

Ethnomedicinal knowledge among *Malamalasar* tribe of Parambikulam wildlife sanctuary, Kerala

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The paper examines traditional uses of some plants used by the *Malamalasar* tribe of Parambikulam wildlife sanctuary in Palakkad district of Kerala state. Forests have provided tribals with enough material for use in the traditional medicine. During the survey of the tribal colonies, data on 80 medicinal plants used to cure common ailments were collected. From 80 selected medicinal plants, 10 species were found to be used for cuts & wound healing, 4 species for cough & cold, 4 species for treating snakebite, 4 species for headache, 4 species to control dysentery, 3 species for jaundice, etc. Details of the study have been enumerated.

Keywords: Ethnobotany, Malamalasar, Parambikulam wildlife sanctuary, Tribal medicine

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Ethnobotanical knowledge is very ancient in India. Systematic field and ethnobotanical investigations have been carried out by several researchers¹⁻⁶. Floristic content of Palakkad district is well documented, where Parambikulam Wildlife Sanctuary is located⁷⁻⁸. No attempt has been made in the past to gather and report the traditional dependence of the tribal people of the sanctuary on the vegetation and flora of the area⁹. The paper intends to illustrate the ethnobotanical knowledge of tribes inhabiting the sanctuary. Settlements of *Kadars*, *Malasars*, *Muduvans* and *Malamalassars* tribal groups are in the folds and flats of the mountain terrain of the area. Tribals are traditionally agriculturists and frequently collect non-wood forest products from the forests of Sanctuary. Parambikulam wildlife sanctuary is situated in Palghat district, with an extent of 274 km² within 76°35' and 76°50' E longitude and between 10°20' and 10°26' N latitude (Fig. 1). The sanctuary is contiguous with the natural forests of Sholayar and Vazhachal in Thrissur district of the state. The sanctuary is contiguous with forests of Anamalai's, Nelliampathis, Sholayar, High ranges and Palani hills. The major interception of the Western Ghats, namely the Palghat gap, lies North of this area. The area in

general has a slope towards West with the highest peak of Karimalagopuram (1,438 m) descending to the banks of Chalakkudy river (439.5 m). The sanctuary includes both hilly terrains with undulated plateau. The sanctuary spreads in the Sungam and Parambikulam valleys, which are well known for teak plantation.

Malamalassars tribes also known as *Mahamalassars* and *Malaimalassars* were a nomadic tribe, who shift frequently within a small area. They live in fragile huts called *Chalai* located in rock shelters/caves. In each settlement, there are 8-35 huts, while an area of about 2-5 ha has been allotted to each of the settlement for cultivation without removing the trees growing there. The huts in the hamlets are mostly

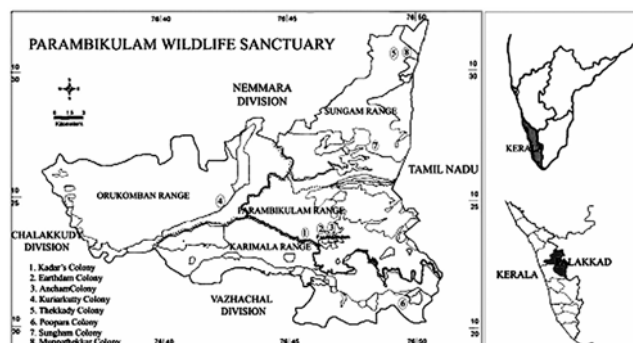


Fig. 1 — Location map of Parambikulam Wildlife Sanctuary

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made of locally available materials like bamboos, canes, branches of trees and thatching materials are grasses and leaves of *Ochlandra* sp. and *Phoenix* sp. The walls of the huts have skeleton made of bamboos and canes, often covered with mud and the floor is thinly plastered with cow dung. Tribals depend on forests for their day-to-day needs for food, shelter, clothing, water, fuel, oil, medicine, etc. Medicine is the second most essential requisite after food and for medicines; they depend on plants, which are the important sources of raw drugs. The knowledge is indigenous, which has been passed on orally from generation to generation with no written records. Recently, the demand on plant-based therapeutics has increased many folds in both developing and developed countries due to the growing recognition of no side effects and easily availability.

Methodology

The study was conducted during the year 2003-2005. The aim of study was to explore, collect, identify and preserve the wild and domesticated plants used by tribals as food, fodder, medicine, oil, tannin, gum, small timber, fuel, fibers, furniture, tools, musical instruments, etc. The data were collected from the tribals through participatory rural appraisal and questionnaire survey. The paper deals with the medicinal plants used by *Malamalasar*, one of the tribal groups of the sanctuary. Eldest persons and

tribal medicine men (*vaidyas*) were contacted to collect data on medicinal uses of plants for various ailments. Local names, plant parts used, mode of administration and disease cured were gathered. The specimens collected were identified with the help of floras and taxonomic revisions, monographs & other available field keys and incorporated in the herbarium of Kerala Forest Research Institute^{4,10-11}.

Results & discussion

Plants used medicinally with their scientific names, local names, methods of preparation, mode of administration and uses are listed alphabetically (Table 1). *Malamalasar* community was found to use 80 plant species in traditional medicine. The ailments included cuts and wounds, diarrhoea, vomiting, dysentery, skin diseases, burns & boils, fever, headache, cough, cold, colic, teeth & gum diseases, snakebite, insect bite, gastric and stomach disorders, etc. They were also found to use some wild plants like *Boerhavia diffusa*, *Cassia tora*, *Phyllanthus emblica*, *Garcinia gummi-gutta*, *Piper nigrum*, *Syzygium aromaticum*, etc. as medicine. They use parts of *Pterocarpus marsupium* (heart wood of stem & root) *Terminalia arjuna* (bark), etc. for the preparation of drinking water. Some edible wild plants growing as weeds such as *Leucas aspera*, *Cassia tora*, *Euphorbia hirta*, *Lantana camara*, *Sida cordata*, *Zingiber zerumbet*, etc. are omnipresent at various habitats.

Table 1 — Medicinal plants used by *Malamalasar* tribe

Plant name	Local name	Uses
<i>Abrus precatorius</i> L.	<i>Kunnikuru</i>	Pounded leaves are used to relieve cough, cold and colic.
<i>Achyranthes aspera</i> L.	<i>Kadaladi</i>	Powdered root mixed with equal amount of black pepper is given with honey as a remedy for cough.
<i>Aerva lanta</i> L.	<i>Cherupoola</i>	Roots are diuretic and demulcent.
<i>Ageratum conyzoides</i> L.	<i>Appa</i>	Leaf paste with calcium hydroxide is applied as wound healing agent.
<i>Aloe vera</i> Mill.	<i>Kattarvazha</i>	Fresh juice is used to treat insect bites, boils, burns and swellings.
<i>Alstonia scholaris</i> R. Br.	<i>Ezhilampala</i>	Latex obtained from plant is applied on burns and boils.
<i>Andrographis paniculata</i> Nees	<i>Neelaveppu</i>	Leaf juice is taken to treat jaundice; leaf paste for snakebite.
<i>Aristolochia indica</i> L.	<i>Karalagam</i>	Leaf juice is used to treat cholera, diarrhoea, and intermittent fevers; leaf paste is used for insect bites.
<i>Artabotrys zeylanicus</i> Hk.f.& Th.	<i>Manoranjitham</i>	Flower decoction is used for treating vomiting.
<i>Asclepias curassavica</i> L.	<i>Kakkathondi</i>	Flower juice is a good styptic.
<i>Asparagus racemosus</i> Willd.	<i>Chatavalli</i>	Leaf paste in combination with warm water baths is used to relieve scabies.
<i>Azadirachta indica</i> A. Juss.	<i>Veppu</i>	Bark, leaves and seeds are used to treat skin diseases & rheumatism. Fruit is used as purgative.
<i>Baliospermum montanum</i> Arg.	<i>Nagadhanthi</i>	Powdered root is taken internally to relieve indigestion.
<i>Bambusa bambos</i> L.	<i>Illi</i>	Poultice prepared from pounded young shoots is applied to infected ulcers to dislodge worms.

Contd —

Table 1 — Medicinal plants used by *Malamalasar* tribe — *Contd*

Plant name	Local name	Uses
<i>Biophytum sensitivum</i> DC.	<i>Nilathengu</i>	Root paste is applied as a wound healing agent.
<i>Bixa orellana</i> L.	<i>Kuppamanjal</i>	The fresh pulp is applied to burns to prevent blisters and scars.
<i>Boerhavia diffusa</i> L.	<i>Thazuthama</i>	Leaf juice is used as a lotion for treating ophthalmia.
<i>Brassica juncea</i> Hk. f. & Th.	<i>Kaduku</i>	Leaf and seed paste is applied on the forehead to relieve headache.
<i>Butea monosperma</i> Lam.	<i>Chamatha</i>	Raw leaf extract is used to treat diarrhoea; bark decoction for cough and cold; red juice from cut bark is applied to ulcers to relieve septic sore throat.
<i>Callicarpa tomentosa</i> L.	<i>Cheruthekku</i>	Aqueous leaf extract is used as antiseptic and to relieve itches.
<i>Calophyllum calaba</i> L.	<i>Punna</i>	Seed kernels for antibacterial properties and skin diseases.
<i>Calotropis gigantea</i> (L.) R.Br.	<i>Erukku</i>	Latex is applied on wounds caused by spines.
<i>Canarium strictum</i> Roxb.	<i>Kunkilyam</i>	Resin decoction/ powder is used for rheumatism, fever and cough.
<i>Cardiospermum halicacabum</i> L.	<i>Uzhinja</i>	Leaf extract is used as antiseptic.
<i>Cassia occidentalis</i> L.	<i>Kolthakara</i>	Root paste is used as a remedy for stomach disorder in children.
<i>Cassia tora</i> L.	<i>Thakara</i>	Pounded leaves as poultice on cuts and wounds to promote healing; ringworms, skin disease.
<i>Centratherum anthelminticum</i> (L.) Kuntze	<i>Kattujeerakam</i>	Seeds for treating snakebite and scorpion sting, seeds are also credited with diuretic properties.
<i>Clematis gouriana</i> L.	<i>Poovalli</i>	Fresh leaf juice for boils and itches.
<i>Coleus aromaticus</i> L.	<i>Panikkoorkka</i>	Leaf paste with coconut oil is applied on head and body to relieve common cold.
<i>Coscinium fenestratum</i> Colebr.	<i>Maramanjil</i>	Root and stem paste is used against jaundice.
<i>Cryptolepis buchanani</i> Roem. et Schult.	<i>Kattupalvalli</i>	Root pounded with that of root bark of <i>Cassia fistula</i> is used as to revive the nervous system paralyzed by alcoholic intoxication.
<i>Cyclea peltata</i> Diels	<i>Padakizhangu</i>	Root paste is a remedy for intestinal disorder and dysentery.
<i>Cymbopogon flexuosus</i> (Nees ex Steud.) Wats.	<i>Vasanapullu</i>	Aromatic oil is carminative; for flatulence and gastric irritability.
<i>Desmodium gangeticum</i> (L.) DC.	<i>Orila</i>	Root juice is used to check vomiting.
<i>Dillenia pentagyna</i> Roxb.	<i>Malampunna</i>	Fruit juice mixed with sugar and water is used as a cooling beverage in fever and cough.
<i>Echinops echinatus</i> Roxb.	<i>Ulkandaham</i>	Leaf paste is applied over the papule seen in skin.
<i>Eclipta prostrata</i> L.	<i>Kayyunni, Kanjanni</i>	Leaf paste is used for hair and its growth.
<i>Ensete superbum</i> (Roxb.) Cheesman	<i>Kaluvazha</i>	Seed powder to treat kidney stones and painful urination.
<i>Entada rheedei</i> L.	<i>Kakkumkai</i>	Bark & wood juice is applied externally to relieve ulcers.
<i>Eucalyptus camaldulensis</i> Deh.	<i>Eucaly</i>	Leaf paste/ juice is applied on forehead to relieve headache and common cold.
<i>Euphorbia hirta</i> L.	<i>Nilapala</i>	Plant juice is used to treat colic and dysentery; latex is applied to treat warts and ringworm.
<i>Garcinia gummi-gutta</i> Robs.	<i>Punampuli</i>	Syrup from the fruit is given to treat bilious disorders.
<i>Grewia tiliifolia</i> Vahl	<i>Chadachi</i>	Crushed bark is used for washing hair to prevent hair fall.
<i>Helicteris isora</i> L.	<i>Idampirivalampiri</i>	One or two drops of fruit boiled in oil are put to relieve earache.
<i>Hemidesmus indicus</i> (L.) R. Br.	<i>Nannari</i>	Root paste is applied on the forehead to reduce fever; root paste with sugar is given to children for cough and diarrhoea.
<i>Holarrhena pubescens</i> (L.) Wall.	<i>Kudakapala</i>	Stem bark is used for treating dysentery and stomachache.
<i>Ichnocarpus frutescens</i> (L.) R.Br.	<i>Palvalli</i>	Leaves boiled in oil are applied for relief from headache, fever and wounds between fingers.
<i>Jatropha curcas</i> L.	<i>Kottapacha</i>	Root bark decoction is used to rinse the mouth to relieve from toothache and sore throat; latex with salt for cold and cough.
<i>Lantana camera</i> L.	<i>Poopathi</i>	Leaf paste to heal wounds
<i>Leucas aspera</i> Willd.	<i>Thumba</i>	Leaf paste is applied on the forehead to relieve headache.
<i>Lawsonia inermis</i> L.	<i>Mailanchi</i>	Leaf decoction is used as gargle for sore throat.
<i>Mallotus philippensis</i> (Lam.) Muell.- Arg.	<i>Sindhoori</i>	Flower decoction is administered for expelling tapeworms.
<i>Maranta virgata</i> Wall.	<i>Vellakoova</i>	Rhizome paste in water is given thrice a day to cure stomach pain.

Table 1 — Medicinal plants used by *Malamalasar* tribe — *Contd*

Plant name	Local name	Uses
<i>Naravelia zeylanica</i> (L.) DC.	<i>Vathakodi</i>	Leaf paste applied is used as healing agent.
<i>Nicotiana tabacum</i> L.	<i>Pokala</i>	Leaves are used to check toothache.
<i>Ocimum americanum</i> L.	<i>Kattuthulasi</i>	Leaf juice to treat insect bite.
<i>Ocimum grattissimum</i> L.	<i>Kattuthruthavu</i>	Leaf juice is used to treat infantile cough, cold, catarrh, dysentery and skin diseases.
<i>Phyllanthus emblica</i> L.	<i>Nellikka</i>	Fruits are used as cooling agent.
<i>Phyllanthus amarus</i> Schum & Thonn.	<i>Kizhanelli</i>	Fresh roots are used for treating jaundice.
<i>Piper longum</i> L.	<i>Kattuthippali</i>	Fruits mixed with honey are used to treat bronchitis, cough & cold.
<i>Piper nigrum</i> L.	<i>Kurumulaku</i>	Aromatic stimulant is used to treat cholera, cough and fever.
<i>Pittosporum tetraspermum</i> Wt. & Arn.	<i>Analaivegum</i>	Root bark paste with cow's urine is taken internally against snakebite.
<i>Pterocarpus marsupium</i> Roxb.	<i>Venga</i>	Heart wood paste is used for body pain and diabetes.
<i>Pterocarpus santalinus</i> L.f.	<i>Rakhachandanam</i>	Wood paste considered as blood purifier is useful for curing skin diseases and poisonous affections.
<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz	<i>Amalpori</i>	Root extract is used to treat intestinal disorders.
<i>Rotula aquatica</i> Lour.	<i>Kaloorvanchi</i>	Plant decoction is used for urinary disorders.
<i>Sida cordata</i> (Burm.f.) Borssum	<i>Kurunthotty</i>	Leaf paste is applied as hair oil.
<i>Solanum surattense</i> Burm. f.	<i>Mullukathrikka</i>	Seeds placed in coconut are put on a hot iron block and the smoke is inhaled through mouth to treat decaying teeth.
<i>Syzigium aromaticum</i> Gaertn.	<i>Karayambo</i>	Bud is placed for treating decaying teeth.
<i>Terminalia arjuna</i> (Gaertn.) Roxb.	<i>Nir-maruth</i>	Fresh leaf juice is used to treat earache; powdered bark is used against heart troubles.
<i>Terminalia bellirica</i> Roxb.	<i>Thanni</i>	Bark is used as a diuretic.
<i>Terminalia chebula</i> Retz.	<i>Kadukka</i>	Fruit pulp as dentifrice to cure bleeding gums; promotes healing of chronic ulcers and wounds.
<i>Terminalia paniculata</i> Roth	<i>Vellamaruth</i>	Bark juice with clarified butter and rock salt is applied for the treatment of parotitis.
<i>Thottea siliquosa</i> (Lam.) Ding Hou	<i>Padamchurukki Alpm</i>	Roots and leaves are used as sedative for treating snakebite.
<i>Tribulus terrestris</i> L.	<i>Njerinjil</i>	Seed infusion is used to treat kidney stones, painful urination and genito-urinary disorders.
<i>Vanda tessellata</i> (Roxb.) Hook. ex D. Don	<i>Chekitola</i>	Leaf juice is used as eardrop to treat earache.
<i>Vitex altissima</i> L.f.	<i>Mayila</i>	Bark juice is used externally to relieve rheumatic swellings and chest pains.
<i>Wrightia tinctoria</i> Br.	<i>Danthapala</i>	Bark paste is given orally to children to expel worms.
<i>Zingiber zerumbet</i> (L.) Sm.	<i>Kattinji</i>	Rhizome decoction with pepper and cumin seeds is used as a remedy for fever.
<i>Ziziphus oenopia</i> (L.) Mill.	<i>Kottavalli</i>	Bark decoction is given to promote healing of fresh wounds.

Tribal people with their ancestral traditional knowledge infer what to eat and what not to eat. They are thoroughly acquainted with the methods of excluding the harmful substances from the wild plants. *Malamalasar* community is still using some medicinal plants as wild edible plants in their day-to-day life. The therapeutic activities of medicinal plants are due to the presence of certain chemical compounds called the secondary metabolites. The expression of these secondary metabolites is controlled and conditioned by a variety of factors, which include macro- and microenvironment, as well as the stage of growth and development of the plant. The chemical composition of such metabolites and their therapeutic activities are extremely important in the standardization of the herbal drugs.

The results of our survey showed that ethnomedicinal knowledge and its applications are

still alive in the colonies of the sanctuary. However, most of the knowledge acquired by the local people has been passed on to them by word of mouth from one generation to the next. Since written documentation is mostly lacking, this knowledge is in danger of being lost. The habitats, habits, plant parts used for different ailments and the diseases cured are presented graphically (Figs 2-5). Unscientific collection, over exploitation, clearing of land for agriculture and use of chemical herbicides put adverse effect on the natural vegetation. There is a gradual decline and deterioration of the traditional medicine in the traditional communities for ages. A scientific base updating the technology of this ethnomedicinal information together with research in traditional medicine is a very much essential to achieve the cherished goal of health.

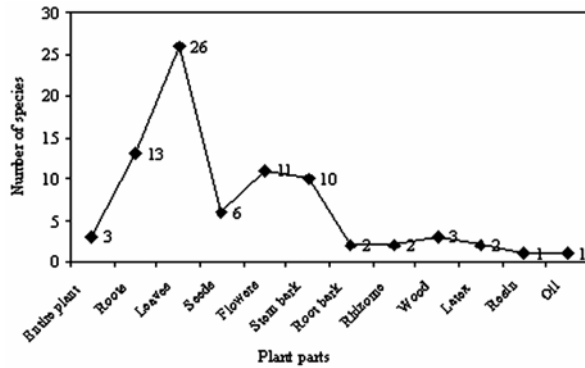


Fig. 2 — Plant parts used by Malamalasar tribe

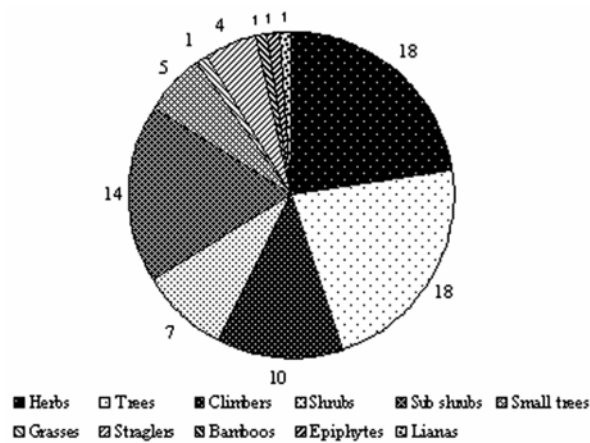


Fig. 3 — Habit of ethnomedicinal plants used by Malamalasar tribe

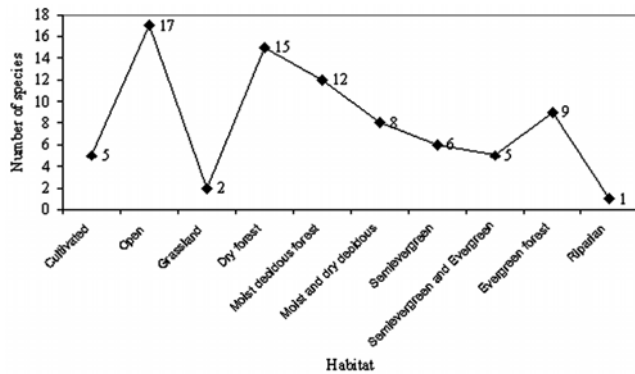


Fig. 4 — Habitat of ethnomedicinal plants used by Malamalasar tribe

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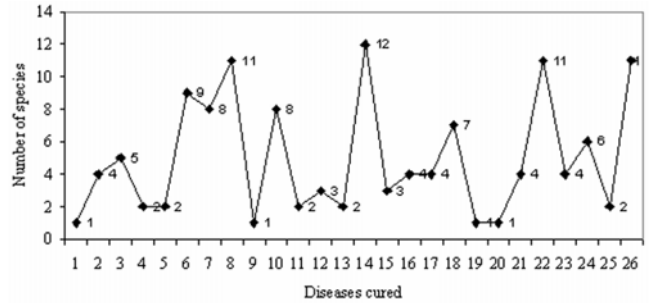


Fig. 5 — Diseases cured by ethnomedicinal plants used by Malamalasar tribe

1. Alcoholic intoxication, 2. Antiseptic, 3. Boils and burns, 4. Chest pain, 5. Cholera, 6. Colic and stomach disorder, 7. Common cold, 8. Cough and bronchitis, 9. Diabetes, 10. Dysentery and diarrhoea, 11. Earache, 12. Expelling worms, 13. Eye diseases, 14. Fever and head ache, 16. Hair and growth, 17. Insect bite and scorpion sting, 18. Jaundice and bilious disorder, 19. Mouth and gum diseases, 20. Parotitis, Purgative, 21. Rheumatic pain and swelling, 22. Skin diseases, 23. Snake bite, 24. Urinogenital disorder, 25. Vomiting, 26. Wounds and cuts

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References

- Jain SK, *Contribution to Indian Ethnobotany*, (Scientific Publishers, Jodhpur), 1997.
- Majumdar AK, Ayurveda and Modern Medicine, *Ancient Sci Life*, 9 (1989) 117-190.
- Manilal KS, Ethnobotany of the Rices of Malabar, In: *Contribution to Indian Ethnobotany*, (Scientific Publishers, Jodhpur), 1991, 243-253.
- Parrotta JA, *Healing Plants of Peninsular India*, (CAB International, New York), 2001, 917.
- Vartak VD & Madhav Gadgil, Studies in Ethnobotany- A new vista in Botanical Sciences, *Biovigyanam*, 5 (1980) 151-156.
- Jain SK & ARK Sastry, *Threatened Plants of India- A state of the art report*, (Botanical Survey of India, Howrah), 1980.
- Manilal KS, *Flora of Silent Valley-Tropical Rain Forest of India*, (Mathrubhumi Press, Calicut), 1988.
- Vajravelu E, *Flora of Palaghat District*, (Botanical Survey of India, Calcutta), 1990.
- Sasidharan N, *Floristic studies in Parambikulam Wildlife Sanctuary*, Kerala Forest Research Institute, Research Report No 246, (Kerala Forest Research Institute, Peechi), 2002.
- Gamble JS, *Flora of the Presidency of Madras*, 3 Vols, (Adlard & Sons Ltd, London), 1915-1935.
- Hooker JD, *Flora of British India*, 7 Vols, (Reeve & Company Ltd, London), 1872-92.