice.
500.	<i>Luvunga scandens</i> Ham. /Rutaceae.	East Bengal, Assam, Khasia Hills.	Root. Berries.	Cure biliousness.
501.	<i>Lychnis coronaria</i> Desr. /Caryophyllaceae.	Found in Kashmir.	Root.	Decoction of root used in liver diseases.
502.	<i>Lycopersicon esculentum</i> Mill. / Solanaceae.	Cultivated throughout India.	Fruit.	Fruits considered as liver stimulant and tonic.
503.	<i>Lycopodium clavatum</i> L. /Lycopodiaceae.	North-East Himalaya.	Spore. Herb.	Used in hepatic congestion and liver complaints.
504.	<i>Lygodium flexuosum</i> (L.) Sas. /Lygodiaceae.	Throughout India from plains to hills, ascending upto 1,500m.	Root. Leaf.	Kadar applied leaf paste all over the body to cure jaundice. Roots used to cure jaundice.
505.	<i>Madhuca longifolia</i> (Koenig.) Mac Bride / Sapotaceae.	Central India, Gujarat, Konkan, N. Kanara, Deccan.	Bark.	Decoction of the bark used to cure biliousness or congestion of the liver. Bark bath recommended in jaundice.
506.	<i>Madhuca meriifolia</i> (Moon) Lam. /Sapotaceae.	Western Peninsula.	Fruit.	Fruits given in biliousness.
507.	<i>Mahonia nepalensis</i> DC./Berberidaceae.	Darjeeling - Temperate Himalaya: 1,350-2,700m. Khasia Hills: 1,350-1,700m.	Wood Bark.	Decoction (15-20ml) of the wood bark taken two times daily for 15 days in case of jaundice.
508.	<i>Malaxis acuminata</i> D. Don./Orchidaceae.	Throughout India, on hills upto 3,000m.	Stem base.	Stem base useful in vitiated conditions of pitta.
509.	<i>M. musifera</i> (Lindley) Kuntze / Orchidaceae.	Throughout India, in hills upto 4,000m.	Stem.	Swollen stem useful in vitiated conditions of pitta.
510.	<i>Mallotus philippensis</i> (Lamk.) Muell.-Arg. / Euphorbiaceae.	Throughout India except in the driest regions, upto 1,500m in Himalaya & W. Ghats.	Fruit.	Powdery coat of the fruit mixed with water prescribed for one week to expel bile. Bath with decoction of its stem bark, <i>Cuscuta reflexa</i> (whole plant), <i>Mangifera indica</i> (stem bark) and <i>Dendrocalamus strictus</i> (leaves) in equal quantities used for jaundice.
511.	<i>Mallotus roxburghianus</i> Muel.-Arg. /Euphorbiaceae.	Sikkim Himalaya; Assam, Silhet.	Young Leaves.	Soup taken for liver ailments.
512.	<i>Malva sylvestris</i> L. /Malvaceae.	Temperate Himalaya from Punjab – Kumaon: 700-2,700m.	Whole Plant.	Plant useful in jaundice.
513.	<i>M. verticillata</i> L. /Malvaceae.	Along roadsides & near villages; mostly cultivated in India.	Stem. Leaf.	Useful in icteric type of hepatitis.
514.	<i>Mangifera indica</i> L. / Anacardiaceae.	Commonly cultivated throughout Tropical India from Kumaon-Assam, Bihar, Orissa & southwards to Peninsular India.	Leaf. Bark.	Bath with decoction of its stem bark, <i>Achyranthes aspera</i> and whole plant of Talamkhana boiled for 3 hours used for the treatment of jaundice by tribals of U.P. Also, paste of its tender leaves (5g) and shoot of <i>Oxalis corniculata</i> given twice daily for a week in chronic liver disorders.

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515.	<i>Manilkara hexandra</i> (Roxb.) Dub. /Sapotaceae.	Upper Gangetic Plains, Central & South India, Gujarat & West Bengal.	Bark.	Bark used in jaundice. Fruit cures biliousness.
516.	<i>M. zapota</i> L. Van Royen. /Sapotaceae.	Cultivated more or less throughout India.	Fruit.	Fruits preventive against biliousness.
517.	<i>Manisuris granularis</i> (L.) L. f./Poaceae.	Throughout the hotter parts of India.	Whole Plant.	Plant administered internally with sweet-oil in cases of liver complaints.
518.	<i>Matricaria chamomila</i> L. /Asteraceae.	Upper Gangetic Plain, Punjab, Kashmir.	Oil.	Oil used as a good liver tonic.
519.	<i>Maytenus senegalensis</i> (Lam.) Exell. /Celastraceae.	Dry scrub forests throughout India, particularly in Central India.	Leaves.	Leaves chewed in jaundice. Also, its leaf juice taken orally for jaundice and other liver disorders.
520.	<i>Meconopsis aculeata</i> Royle /Papaveraceae.	W. Himalaya (Kashmir – Kumaon): 3,500-5,000m.	Whole Plant.	Extract of whole plant given in small doses against inflammation of liver.
521.	<i>Melandrium firmum</i> (Siebold et Zucc.) Rohrb. /Caryophyllaceae.	Open areas in lowlands & mountains.	Whole Plant.	Used for activating liver.
522.	<i>Melia azedarach</i> L. /Meliaceae.	Cultivated & naturalized throughout India.	Root.	Root removes biliousness; Also, useful for bile influences in cattle.
523.	<i>Melia composita</i> Willd. /Meliaceae.	Sikkim Himalaya, N. Bengal, upper Assam, Khasia hills, hills of Orissa, N. Circars, Deccan & W. Ghats at 500-1,800m.	Fruit.	Fruit eaten raw as a liver tonic.
524.	<i>Melissa parviflora</i> Benth. /Lamiaceae.	Temperate Himalayas from Garhwal to Sikkim, Darjeeling & Khasi, Aka & Mishmi hills 1,200-3,000m.	Leaf.	20-25ml decoction of the leaf taken two or three times daily for 10-15 days in liver trouble.
525.	<i>Memecylon malabaricum</i> (Cl.) Cogn. /Melastomataceae.	Lower slopes of W. Ghats in Kerala & moist shoals of Nilgiri & Palni hills upto 2,000m.	Leaf.	Leaves used to cure jaundice.
526.	<i>Mentha arvensis</i> L. /Lamiaceae.	Himalaya, Kashmir: 1,700-3,350m.	Whole Plant.	Plant used to treat liver diseases.
527.	<i>M. longifolia</i> (L.) Huds./Lamiaceae.	Temperate Himalaya: 1,200-3,600m Kashmir, Garhwal, Kumaon, Punjab.	Leaf.	Paste of the leaves pounded into a paste taken orally for jaundice.
528.	<i>M. spicata</i> L. /Lamiaceae.	Cultivated in Indian gardens.	Leaf.	Leaves used to cure jaundice.
529.	<i>Menyanthes trifoliata</i> L. /Gentianaceae.	Kashmir & Temperate regions of India.	Leaf. Rhizomes.	Used to treat jaundice.
530.	<i>Mesua ferrea</i> L. /Clusiaceae.	Throughout India, in evergreen forests upto 1,500m.	Flower.	Flowers useful in vitiated conditions of pitta.
531.	<i>Michelia champaca</i> L. /Magnoliaceae.	Evergreen forests throughout India, E. sub-Himalayan tract, lower hills upto 1,000m; also cultivated.	Flower. Bud. Fruit.	Useful in vitiated condition of pitta.
532.	<i>Mimosa pudica</i> L. /Mimosaceae.	Naturalized throughout plains districts & wastelands of India.	Leaf. Root.	Infusion of leaves used for liver diseases. Decoction of roots (3-4g) given once daily for one week in chronic liver disorders.

Sr. No	Plant Name/Family	Distribution	Parts Used	Folk Uses
533.	<i>Mimusops elengi</i> L. /Sapotaceae.	W. Peninsula, southwards from the Khandala Ghats.	Bark.	Bark cures biliousness.
534.	<i>Mitragyna parviflora</i> (Roxb.) Korth. /Rubiaceae.	Scattered in deciduous forests throughout the drier regions of India to 1,200m in the outer Himalaya.	Bark. Fruit. Leaf.	Bark and fruit used as a substitute for <i>Anthocephalus chinensis</i> (Rubiaceae) to alleviate pitta. Leaf juice (1-2 drops) poured into eyes to cure jaundice.
535.	<i>Momordica charantia</i> L. /Cucurbitaceae.	Cultivated throughout India; also occur naturally in India.	Fruit. Leaf.	Leaf juice given in bilious affections. Fruit useful in liver diseases.
536.	<i>M. dioica</i> Roxb. ex Willd. / Cucurbitaceae.	Throughout India, ascending to 1,700m in the Himalaya.	Root.	Roots used as an errhine in jaundice.
537.	<i>Monochoria vaginalis</i> Presl. /Pontederiaceae.	Ponds & marshes throughout India upto 1,500m.	Rootstock. Leaf.	Useful in vitiated conditions of pitta. Juice of roots taken to treat liver disorders.
538.	<i>Morinda angustifolia</i> Roxb./Rubiaceae.	Tropical Himalaya, Wild & cultivated, Khasia & Naga hills.	Root.	100ml extract of decoction prepared by boiling 100g of its pounded roots taken daily for 15 days to reduce jaundice.
539.	<i>M. pubescens</i> J. E. Sm. /Rubiaceae.	Bengal, C. Provinces & S. India.	Bark.	20-30ml extract of bark with extract of barks of <i>Oroxylum indicum</i> , <i>Haldina cordifolia</i> and <i>Terminalia bellirica</i> given twice a day for 8-9 days.
540.	<i>M. concanensis</i> Nimmo ex Dalz. & Gibson / Moringaceae.	Hills of deciduous belt, Rajputana, Sindh & the Concan.	Fruit.	Fruits useful for curing liver ailments and in biliousness.
541.	<i>M. oleifera</i> Lamk. /Moringaceae.	Cultivated throughout India upto 1,100m; foot hills of W. Himalaya.	Root.	Tender pods given for liver. Decoction of the root-bark or fresh root recommended for enlarged liver.
542.	<i>Morus alba</i> L./Urticaceae.	Commonly cultivated in northern part of the Trans-Indus territory.	Fruit.	Fruit useful in biliousness.
543.	<i>M. australis</i> Poiret in Lamk./Urticaceae.	Wild in the sub- Himalayan tract from the Sutlej eastwards, upto 1,700m.	Fruit.	Fruit useful in biliousness.
544.	<i>Mucuna monosperma</i> DC./Fabaceae.	E. Himalaya, Khasia, Assam, Chittagong, Konkan.	Seed.	Seeds useful in biliousness.
545.	<i>M. pruriens</i> (L.) DC. /Fabaceae.	Throughout India among hedges & bushes.	Root.	Roots useful in vitiated conditions of pitta.
546.	<i>Mukia maderaspatana</i> (L.) M. Roem. /Cucurbitaceae.	Common throughout India in the plains, ascending the hills.	Leaf. Whole Plant. Shoot.	Juice prepared from 10g of leaf with 200ml of rice fermented water taken orally two times a day for a period of one week to reduce bile accumulation. Tender shoot, leaves and/or the plant useful in bilious conditions.

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547.	<i>Musa balbisiana</i> Colla. /Musaceae.	Cultivated throughout India.	Throughout the year.	Fruit useful in vitiated condition of pitta. Roots used as a tonic for congestion of the liver. Extracted juice of the plant given in jaundice. Decoction of ripe fruit of Averrhoa carambola crushed with equal quantities of roots of <i>Musa balbisiana</i> , 50g seeds of <i>Lens esculentus</i> given, thrice or even more till cure; use of salt and lemon prohibited during the course of treatment. Juice of rhizomes (10-15ml) alone or with 1-2 drops of juice from rhizome of <i>Acorus calamus</i> given twice daily for a week to cure hepatitis.
548.	<i>Mussaenda frondosa</i> Bach.-Ham. /Rubiaceae.	Forests throughout India also cultivated.	Leaf. Root.	5ml leaf juice or root decoction (10-15ml) taken 2-3 times daily for 10-15 days in jaundice and liver trouble.
549.	<i>M. treutleri</i> Stapf. /Rubiaceae.	N. India, Nepal-Assam.	Leaf.	Leaf extract taken to cure jaundice.
550.	<i>Myrica esculenta</i> Buch.-Ham. ex / Casuarinaceae.	Sub-Tropical Himalaya from Ravi eastwards to Assam Khasi, Jaintia, Naga & Lushai hills.	Stem Bark.	10-15ml decoction of the stem bark taken once daily for 1-2 months to strengthen the liver.
551.	<i>Myricaria squamosa</i> Desv. /Elatinaceae.	Temperate & Alpine Himalaya (Sikkim - Kumaon): 3,500- 4,500m.	Bark.	Decoction of bark used in jaundice.
552.	<i>Myristica dactyloides</i> Gaertn. / Myristicaceae.	Deccan Peninsula, Western Ghats from Canara southwards, ascending to 1,500m in the hills.	Seed.	Aril used to treat liver disorders.
553.	<i>Myrtus communis</i> L. /Myrtaceae.	Indigenous to North-West Himalaya.	Leaf.	Leaves useful in the diseases of liver.
554.	<i>Naravelia zeylanica</i> (L.) DC. /Ranunculaceae.	Throughout India, common in hedges & thickets.	Whole Plant.	Plant useful in vitiated condition of pitta.
555.	<i>Nardostachys grandiflora</i> DC. / Valerianaceae.	Alpine Himalaya, 3,600-5,000m: extending eastwards from Kumaon - Sikkim at 5,650m.	Root.	Roots cure biliousness and jaundice.
556.	<i>Naregamia alata</i> Wight & Arn. / Meliaceae.	All districts throughout S. India upto 900m.	Root. Stem. Leaves.	Roots cure biliousness. Decoction of leaves and stem used in biliousness.
557.	<i>Nelumbo nucifera</i> Gaertn. (Pl. 7C) / Nelumbonaceae.	Common in freshwater ponds.	Flower.	Flowers used in the diseases of liver.
558.	<i>Nepeta longibracteata</i> Benth. / Lamiaceae.	Alpine W. Himalaya: 4,500-5,600m.	Shoot.	Shoot used in liver complaints.
559.	<i>Nephrolepis biserrata</i> Schott. /Polypodiaceae.	North India, Maharashtra, South India.	Root.	Roots used in jaundice.
560.	<i>N. cordifolia</i> (L.) Persl. /Polypodiaceae.	Throughout India ascending upto 1,500m.	Tuber.	Washed tubers chewed raw for liver disorders.
561.	<i>Neptunia oleracea</i> Lour. /Mimosaceae.	Throughout India in tanks, lakes & other stagnant waters.	Whole Plant.	Plant useful in vitiated condition of pitta.
562.	<i>Nervilia aragoana</i> Gaud. /Orchidaceae.	Himalaya from Garhwal eastwards at 1,200-1,500m, Pulney hills, Konkan.	Whole Plant.	Plant useful in vitiated condition of pitta.

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563.	<i>Nyctanthes arbour-tristis</i> L./Nyctanthaceae.	Outer Himalayan ranges, Assam, Bengal, C. India, southwards to the Godavari; cultivated in many parts of India.	Leaf.	Leaf juice given to treat liver diseases.
564.	<i>Nymphaea nouchali</i> Burm. f. / Nymphaeaceae.	Throughout the warmer parts of India, in tanks, ponds & diches.	Seed. Flower.	Seeds useful in vitiated condition of pitta. Flower lessens bile.
565.	<i>N. stellata</i> Willd./Nymphaeaceae.	Warmer parts of India.	Fruit.	Fruit dispels biliousness.
566.	<i>Nymphoides hydrophylla</i> (Lour.) Kuntze /Menyanthaceae.	Throughout India.	Whole Plant.	Fresh plant juice given to treat jaundice.
567.	<i>Ochreinauclea missionis</i> (Wall. ex G. Don) Ridsdale/Rubiaceae.	Along the banks of streams & river of moist forests.	Root. Bark.	Root and its bark employed to treat jaundice and hepatic disorders.
568.	<i>Ochrocarpus longifolius</i> Benth. & Hook. f. ex T. Anders./Clusiaceae.	W. Ghats of the Konkan, N. Kanara, Malabar & Coimbatore.	Flower.	Flower dispels biliousness.
569.	<i>Ocimum americanum</i> L. /Lamiaceae.	Often abundant near cultivated fields, wastelands in plains.	Whole Plant.	Plant used to treat biliousness.
570.	<i>Ocimum sanctum</i> L. /Lamiaceae.	Throughout India as well as cultivated.	Whole Plant. Leaf.	Plant useful in hepatopathy. Leaf juice taken for jaundice one teacup in early morning till recovery by Bettakurubas.
571.	<i>Olox zeylanica</i> Wall. /Olacaceae.	W. Peninsula, from the Concan southwards.	Leaf.	A mixture of its leaves and black pepper given to cure jaundice.
572.	<i>Olea ferruginea</i> Royle /Oleaceae.	North-West Himalaya & Kashmir.	Fruit.	Fruit used in bilious complaints.
573.	<i>Operculina turpenthum</i> (L.) Silva Manso./Convolvulaceae.	Throughout India upto 900m, occasionally cultivated.	Root.	Roots hepatic stimulant and prescribed with picrorrhiza to treat jaundice.
574.	<i>Opuntia stricta</i> (Haw.) Haw. /Cactaceae.	Common in scrub forests, along roads & on degraded lands throughout Peninsular India.	Fruit.	Fruit syrup said to increase the secretion of bile. Ripe fruit given in jaundice.
575.	<i>Orchis latifolia</i> L./Orchidaceae.	Throughout India.	Whole Plant.	Plant useful in vitiated condition of pitta.
576.	<i>Origanum majorana</i> L. /Lamiaceae.	Extensively cultivated throughout India.	Whole Plant.	Herb used as a tonic for liver.
577.	<i>Oroxylum indicum</i> (L.) Kurz. /Bignoniaceae.	Scrub forests & roadsides throughout the greater parts of India upto 1,200m.	Stem. Bark. Root bark.	Mixture of its stem bark grounded with that of <i>Betula alnoides</i> and <i>Vitex negundo</i> given for treating jaundice. Decoction of the root bark used to check congestion of the liver.
578.	<i>Orthosiphon aristatus</i> (Blume) Miq. /Lamiaceae.	A rare wild plant; cultivated in Assam, Deccan Peninsula; Anamallai hills.	Whole Plant.	Entire plant excepting roots used in hepatitis, jaundice and biliary lithiasis.
579.	<i>Oryza collina</i> (Trimen) Sharma & Shastri /Poaceae.	Throughout India, cultivated.	Root. Grain.	Roots useful in bilious fever. Grains useful in vitiated condition of pitta.
580.	<i>Ougeinia oojeinensis</i> (Roxb.) Hochr. /Fabaceae.	Deciduous forests throughout India.	Bark.	Bark useful in vitiated conditions of pitta.
581.	<i>Oxalis acetosella</i> L. /Oxalidaceae.	Throughout the warmer parts of India; Temperate Himalaya: 2,438-3,657m.	Whole Plant	Plant useful in liver disorders.



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582.	<i>O. corniculata</i> L. /Oxalidaceae.	Throughout the warmer parts of India	Leaf. Whole Plant.	5ml plant juice taken once a day for 6-7 weeks as a liver tonic. Leaf paste alone or mixed with juice of white onions given internally to treat biliousness and bilious headache. 3-Paste of the plant (5-10g) with tubers of <i>Cyperus rotundus</i> (1g) mixed in half a glass of lukewarm water given twice daily for a week for chronic liver disorders associated with dyspepsia.
583.	<i>Oxystelma secamone</i> (L.) Karst. /Asclepiadaceae.	Common twiner of humid habitats.	Root.	Fresh root paste given to treat jaundice.
584.	<i>Paederia scandens</i> (Lour.) Merr./Rubiaceae.	Found in Himalaya from Dehradun eastwards upto 1,800m; also in Bihar, Bengal, Assam.	Leaf. Root.	Leaves given in liver diseases. Juice of roots used in liver pain.
585.	<i>Paeonia emodi</i> Wall. ex Royle / Ranunculaceae.	W. Himalaya from Kashmir - Kumaon.	Tuber. Root.	Tubers highly esteemed as a medicine for bilious obstructions. Fleshy roots used in biliousness.
586.	<i>Pandanus facicularis</i> Lam. / Pandanaceae.	Throughout India, along the sea coast & water courses.	Root. Leaf.	Roots and leaves useful in vitiated condition of pitta.
587.	<i>Panicum sumatrense</i> Roth. ex / Poaceae.	Cultivated throughout India upto 2,100m.	Grain.	Grains useful in vitiated condition of pitta.
588.	<i>Papaver somniferum</i> L. /Papaveraceae.	Cultivated throughout India.	Whole Plant.	Plant diminishes pitta.
589.	<i>Paracalyx scariosus</i> (Roxb.) Al. /Fabaceae.	Western & S. India.	Fruit.	Fruit cures biliousness.
590.	<i>Parmelia kamstchadalis</i> Ach. / Parmeliaceae.	Kashmir hills & the Himalaya.	Whole Plant.	Plant useful in biliousness.
591.	<i>Paspalum scrobiculatum</i> L./Poaceae.	Throughout India, wild as well as cultivated.	Grain.	Grains useful in hepatopathy and in vitiated condition of pitta.
592.	<i>Passiflora edulis</i> Sims./ Passifloraceae.	Wild in parts of Assam & Bengal.	Fruit.	Juice of ripe fruit taken for jaundice.
593.	<i>P. foetida</i> L. /Passifloraceae.	Naturalised in open habitats in many parts of India.	Leaf. Fruit.	Fruit juice and decoction of leaves given to treat biliousness.
594.	<i>Pavetta indica</i> L. /Rubiaceae.	Spread throughout India.	Root.	Powdered roots or its decoction prescribed for jaundice.
595.	<i>Pavonia odorata</i> Willd. /Malvaceae.	Bundelkhand, Sindh, Bengal, Konkan.	Whole Plant.	Plant removes pitta.
596.	<i>Pedaliium murex</i> L. /Pedaliaceae.	Throughout India especially in the coastal areas of South India.	Whole Plant.	Plant useful in vitiated condition of pitta.
597.	<i>Pedicularis longiflora</i> Rudolph / Scrophulariaceae.	Alpine Himalaya: Kashmir - Sikkim (3,500-5,500m).	Flower.	One teaspoonful powder of flowers taken twice a day upto 2 weeks or more to treat inflammation of liver.
598.	<i>Peganum harmala</i> L. /Zygophyllaceae.	Throughout North-Western India & drier regions of Deccan.	Whole Plant. Seed.	Employed in jaundice.
599.	<i>Pennisetum americanum</i> (L.) Leeke. /Poaceae.	Throughout hotter parts of India, cultivated or as an escape.	Grain.	Grains useful in liver diseases.
600.	<i>Pentanema indicum</i> (L.) Ling. /Asteraceae.	Throughout Indian plains, ascending upto 1,800m in hills.	Whole Plant.	Useful in jaundice.
601.	<i>Pentapetes phoenicea</i> L. /Sterculiaceae.	N.W. India, Bengal, Gujarat.	Whole Plant. Root.	Plant useful in hepatopathy. Roots antibilious.

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602.	<i>Pentatropis cynanchoides</i> R. Br. /Asclepiadaceae.	Punjab, eastwards to the Jamuna.	Whole Plant.	Plant cures biliousness.
603.	<i>Pergularia daemia</i> (Forsk.) Choiv. / Asclepiadaceae.	Hotter parts throughout India.	Leaf.	Leaf paste mixed with rice grain given to treat jaundice.
604.	<i>Peumus boldus</i> Molina. /Monimiaceae.	Introduced in India.	Leaf.	Leaves used to treat liver disorders.
605.	<i>Pharbitis nil</i> Choosy /Convolvulaceae.	Tropical & sub- Tropical regions.	Seed.	Seeds useful in hepatopathy.
606.	<i>Phaseolus aureus</i> Ham. in Wall. / Fabaceae.	Wild & universally cultivated in plains, ascending to 2,000m in the N.W. Himalaya.	Seed.	Soup of 'mudga' ( <i>Phaseolus aureus</i> ) given alongwith honey, ghee and juice of meat for the ailments caused by pitta in animals.
607.	<i>Phoenix pusilla</i> Gaertn. /Arecaceae.	Dry forests of Kerala, Karnataka.	Fruit.	Fruits useful in vitiated conditions of pitta.
608.	<i>P. sylvestris</i> (L.) Roxb. /Arecaceae.	Throughout India upto 1,500m.	Fruit.	Fruits employed in liver enlargement.
609.	<i>Phyla nodiflora</i> L. /Verbenaceae.	Throughout India, upto 900m.	Whole Plant.	Plant useful in vitiated condition of pitta.
610.	<i>Phyllanthus acidus</i> (L.) Skeels /Euphorbiaceae.	Widely cultivated in India.	Fruit.	Fruit given to treat biliousness.
611.	<i>P. baollanianus</i> Muell. Arg./ Euphorbiaceae.	Mostly throughout India upto 1,350m.	Whole Plant.	Plant paste consumed with 100ml milk twice a day for 5 days for jaundice.
612.	<i>P. debilis</i> Klein ex Willd. / Euphorbiaceae.	N.W. India, Sikkim, Bihar, Assam & Peninsular India on plateaus above 1,000m.	Leaf.	Leaf paste mixed with cow's milk, administered orally till cure.
613.	<i>P. fraternus</i> Webst. /Euphorbiaceae.	Common throughout India in hotter parts from the Punjab to Assam - southwards to Travancore, ascending the hills upto 914m.	Root. Whole Plant. Leaf. Fruit.	Root juice mixed with goat's milk given in jaundice (2 teaspoonful in about 50ml milk once daily for a fortnight). Powdered roots and leaves or their decoction used in jaundice or bilious complaints. Fresh root considered an effective herb against jaundice and liver infection. Juice of whole plant employed in jaundice. About 15g paste of whole plant given thrice daily for one week for both infective hepatitis and chronic liver problems associated with liver cirrhosis due to alcoholism. Whole plant pounded with that of <i>Eclipta prostrata</i> and <i>Centella asiatica</i> , (one teacup early morning on empty stomach for three days in equal proportions), mixed with water (20ml) and given for curing jaundice by Yeravas. Paste of one whole plant mixed with cloves, cardamom and dry ginger given orally once a day for 3 weeks to treat jaundice. Fine paste of a handful of whole plants mixed in 200ml of goat's milk, given orally for 3-days on empty stomach to cure jaundice. Also, its leaf paste and extract of 2-3 spoonful fruit mixed with boiled cow milk or curd given on empty stomach for 15-22 days for curing jaundice.
614.	<i>P. reticulates</i> Poir./Euphorbiaceae.	Throughout India, in hedges or waste.	Whole Plant.	Useful in vitiated condition of pitta.
615.	<i>P. urinaria</i> L. /Euphorbiaceae.	Hill slopes of Garhwal & in other parts of India.	Whole Plant.	Plant decoction or its paste given with 'mishri' for jaundice.

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616.	<i>Physalis minima</i> L. /Solanaceae.	Throughout India, upto 2,300m as a weed on cultivated land.	Whole Plant.	Plant useful in vitiated condition of pitta.
617.	<i>Picrorrhiza kurroa</i> Pennell. /Scrophulariaceae.	Distributed along stream borders & moist rocks of Alpine regions in C. Himalaya: 3,300-3,800m.	Rhizome. Root.	1-2g dried root powder taken orally, once daily for 3-4 days in bilious dyspepsia and for 10-15 days in jaundice. Drug prepared from rhizome promotes bile secretion.
618.	<i>Pinus gerardiana</i> Wall./Pinaceae.	N.W. Himalaya at 4,000m.	Whole Plant.	Plant useful in biliousness.
619.	<i>P. roxburghii</i> Sarg./ Pinaceae.	Throughout the Himalaya from Kashmir - Bhutan, Shivalik hill, Ooty.	Wood.	Wood considered liver tonic, also useful in hepatopathy.
620.	<i>Piper betle</i> L./Piperaceae.	Cultivated in the hotter & damper parts of India.	Whole Plant.	Plant used in the congestion and other affections of the liver.
621.	<i>P. longum</i> L. / Piperaceae.	Moist deciduous to evergreen forests; grown as crops in Kerala, A.P., Karnataka, T.N., Maharashtra.	Fruit. Root	Roots and fruiting spikes used in treating jaundice. Shoot and root useful in liver dysfunction.
622.	<i>P. mullesua</i> D. Don. /Piperaceae.	W. Ghats, Nilgiris, Anamalais, Pulneys & hills of southern Kerala, Shola forests above 1,500m.	Root.	Roots useful in vitiated condition of pitta.
623.	<i>Piper nigrum</i> L./Piperaceae.	Cultivated in the hot & moist parts of India.	Fruiting stalk.	Paste of one of the pieces of immature fresh fruiting stalk with 2g roots of <i>Momordica cochinchinensis</i> administered once daily for 4-5 days in infective hepatitis.
624.	<i>Pistacia chinensis</i> Bunge /Anacardiaceae.	Trans-Indus, Salt range, Punjab, outer ranges of N.W. Himalaya: 500-2,700m.	Gall.	Gall useful in the diseases of biliousness.
625.	<i>Pisum sativum</i> L. /Fabaceae.	Generally cultivated.	Seed.	Seeds useful in biliousness.
626.	<i>Planchonella obovata</i> (R. Br.) Pierre. /Sapotaceae.	Andaman & Nicobar Island.	Leaf.	Leaf paste mixed in pig blood applied on body during jaundice.
627.	<i>Plantago ovata</i> Forssk./Plantaginaceae.	Cultivated in Punjab, Gujarat & Haryana.	Seed.	Seeds useful in bilious fever.
628.	<i>Plectranthus vetiveroides</i> Jacob /Lamiaceae.	Cultivated in S. India.	Whole Plant.	Plant useful in vitiated condition of pitta.
629.	<i>Plumbago indica</i> L. /Plumbaginaceae.	Moist situations as well as cultivated throughout India.	Root.	Roots useful in hepatosplenomegaly and used in the enlargement of liver.
630.	<i>P. zeylanica</i> L. /Plumbaginaceae.	Throughout India, ascending to 1,650m.	Root.	20-30ml of root decoction with bark of <i>Oroxylum indicum</i> and roots of <i>Carissa congesta</i> given twice a day for 5-6 days.
631.	<i>Podophyllum hexandrum</i> Royle ex camb. /Berberidaceae.	Temperate & alpine zones: 2,400-4,500m.	Rhizome. Root.	Rhizome employed in jaundice and chronic hepatitis. Dried root powder (0.5%) taken for 5-7 days as a hepatic stimulator and for hepatic diseases.
632.	<i>Podophyllum peltatum</i> L. /Berberidaceae.	Inner ranges of the Himalaya; Kashmir-Sikkim at 1,800-4,000m.	Rhizome.	Rhizome used for liver complaints, bilious vomiting, liver region painful.
633.	<i>Polyalthia longifolia</i> (Sonn.) Thwaites /Anonaceae.	Cultivated in gardens & avenues all over India.	Bark.	Bark useful in vitiated condition of pitta.

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634.	<i>Polycarpaea corymbosa</i> (L.) Lam. /Caryophyllaceae.	W. Peninsula, Central & N.W. India, ascending the W. Himalaya to 2,350m.	Leaf. Root.	Leaf paste given to treat jaundice and hepatic disorders. Roots used for liver complaints.
635.	<i>Polygala erioptera</i> DC./Polygalaceae.	Tropical regions of India.	Whole Plant.	Juice of plant given in jaundice.
636.	<i>Polygonatum cirrhifolium</i> (Wall.) Royle / Liliaceae.	Himalaya: 1,200-4,200m.	Rootstock.	Rootstock useful in vitiated condition of pitta.
637.	<i>P. verticillatum</i> (L.) All. / Liliaceae.	Himalaya: 1,800 – 3,900m.	Rootstock.	Rootstock useful in vitiated condition of pitta.
638.	<i>Polygonum glabrum</i> Willd. /Polygonaceae.	Sub-Himalayan forests of northeastern U.P. (Common in ditches).	Root.	Root paste given to treat jaundice.
639.	<i>Portulaca oleracea</i> L. /Portulacaceae.	Common weed in open, disturbed habitats such as vacant lots, fields, gardens & sandy riverbeds throughout India to an elevation of 1,500m.	Whole Plant.	Plant paste given to treat liver diseases.
640.	<i>Prunus amygdalus</i> Batsch /Rosaceae.	Cultivated in Kashmir & Punjab at 2,400m.	Kernel. Oil.	Kernel useful in vitiated condition of pitta and obstruction of the liver. Oil useful in hepatopathy and vitiated condition of pitta.
641.	<i>P. cerasoides</i> D. Don. /Rosaceae.	Himalaya: 900-2,300m.	Heartwood.	Heartwood useful in vitiated condition of pitta.
642.	<i>P. cerasus</i> L. /Rosaceae.	Cultivated in N.W. Himalaya.	Fruit.	Fruit useful in biliousness.
643.	<i>P. ceylanica</i> (Wt.) Miq. /Rosaceae.	Found in southern India, Deccan, Orissa.	Bark.	50ml juice of bark prescribed in morning for the treatment of jaundice in children.
644.	<i>P. domestica</i> L./Rosaceae.	Cultivated at High altitudes in Nilgiris & H.P.	Fruit.	Fruits useful in vitiated condition of pitta and bilious states of the liver.
645.	<i>P. salicina</i> Lindl. /Rosaceae.	Cultivated in the plains of N.W. India.	Fruit.	Ripened fruits used for jaundice.
646.	<i>Pseudarthria viscida</i> (L.) Wight & Arn. / Fabaceae.	Throughout S. India, upto 900m in the hills.	Root.	Decoction of roots or their powder used for biliousness.
647.	<i>Psidium guajava</i> L./Myrtaceae.	Cultivated & naturalized throughout India.	Fruit.	Dose comprising juice from one fruit of <i>Psidium guajava</i> , ¼ litre of goat milk and 1-1.5” root of <i>Sida</i> sp. administered orally; 3 doses considered sufficient on alternate days to clear urine and removal of yellowness from the eyes of the patients.
648.	<i>Psoralea corylifolia</i> L. /Fabaceae.	Weed in M.P., Chhatisgarh, Rajasthan, Bihar, W. Bengal & Maharashtra.	Seed.	Decoction of seeds will take care of bilious affections and congestion of liver.
649.	<i>Psychochlaina praealta</i> (Don.) Miers. / Solanaceae.	Ladakh; 3,300-5,350m.	Seed.	Seeds used as an emetic in case of bilious attack.
650.	<i>Pterocarpus marsupium</i> var. <i>acuminatus</i> Prain./Fabaceae.	Deciduous & evergreen forests throughout India.	Flower. Gum.	Flowers and gum useful in vitiated condition of pitta and hepatopathy.
651.	<i>Pterocarpus santalinum</i> L. /Fabaceae.	Deccan, in the hills of Cudapan, S. Kurnool, N. Arcot & Chingleput, upto 500m.	Wood.	Wood cures biliousness.

Sr. No	Plant Name/Family	Distribution	Parts Used	Folk Uses
652.	<i>Pterospermum canescens</i> Roxb. / Sterculiaceae.	N. Circars, Deccan, Coimbatore.	Flower.	Flower removes biliousness.
653.	<i>Pueraria tuberosa</i> (Roxb. ex Willd.) DC. /Fabaceae.	Distributed throughout most of India upto 1,200m in N. India.	Tubers.	Tubers used to treat biliousness.
654.	<i>Punica granatum</i> L. /Punicaceae.	Cultivated in W. Himalaya as an ornamental and fruit tree; naturalized in some areas at 700-2,700m.	Fruit. Seed	Infusion of seeds used for congestion of the liver. Decoction of 50-100g fruit rind given in the morning with 'mishri'(sugar crystals) against jaundice.
655.	<i>Pyrus malus</i> L. /Rosaceae.	Wild in N. W. Himalaya; cultivated in cooler parts of India.	Fruit.	Fruit useful in biliousness.
656.	<i>Radermachera xylocarpa</i> (Roxb.) K. Schum./Bignoniaceae.	Throughout the Deccan Peninsula upto 1,500m extending into parts of Gujarat, Bihar & Orissa.	Bark.	10-20ml decoction of bark alongwith that of <i>Oroxylum indicum</i> given for 2-3 days for biliousness.
657.	<i>Raphanus sativus</i> L. /Brassicaceae.	Cultivated throughout India upto 4,876m.	Root. Leaf.	Extract of 5-10 leaves taken with sugar thrice daily to cure jaundice. Juice of roots and leaves taken for curing jaundice.
658.	<i>Reinwardtia indica</i> Dumort /Linaceae.	More or less throughout India.	Root.	Decoction of root along with a pinch of black pepper given in the treatment of jaundice.
659.	<i>Rhaphidophora pertusa</i> (Roxb.) Schott./ Araceae.	Wet lowland forests from deciduous - evergreen.	Stem.	Stem juice administered orally to cure inflammation of liver by Kani tribes in Kerala.
660.	<i>Ricinus communis</i> L. /Euphorbiaceae.	Naturalized in sub-Tropical regions; frequently met within wastelands below 1,200m.	Leaf.	Paste of its leaves along with that of <i>Phyllanthus amarus</i> in equal ratio given for about 3 days to treat jaundice. Also, its leaf juice mixed in milk in 1:3 proportion taken half glass early morning on empty stomach for 3-4 days for jaundice.
661.	<i>Rosa alba</i> L./Rosaceae.	Cultivated in India.	Flower.	Flower cures biliousness.
662.	<i>R. centifolia</i> L./Rosaceae.	Cultivated throughout India.	Flower.	Flowers 'Rose otto' useful in vitiated conditions of pitta and biliary calculus.
663.	<i>R. damascena</i> Mill. /Rosaceae.	Widely grown in gardens throughout India.	Bud.	Buds used for removing bile.
664.	<i>Rubia cordifolia</i> L. /Rubiaceae.	Throughout India in hilly districts upto 3,750m.	Root.	10-15ml root decoction taken 2 times a day for 5-10 days in jaundice and liver troubles.
665.	<i>Rumex crispus</i> L. /Polygonaceae.	Mt. Abu of Rajasthan.	Root.	Roots useful as bile stimulant and obstructive jaundice.
666.	<i>R. nepalensis</i> Spreng. /Polygonaceae.	Temperate Himalaya, W. Peninsula on the Ghats from the Concan to the Nilgiris.	Root.	Infusion of root used in hepatitis and as a liver tonic.
667.	<i>Ruta graveolens</i> L. /Rutaceae.	Cultivated throughout India.	Flower. Fruit.	Flowers and fruits regarded very beneficial in the treatment of jaundice.
668.	<i>Saccharum officinarum</i> L. /Poaceae.	Cultivated in the hotter parts of India.	Stem.	Stem juice taken orally during jaundice; juice of culms preserved for 8-10 year in vinegar given (2 teaspoonful) with equal quantity of lukewarm water twice daily for a week in infective hepatitis.
669.	<i>Saccharum spontaneum</i> L. /Poaceae.	Warmer parts throughout India, ascending upto 1,828m in the Himalaya.	Whole Plant.	Extract of the plant given in biliousness.

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670.	<i>Salacia reticulata</i> Wight /Hippocrateaceae.	Forests throughout India.	Root.	Roots considered liver tonic and also useful in hepatopathy.
671.	<i>Salvadora persica</i> L. /Salvadoraceae.	Drier parts of India.	Fruit.	Fruits useful in biliousness.
672.	<i>Samadera indica</i> Gaertn. /Simarubaceae.	Evergreen forest & along backwaters of S. India.	Seed.	Seeds useful in bilious fever.
673.	<i>Santalum album</i> L. /Santalaceae.	India, especially in Karnataka, T.N., & Kerala, ascending upto 1,200m.	Heartwood. Flower.	Heartwood useful in vitiated condition of pitta and jaundice. Infusions of flower take care of congestion of liver.
674.	<i>Saponaria officinalis</i> L. /Caryophyllaceae.	Temperate regions; introduced in India.	Root.	Roots useful in jaundice and hepatic eruptions.
675.	<i>Saraca ascosa</i> (Roxb.) de Wilde. / Fabaceae.	Evergreen forests throughout India upto 750m & cultivated.	Flower.	Flowers useful in vitiated condition of pitta.
676.	<i>Saussurea taraxicifolia</i> Wall. / Asteraceae.	Alpine Himalaya (Kunawurt - Sikkim): 4,000-5,000m.	Whole Plant.	Herb useful in liver troubles.
677.	<i>Saxifraga mucronulata</i> Royle /Saxifragaceae.	Alpine Himalaya from Kashmir & Kumaon: 4,500-5,650m; common to Sikkim at 6,000m.	Whole Plant.	Useful in jaundice and hepatitis.
678.	<i>Schisandra chinensis</i> (Turcz.) Baill. / Schisandraceae.	North-Western Himalayas & throughout Central and South India.	Whole Plant.	Plant considered liver protectant and used in the treatment of hepatitis and poor liver function.
679.	<i>Schleichera nigrum</i> L. /Sapindaceae.	Throughout India upto 2,743m in Himalaya.	Leaf.	Leaves chewed thrice a day for 3-4 days to cure jaundice.
680.	<i>S. oleosa</i> (Lour.) Oken. /Sapindaceae.	N.W. Himalaya and throughout C. & southern India.	Seed.	Seeds cure biliousness.
681.	<i>Scoparia dulcis</i> L. /Scrophulariaceae.	Plains of Bengal, abundant.	Leaf. Whole Plant.	50ml supernatant of 20 fresh leaves ground with water taken orally twice a day for 3 days to cure jaundice. Sharbat made of whole plant with sugar candy given in jaundice.
682.	<i>Scutellaria prostrata</i> Jacq. ex Benth. /Lamiaceae.	W. Himalaya; (Kashmir – Kumaon): 2,700-4,600m.	Shoot.	Shoot useful in liver diseases.
683.	<i>Securinega leucopyrus</i> (Willd.) Muell.-Arg. /Euphorbiaceae.	Dry localities throughout India.	Whole Plant.	Plant useful in vitiated conditions of pitta.
684.	<i>Selaginella rupestris</i> Spring. /Selaginellaceae.	Throughout India; in Indian gardens as ornaments.	Whole Plant.	Plant hepatoprotective.
685.	<i>Semecarpus anacardium</i> L. f. /Anacardiaceae.	Semi-evergreen & moist deciduous forest throughout India.	Fruit.	Fruits used as liver tonic for hepatopathy and liver enlargement.
686.	<i>Sesbania grandiflora</i> Pers./Fabaceae.	Cultivated in many parts of India.	Flower.	Infusion of flowers useful in congestion of liver.
687.	<i>S. sesban</i> (L.) Merrill. /Fabaceae.	Plains from Himalayas to Sri Lanka ascending to 1,350m in northwest.	Root.	Roots remove biliousness.
688.	<i>Shorea robusta</i> Gaertn. f. /Dipterocarpaceae.	N.E. & Central India upto 1,700m.	Bark. Leaf. Resin.	Useful in vitiated condition of pitta.
689.	<i>Sida acuta</i> Burm. f./Malvaceae.	Hotter parts of India.	Root.	Roots useful in bile disorders.

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690.	<i>S. cordifolia</i> L. /Malvaceae.	Throughout sub-tropical parts of India.	Leaf. Root	Leaf decoction is used to treat bile disorders. Decoction of 20g roots with 1-2 drops of juice of shoots of <i>Scoparia dulcis</i> given twice daily for a week in infective viral hepatitis.
691	<i>S. rhombifolia</i> L. /Malvaceae.	Throughout India, upto 200m in Himalaya.	Root.	Paste of its root with 'gorchina' (said to be derived from the liver of some cows) administered for bile complaints in children.
692.	<i>Silybum marianum</i> Gaertn. /Asteraceae.	Kashmir & Himalayan region; cultivated in India.	Whole Plant.	Plant effectively protects and regenerate the liver cells and cures the cirrhosis caused by different agents by stimulating bile secretion.
693.	<i>Smithia conferata</i> Sm. /Fabaceae.	Throughout Peninsular India upto 1,350m.	Whole Plant.	Herb used to treat biliousness.
694.	<i>Solanum dulcamara</i> L./Solanaceae.	Kashmir – Garhwal: 1,350-2,700m; Sikkim.	Berry.	Berries considered good chronic enlargement of the liver.
695.	<i>S. surattense</i> Burm. f. / Solanaceae.	Wasteplaces & roadsides throughout India.	Fruit. Root.	Decoction of roots takes care of congestion of liver. Fruit used in enlargement of liver. Also, its garland tied around neck to relieve jaundice.
696.	<i>S. torvum</i> Swartz. /Solanaceae.	Throughout the Tropical regions in India.	Fruit.	Decoction or infusion of two mature fruits in 100ml water taken twice a day an hour before meals for a week in acute hepatitis.
697.	<i>S. villosum</i> Mill./Solanaceae.	Common weed of cultivated fields, roadsides & moist wasteplaces.	Leaf. Root Bark. Whole Plant.	Decoction of leaves mixed with honey used in liver disorders and jaundice. Decoction of the root bark or juice of the plant useful in hepatomegaly in doses of 6-8 ounces for chronic enlargement of liver.
698.	<i>Solena amplexicaulis</i> (Lamk.) /Cucurbitaceae.	Throughout India, ascending upto 2,100m in the hills.	Root.	Fresh roots inhaled to reduce jaundice; also its garland worn around neck along with root of <i>Plumbago indica</i> and rhizome of <i>Curcuma domestica</i> for 15-20 days to reduce jaundice.
699.	<i>Sphaeranthus senegalensis</i> DC. /Asteraceae.	Common in damp habitats throughout India & to 1,500m in N. India.	Whole Plant.	Plant juice used to treat liver problems.
700.	<i>Spinacea oleracea</i> L. /Chenopodiaceae.	Cultivated extensively in India upto 2,100m.	Seed.	Seeds used to cure jaundice.
701.	<i>Spondias pinnata</i> (L. f.) Kurz. /Anacardiaceae.	Throughout India to 1,500m in the Himalaya; wild as well as cultivated.	Fruit. Bark.	Ripe fruit and bark useful in bilious dyspepsia.
702.	<i>Stephania japonica</i> (Thunb.) Miers. /Menispermaceae.	Tropical & Temperate Himalaya, ascending to 2,350m from Sindh eastwards to Khasia hills.	Leaf.	Assamese of N. Lakhimpur use its pounded leaves with milk for jaundice.
703.	<i>Stereospermum chelonoides</i> (L. f.) DC. /Bignoniaceae.	Throughout most of India in mixed deciduous & sal ( <i>Shorea robusta</i> ) – dominant forests and sub-Himalayan tract upto 1,500m.	Flower.	Flowers considered useful for treating bilious diarrhoea.
704.	<i>Strychnos nux-vomica</i> L. /Loganiaceae.	Throughout Tropical India in semi-deciduous forests to 1,350m.	Seed.	Dried seeds used to treat jaundice.
705.	<i>S. potatorum</i> L. /Loganiaceae.	Konkan, C. India, N. Circars, Deccan, Carnatic - S. Travancore.	Fruit.	Ripe fruits cure jaundice.

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706.	<i>Swertia chirayita</i> (Roxb. ex Flem.) Karsten. /Gentianaceae.	Deciduous forests of W. Bengal, Central & S. India upto 1,200m.	Seed. Whole Plant.	Seeds useful in liver disorders, hepatitis and jaundice. Herb a liver protective, used to kill malarial parasites from liver.
707.	<i>S. ciliata</i> (D. Don. ex G. Don) B. L. Burtt. /Gentianaceae.	Throughout Temperate & Alpine slopes of C. Himalaya near forests edges & moist slopes upto 4,000m.	Whole Plant.	50-75ml infusion of the whole plant taken 2 times daily for 15 days as a liver stimulant and in jaundice.
708.	<i>S. petiolata</i> Royle ex D. Don. /Gentianaceae.	W. Himalaya: Kashmir, upto 4,000m.	Whole Plant.	Decoction of whole plant given twice a day as a health tonic for liver.
709.	<i>Symplocos cochinchinensis</i> (Lour.) Moore. /Symplocaceae.	Evergreen forests, ravines & the Shoals throughout India upto 900m.	Bark.	Useful in vitiated condition of pitta.
710.	<i>S. paniculata</i> Wall. /Symplocaceae.	Common tree in the Himalaya from H.P. - Assam & Khasi Hills: 600-2,400m.	Bark.	Bark useful in diseases of liver.
711.	<i>S. racemosa</i> Roxb. /Symplocaceae.	N.E. India, Himalaya upto 1,400m.	Bark.	Bark decoction used to treat liver complaints.
712.	<i>Syzygium aromaticum</i> (L.) Merrill. & Perry/Myrtaceae.	Cultivated in S. India.	Dried flower buds (cloves).	Cloves useful in vitiated condition of pitta and hepatopathy.
713.	<i>S. cumini</i> (L.) Skeels. /Myrtaceae.	Almost throughout India ascending upto 1,800m.	Fruit. Stem Bark.	Fruits useful in bilious diarrhea and liver disorders. Decoction of stem bark (about 50g) from the sunny side of tree given twice daily for a week in chronic liver problems.
714.	<i>S. hemisphericum</i> Alston./Myrtaceae.	W. Peninsula: Anamallai & Tinnevely Ghats.	Bark.	Decoction of bark used in biliousness.
715.	<i>S. jambos</i> (L.) Alston. /Myrtaceae.	Cultivated throughout India upto 1,350m.	Bark.	Bark useful in vitiated condition of pitta.
716.	<i>S. operculatum</i> (Roxb.) Niedenzu. /Myrtaceae.	Sub-Himalayan tract from the Jumna eastwards, Savannahs, & open habitats in sal ( <i>Shorea robusta</i> )-dominant forests.	Stem Bark.	Used in the treatment of biliousness.
717.	<i>Tabernaemontana divaricata</i> (L.) R. Br./Apocynaceae.	Cultivated throughout India.	Root.	Decoction of 100-200g roots taken three times to cure jaundice.
718.	<i>Tacca plantaginea</i> (Hance) Drenth. /Taccaceae.	Wild in wet places in mountainous regions.	Root.	Roots utilized for the relief of jaundice following viral hepatitis.
719.	<i>Tagetes minuta</i> L./Asteraceae.	N.W. Himalayan region; cultivated as a crop in J&K, Punjab, Uttranchal, Karnataka.	Flower.	Flowers useful in liver complaints.
720.	<i>Tamarindus indica</i> L. /Fabaceae.	Throughout India, particularly in S. India; often cultivated.	Fruit. Leaf. Seed.	Fruits useful in liver complaints, biliousness and in diseases caused by deranged bile. Seeds also used in hepatopathy. Leaf infusion used as coolant and used to treat bilious fever; also its paste along with fruit of <i>Cuminum cyminum</i> given along with goat's milk for 3 days to treat jaundice.
721.	<i>Tamarix dioica</i> Roxb. ex Roth. /Tamarindaceae.	Punjab - Assam, W. Peninsula, near rivers & on the sea coast.	Leaf.	One teaspoonful of about 150g powder of leaves mixed with 10g black salt taken with hot water to cure liver disorders.



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722.	<i>Tanacetum dolichophyllum</i> (Kitam.) Kitam./Asteraceae.	W. Himalaya (Kashmir – Kumaon): 3,350-4,500m.	Leaf.	Leaves useful in jaundice.
723.	<i>Taraxacum officinale</i> Web. ex Wigg. / Asteraceae.	Throughout India, in the hills from 300-5,400m.	Root. Whole plant.	1-2g dried root powder or its extract taken 1-2 times daily in liver complications. Plant also considered useful for jaundice, biliary calculi and other hepatic diseases.
724.	<i>Taxus baccata</i> L./Taxaceae.	Temperate Himalaya: 2,000-3,500m; Khasia hills 1,700m.	Tender Shoot.	Young shoots used in severe biliousness.
725.	<i>Tecomella undulata</i> (Sm.) Seem. /Bignoniaceae.	Punjab, Rajputana, Sindh, Kathiawar.	Whole Plant.	Plant useful in urinary discharges due to pitta.
726.	<i>Tectona grandis</i> L. f./Verbenaceae.	Deciduous forests throughout India upto 1,000m; also cultivated.	Bark. Flower. Fruit. Wood. Whole Plant.	Flowers used in biliousness. Bark, wood, leaves and fruits useful in vitiated condition of pitta. Dried plant useful in bilious febrile attacks and obstructions of the liver.
727.	<i>Terminalia alata</i> Heyne ex Roth. /Combretaceae.	Common throughout India; sub-Himalayan tracts, Deccan Peninsula.	Fruit.	Considered useful for liver complaints.
728.	<i>T. arjuna</i> Wight & Arn./Combretaceae.	Common in forests & along water streams; also planted as an avenue tree.	Bark.	Powder of the bark useful in vitiated condition of pitta, cirrhosis of liver and bile duct problem.
729.	<i>T. bellerica</i> (Gaertn.) Roxb. / Combretaceae.	Throughout the plains, sub-Himalayan tracts.	Fruit. Bark.	Fruits antibilious and useful in liver complaints. Juice of stem bark mixed with garlic and pepper given orally in case of jaundice.
730.	<i>T. catappa</i> L./Combretaceae.	Common along beaches, rocky coasts, upper margins of mangrove swamps, low land clearing and secondary forests.	Leaves.	Infusion of leaves used to treat jaundice.
731.	<i>T. chebula</i> Retz./ Combretaceae.	Throughout the greater part of India; 1,700m in the outer Himalaya & upto 2,000m in Travancore.	Fruit.	Decoction of fruits (20-25ml) taken once a day for 5-6 weeks in bile trouble and enlargement of liver. Powder of dry fruits of this plant given along with honey twice daily after meal for a week to treat jaundice.
732.	<i>T. crenulata</i> Roth. /Combretaceae.	Semi-evergreen & mixed deciduous forests throughout India.	Bark.	Bark useful in vitiated condition of pitta.
733.	<i>T. paniculata</i> Roth. /Combretaceae.	Semi-evergreen & moist deciduous forests in W. & E. Ghats upto 1,200m.	Bark.	Bark useful in vitiated condition of pitta.
734.	<i>Thalictrum foliolosum</i> DC. /Ranunculaceae.	Usually on shady slopes along roadsides, in sub-Tropical & Temperate regions between 800-2,500m.	Root.	15g root powder given thrice a day for 2 weeks in jaundice.
735.	<i>Thespesia populnea</i> (L.) Sol. ex Corr. /Malvaceae.	Tropical shores of Bengal.	Heart Leaves. Wood.	Heartwood used for biliousness. Paste of fallen leaves along with cow's milk given thrice a day to treat jaundice.
736.	<i>Thuja orientallis</i> L./Cupressaceae.	Mountain thickets of India.	Seeds.	Seeds used as liver tonic.
737.	<i>Thymus linearis</i> Benth. /Lamiaceae.	Himalaya: 1,500-4,500m.	Leaf. Whole Plant.	Leaves useful in biliousness. Plant useful in liver complaints.

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738.	<i>Tinospora cordifolia</i> (Willd.) Hook. f. /Menispermaceae.	Throughout India, ascending upto 300m.	Whole plant. Stem. Leaves.	Extract of fresh stem (10-20ml) taken 2-3 times daily for 3-7 days in case of bilious fever. 1-2g pulverized stem given twice daily for 12-15 days to cures congestion of the liver and viral hepatitis. A necklace of small stem pieces hung around the neck to cure jaundice. Leaves are used to cure jaundice.
739.	<i>T. sinensis</i> (Lour.) Merrill. / Menispermaceae.	1,000m in India from Assam & Bengal and throughout most of Peninsular India.	Whole Plant.	Whole plant used for the preparation of medicinal baths for liver disorder.
740.	<i>Toona ciliata</i> R./Meliaceae.	Sub-Himalayan tract, Bombay - Nilgiris & Anamalais & other hills of the W. Peninsula.	Bark.	Bark useful in bilious fevers.
741.	<i>Tragia plukenetii</i> A. R. Smith / Euphorbiaceae.	Throughout India, ascending upto 750m.	Root.	Roots useful in vitiated condition of pitta.
742.	<i>Tragopogon pratense</i> L. /Asteraceae.	W. Himalaya; 4,000-4,600m.	Root.	Decoction of root given in liver disorders.
743.	<i>Trapa natans</i> L. var. <i>bispinosa</i> (Roxb.) Makino. /Trapaceae.	Ponds, lakes & tanks throughout India; also cultivated.	Fruit.	Fruits useful in vitiated condition of pitta.
744.	<i>Trewia nudiflora</i> L. / Euphorbiaceae.	Throughout the hotter parts of India.	Whole Plant.	Plant removes biliousness.
745.	<i>Trianthema portulacastrum</i> L. /Aizoaceae.	Found throughout India.	Leaves.	Leaves beneficial in swellings of body caused by disorders of liver.
746.	<i>Tribulus lanuginosus</i> L./Zygophyllaceae.	Weed along roadsides & wastelands throughout India upto 5,400m.	Root. Fruit.	Roots and fruits useful in vitiated condition of pitta. Extract of powdered dried fruits soaked overnight in water taken twice or thrice a day upto month or more against liver disorders.
747.	<i>Trichosanthes anguina</i> L. /Cucurbitaceae.	Extensively cultivated throughout the hotter parts of India.	Fruit.	Fruits cure biliousness.
748.	<i>T. cucumerina</i> L. /Cucurbitaceae.	Distributed throughout India.	Leaf. Stem. Fruit.	Leaves and stem used in bilious disorders. Fruits useful in jaundice.
749.	<i>T. dioica</i> Roxb. /Cucurbitaceae.	Throughout the plains of N. India, extending to Assam.	Leaf.	Leaves cure biliousness.
750.	<i>T. lobata</i> Roxb./Cucurbitaceae.	Throughout India, in plains & in lower hills; also cultivated.	Whole Plant.	Whole plant useful in hepatopathy jaundice.
750.	<i>Tridax procumbens</i> L. /Asteraceae.	Throughout plains of India, ascending upto 2,400m.	Whole Plant.	Extract of the whole plant used for jaundice.
751.	<i>Trigonella foenum-graecum</i> L. / Fabaceae.	Wild in Kashmir, Punjab & Upper Gangetic plains; cultivated in many other parts of India.	Leaf. Flower.	Leaves given internally for vitiated condition of pitta. Flowers recommended for biliousness.
752.	<i>Triticum aestivum</i> L./Poaceae.	Widely cultivated in India.	Grains.	Grains useful in vitiated condition of pitta.
753.	<i>Tylophora indica</i> (Burm. f.) Merrill. /Asclepiadaceae.	N.E. Bengal, Assam, Deccan Peninsula; abundant.	Root.	Root paste applied on eye lids for 3 days to cure jaundice.

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754.	<i>T. tenuissima</i> (Roxb.) Wt. & Arn. /Asclepiadaceae.	Bengal; Salt lake near Calcutta & Sundarbunds. Deccan Peninsula from Canara southwards.	Whole Plant.	Plant useful in bilious swelling.
755.	<i>U. picta</i> Desv./Fabaceae.	Himalaya-Sri Lanka; ascending to 2,000m in the north-west.	Root.	Roots useful in jaundice.
756.	<i>Uraria rufescens</i> (DC.) Schindl. / Fabaceae.	Grassy ravines of the Himalaya (Kumaon – Sikkim), in Assam to an altitude of 1,200m.	Whole Plant.	Plant relieves bile troubles.
757.	<i>Urena lobata</i> L. /Malvaceae.	Generally distributed over the hotter parts of India.	Root.	Decoction of 100-200g of its roots and Piper longum L., taken once daily for 20 days to cure jaundice.
757.	<i>Urtica dioica</i> L. /Urticaceae.	N.W. Himalaya: 2,700-3,550m.	Leaf. Root. Aerial parts.	Infusion of leaves (50-100ml) taken 1-3 times a day for 1-2 months in case of chronic hepatitis. Roots and aerial parts useful in jaundice.
759.	<i>U. parviflora</i> Roxb./Urticaceae.	Kashmir - Assam.	Whole Plant.	Plant useful in jaundice.
760.	<i>Uvaria narum</i> (Dunal) Wall. ex Wight /Anonaceae.	Forests of W. Ghats upto 1,200m.	Root. Leaf.	Useful in vitiated condition of pitta and jaundice.
761.	<i>Valeriana hardwickii</i> Wall. /Valerianaceae.	Temperate Himalaya (Kashmir – Bhutan): 1,350-4,000m; Khasia 1,350-2,000m.	Root.	10-15ml extract of the root taken twice daily for 10-15 days in the diseases of the liver.
762.	<i>V. jatamansi</i> auct. non Jones /Valerianaceae.	In the Himalaya upto 3,000m.	Root.	Roots hepatotonic and useful in jaundice and liver enlargement.
763.	<i>Vangueria spinosa</i> Roxb./Rubiaceae.	N. Bengal, Konkan, Deccan, N. Kanara, T.N.	Fruit.	Fruit used as an expellent of bile.
764.	<i>Verbena officinalis</i> L. /Verbenaceae.	Kashmir-Bhutan in the Himalaya.	Aerial Parts.	Extract of the aerial parts employed in liver complaints.
765.	<i>Vetiveria zizanioides</i> (L.) Nash. /Poaceae.	Plains & Lower hills throughout India upto 1,200m.	Root.	Useful in vitiated condition of pitta and bilious fever.
766.	<i>Vigna mungo</i> (L.) Heeper. /Fabaceae.	Cultivated throughout India.	Seed.	Decoction of seeds used internally in liver affections.
767.	<i>V. pilosa</i> Baker. /Fabaceae.	Throughout India, in forests at low altitudes.	Root.	Roots useful in vitiated condition of pitta.
768.	<i>V. radiata</i> (L.) Willczek. /Fabaceae.	Throughout India, plains & hills upto 300m.	Root.	Roots useful in vitiated condition of pitta.
769.	<i>Vigna trilobata</i> (L.) Verdc./Fabaceae.	Himalaya, upto 2,300m.	Fruit.	Fruit cures biliousness.
770.	<i>V. umbillata</i> Thunb./Fabaceae.	Throughout India; in plains, ascending to 1,500m in hills cultivated or wild.	Root.	Roots useful in jaundice.
771.	<i>V. unguiculata</i> (L.) Walp./Fabaceae.	Throughout India, cultivated.	Seed.	Seeds considered liver tonic and used in vitiated condition of pitta and
772.	<i>Viola pilosa</i> Blume. /Violaceae.	Throughout the Temperate Himalaya, Khasia Hills, Pulney & Nilgiri.	Whole Plant.	Used in biliousness.
773.	<i>Viscum album</i> L./Santalaceae.	Jaunsar & Tehri-Garhwal upto 2,000m, parasitizing chiefly on rosaceous trees & shrubs, on elm, walnut & Willow between	Whole Plant.	Considered useful in hepatic enlargements.

Sr. No	Plant Name/Family	Distribution	Parts Used	Folk Uses
		1,200-2,600m in H.P.		
774.	<i>V. articulatum</i> Burm. f./Santalaceae.	Himalaya, Assam, Khasia Hills.	Whole Plant.	Herb useful in biliousness.
775.	<i>Vitex negundo</i> L. /Verbenaceae.	Scrub-jungles & roadsides in the warmer parts throughout.	Flower. Leaves.	Flowers useful in hepatopathy. Juice (5ml) of fresh leaves mixed with a glass of lukewarm water administered twice a day for one week in chronic liver problems associated with loss of appetite.
776.	<i>Vitis vinifera</i> L./Vitaceae.	Cultivated throughout India.	Fruit. Flower.	Fruit useful in vitiated condition of pitta. Flowers employed in hepatopathy.
777.	<i>Wedelia chinensis</i> (Osbeck) Merr. / Asteraceae.	Wet places & Coastal areas throughout India.	Leaf. Whole Plant.	One teaspoonful of leaf-powder added to 200ml of goat's milk or hot water or leaf juice administered orally to treat jaundice, liver and bile problem. Plant considered very specific for viral hepatitis.
778.	<i>W. urticifolia</i> DC./Asteraceae.	W. Peninsula; on the Ghats from the Concan southwards.	Whole Plant.	Juice from this plant with 'Keelanelli' ( <i>Phyllanthus amarus</i> Schum. & Thonn.) taken internally for jaundice.
779.	<i>Wendlandia heynei</i> (Roem. & Schult.) Sant. & Merch. /Rubiaceae.	Tropical Himalaya, ascending to 1,350m.	Twig.	Twigs placed on the door of cattle shed for checking 'Tilbad' disease in cattle.
780.	<i>Withania coagulans</i> Dunal /Solanaceae.	N.W. India.	Fruit.	Fruits are useful in chronic liver complaints.
781.	<i>W. sominifera</i> (L.) Dunal /Solanaceae.	Throughout Drier and sub-Tropical India; rare in lower Bengal.	Root.	Powdered root used in liver complaints.
782.	<i>Woodfordia fruticosa</i> (L.) Kurz. / Lythraceae.	Common in the forests on Hill slopes & wastelands.	Flowers.	40-50ml decoction of flowers taken 2 times a day for 2-3 weeks in liver troubles and vitiated condition of pitta.
783.	<i>Wrightia tinctoria</i> (Roxb.) R. Br./ Apocynaceae.	Throughout India, upto 1,200m.	Bark. Seed.	Useful in vitiated condition of pitta.
784.	<i>Xanthium strumarium</i> L./Asteraceae.	Throughout India.	Whole Plant.	Plant cures biliousness.
785.	<i>Youngia tenuifolia</i> (Willd.) / Asteraceae.	N. Kashmir: 4,000-5,000m.	Whole Plant.	Plant useful in jaundice.
786.	<i>Zaleya decandra</i> (L.) Burm. f. /Aizoaceae.	Deccan Peninsula.	Root.	Root paste given to treat jaundice. Root juice applied in the eyes once a day early in the morning for 3 days to treat jaundice.
787.	<i>Zanonia indica</i> L./Cucurbitaceae.	Throughout India, in forests.	Fruit.	Fruits useful in vitiated condition of pitta.
788.	<i>Zanthoxylum armatum</i> DC. / Rutaceae.	Hot Valleys of the sub-Tropical Himalaya, ascending to 2,000m; Khasia 700-1,000m.	Fruit. Bark	A single fruit taken 2-3 times daily for about a month to strengthen liver. Bark and fruit considered liver tonic and useful in hepatopathy.
789.	<i>Z. rhetsa</i> DC. /Rutaceae.	W. Peninsula, Coromandel & the Konkan southwards.	Stem.	Stem used to cure jaundice.
790.	<i>Zea mays</i> L./Poaceae.	Cultivated anywhere.	Styles. Stigmas (Maize Milk).	Maize silk used in the treatment of hepatitis as it mildly stimulates bile secretion.
791.	<i>Zingiber officinale</i> Rosc. /Zingiberaceae.	Widely cultivated in India upto 1,500m.	Rhizome.	Concentrate of 20g ginger juice boiled together with 70g of cow's milk taken with powdered sugar twice daily for liver ailments.
792.	<i>Zizyphus mauritiana</i> Lamk. /Rhamnaceae.	Cultivated in gardens, villages & roadsides in Hotter parts of India; wild in Wastelands & Tropical forests.	Seed. Root. Fruit.	Seeds given with buttermilk in bilious affections. Roots and fruit also useful in vitiated condition of pitta.

Table 2: Distribution Patterns of Hepatoprotective and Hepatocurative Plants Used in India

Distribution	No. of Species
Throughout or Scattered Distribution	515
N.W. & W. Himalaya	69
N.E. & E. Himalaya	33
Peninsular India (Ghats, Coastal Plains, Deccan Plateau)	56
Entire Himalaya	74
Central Highlands & Plains of India	23
Tropical Forests of India	22

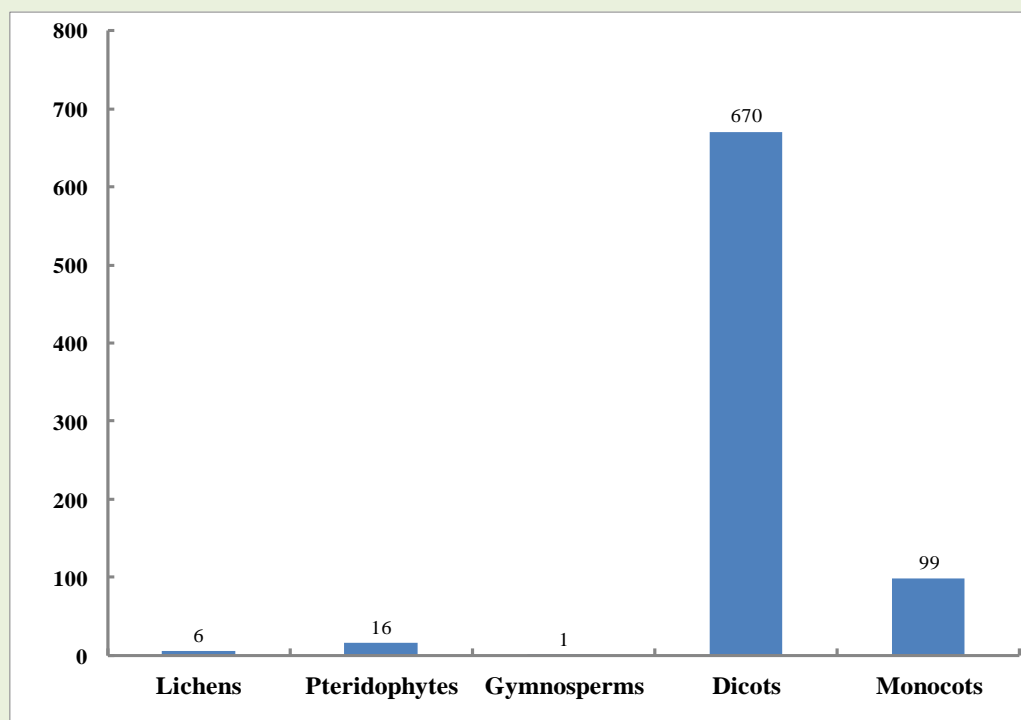
Table 3: Predominant Dicot Hepatoprotective and Hepatocurative Plant Families with Their Relative Percentage in Taxa

Name of Family	Total no. of Spp.	%age taxa	in	Name of Family	Total no. of Spp.	%age in taxa
Fabaceae	82	10.35		Sapindaceae	5	0.63
Asteraceae	43	5.43		Anonaceae	4	0.50
Euphorbiaceae	31	3.91		Bignoniaceae	4	0.50
Rubiaceae	25	3.16		Boraginaceae	4	0.50
Cucurbitaceae	21	2.65		Brassicaceae	4	0.50
Lamiaceae	18	2.27		Caryophyllaceae	4	0.50
Apiaceae	17	2.15		Lauraceae	4	0.50
Rutaceae	15	1.90		Lythraceae	4	0.50
Malvaceae	15	1.90		Oxalidaceae	4	0.50
Moraceae	14	1.77		Urticaceae	4	0.50
Ranunculaceae	14	1.77		Bombacaceae	3	0.38
Solanaceae	14	1.77		Bursaceae	3	0.38
Apocynaceae	13	1.77		Celastraceae	3	0.38
Asclepiadaceae	13	1.64		Cuscutaceae	3	0.38
Acanthaceae	12	1.52		Ebenaceae	3	0.38
Berberidaceae	12	1.52		Fumariaceae	3	0.38
Rosaceae	12	1.52		Nymphaeaceae	3	0.38
Verbenaceae	12	1.52		Papaveraceae	3	0.38
Amaranthaceae	10	1.26		Polygonaceae	3	0.38
Convolvulaceae	10	1.26		Santalaceae	3	0.38
Gentianaceae	10	1.26		Sterculiaceae	3	0.38
Scrophulariaceae	10	1.26		Symplocaceae	3	0.38
Combretaceae	9	1.14		Tiliaceae	3	0.38
Meliaceae	8	1.01		Valerianaceae	3	0.38
Menispermaceae	8	1.01		Begoniaceae	2	0.25
Myrtaceae	7	0.88		Crassulaceae	2	0.25
Oleaceae	6	0.76		Elaeocarpaceae	2	0.25
Sapotaceae	6	0.76		Geraniaceae	2	0.25
Aizoaceae	5	0.63		Hypericaceae	2	0.13
Anacardiaceae	5	0.63		Juglandaceae	2	0.25
Capparidaceae	5	0.63		Lecythidaceae	2	0.25
Chenopodiaceae	5	0.63		Linaceae	2	0.25
Clusiaceae	5	0.63		Loganiaceae	2	0.25
Flacourtiaceae	5	0.63		Mimosaceae	2	0.25
Piperaceae	5	0.63		Moringaceae	2	0.25
Myristicaceae	2	0.25		Ericaceae	1	0.13
Onagraceae	2	0.25		Erythroxylaceae	1	0.13
Passifloraceae	2	0.25		Hamamelidaceae	1	0.13
Plumbaginaceae	2	0.25		Hippocastanaceae	1	0.13
Rhamnaceae	2	0.25		Hippocrateaceae	1	0.13
Saxifragaceae	2	0.25		Lobeliaceae	1	0.13
Simarubaceae	2	0.25		Magnoliaceae	1	0.13
Ulmaceae	2	0.25		Malpighiaceae	1	0.13
Violaceae	2	0.25		Melastomaceae	1	0.13
Vitaceae	2	0.25		Menyanthaceae	1	0.13

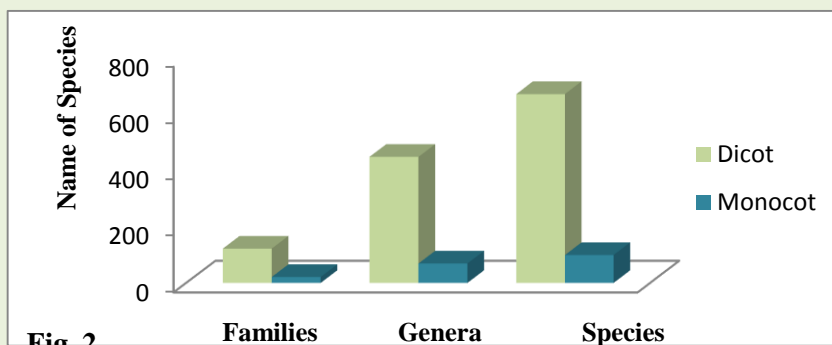
Zygophyllaceae	2	0.25	Monimiaceae	1	0.13
Alangiaceae	1	0.13	Myrsinaceae	1	0.13
Aquifoliaceae	1	0.13	Nelumbonaceae	1	0.13
Aristolochiaceae	1	0.13	Nyctaginaceae	1	0.13
Basellaceae	1	0.13	Nyctanthaceae	1	0.13
Betulaceae	1	0.13	Olacaceae	1	0.13
Bixaceae	1	0.13	Pedaliaceae	1	0.13
Cactaceae	1	0.13	Plantaginaceae	1	0.13
Campanulaceae	1	0.13	Polygalaceae	1	0.13
Caricaceae	1	0.13	Portulacaceae	1	0.13
Casuarinaceae	1	0.13	Primulaceae	1	0.13
Dilleniaceae	1	0.13	Punicaceae	1	0.13
Dipsaceae	1	0.13	Salvadoraceae	1	0.13
Dipterocarpaceae	1	0.13	Schisandraceae	1	0.13
Elaeagnaceae	1	0.13	Tamarindaceae	1	0.13
Elatinaceae	1	0.13	Trapaceae	1	0.13

**Table 4 : Predominant Hepatoprotective and Hepatocurative Monocotyledonous Families with Their Relative Percentage in Taxa**

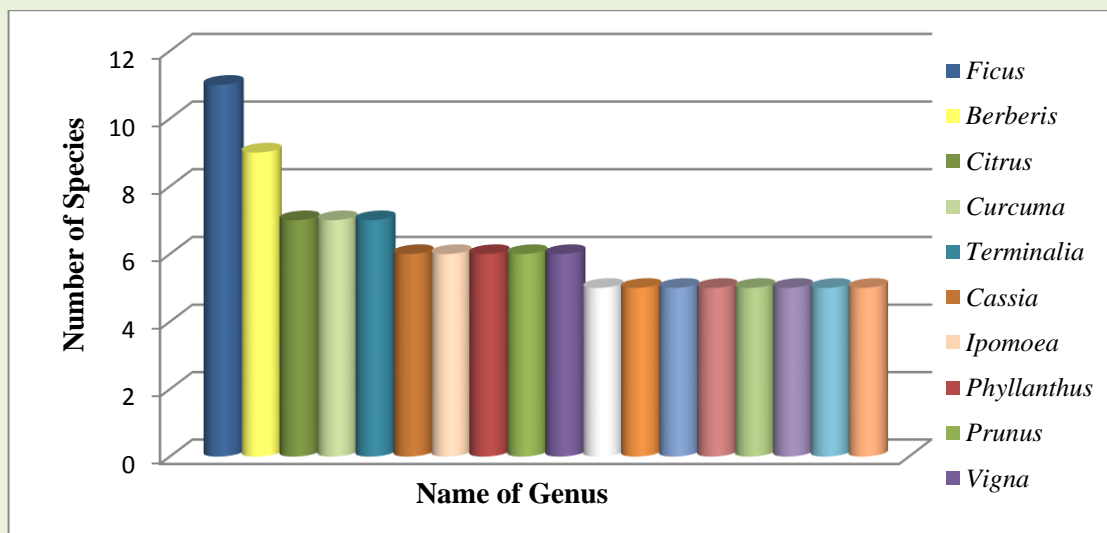
Name of Family	Total No. of Spp.	%age in Taxa	Name of Family	Total No. of Spp.	%age in taxa
Poaceae	22	2.78	Agavaceae	1	0.13
Liliaceae	14	1.77	Amaryllidaceae	1	0.13
Zingiberaceae	14	1.77	Bromeliaceae	1	0.13
Arecaceae	10	1.26	Ceratophyllaceae	1	0.13
Orchidaceae	6	0.76	Hypoxidaceae	1	0.13
Araceae	5	0.63	Musaceae	1	0.13
Cyperaceae	5	0.63	Ophioglossaceae	1	0.13
Iridaceae	5	0.63	Pandanaceae	1	0.13
Commelinaceae	3	0.38	Pontederiaceae	1	0.13
Dioscoreaceae	3	0.38	Taccaceae	1	0.13
Bambusaceae	2	0.25			



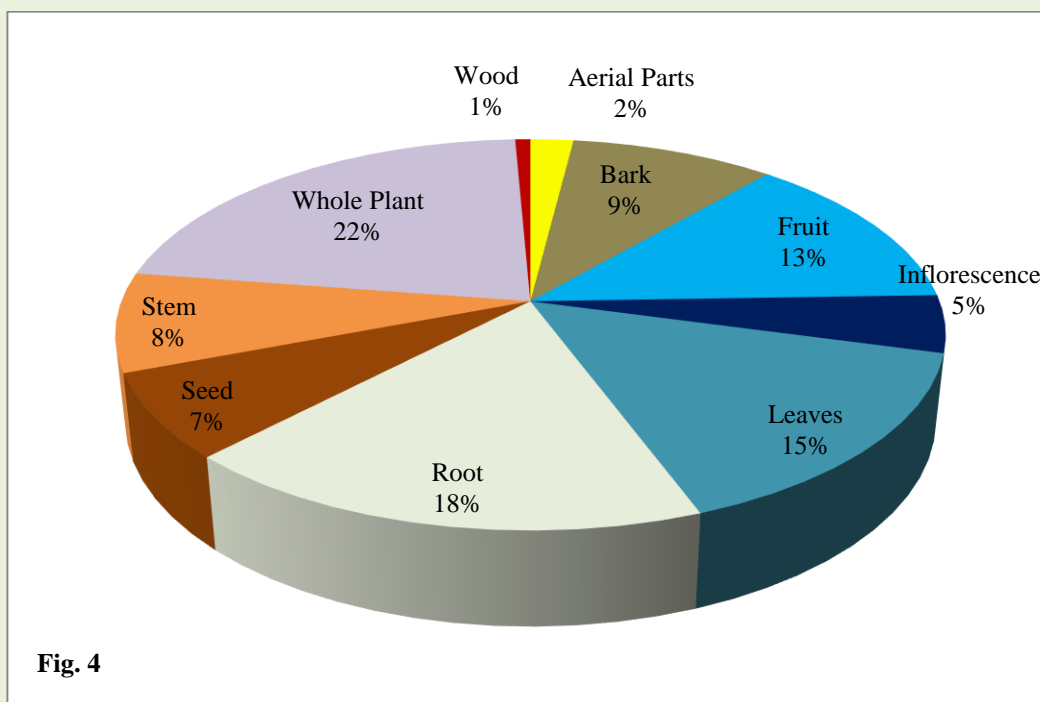
**Fig. 1:** Hepatoprotective and Hepatocurative Plants under Various Divisions of Plant Kingdom.



**Fig. 2:** Hepatoprotective and Hepatocurative Families, Genera and Species Under Dicots and Monocots.



**Fig. 3:** Promising Indian Genera for Hepatoprotection and Hepatocuration.



**Fig. 4:** Piechart Showing Predominant Plant Parts Employed for Hepatoprotection and Hepatocuration.