

KAMALA—THE NATIONAL FLOWER OF INDIA—ITS ANCIENT HISTORY AND USES IN INDIAN MEDICINE

R. MITRA and L. D. KAPOOR

Central Council for Research in Indian Medicine and Homoeopathy Unit,
National Botanic Gardens, Lucknow.

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Kamala referred to as Indian Lotus in modern literature is considered as a sacred plant and is one of the important drugs of the indigenous system of medicine. *Kamala* entered into Indian art of all ages and all religions as a conspicuous decorative element and auspicious symbol. Ancient Sanskrit literature and Āyurvedic texts have used the Sanskrit name *Kamala* for *Nelumbo nucifera* Gaertn. (Family : Nelumbonaceae under Nymphaeaceae), of Bentham and Hooker which is an aquatic herb with large peltate leaves and large white or pink flowers having numerous petals. The present communication deals with the ancient history of the flower and the drug, its application in art and literature along with its nativity, distribution and uses in indigenous system of medicine,

Kamala is one of the important drugs of the indigenous system of medicine, largely used as cooling, astringent, diuretic, sedative, refrigerant and expectorant. The whole plant is considered sweet, slightly bitter, acts as a general febrifuge, tones the breast, removes worms, allays thirst and biliousness and is useful in burning sensation of the body, piles, strangury and leprosy. It has been mentioned in the *R̥gveda*¹, under the name of *Puṇḍarīka*, and later in *Yajurveda* and *Atharvaveda*². In the *Atharvaveda*, the human heart is compared with the *kamala*.

Every part of the plant has a distinct name and almost all parts are used medicinally supplying one or more drugs. The whole plant with flowers is known as *Padmīnī*, the rhizome is known as *kamalakand*, the tender leaves as *sambartika*, the peduncle as '*mṛṇāl*' or *viṣa*, the stamens as *kiñjalka*, the torus as '*padmakṣa*', the seeds as '*Karṇika*' or *padmākṣya*; and the honey formed in the flowers by the bees feeding upon *padma* is known as *makaranda* or *padma-madhu*.

Kamala or *puṇḍarīka*, referred to as Indian lotus in modern literature, is considered as a sacred plant among Hindus and has obtained a unique place in their mythological fables and religious ceremonies. It has played a prominent part in the mythology of Brahamanism. The Buddhists and the Jainas have also accepted the flower as sacred. The flower conveyed a special significance to the yogis and tāntriks. The yogis use it as a symbol to depict various cardinal points of the human body.

In the *Brāhmaṇas* the lotus first appears associated with the creator *Prajāpati* in cosmogonic myths. Thus the *Taittirīya Brāhmaṇa* tells how *Prajāpati* designing to evolve the universe, which in the beginning was fluid, saw a lotus leaf standing erect out of the water. Thinking that it must rest on something, he dived in the form of a boar, and finding the earth below, broke off a fragment ; then he rose with it to the surface, and spread it out on the leaf. Again the *Taittirīya Āraṇyaka* relates that when the universe was still fluid, *Prajāpati* alone was produced on a lotus leaf³.

Later in the epic poetry of the *Mahābhārata*, *Brahmā*, the creator, is described, as having sprung from the *kamala* that grew out of Viṣṇu's navel, when that deity lay absorbed in meditation⁴. The *kamala* is thus also connected with Viṣṇu, one of whose names is accordingly *Padma-nābha*, *Padma* being one of the synonyms of *kamala*. The *kamala* seat and pedestal have an almost universal application with the figures of Hindu mythology. The three great gods of the Hindu religion, *Brahmā*, Viṣṇu, Śiva, with their respective consorts, *Sarasvatī*, the goddess of learning ; *Lakṣmī*, the goddess of fortune and beauty ; and *Pārvatī*, the Śakti and several other Indian Gods are represented on a lotus seat. Viṣṇu's idol is always shown holding a *kamala puṣpa* (flower) in one of his four hands. For all female deities, the bud or flower of *Puṇḍarīka* is a must symbol in one of their hands. In *Mahābhārata* there is a myth relating that from Viṣṇu's forehead sprang a *padma*, out of which came *Srī*, another name for *Lakṣmī* ; hence it is known as *Srīpuṣpa*. In *Mahābhārata*, in the account of Mount Kailash, it has been described that the river *Mandākinī* and the lake *Nalinī* were covered with this flower.

Primarily the lotus flower appears to have symbolized for the Aryans from very remote times the idea of super-human or divine birth, and secondarily, the creative force and immortality. The traditional Indian and Buddhist explanation for it is that the glorious lotus flower appears to spring not from the sordid earth but from the surface of the water and is always pure and unsullied, no matter how impure may be the water of the lake. It thus expresses the idea of supernatural birth, and the emergence of the first created object from the primordial waters of chaos ; hence also the flower was regarded as the matrix of the Hindu creator *Nārāyana*, and his later form as the God *Brahmā*⁵.

The *kamala* or *padma* entered into Indian art of all ages and all religions as a conspicuous decorative element. It appears thus on the oldest architectural monuments of Buddhism as well as, later on, those of Jainism and Hinduism all over India. As regards its application in religious art, this flower figures on all the Buddhist monuments which came into being in different parts of the country about 200 B.C. The most striking example is exhibited in the figure of the Goddess *Lakṣmī* in the Buddhists sculpture at Udaigiri, Sanchi, where it is frequently repeated on the gateways of the great *stupa*. She is portrayed sitting or standing on a *kamala* flower and holding up in each hand a flower, which is watered by two

elephants from pots raised by their trunks. Buddha began to be represented in sculpture from about beginning of our era and his image constantly appears sitting cross legged on a *padma-āsana*.

The use of *padma-āsana* has been extended to images of *bodhisattvas* not only in India, but in Buddhist countries beyond its borders. In a modern Tibetan picture, Maitreya is depicted on *kamala-āsana* and the figure of a Persian—*bodhisattva* sitting on a seat adorned with this flower was also discovered. Even in China, the *bodhisattva* Avalokiteśvara occurs sitting on a *kamala-āsana*, and in Nepal also as standing on a *kamala* pedestal. Thus the lotus flower has also been considered sacred in Tibet and China.

For the Sanskrit poets, the *kamala* or *padma* is the emblem of beauty to which they constantly compared the beauty of their heroines. In *Kumāra-sambhava*, Kālidāsa⁵ has compared the arms of Pārvaī with *mṛṅāl*, *mṛṅāl* being the peduncles of *padma*.

Thus there is no exaggeration in saying that the Indian Lotus has enjoyed an unparalleled popularity throughout the length and breadth of India from the earliest times down to the present day.

Ancient Sanskrit literature, *Nighanṭus*, *Samhitās* and other Āyurvedic texts have used the Sanskrit name *puṇḍarīka* for *Nelumbo nucifera* Gaertn. syn *N. speciosum* Willd. belonging to Family Nelumbonaceae under Nymphaeaceae of *Bentham and Hooker*. *N. nucifera* is an aquatic herb with creeping and stout rhizomes and peltate and orbicular, large, smooth, long petioled leaves which are floating as well as aerial, and with large scented flowers having numerous petals. There are two forms: one with white flowers, and the other with pink or reddish pink flowers. The white flowered form is more commonly called *puṇḍarīka* or *śveta kamala* and the pink or red flowered one as *kokanad* or *rakta kamala*. The *puṣkara*, *nīlkamal*, or *indivara* of Āyurvedic texts and ancient literature (*Rgveda*, *Atharvaveda*, *Rāmāyaṇa*⁶, *Mahābhārata*⁷) is probably a blue flowered species of *Nymphaea*, a related plant.

Different names have been mentioned in other Āyurvedic texts for *puṇḍarīka* or *kamala*. It is known in Sanskrit as *padma*, *pañkaja*, *pañkeruha*, *abja*, *ambhoja*, *ambuja*, *sarasa*, *jalodbhava* (all meaning that it grows in water), *Śatapatra*, *Śatadal* or *sahasrapatra* (i.e. it has numerous petals), *uryavikaśī* (flowers in the morning), *śrī*, *aravinda*, *utpala*, *nalika* and *biṣprasun*⁸. In Bengali and Hindi it is more commonly known as *padma*, *kamala*, *pañkaja*. It is known as *tamara* in Telegu, *aravindam* in Malayalam, *nelum* in Sinhalese, *nīlifer* in Arabic and Persian, *nelumbo* in French, *Pectige Nelumbo* in German and Sacred Lotus, Indian or Egyptian Lotus or Pythagorean bean in English⁹⁻¹⁵.

Nelumbo nucifera, is distributed in warmer parts of India and Pakistan and is also found in Persia, Sri Lanka, China, Cochin-China, Japan, Malay Islands, Philippines, Moluccas and throughout Nepal Terai. It is also found in tropical Australia.

A yellow flowered species, *Nelumbo lutea* Willd. is native to North America being distributed in Atlantic North America and southwards to Columbia¹⁶.

The nativity of *Nelumbo nucifera* is rather controversial. Actually which place is the original home of *Nelumbo nucifera* is rather doubtful. Starbo and Theophrastus recorded the plant as a native of Egypt as the sculptured representations of it abound among the ruins of Egyptian temples, and as many other circumstances proved the veneration paid to this plant by the votaries of *Iris*⁹.

In America, *Nelumbo nucifera* has been commonly regarded as Sacred or Egyptian lotus. But Pickering, Pleyte, Joret and Schweinfurth from the botanical side and Wilkinson among archaeologists unite in the opinion that *Nelumbo* is never found on the ancient monuments of Egypt and that was not known in Egypt before the advent of the Persians. (In Wills' Dictionary of Flowering Plants and Ferns, as revised by Airy Shaw, p. 762, 1966 it is mentioned that *N. nucifera* Gaertn. was introduced into Egypt in 500 B. C., but it no longer occurs in the Nile.) Not until the Roman period did it find a place in Egyptian art. The lotus of the Palmy days was a water-lily native to the Nile Valley and Delta. Herodotus mentions that two varieties of water-lilies, which the Egyptians called lotus, sprang up in the water. The roots were collected by the people, dried, powdered, baked and eaten as bread. This evidently refers to a *Nymphaea*. He goes on to mention other lilies which are like roses with fruit like a wasp's nest and edible seeds of the size of an olive stone. This is evidently *Nelumbo nucifera*. Wilkinson, therefore, opines that there is no evidence of *Nelumbo nucifera* having been sacred to Egyptians much less an object of worship¹⁷. According to Bailey¹, China and Japan are the recognised homes of *N. nucifera*.

Fossil records of *Nelumbo* occur right from Cretaceous upto Pleistocene. It has been reported from Southern and Western North America, Greenland, Central and Western Europe, Russian Far East, Northern Africa, Japan and India. Puri¹⁸ has described the first Indian fossil *Nelumbo* (as *Nelumbo nucifera* Gaertn.) from the Pleistocene of Kashmir. Lakhnapal¹⁹ has reported the fossil record of this plant from the early Tertiary rock of India. The presence of *Nelumbo* in the Tertiary of Assam is recorded on the basis of a few impressions of leaves and rhizome found in a collection from the Eocene beds near Damalgiri (25°32'N ; 90°7'E). These records furnish evidence in support of the view that the sacred *Nelumbo* is indigenous to India.

Kamala or *punḍarika* is used in Āyurvedic profession from early times. In Āyurvedic classics, copious references regarding the properties and uses of the drugs are found. In the old *Samhitās* like *Caraka*²⁰, *Suśruta*²¹ and *Vāgbhaṭa*²² it has been described as sweet, cooling, astringent, demulcent useful in dysentery, diarrhoea, in burning sensation during fever and also in curing *kapha* and *pitta*.

उत्पलं कुमुदपद्मं किञ्जल्कं संग्राहिकरत्नपित्तप्रशमानानम्

(च. सं.)

सत्तिकं मधुरं शीतं पद्मं पित्तकफापहम्

(सु. सं.)

In *Bhāvaprakāśa*²³ it has been described as

कमलं शीतलं वण्यं मधुरं कफपित्तजित्
तृष्णादिदाहास्त्रं विस्फोटं विषवीसर्पनाशनम् ।
विशेषतः सित्तं पद्मं पुण्डरीकमिति स्मृतम्
रक्तं कोकनदं ज्ञेयं नीलमिन्दीवरं स्मृतम् ।
धवलं कमलं शीतं मधुरं कफपित्तजित्
तस्मादल्पगुणं किञ्चिदन्यद्रक्तोत्पलादिकम् ।

In *Bhārata Bhaiṣjya Ratnāvalī*²⁴ the properties and uses of the different parts of *punḍarīka* are described as :

श्वेतकमलं किञ्जल्कं सम्पिष्टं तण्डुलाम्बुना
मत्स्यपित्तमधुसंयुक्तं क्षिप्रं हन्ति प्रवाहिकाम्
कमलं सुरसामूलं लिप्तं हन्ति शिरोरुजम् ।

According to other *nighantus* and experts on Āyurveda also, the white variety is more efficacious than the other varieties of *kamala* and it is regarded as cooling, sweet, slightly bitter, astringent, improving the complexion, acting as a nervine tonic, good for eye diseases and blood impurities and also curative of fatigue, fever, *kapha*, *pitta doṣas* and all types of cutaneous infections.^{19, 20, 26}

During the medieval and the later periods, the writers on *Unani Materia Medica* recognized the drug under the name of *nilufer*. They widely used it for the same properties as described in Āyurveda. Therapeutically they have also estimated the drug as highly diuretic, demulcent, aphrodisiac, cooling and useful in *kapha* and *pitta doṣas*, in throat troubles and chest complaints, and headache, acting as a tonic, curing jaundice, and bleeding piles. In combination with other drugs *nilufer* is used in high fever, tuberculosis and for various other disorders.^{9, 10, 26}

In modern indigenous practice also, the drug is valued as sweet, cooling, demulcent, diuretic, aphrodisiac, astringent, tonic and used for diarrhoea, dysentery, in burning sensation of the body, for nutritive purposes and other various disorders.^{9-14, 27-30}

It is worthwhile to mention some of the latest work that has been done on this drug. The effect of *kamalakanda chūrṇa* in functional uterine bleeding was

observed in the Department of Prasuti Tantra in Banaras Hindu University, Varanasi. The dose given was 3 to 6 *maṣkas* per day with cold water for 5 days according to the severity of the conditions. The patients responded quite well to the treatment. No toxic symptoms were noted³⁰. Recently pharmacological investigations carried out in the Pharmacology Department of Banaras Hindu University, Varanasi by Tripathi *et al*³¹, revealed that the drug possesses a powerful CNS depressant activity as well as central stimulant activity. This amply justifies the rationale of the use of the plant in mental diseases.

The drug also enters into a number of Āyurvedic and Unani formulations both compound as well as single drug preparations. *Aravindasava*, *mṛṇāladilepa*, *kamalakeśrādiyoga*, *utpaladi sṛtam*, *mahāpadmaka tailam* are some of the well known Āyurvedic preparations and *Sherebet-e-Giloye*, *Habba-Jawahar-Kafuri*, *Lakhlakha*, *Khuab-Awaar*, *Aksir-Khafkan* are some of the popular unani preparations.

It has already been mentioned that nearly all parts of *kamala* are used for various medicinal purposes. The rhizome, leaf, flower, fruit and seeds are sold in the market under different names in different parts of the country and used as food, in folk-lore medicine and also for other medicinal purposes which are in practice.

It may be worthwhile to touch upon some of the salient points in respect of the specific uses of various plant parts of this drug.

THE RHIZOMES are known as *hasinda*, *bhenrh* or *kamalkakri* and are sold in the market. The fresh rhizome is eaten for its nourishing and nutritive properties and also administered in diarrhoea and dysentery, in cutaneous infections, and in ringworms.

THE TENDER LEAVES are bitter, cooling, largely used as refrigerent in fever, in cephalalgia and the milky juice is administered in diarrhoea.

THE FLOWER is sweet, cooling, astringent and diuretic and is given in diarrhoea, in diseases of the liver, efficacious in cough, menorrhagia and in checking haemorrhage from bleeding piles.

THE PETALS and THE FILAMENTS are astringent and the latter are given in bleeding piles, and, in combination with other drugs, in menorrhagia.

THE PISTILS with black pepper are used as an antidote to snake poisoning. HONEY, known as *padma madhu* is beneficial to the eye diseases.

THE FRUIT which is commonly known as *kamalgatta* is sweet, slightly bitter, astringent and cooling, aphrodisiac sedative to the pregnant uterus, removes thirst, strengthens the body, acts as a tonic and also checks vomiting.

THE SEEDS made into paste are useful externally in skin diseases and leprosy.

In the conclusion it can be said that the Indian lotus or *kamala* which, according to Indian thought and culture, is the "visible expression of creative activity from waters of Creation", is a highly valued plant in Indian Medicine. Intimately associated with Indian mythology, it has served to the poet as the highest symbol of the poetry of life. To the sculptor, painter, craftsman it has provided an unending series of decorative motifs. It has conveyed a special significance to Hindus, to the Buddhists, to the Jains, to the tantriks and of course to the medical men. Symbolizing all that is truthful and pure, sacred and auspicious and beautiful and delicate it fully deserves the distinction and glory accorded to it by being declared as the National Flower of India.

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REFERENCES

- ¹ *Rgveda* 7:142:30: 425 Commented by Pt, Jaidev Sharma.
- ² *Atharvaveda* 2:106:165 Commented by Pt, Jaidev Sharma.
- ³ *Encyclopaedia of Religions and Ethics*; edited by James Hastings Vol, VIII : 142-146.
- ⁴ Ved Vyasa's *Srimadbhagwat Mahāpurān* Ch, 8/sh-14-19:P, 231.
- ⁵ Kalidāsa's *Kumara-sambhavam*, Ch, 5/sh-29.
- ⁶ Valmiki's *Rāmāyana* 1:31:7.
- ⁷ Vedvyasa's *Mahābhārata* 13:149/51; 13:149:19, 2:10:36, 1:67/95.
- ⁸ Raja Radha Kanta Dev, *Shabda-Kalpadrumah*, Choukhambha Sanskrit Series : 27, 40, 41, 164, 1961.
- ⁹ Dymock, W., Warden, C. J, H, Hooper, D., *Pharmacographica Indica* Calcutta; p, 7, 1891,
- ¹⁰ Kirtikar. K. R. & Basu, B. D. *Indian Medicinal Plants*; L. M. Basu, Allahabad Vol, I: 116, 1933.
- ¹¹ Khory, R. N, & Burm, M. D. *The Bombay Materia Medica and their Therapeutics*, Ranina's Union Press-143, 1887.
- ¹² Watt, G, *Economic Products of India*, Calcutta, Vol, 11; 805, 1883.
- ¹³ Dutt, U. C, *Materia Medica of the Hindus* : 110, 1922.
- ¹⁴ Sharma, P. V., *Dravya Guṇa Vijnān*, Choukhambha Press, Varanasi, Vol, 2 & 3 ; 446-448, 1966.
- ¹⁵ *The Wealth of India*, CSIR, New Delhi, Vol, VII : 7-9, 1966.
- ¹⁶ Bailey, L, H, *The Standard Cyclopaedia of Horticulture*, Mc Millan Co. New York, Vol, II : 2117, 1950.
- ¹⁷ Conard, H. S. *The Water Lilies* (A monograph on the genus *Nymphaea*), The Carnegie Institution of Washington, 1905.
- ¹⁸ Puri, G. S. Note on the fossil leaf of *Nelumbo nucifera* Gaertn. from the pleistocene (Karewa) deposits of Kashmir with a review of the fossil history of the Nymphaeaceae; *Indian Forester*, 76 : 343, 1950.

- ¹⁹ Lakhanpal, R. N, On the occurrence of *Nelumbium* in the tertiary of Assam, *J. Indian bot. Soc.* 34(3) : 222-224, 1955.
- ²⁰ *Caraka Samhitā* text with Hindi translation ; Motilal Banarasi Das, Ch. Pt-1 SU/Ch-27: Sh-112 : 235, 1948.
- ²¹ *Suśruta Samhitā* with Hindi translation, Motilal Banarasi Das, Su-Ch. 5.
- ²² Vāgbhaṭa, *Aṣṭāṅgahṛdayam*, Published by Tukaram Javaji 3rd edn. Chi-Ch-2/Sh-141 : 326, 1902.
- ²³ Bhava Misra, *Bhāvaprakāśa Nighanṭu, Pūrva Khaṇḍa*, Commented by B. G. Kaushik: 710-716.
- ²⁴ *Bhārata Bhaiṣajya Ratnākara* commented by Pt. Gopinath Gupta. Unjha Ayurvedic Pharmacy, Gujarat, Vol. 1-IV: 59, 104-105, 274, 698, 747.
- ²⁵ *Rāj Nighanṭu* cum *Dhanwantari Nighanṭu*, commented by N.V. Purandare, 156, Anandashram Press, Poona, 1925.
- ²⁶ Hakim Daljit Singh, *Yunani Siddha Yoga Samgraha*, 2nd edn. Vaidyanath Āyurvedic Bhavan Ltd: 1, 4, 5, 9, 16, 31, 35, 89, 1955.
- ²⁷ Nadkarni, A. K. K. M. Nadkarni's *Indian Materia Medica*, Popular Book Depot, Dootpapeswar, Bombay. 1 : 844, 1954.
- ²⁸ Dwivedi, V. N. *Bhavaprakāśa Nighanṭu*, Motilal Banarasi Das, Varanasi 276, 1949.
- ²⁹ Bhandari, C. R. *Vanausadhi Candrodaya*, 2nd edn, Bhanupura. Indore 5 & 6 : 1422-1423, 1949.
- ³⁰ Anonymous. Effect of *kamal-kand* and *lodhra chūrna* in disfunctional uterine bleeding. Bull. Post Graduate Institute of Indian Medicine, BHU., Varanasi, 1 : 37, 1967.
- ³¹ Tripathi V. J., Bhattacharya, S. K., Ray. A. B. and Das Gupta, B. Chemistry and Pharmacology of the major alkaloid and its degradation product, isolated from Indian Lotus, *Nelumbo nucifera*. Paper presented at the Tenth scientific seminar in Indian Medicine held at Institute of Medical Sciences, Banaras Hindu University from 5th to 8th April 1975.