

## Indigenous Dyes of the Madras Province

By K. CHERIAN JACOB, L. Ag., F. L. S.,  
*Agricultural Research Institute, Coimbatore.*

Dyeing is a very ancient industry and it is known that barbarians in remote ages painted their bodies with gay colours. It is difficult to decide as to which of the three countries, India, China and Egypt, was the first to learn the uses of vegetable dyes. Though India is one of the countries to originate the art, we have not gone far in improving it on scientific lines. The Westerners learnt the art from the East and step by step improved it to a fine degree in which their knowledge of chemistry was very helpful. With the first World War, aniline dyes, which are products of distillation of coal tar, replaced the vegetable dyes to a large extent. The advent of the Second World War has made the import of these dyes into India very difficult. The plight of handloom weavers of this Province is very hard and very high prices are demanded for the artificial dyes. This is an opportune time to study and develop this industry not only by a study of the chemical processes and skilful combinations of colours but also by a search for new plants that may yield dyes. Most of the important indigenous dyes of this Province, with the local names and short descriptions of the plants from which they are extracted, mordants and uses of the dyes are given below. It is hoped that it will be of assistance to those who are interested in this ancient industry which is full of scope for development.

### 1. Red and shades of red

1. *Catechu*. The dye is extracted from *Acacia Catechu* Willd. (Tam: *Kasikatti moram*; Tel: *Nalla sendra*) which is a moderate-sized deciduous tree with pale yellow flowers. It occurs in the deciduous forests of most of the districts in this Province especially in the Northern Circars. The chips of heart-wood of mature trees boiled with certain mordants yield a dull red dye. Mordants generally used are lime, alum, perchloride of tin and copper nitrate. This dye is much used by the calico printers of India.

2. *Sappan*. This dye is extracted from *Caesalpinia Sappan* Linn. (Tam: *Vorattangi*; Tel: *Bakanu Patanga*) which is a small thorny tree found under cultivation in some gardens in Madras, Courtalam, Coimbatore and other places. The wood yields a valuable red dye which is largely exported. The root is reported to yield a yellow dye. It is largely used with alum in calico-printing and in Madras for dyeing straw-plait for hat-making. In Pegu it is used for dyeing silk.

3. *Carthamine* is extracted from the flowers of *Carthamus tinctorius* L. (Eng: The safflower, wild or bastard saffron, African or American saffron; Tam: *Kushumba*; Tel: *Kusumba*) which is an annual herbaceous plant with large orange coloured flower heads, cultivated as dye-crop all over India and as an oil-seed in the Madras Province. It is grown extensively in the

black cotton soil areas of this Province and is not found wild anywhere. The florets are picked as fast as they appear and dried in the shade and pressed. The yellow colouring matter is washed off and the red colouring matter is extracted by dissolving in dilute alkaline solutions and is used in dyeing silk and wool.

4. *Gulnari* (Bengal) or *Basanti* (Cawnpore) is extracted from the flowers and seeds of *Cedrela Toona* Roxb. (Tam: *Tona maram*; Tel: *Nandhi chettu*) which is a large handsome tree common in the mountainous tracts of the Province. The flowers yield red and yellow dyes said to be used in Bengal and Mysore for dyeing cotton. The seeds yield a red dye. The colour is fleeting and apparently only used by the poorer classes for dyeing cotton cloth.

5. *Erythrina indica* Lamk. (Eng: Indian Coral-tree; Tam: *Mulmurukk*; Tel: *Badisa*; Mal: *Murukku*) is a striking tree in flower and of moderate size, armed often with prickles. It occurs throughout the Province often planted. The flowers are collected, dried and boiled in water to extract a red dye. The bark is also said to be used in dyeing.

6. *Majiti* (Garhwal) The dye is extracted from the flowers of wild *Impatiens Balsamina* L. (Eng: The Garden Balsam) which is an erect herbaceous annual of one to three feet high. It is found in hilly regions but at low elevations. Flowers yield a red dye. Some people use the juice of this plant mixed with alum to colour their eyes and nails.

7. *Henn* or *Henna* is prepared from the leaves of *Lawsonia inermis* L. (Eng: The henna plant; Tam: *Maruthani*; Tel: *Gorinta*; Kan: *Gorantu*) which is a shrub growing to eight feet in height with white flowers and small leaves. It is found in the deciduous forests of the Coromandel Coast and planted sometimes as a hedge plant in other places. Leaves are used in dyeing handkerchiefs in Rajputana and by certain classes of people for colouring beard, nails, etc.

8. *Kamala* is extracted from the red powder which covers the fruits of *Mallotus philippinensis* M. Arg. (Eng: The monkey face tree; Tam: *Kamela*; Tel: *Kunkuma*, *Kapila*) which is a small much-branched tree common in the deciduous forests throughout the Province. The red powder which covers the fruit yields a rich orange red dye known as *Kamala dye*. The extract prepared with soda imparts to silk a fine and durable flame colour without further addition or the use of mordants. It is employed in dyeing silk.

9. *A'l dye* is extracted from the roots of *Morinda citrifolia* L. (Eng: The Indian mulberry; Tam: *Nuna*; Tel: *Mogali*; Mal: *Manjanathi*) which is a small tree with white flowers and large fleshy fruits found in the coastal forests of the Northern Circars and the West Coast districts of this Province. Roots of fairly old trees give a red dye. The roots are mixed with a little sweet-oil and ground to powder in a handmill. Cloth is dyed by being boiled with this powder. The cloth is treated with alkaline earth, alum water,

decoction of myrobalan, etc. It is used for dyeing cotton cloth. The dye contained in the root-bark seems to be the best red, whereas that contained in the woody parts of the roots is more yellow than red.

10. *Morinda tinctoria* Roxb. (Tam : *Nuna* ; Tel : *Togari, Maddi*) is a moderate-sized tree found in all the dry districts of this Province. The wood and the bark of stem and root yield a red dye apparently identical with that of *M. citrifolia* L.

11. *Chay root* This dye is extracted from the root bark of *Oldenlandia umbellata* L. (Eng : Indian Madder ; Tam : *Chaya ver* ; Tel : *Chiri veru*) which is a small herbaceous plant with lilac flowers spreading on the ground and growing to six inches in height. It is common throughout this Province especially in waste places. It was in much cultivation for its dye at Nellore and Masulipatam many years ago. The root-bark of this plant, commercially known as chay root, yields the dye. Alum is used as mordant. In olden days handkerchiefs were dyed in Madras with this dye.

12. *Santalin* is extracted from the wood of *Pterocarpus santalinus* L. f. (Eng : Red Sanders-wood ; Tam : *Segoppu chondanam, Raktha chondanam* ; Tel : *Yerra chondanam*) which is a pretty and moderate-sized tree found only in limited areas. It occurs in the hills of Cuddapah, North Arcot and Chingleput districts. The wood contains a red colouring matter called *santalin* which is easily dissolved out by means of any alkaline solution and is used as a dye. This is used for dyeing textile fabrics, as colouring agent in pharmacy, for dyeing leather, for staining wood and also employed in India as a pigment for marking idols and the forehead in some caste ceremonies.

13. *Manjit* is obtained from *Rubia cordifolia* Linn (Eng : The Indian madder ; Tam : *Manjithi, Shevelli* ; Tel : *Manjishta*) which is a very scabrous climbing herb with ovate-cordate, 5—7 ribbed leaves. It is found in the forest regions throughout the Province. The stem is cut into very small chips which are carefully washed and boiled in water for six hours. The cotton cloth to be dyed for red is boiled for ten minutes in alkaline water made by the addition of some ash and then drenched several times in the dye. Alum is usually employed as a mordant.

14. *Lac-dye* (Tam : *Komburuki* ; Tel : *Kommaloka*). Lac is the resinous incrustation formed on the bark of twigs especially of *Schleichera trijuga* Willd. in this Province by the action of the lac insect, *Coccus lacca*. *Schleichera trijuga* Willd. (Tam : *Puvam* ; Tel : *Puska*) is a large tree occurring in most of the districts of this Province. Systematic inoculation of lac-insects and collection of lac are done by the Forest Department of this Province. The lac-dye has been in use from remote times not only for textile purposes but also as a pigment in cosmetics.

## II Yellow and shades of yellow.

15. *Annatto* is extracted from the seeds of *Bixa orellana* L (Tam : *Kurangu-manjal* ; Tel : *Jaffra chettu*) which is an evergreen shrub or small

tree cultivated and found wild especially in the West Coast districts and the Circars. The dye may be extracted from the seeds direct or from the pulpy matter which may be separated from the seeds by boiling and made into cakes. It is used to give a flesh colour to cotton and silk. It is also used for colouring butter.

16. *Adhatoda Vasica* Nees (Tam: *Adhatodai*; Tel: *Adasara*) is an evergreen shrub, often gregarious, growing to about eight feet in height. It is found in the Northern Circars and elsewhere, cultivated and run wild near villages. The leaves yield an yellow dye on boiling. It gives a greenish blue dye when combined with indigo. The dye is used for dyeing coarse cloth.

17. *Kanthal* is extracted from the wood of *Artocarpus integrifolia* L. (Tam: *Pila*; Tel: *Panasa*) which is a large tree, cultivated throughout India for its monster fruits. The heart wood yields an yellow dye. The colour is fixed, with alum and often intensified by a little turmeric. With indigo it gives a green colour. It is used to colour the Burmese priest's robes and also as an ordinary yellow dye in parts of Madras.

18. *The Tesu dye* is extracted from the flowers of *Butea frondosa* Koen. (Tam: *Purosu*, *Palasham*; Tel: *Palashamu*, *Motuku*) which is a moderate-sized tree met with in all dry districts in the deciduous forests. It is very conspicuous when in flower before the leaves appear. The flowers called *tesu* or *kesu* yield a brilliant but fleeting yellow dye. They are collected in March and April and sun-dried. The dried petals are separated and preserved or they are sometimes reduced to powder. Alum, lime or wood-ash makes the colour less fleeting. This dye is used for dyeing textiles.

19. The extract of *Kamala* prepared with soda imparts a fine and durable deep orange colour to silk (vide no. 8).

20. *Turmeric dye* is obtained from *Curcuma longa* L. (Eng: Turmeric; Tam: *Manjal*; Tel: *Posupu*) which is a herbaceous plant with large leaves and root-stock. A type with harder root-stock and much richer in the dye principle than in the ordinary condiment type, is grown wherever it is used as a dye. The main rhizome yields the dye. Alum purifies the colour and destroys all shades of red. Carbonate of soda and lime juice are mixed for getting a brilliant yellow. This dye is used in all kinds of textiles.

21. *Garcinia tinctoria* Dunn. (*G. xanthochymus* Hk. f.) (Tam: *Mukki*; Tel: *Iwara mamidi*) is a handsome evergreen tree of moderate size with very hard wood found in the forests of Northern Circars, Western Ghats, Nilgiris, North Travancore, etc. The bark is employed in extracting a bright yellow dye which is used in dyeing cotton.

22. *Mohonia Leschenaultii* Takeda (Eng: Indian barberry) is a large shrub with stiff, erect, corky-barked stems. It occurs in the hills of the

Western Ghats from the Nilgiris southwards, above 5000 ft. in shola forests. A yellow dye is extracted from the wood.

23. The dye contained in the woody parts of the roots of *Morinda citrifolia* L. is yellow (vide no. 9):

24. *Nyctanthes Arbor-tristis* L. (Eng: Night flowering jasmine; Hind: *Harsinghar*; Tam: *Parijatham*; Tel: *Pagada malle*) is a bushy shrub or small tree rough all over with stiff whitish hairs found in the deciduous forests of the Northern Circars; elsewhere it is planted. Flowers yield an yellow dye. It is largely used for dyeing tussur silk. Sometimes in combination with turmeric it is used for dyeing other silks. The white portions of the flowers yield a purple dye known as *Gulkama*.

25. *Terminalia Chebula* Retz. (Eng: Myrobalan or Indian gallnut; Tam: *Kodukkai*; Tel: *Karakka*) is a large deciduous tree found in all districts of the Province all over the forests. The dried fruits form the "Chebolic" or Black Myrobalan of commerce. The powdered rind of the fruits steeped in water is used as dye. A permanent yellow dye may be got with alum. This is used for dyeing cotton cloth.

*Grey* A mixture of the fruit and ferrous sulphate in certain proportions produces an iron grey colour.

*Black* The fruit is mixed with the pods of *Caesalpinia Sappan* to produce a black dye.

26. *Ulex europaeus* L. (Eng: Gorse or furze) is a thorny shrub of two to four feet in height. It is an European plant and has become completely naturalised in the Nilgiri and the Pulney hills at high elevations. Bark, flowers and young shoots yield an yellow dye. The dye is used for dyeing textile fabrics.

27. *Allium Cepa* L. (Eng: The Onion; Tam: *Venkayam*; Tel: *Vulli gaddalu*) is a bulbous herb with fistular leaves. It is cultivated throughout the Province for its edible bulbs. The dye is prepared by boiling a sufficient quantity of onion skins with some alum for half-an-hour. This gives a good yellow colour. The addition of tin will make the colour orange.

28. *Lichen dyes* Lichens are abundant in places above 2500 ft. in this Province, and are found in all mountainous places. Those that are growing on rocks are preferred to those growing on trees for dyeing purposes. It is used with wool for dyeing red, yellow and brown colours.

## (II) Blue and shades of blue

29. *Indigo* is obtained from *Indigofera tinctoria* L. (Eng: The Madras indigo; Tam: *Neelam*; Tel: *Nili*) which is a bushy shrub growing to six feet in height. It occurs in Circars, Deccan and Carnatic, cultivated or run wild. *Indigofera sumatrana* Gaertn. (Bengal indigo) is also grown in this Province for this dye. Leaves yield a blue dye. It was used for

dyeing all kinds of fabrics throughout the world before the advent of the German aniline dyes.

#### IV Green Colour

Green results from the mixing of blue and yellow in varying proportions according to the shade of colour required.

#### V Grey Colour

30. *Pteris aquilina* L. (Eng : Bracken fern). The rhizome of this fern is stout, creeping underground, producing leaves (fronds) two to five feet long and one to two feet broad. It is common in all mountainous tracts of this Province. Roots and young tops yield an yellow dye. One ounce of iron and two ounces of cream of tartar are used as mordant. A quantity of young tops is boiled for half-an-hour, strained and silk is boiled in the decoction for about an hour for dyeing grey.

31. The infusion obtained by steeping the powdered rind of the fruits of *Terminalia Chebula* Retz. in water, imparts a grey colour to cloth.

#### VI Black Colour

32. Black colour is obtained by using the dried fruits of *Diospyros peregrina* Gurke in combination with the rind of those of *Terminalia Chebula* Retz. and ferrus sulphate. The black colour is also obtained by mixing up the rind of *Terminalia Chebula* Retz. with the pods of *Caesalpinia Sappan* L.

#### VII Purple Colour

33. The white portion of the flowers of *Nyctanthes Arbor-tristis* Linn. yields a purple dye known as *Gulkama*.

#### VIII Brown Colour

By different processes with Nos. 1 and 31, brown colour is obtained.

#### References

- Listard, L. (1881) *Memorandum on Dyes of Indian Growth and Production*  
 Mairet, Ethel M. (1916) *Vegetable Dyes*  
 Watt, G. (1893) *Dictionary of the Economic Products of India.*