

Literary review of *Parijata* (*Nyctanthus arbor-tristis* Linn.) an Herbal Medicament with Special Reference to Ayurveda and Botanical Literatures

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ABSTARCT

Parijata (*Nyctanthus arbor-tristis* Linn.) commonly known as night jasmine, a wonderful plant is described in Ayurveda with it's enormous medicinal value. It is mostly found in sub tropical Himalayas of Nepal and southern parts of India and widely cultivated in tropical and sub-tropical regions in all over the world. Other than *Parijata* it is popularly known as *Har-shinghar*. Different parts of this plant are used for various medical purposes. It's leaves have broad spectrum medicinal use such as anti- bacterial, anti-inflammatory, anti-pyretic and anti-helmentic effect. The descriptions of habitat, morphology, etymology, traditional pharmacology, therapeutic use etc. are richly found in Ayurvedic literatures. Scientific classification, family and genus characters, vernacular names, habitat and habit, ethno-botanical use, pharmacological activities, chemical constituents, cultivation and propagation etc. are also described in this literary study. Authors are hopeful, the article will help the researchers of Ayurveda as well as in other field of bio-medical sciences to explore more about the said plant for the benefit of society.

Keywords: *Parijata*, *Nyctanthus arbor-tristis*, *Rasa Panchaka*,
Pharmacognosy, *hara-shinghara*

INTRODUCTION

Ayurveda, worlds' most ancient healing heritage uses the plant kingdom since it's inception both for diet and medicines as when required. Ancient Acharyas have felt enormous therapeutic potentiality of each and every plant on being their judicious use ¹. Among millions of plants and their different species, *Parijata* is having therapeutic predominance in certain disease conditions like chronic fever and worm infestations ⁵. Literary review of the said plant may explore further therapeutic quality and may facilitate cross disciplinary research for the benefit of public in larger extent.

Nyctanthus arbor-tristis Linn., belonging to the family Oleaceae, is a fabulous plant having high medicinal value. It is commonly known as *har-singhar* in Hindi, *Parijata* in Sanskrit and night

jasmine in English. It is widely distributed in sub-Himalayan regions and southwards to Godavari and is predominantly native to southern Asia ². The geographical distribution of the plant extends from northern Pakistan and southern Nepal through northern India and south east to Thailand and also in other parts of the world ³. Due to it's high therapeutic value now a day it is a matter of interest for research in bio-medical science to explore more accurate therapeutic index, in terms of active principles that could be the marker compound of the plant. Broad spectrum medical use of the plant and it's different parts are described in various Ayurvedic literatures. Many samhitas and nighantus are describing about the nomenclature, morphology and different actions of plants as *oushadhi* (medicine) in detail. The complete pharmacognostical study of drug such as origin of the drug, common name, scientific nomenclature,

and family, geographical distribution along with cultivation, collection, and propagation are also the part of current drug review write up. Details of macroscopic, microscopic characters of discussed plant material with chemical composition may facilitate the interdisciplinary research in this regard.

Mythological Origin of *Parijata*:-⁴

Mythological story reveals that, the drug *Parijata* is a heavenly tree brought to earth by Lord Krishna. A quarrel over it ensued between Satyabhama and Rukmini, Krishna's wives. But Krishna planted the tree in Satyabhama's courtyard in a way, that when the tree flowered, the flowers fell in Rukmini's courtyard.

Etymology:-⁵

Etymology of *Parijata* is "*Paarinaha Samudrath jaatho va parijatah*":- It is called *Parijata*, because of its origin from *samudra* (Ocean) as a result of (*parinaha*) extensive searching.

Habit and Habitat:-⁶

Habit

- It is a terrestrial, woody, perennial, small tree growing up to 10 m tall, with flaky grey bark. Branches are spreading, rough, twigs tetragonal, having life spans 5-20 years.
- Leaves decussately opposite, ovate, subcordate at base, acute at apex, margin entire or with a few teeth.
- Flowers in axillary or terminal, bracteates cymes consisting of 2-7-flowered corymbs, with quadrangular, slender peduncle, fragrant and sessile.
- Corolla with a cylindrical orange tube and 5-8 spreading, imbricate and more or less contorted, white lobes, 5-15 mm long.
- Stamens 2, inserted near the top of the corolla tube, stigma obscurely bifid. Calyx is

ovoid, orange to red with white and spreading; 4 to 8 lobes.

- Anthers are 2, sub-sessile and inserted near the mouth of corolla tube. Ovary is two celled with one ovule in each cell.
- The fruit is a flat brown heart-shaped to round, capsule 2 cm diameter, with two sections each containing a single seed. Seeds are erect, orbicular and flattened.
- The tree begins to flower from late September onwards till December. Flowers open late in the evening.

Habitat

- Night jasmine is native to the subtropical Himalayas of Nepal and India; it is more found in southern parts of India, and in South-East Asian country such as Thailand, Malaysia and Indonesia.
- In its native area night jasmine is found on rocky ground in dry hillsides, and as undergrowth in dry deciduous forest.
- It can be cultivated in tropical and subtropical regions all over the world, from sea-level up to 1500 m altitude at the equator, within a wide range of rainfall patterns, from seasonal to non-seasonal.
- It is easily propagated through seeds and cutting parts. It grows well in any soil except waterlogged areas.
- Night jasmine is often planted near Hindu temples in India and Sri Lanka, as well as in Malaysia and Indonesia.

Description of *Parijata* in different Ayurvedic literatures

In different ancient literatures *Parijata* is described under different verga. Regarding the etymology, synonyms, morphological description, therapeutic use there are enormous descriptions found in all most all samhitas and nighantus.

Table:1 shows the position of *Parijata* in different literature

Sl.No.	Name of Literature	Name of verga (group)
1.	Hridaya-deepika Nighantu	Ekakapada verga
2.	Shaligram Nighantu	Pushpa verga
3.	Bhavaprakasha Nighantu	Guduchayadi verga
4.	Nighantu Aadarsha	Jatyadi verga
5.	Priya nighantu	Hartiakyadhi verga

Placement of *Parijata* under different verga by different literature.

Observing the morphology, therapeutic effect, habit and habitat different Acharyas have placed *Parijata* under different verga (group) for convenient of study.

Synonyms of *Parijata*:⁷

Parijata is known by many names in different classics. It's different synonyms are indicative of it's physical properties like colour, fragrance as well as use of flower and leaves. Different synonyms are Parajataa, hara-singhara, sephali, raga-pushpi, kahrapatruk, sephalika, pushpaka, nala-kumkuma, prajakta, rakta-kesara etc.

Significances of Synonyms:⁸

- Raaga-pushpi* : Its flowers have very beautiful and attractive colours.
- Shephalika* : Plenty of honey bees reside on this tree.
- Khara-patraka* : Its leaves are rough in texture.
- Naala-kukuma* : Corolla tube is orange in colour.
- Hara-singhaara* : Lord Hari is decorated by *Parijata* pushpa.
- Rakta-kesara* : Red colour corolla

Traditional pharmacological properties (*rasa, guna, virya* and *vipaka*)

Traditional pharmacological properties of *Parijata* like *rasa, guna, virya* and *vipaka* are described in different literatures such as.

Therapeutic Use

Different Acharyas have described different use of *Parijata*. Also it is used as an ingredient of many compound formulations. The details of it's use according to different texts are given below.

Used part, dose and *dosaghnata*

Usually leaf, root, flower and seed of *Parijata* are used in different dosage form, like juice, powder, decoction etc. for various diseases conditions. It is specifically used to pacify the diseases occurring due to vitiation of *vata* and *kapha*.

Dose of *Parijata* is different as per the different dosage form like:-¹⁰

- For swarasa (juice):- 10-20 ml
- For churna (powder):- 1-3 gm
- For kwatha (decoction):- 50-100 ml

Use of specific dosage form of *Parijata* in different disease condition:-¹¹

The general use of the study drug is described in table No... Other than these uses there are some specific use of different dosage form of *Parijata* with change in *anupana* (vehicle), are mentioned below.

- *Patra swarasa* (leaf juice) with *madhu* (honey) is used in *Jeerna jwara* (chronic fever) and with *loha-bhasma* used in *pandu* (anemia), *yakrit & pleeha* *vriddhi* (hepato-billiary diseases).
- A decoction of the leaves is recommended specifically for obstinate sciatica.
- In *Susrutha samhita* the *panchanga kwatha* of this drug is mentioned in the context of *udaka-meha* (chyluria).
- In *Sushruta Samhita*, *Parijata*, *Ikshuraka* and

Table: 2 shows the traditional pharmacology of *Parijata* in different literature⁵⁻¹⁰

SI. No.	Traditional Pharmacological Properties	Name of the texts
	<i>Rasa- katu, tikta, guna-ruksha, virya-ushna</i>	Raja Nighantu
	<i>Rasa –tikta</i>	Saligrama Nighantu
	<i>Rasa- tikta, virya –ushna</i>	Priya Nighantu
	<i>Rasa –tikta, vipaka-katu</i>	Nighantu Adarsha
	<i>Rasa-tikta, guna-laghu, ruksha, virya-ushna, vipaka-katu</i>	Data base of Medicinal plant

Apamarga along with *Kshara-taila* is mentioned in the context of Pleehodara treatment.

- In Sushruta Samhita, the taila prepared out of Parijata twak (bark) is mixed with kanji (rice gruel) and saindhava (rock salt) to prepare a specific type of anjana (a dosage form used to apply in sclera part of eye). This anjana is beneficial in case of different *netra-rogas* and *shoola* (pain in eye and in different eye diseases).
- The tender leaves of Parijata, Ardraka swarasa (ginger juice) and madhu (honey) along with loha bhasma is beneficial in case of *Pandu* (anemia).
- In Bhava prakasha nighantu the intake of ksheera (cow's milk), ghrita (cow's ghee) and sharkara (sugar) are used as anupana (vehicle) during the intake of certain preparations made up of Parijata.
- In Bhavaprakasha nighantu, patra swarasa (leaf juice) and sharkara (sugar) is indicated in context of krimi (worm infestations).
- In Bhavaprakasha nighantu the churna prepared out of bark along with betel leaves, 3 to 4 times in a day, is indicated in case of kasa (cough) and swasha (breathless ness/ bronchial tree diseases).

- In Bhavaprakasha nighantu the kalka (paste) prepared out of seeds rubbed in water is applied over the affected area in case of hair loss.

Description of Parijata in modern era and in botanical literatures

Ayurvedic literatures written in modern era such as..... were also describing Parijata with its different aspects like group, synonyms, plant description and morphology, flowering season, traditional pharmacological properties, used parts, dose and therapeutic use. The descriptions are very much similar with ancient and medieval era as described earlier hence it is not elaborated more.

Botanical description

Because of the bio-medical importance of the said drug it is a matter of interest for the researchers of basic sciences like chemistry, botany etc. hence available botanical descriptions are tried to explore.

Various texts like, Indian medicinal plants, Indian Materia Medica, Wealth of India etc. are reviewed for the description of the drug which is as follows.

Table: 3 shows the therapeutic use of *Parijata* [5, 8, 9, 10, 20]

Sl.No.	Therapeutic use	Name of text with reference
1.	Jwaraghna	Shaligram nighantu, priya nighantu, Data base of Medicinal plant, GOI
2.	Yakrut, pliha vruddi	Priya nighantu
3.	Krimi Priya nighantu	
4.	Gridrasi	Priya nighantu, Data base of Medicinal plant, GOI
5.	Vataghna	Raj nighantu, priya nighantu
6.	Sandi-vataghna	Raj nighantu, Data base of Medicinal plant, GOI
7.	Vedana-sthapana	Data base of Medicinal plant, GOI
8.	Jantughna	Data base of Medicinal plant, GOI
9.	Kaphagna	Data base of Medicinal plant, GOI
10.	Sweda janana	Data base of Medicinal plant, GOI
11.	Vishaghna	Data base of Medicinal plant, GOI
12.	Deepana	Data base of Medicinal plant, GOI
13.	Twak roghara	Shaligram nighantu
14.	Kasa-hara	Shaligram Nighantu
15.	Prameghna	Sushruta samhita
16.	Lekhana-karma in kustha as Anu- Shastra	Sushruta samhita

Classification of study drug :-¹²

Kingdom	:	Plant
Order	:	Lamiales
Family	:	Oleaceae
Genus	:	Nyctanthus
Species	:	Arbortristis

Characters of *Nyctanthus arbor-tristis*:-¹³

- Tree is erect shrubs, unarmed.
- Leaves are opposite, ex- stipulate, usually simple, entire, pinnately veined or trifoliate.
- Flowers are bisexual, regular sometimes polygamous usually in trichotomous, terminal or axillary cymes or panicles rarely fascicled or racemose.
- Calyx is small, free, truncate or lobed.
- Corolla is usually gamo-petalous, and valvate, tube is medium to short.
- Stamens are two, epipetalous, filaments usually short. Ovary is free, two celled ovules, 1 or 2 present in each cell, style short, stigma bi-lobed.
- Fruit- A Loculicidal capsule, or indehiscent, or a succulent berry or drupe. Seeds are solitary or 2 in each cell, erect or pendulous, albumen fleshy.

Vernacular Names:-¹⁴

English	:	Night jasmine, coral jasmine,
Hindi	:	<i>Parja, Har, Siharu, Harsing har, saherwa, seoli, Nibari, Shefali.</i>
Kannada	:	<i>Parijata, harashingar</i>
Odia	:	<i>Shingadahar, harashingar, gangaseuli, jharasephali</i>
Tamil	:	<i>Pavilamalligai, manja-pu, pavazahamalligai</i>
Telugu	:	<i>Pagadammali, swetasarasa, paghada, karchia, karuchiya</i>
Malayalam	:	<i>Pavilamalli, parijatam, pavizhamalli, parijatakam</i>
Marathi	:	<i>Khurasli, Parijataka, Purijat</i>

Chemical Constituents:-¹⁵

Following chemical constituents are found in *Parijata* D-Mannitol.

Mannitol is an organic compound. Mannitol is used clinically to reduce acutely raised intracranial pressure and used as an

osmotic diuretic agent and a weak renal vasodilator.

Tannin

Tannins are astringent, bitter plant polyphenols that either bind and precipitate or shrink proteins and various other organic compounds including amino acids and alkaloids.

Linoleic Acid

Linoleic acid is an unsaturated omega-6 fatty acid. It is a colorless liquid. Linoleic acid is beneficial in Cystic fibrosis, Cancer Prevention, Dermatitis and Diabetes. Research activities prove that linoleic acid acts as anti-inflammatory, acne reductive, and moisture retentive properties when applied topically on the skin.

Different parts of the plant *Parijata* contains following phyto-chemicals:-¹⁶

- Flowers: - Essential oil, nyctanthin, d-mannitol, tannin, glucose, caratenoid and glycosides are present in flowers.
- Seeds: - Arbortristoside A and B, glycerides of linoleic, oleic, stearic, palmitic and myristic acids, nyctantic acid and a water soluble polysaccharide composed of D – glucose and D – mannose are present in seeds. It also contains 15% of a pale yellow-brown oil, nyctanthic acid and beta-sitosterol.
- Leaves:- B-Sitosterol, nyctanthic acid, tannic acid, methyl salicylate, mannitol, ascorbic acid, carotene, linoleic acid, glycosides, 6-beta-hydroxyloganin, benzoic acid, glucose, fructose, flavonol, triterpenoids, and some trace of volatile oils are present in leaves,
- Flower oil: - α -Pinene, P-Cymene, L-hexanon, phenylacetaldehyde, and l-decanol are present in flower oil of the plant.
- Stem: - glycosides, B-glucopyranosyl, α -Xylo-phranoside and B – Sitosterols are present in stem.
- Bark: - Methyl-D-glucose, methyl-D-Mannose, arbortristoside A,B,C and iridoid glycoside-nyctanthaside, glycoside and alkaloids

Modern Pharmacological properties:-¹⁷

Due to presence of lots of chemicals and phyto-chemicals it has a many pharmacological

actions like Analgesic, Anti-inflammatory, Anti-spasmodic, Anti-viral, Anti-allergic, Anti-fungal, Anti-bacterial, Anti-pyretic, Immunomodulator, Insecticidal, Respiratory stimulant and Anti-malarial

Different medical uses described in modern literatures:-¹⁸

- The leaves are bitter and pungent in taste. It is used to treat fever, fungal skin, infection also used as antibacterial, anti-inflammatory and antihelminthic. Bitter leaves extract is given to children for the expulsion of roundworms and threadworms. Leaf juice is used in sciatica, rheumatism and fever, as an antidote for reptile venoms and snake bite. The flowers are bitter and astringent it is used in ophthalmic diseases and as carminative.
- It is used in obstinate remittent fever, sciatica, and rheumatism. Because of mild purgative in nature it is very useful in constipation of children.
- It is used in treatment of bronchitis and also as an antidote to snake bite.
- In India, Indonesia (Java) and Malaysia, the flowers are used medicinally to provoke menstruation.
- The bark of this tree is used in eye diseases, ulcers and as expectorant. Bark decoction is used for bleeding gums.
- The seeds, leaves, flowers of *Nyctanthus arboristis* possess hepato-protective, anti-leishmanial, immune-stimulant, antiviral and antifungal activities.
- The fresh leaves are also used for the preparation of homoeopathic medicines.

Different other commercial uses of the plant:-¹⁹

- The plant is cultivated for its fragrant flowers, useful to prepare different perfume and dyes. Locally the dye is also used for dyeing cotton cloth and as a cheap substitute for saffron in coloring the robes of Buddhist priests.
- For dyeing, fabrics are immersed in a decoction of the corolla tubes. They impart a beautiful orange, yellow or golden colour like saffron, but the colour is easily washed out, and will fade rapidly in the sun. To make the colour more permanent, lime juice or alum is added to the dye bath. Then the colour is

moderately resistant to light, soap, alkali and acid.

- The bark may be used as a tanning material and the leaves are used for polishing the ivory also used like sandpaper to polish wood.

DISCUSSION

Parijata has been used for different medical as well as domestic purposes since more than hundred years. Due to its broad spectrum use in health management it is described in all most all ancient literatures regarding its identification, morphology, sources, availability, dose and therapeutic use. For exploring its therapeutic and bio-medical utility the current botanical and other contemporary literatures are also reviewed and very useful materials are found such as chemical constituents, scientific classification and morphology, habit and habitat, therapeutic and commercial use etc. the plant is well tolerated in large range of climatic conditions hence the plant extends from northern Pakistan and southern Nepal through northern India and south east to Thailand and also in other parts of the world. As per the traditional pharmacology, due to tikta rasa, ushna virya and laghu guna it is used in kapa vitiated diseases. Due to ushna virya it is used in vata diseases. Also due to tikta rasa it causes pacifying of the *amadosa* and excess *jathara-pitta* (gastric acids), in turn body temperature is reduced. Due to its serrated edge of its leaf, leaves are used as anu-shastra in Sushruta Samhita. It is observed that leaves are mostly used for medicinal purposes in comparison to other parts of the plant. Due to tikta rasa and ushan virya leaves are the drug of choice in chronic fever. Corolla is mostly used for commercial purposes in comparison to other parts of the plant. On chemical and phyto-chemical analysis it is found that, the plant contains many active principles as well as different bio-markers. B-Sitosterol, nyctanthic acid, tannic acid, lenolic acid, D-mannitol and oleic acids are richly found in leaves, may be responsible for its high therapeutic efficacy. Multi active ingredients present in different parts of the plant may be the cause of its broad spectrum therapeutic use. It is proven that lenolic acid have anti-inflammatory effect. Over all *Parijata* is a very important herbal medicine now and then.

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