

OBSERVATIONS ON THE UTILISATION OF FOREST PLANTS BY THE TRIBALS OF POINT CALIMERE WILDLIFE SANCTUARY, TAMIL NADU

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ABSTRACT

This paper provides the available information on the usage of forest plants by the tribals called "Seenthikodivalaiyars" of Point Calimere Wildlife Sanctuary. The ethnobotanical values of 92 plant species are described under three heads a) edible plants, b) ethomedicine and c) miscellaneous plants. The need for the conservation of commercially harvested plants of ethnobotanical importance is also discussed.

INTRODUCTION

The Point Calimere Wildlife Sanctuary (10° 18' N; 79° 51' E) is situated at a low promontory on the Coromandel Coast in the Vedaraniyam Taluk of Thanjavur district (now., Nagapattinam Quaide-Milleth district), Tamil Nadu. Its area extends to 2401 hectares. The Sanctuary is bounded by the Bay of Bengal on the east, the Palk Strait on the south, in the west by salt swamps, called the Great Vedaraniyam Salt Swamp, and on the north by a narrow creek which connects the salt swamps to the sea on the east. The Point Calimere forest earlier called as the Vedaraniyam forest is perhaps associated with 'Vedas' the sacred scriptures of the Hindus. The vegetation of the sanctuary comes under 'Tropical dry evergreen forest' type (Champion and Seth 1968). Hussain *et al.* (1984) recorded 300 plant species

from this sanctuary among which 50% are herbs, the rest being climbers, shrubs and trees.

The human habitations in the area are restricted to Kodikkarai and Kodikkadu villages. The main occupation of the villagers is fishing and tobacco cultivation. The human habitation in the Kodikkadu village includes around 75 families of tribals called "Seenthikodi Valaiyars", the name being derived after 'Seenthikodi' botanically referred as *Tinospora cordifolia*, a climber in this forest, whose parts formed one of the important food sources for the tribals. At present the tribes called as 'Adivasis' a name given to them by the Gandhi Samarak Nidhi (Sarma 1976).

The local communities have been utilising many of the forest plants and their products as food, medicine and for their cultural value. Sarma (1976) recorded the use of some plants by the tribals of this area for their medicinal and food values. Ragupathy and Mahadevan

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(1991) recorded the use of 54 species by these tribals. This paper presents available information on the uses of 92 plants by the tribals of Point Calimere Wildlife Sanctuary. The ethnobotanical information is presented under three major heads viz., a) food plants b) ethnomedicine and c) miscellaneous plants. Based on the recent book "Dictionary of the Indian folk medicine and ethnobotany" (Jain 1991) and Ragupathy and Mahadevan (1991), uses are categorised into three groups viz., new Reports (*marked by one asterisk*), species already known in ethnobotanical literature; but its cited use in this paper is a new report (*marked by two asterisks*), and species that is already known in ethnobotanical literature with the use(s) as reported in this paper. The local name (Tamil), bahit, occurrence, medicinal, food and cultural values of each species are described. The herbarium specimens of plant species mentioned in this paper are lodged in the Bombay Natural History Society's field station at Point Calimere.

ENUMERATION OF PLANTS OF ETHNOBOTANICAL IMPORTANCE

(a) Edible plants

Edible fruits :

1. **Capparis zeylanica** L. (Capparidaceae); Adhantai.
Straggling shrub; occasional. Fruits edible (Shah 1984).
2. ****Carissa spinarum** L. (Apocynaceae); Kila-chedi.
Shrub; common. Ripe fruits edible.

3. **Coccinia grandis** (L.) J. Voigt (Cucurbitaceae); Kovai.

Climber; common. Ripe fruits edible (Maheshwari *et al.* 1981; N.P. Chaudhuri *et al.* 1985).

4. **Diospyros ferrea** (Willd.) Bakh. (Ebenaceae); Thuvarai.

Tree; common. Fruits edible (Ramachandran & Nair 1981b).

5. **Flacourtia indica** (Burm. f.) Merr. (Flacourtiaceae); Karukkai

Shrub; common. Fruits edible (Maheshwari & Singh 1984; Ramachandran & Nair 1981b).

6. **Manilkara hexandra** (Roxb.) Dub (Sapotaceae); Palamaram.

Tree; common. Fruits edible (Jain 1964; Singh & Singh 1981; Shah 1984).

7. **Opuntia dillenii** (Ker-Gawl.) Haw. (Cactaceae); Sappathikalli.

Shrub; occasional. Fruits edible (Ramachandran & Nair 1981b).

8. ***Phoenix pusilla** Gaertn. (Arecaceae); Iccham.

Shrub; common. Fruits are edible.

9. ***Securinega leucopyrus** (Willd.) Muell. - Arg. (Euphorbiaceae); Varupala.

Shrub; common. Fruits are edible.

10. **Scutia myrtina** (Burm f.) Kurz (Rhamnaceae); Thoradi.

Shrub; common. Fruits edible (Ramachandran & Nair 1981b).

- 11. *Syzygium cumini* (L.) Skeels** (Myrtaceae); Naval.

Tree; occasional. Fruits edible (Vartak 1959; Shah *et al.* 1981; Ramachandran & Nair 1981a, 1981b; Maji & Sikdar 1982; Bhujel *et al.* 1984; Maheshwari & Singh 1984; Lakshmanan *et al.* 1986).

- 12. *Zizyphus mauritiana* Lam.** (Rhamnaceae); Elanthai.

Tree; occasional. Fruits edible (Jain 1964; Shah *et al.*, 1981; Singh & Singh 1981).

- 13. *Zizyphus oenoplia* (L.) Miller** (Rhamnaceae); Sooraj.

Straggler; common. Fruits edible (Ramachandran & Nair 1981b; Maji & Sikdar 1982; Shah 1984).

Edible Vegetables

- 1. ** *Asystasia gangetica* T. And.** (Acanthaceae); Pacchatthi keerai.

Climbing shrub; common. Leaves cooked and eaten.

- 2. ** *Canavalia gladiata* DC.** (Fabaceae); Koliavaran kottai.

Climber; common. Fruits cooked and eaten.

- 3. *Carissa spinarum* L.**

Unripe fruits made into pickles (Ramachandran & Nair 1981b; Singh & Singh 1981; Nagar 1985).

- 4. *Coccinia grandis* (L.) J. Voigt**

Leaves and unripe fruits used as vegetable (Singh 1945; Jain & De 1966; Ball 1967; Singh & Maheshwari 1985).

- 5. *Momordica dioica* (Roxb. ex Willd.)** (Cucurbitaceae); Pazhupavai

Climber; common. Unripe fruits cooked and eaten (Vartak 1959; Singh & Singh 1981; Shah 1984).

- 6. *Mucuna pruriens* (L.) DC.** (Fabaceae); Poonaiikkali.

Climber; common. Seeds roasted and the powder eaten (Vartak 1959; Ball 1967; Shah *et al.* 1981).

- 7. *Rivea hypocrateriformis* (Desv.) Choisy** (Convolvulaceae); Musuttai.

Climbing shrub; common. Leaves cooked and eaten (Ramachandran & Nair 1981b).

- 8. *Sesuvium portulacastrum* (L.) L.** (Aizoaceae); Vankarachikeerai.

Herb; common. Stem cooked and eaten (Shah 1984).

- 9. *Suaeda maritima* (L.) Dumort.** (Chenopodiaceae); Umari.

Shrub; occasional. Leaves cooked and eaten (Saxena & Dutta 1975).

- 10. *Tamarinds indica* L.** (Caesalpiniaceae); Puli.

Tree; occasional. Fruit pulp used for cooking purposes (Shah 1984).

- 11. *Tinospora cordifolia* (Willd.) Miers ex Hook. f. & Thoms.** (Menispermaceae); Seenthil.

Climber; very common. Stem macerated, boiled in water and eaten (Shah *et al.* 1983).

- 12. *Vigna trilobata* (L.) Verd.** (Fabaceae); Kuttu mocchai.

Climber; common. Fruits cooked and eaten (Ramachandran & Nair 1981a).

(b) Ethnomedicine**Alterative****1. ** *Capparis zeylanica* L.**

Climbing shrub; occasional. Leaves cooked in gingili oil used as alterative.

Antidote**2. *Aristolochia indica* L. (Aristolochiaceae); Perumarunthu.**

Twiner; occasional. Juice of stem and root administered orally for snakebite (Singh & Maheshwari 1983; Sudhakar & Rolla 1985).

Arthritis**3. ** *Wattakaka volubilis* (L. f.) Stapff (Asclepiadaceae); Kurinja**

Climber; common. Leaf paste and lime externally applied to reduce inflammation at the joints.

Asthma**4. **Solanum trilobatum* L. (Solanaceae); Thuthuvalai.**

Climbing shrub; common. Leaves, flower and fruit half boiled and the extract administered orally to cure asthma.

Biliousness**5. ***Asparagus racemosus* Willd. (Liliaceae); Thanneermuttan.**

Climber; common. Decoction of rhizome administered orally to treat biliousness.

6. ** *Cardiospermum halicacabum* L. (Sapindaceae); Mudakkatthan.

Climber; common. Leaf paste ground with onion and salt consumed for biliousness.

7. ** *Cissus quadrangularis* L. (Vitaceae); Pirandai.

Shrub; common. Stem paste ground with salt and tamarind pulp consumed for biliousness.

8. ** *Hemidesmus indicus* (L.) R. Br. (Asclepiadaceae); Nannari.

Twiner; common. Stem ground with dry ginger and the extract administered orally for biliousness.

Boil**9. ***Jatropha gossipifolia* L. (Euphorbiaceae); Kattamanakku.**

Shrub; common. Latex gargled to cure ulcers of the mouth.

Bone fractures**10. ***Albizia lebbek* (L.) Willd. (Mimosaceae); Vagai.**

Tree; locally abundant. Powdered bark mixed with egg white and lime applied for bone fractures.

Child birth**11. ***Azima tetracantha* Lam. (Salvadoraceae); Sangalai-chedi.**

Shrub; common. Leaves ground with neem leaves administered orally to remove wastes after delivery.

12. ** *Tinospora cordifolia* (Willd.) Miers ex Hook.f. & Thoms.

Climber; common. Leaves half boiled and the paste applied on wounds. Stem extract administered orally to hasten the delivery.

Cold and fever

13. ****Anisomeles indica** (L.) Kuntze
(Labiateae); Pai-miratti.

Herb; occasional. Extract of the leaves administered orally to reduce cough and fever.

14. ****Dichrostachys cinerea** (L.) Wight & Arn. (Mimosaceae); Vidatthuvarai.

Large shrub; common. Root ground with dry ginger, rice, flour and *Indigofera longeracemosa* roots and the extract administered orally for fever.

15. ****Glycosmis pentaphylla** (Retz.) DC. (Rutaceae); Konchi.

Shrub; common. Leaves boiled in water and applied externally to reduce headache and fever.

16. ***Drypetes sepiaria** (Wight. & Arn.) Pax & Hoffm. (Euphorbiaceae); Veera-maram.

Tree; common. Extract of the root administered orally to reduce fever.

17. ***Indigofera longeracemosa** Boiv. ex Baillon (Papilionaceae); Avuri.

Shrub; common. Roots ground with dry ginger and the extract administered orally to cure cold and fever.

18. ****Ixora pavetta** Andrews (Rubiaceae); Kai-palai.

Tree; occasional. Bark ground with dry ginger and pepper and the extract administered orally to reduce headache and fever.

19. ****Maytenus emarginata** (Willd.) Ding How (Celastraceae); Vettalai.

Shrub ; Common. Root ground with dry ginger and *Indigofera longeracemosa* roots and the extract administered orally to reduce chest pain and fever.

20. ****Toddalia asiatica** (L.) Lam. (Rutaceae); Milakaranai.

Shrub; common. Root ground with dry ginger and *Indigofera longeracemosa* roots and the extract administered orally to reduce chest pain and fever.

21. ****Trichosanthes cucumerina** L. (Cucurbitaceae); Pai-pudalai.

Climber; common. Seeds ground with *Indigofera longeracemosa* roots and the extract administered orally to reduce fever and body pain.

22. **Vitex negundo** L. (Verbenaceae); Nocchi.

Shrub; occasional. Leaf juice inhaled to relieve from symptoms of cold (Jain & De 1966; Shah & Joshi 1971).

Dental complaints

- 23 ***Cleome aspera** J. Koen. ex DC. (Capparaceae); Naikkadugu.

Herb; common. Smoke obtained by frying the seeds directed to mouth to cure toothache.

24. **Ficus benghalensis** L. (Moraceae); Aala-maram.

Tree; rare. Milky juice of the plant externally applied to the teeth and gums to relieve from toothache (Nagendra Prasad & Abraham 1984; Negi *et al.* 1985; Rai 1985).

- 25. ***Thespesia populnea* (L.) Sol. ex Corr.**
(Malvaceae); Poovarasu.

Tree; locally abundant. Powdered bark used for cleaning teeth and prevent tooth diseases.

Disinfectant

- 26. *Cissus vitiginea* L.** (Vitaceae);
Panadappan.

Climber; common. Powdered stem mixed with coconut oil applied on wounds infected with worms (Chelladurai 1983).

Ear complaints

- 27. *Sansevieria roxburghiana* Schult. f.**
(Agavaceae); Marul.

Herb; rare. Oil obtained by heating leaves used to control pus formation in the ear (Ramachandran & Nair 1981b).

- 28. *Vanda tessellata* Hook.** (Orchidaceae).

Epiphytic shrub; rare. Oil obtained by heating leaves and flowers dropped in the ears to reduce earache (Nagendra Prasad & Abraham 1984).

Expectorant

- 29. ***Atalantia monophylla* (L.) Corr.**
(Rutaceae) Kattunaregam.

Large shrub; common. Juice of the fruit pericarp mixed with honey used in reducing cough.

- 30. ***Mukia maderaspatana* L.**
(Cucurbitaceae); Musumusukkai.

Climber; common. Leaves ground with rice flour administered orally as expectorant.

- 31. ***Solanum surattense* Burn. f.**
(Solanaceae); Kandan-katthari.

Herb; common. Leaves ground with betel leaves and *Azima tetraantha* leaves and the extract administered orally as expectorant in children.

Hair care

- 32. *Gmelina asiatica* L.** (Verbenaceae);
Kumulai.

Tree; common. Pulp used to remove lice from head (Chelladurai 1983; Sudhakar & Rolla 1985).

- 33. ***Phyla nodiflora* (L.) E. Greene**
(Verbenaceae); Poduthalai.

Herb; common. Juice of leaves and fruit mixed with pepper externally applied on head to clear dandruff and hair lice.

Insect Bite

- 34. ***Euphorbia tirucalli* L.**
(Euphorbiaceae); Tiruccalli.

Climbing shrub; rare. Latex externally applied for insect bite.

- 35. ***Vigna trilobata* (L.) Verd.**

Leaf juice orally administered to treat insect poison.

Injuries

- 36. *Croton bonplandianum* Baillon** (Euphorbiaceae); Rail-poondu.

Herb; common. Leaf paste mixed with lime externally applied on injuries (Singh & Pandey 1980).

- 37. *Pergularia daemia* (Forsk.) Chiov.**
(Asclepiadaceae); Utthamani.

Twiner; common. Leaf paste mixed with goat's milk externally applied on blisters in legs (Nagendra Prasad & Abraham 1984).

38. *Pongamia pinnata* (L.) Pierre. (Fabaceae); Pungamaram.

Tree; common. Powdered roots mixed with coconut oil and externally applied on sores (Janardhanan 1963).

Insecticidal

39. *Pavetta indica* L. (Rubiaceae); Pavettai.

Shrub; common. Smoke obtained by heating leaves helps to ward off mosquitoes.

Intestinal diseases

40. *Canthium parviflorum* Lam. (Rubiaceae); Karai.

Shrub; common. Leaf paste administered orally to control diarrhoea.

41. *Clitoria ternate* L. (Papilionaceae); Sanghu-pusphaam.

Climber; common. Fried and powdered seeds consumed to clear indigestion and other symptoms (Shah *et al.* 1983).

42. *Diospyros ferrea* (Willd.) Bakh.

Tree; common. Powdered seeds mixed with honey used in controlling diarrhoea.

43. *Ficus tsjakela* Rheede ex Burm. f. (Moraceae); Itthi.

Tree; rare. Unripe fruits eaten to control dysentery.

44. *Rivea hypocrateriformis* (Desv.) Choisy (Convolvulaceae); Musuttai.

Climbing shrub; common. Leaves half

boiled and mixed with salt and consumed to control diarrhoea.

45. *Tylophora indica* (Burm. f.) Merr. (Asclepiadaceae); Nanju-aruppan.

Climber; common. Decoction of leaves consumed to control dysentery.

Jaundice

46. *Phoenix pusilla* Gaertn.

Shrub; common. Meristematic portion of the stem powdered and eaten to cure jaundice.

47. *Phyllanthus amarus* Schum. & Thonn. (Euphorbiaceae); Keezhanelli.

Herb; common. Juice obtained from leaves and roots mixed with milk consumed for jaundice (Hemadri & Rao 1984).

Menstrual complaints

***Vigna trilobata* (L.) Verd.**

Twiner; common. Leaf juice mixed with ragi orally administered to control menstrual flow.

Pain

48. *Azadirachta indica* Juss. (Meliaceae); Vembu.

Tree; common. Decoction of the flowers drunken to relieve from body pain.

49. *Boerhaavia diffusa* L. (Nyctaginaceae); Mookaratai.

Herb; common. Leaves cooked and eaten to reduce body pain.

50. *Cassia occidentalis* L. (Caesalpinaceae); Ponnavarai.

Shrub; common. Leaves boiled in water externally applied to reduce pain due to thorn prick in legs.

51. ****Dioscorea pentaphylla** Heyne (Dioscoreaceae); Valli-kodi.

Climber; common. Paste of leaf and stem applied externally to reduce pain in joints.

52. ****Lannea coromandelica** (Houtt.) Merr. (Anacardiaceae); Odian.

Tree; common. Decoction of the barks of *L. coromandelica*, *Azadirachta indica*, *Vitex negundo* and *Jatropha glandulifera* mixed with water for postnatal bath to relieve body pain. Decoction is considered to have germicidal properties.

53. ****Mucuna pruriens** (L.) DC (Fabaceae); Poonaiikkali.

Climber; common. Seed paste externally applied to relieve from pain.

54. ****Trichosanthes tricuspidata** Lour. (Cucurbitaceae); Anacoruttay.

Climber; common. Fruit pulp externally applied on forehead to reduce headache.

Refrigerant

55. ****Cassia auriculata** L. (Caesalpinaceae); Avaram.

Shrub; common. Decoction of leaves consumed as refrigerant.

56. ***Cassia roxburghii** DC. (Caesalpinaceae); Senkonnai.

Tree; common. Decoction of leaves consumed as refrigerant.

57. ****Pithecelobium dulce** (Roxb.) Benth. (Mimosaceae); Kodukkapuli.

Tree; locally abundant. Decoction of leaves consumed as refrigerant.

58. **Phyllanthus reticulatus** Poir. (Euphorbiaceae); Poola.

Straggling shrub; occasional. Decoction of leaves consumed as refrigerant (Mishra & Sahu 1984).

Skin diseases ..

59. ****Aegle marmelos** (L.) Corr. (Rutaceae); Vila maram.

Tree; rare. Powdered rind of the fruits externally applied to cure scabies.

Stomach complaints

60. **Anisomeles indica** (L.) Kuntze.

Whole plant hung in the house is believed as stomachic for children (Sharma *et al.* 1979).

61. ****Crateva adansonii** DC (Capparaceae). Tam : Marvilingam

Tree; occasional. Leaves ground with dry ginger, betel leaves, garlic and *Azima tetracantha* leaves and the extract administered orally to cure stomachic in children.

62. ****Olex scandens** Roxb. (Olacaceae); Vella-veeran kodi.

Climbing shrub; common. Root ground with dry ginger and pepper and the extract administered orally to relieve from stomachache.

63. ****Salvadora persica** L. (Salvadoraceae); Vasamaram.

Tree; common. Roots ground with garlic, pepper and cumin seeds administered orally for indigestion.

Swellings

64. ****Aloe vera** L. (Liliaceae); Kathalai.

Shrub; occasional. Leaf paste applied to cure local swellings.

65. **Calotropis gigantea** (L.) R. Br. (Asclepiadaceae); Erukku.

Shrub; common. Leaves boiled in neem oil externally applied to reduce inflammation (Maheswari *et al.* 1980; Singh & Pandey 1980; Harja & Baishya 1981).

66. ****Crinum latifolium** L. (Amaryllidaceae); Vizha-mungil.

Herb; rare. Rhizome slices boiled and applied externally to reduce inflammation.

67. ***Crotalaria verrucosa** L. (Papilionaceae); Kilukilupai chedi.

Shrub; common. Powered seeds mixed with butter externally applied to reduce inflammation of scrotal sac.

68. ****Datura metel** L. (Solanaceae); Umatthai.

Herb; rare. Leaf paste mixed with rice flour externally applied to reduce inflammation.

69. **Lannea coromandelica** (Houtt.) Merr.

Leaves boiled in castor oil externally applied to reduce inflammation (Shah *et al.* 1983).

70. ****Premna serratifolia** L. (Verbenaceae); Pai-mullai.

Shrub; common. Leaf paste externally applied to reduce swellings and pain.

71. **Tamarindus indica** L.

Tree; occasional. Leaves boiled in salt

water and applied to reduce inflammation (Shah *et al.* 1983).

Throat complaints

72. ****Carmona retusa** (Vahl) Masam (Boraginaceae); Pakkuvetti-chedi.

Shrub; common. Leaf paste and camphor externally applied on throat to reduce throat pain.

Vermifuge

73. ****Azadirachta indica** Juss.

Tree; common. Leaf juice administered orally as vermifuge.

74. **Aristolochia bracteolata** Lamk. (Aristolochiaceae); Aduthinna-palai.

Herb; occasional. Powered seeds mixed with castor oil administered orally to kill parasitic worms in stomach (Singh 1945; Sudhakar & Rolla 1985).

75. **Gloriosa superba** L. (Liliaceae); Karthikai-kizhangu.

Climber; occasional. Rhizome considered as highly poisonous. Powered rhizome administered orally to kill intestinal parasites (Sharma *et al.* 1979).

Veterinary

76. ****Abrus precatorius** L. (Papilionaceae); Kundumani.

Climber; common. Seeds ground with tamarind seeds and the paste externally applied to cure swellings of throat in cattle.

77. ****Clerodendrum inerme** (L.) Gaertner (Verbenaceae); Paei-kalatthi.

Shrub; very common. Leaf juice

externally applied to eradicate ticks in goats.

(c) Miscellaneous plants

Basketry

1. ***Pachygone ovata** (Poir) Hook. f. & Thoms. (Menispermaceae); Parikodi.

Climber; occasional. Stem soaked in water used for tying bamboo fish traps.

2. ***Phoenix pusilla** Gaertn.

Shrub; common. Leaf fronds used in basketry.

Construction

1. ****Atalantia monophylla** (L.) Corr.

Stem used in the construction of houses.

2. **Borassus flabellifer** L. (Arecaceae); Panamaram.

Tree; occasional. Leaves used for thatching (Goel *et al* 1984; Ragupathy & Mahadevan 1991).

3. ****Manilkara hexandra** (Roxb.) Dub.

Stem used in the construction of houses.

Detergent

1. **Sapindus emarginata** Vahl (Sapindaceae); Poonthimaram.

Tree; occasional. Fruit pulp used for cleaning ornaments (Ramachandran & Nair 1981a).

Hemidesmus indicus, *Momordica dioica*, *Phoenix pusilla*, *Manilkara hexandra* and *Sapindus emarginata* need special mention here due to their commercial value. Parts of these plants viz., roots of *H. indicus* and rhizome of *G. superba* for medicine; fruits of *M. dioica*, for vegetable; fruits of *M. hexandra* for edible; fruits of *S. emarginata* for detergent and leaves of *P. pusilla* for basketry are collected in large quantities and transported to places outside this area. Commercial extractors employ the tribals and local villagers for the collection of parts of these plants. As these people are not properly educated in the art of collection, the unscientific way of collection of these plants from a limited locality will affect their regeneration and may even lead to extermination of some of these species in course of time. Therefore, it is suggested that the forest department may take the responsibility to prevent the indiscriminate collection of these species.

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DISCUSSION

Among the 92 ethnobotanically important species reported in this paper, the following six species viz., *Gloriosa superba*,

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