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Ethnomedicinal Recipes for Respiratory and Bronchial diseases from Tribals of Sriharikota Island, Andhra Pradesh

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ABSTRACT

Sriharikota Island in Andhra Pradesh is an elliptical land mass sandwiched between Bay of Bengal in the East and Pulicat lake in the West. Sullurpet is the nearest railway station, which is 18 Km from Sriharikota Island and it is on Chennai –Kolkata trunk line and 90 Km away from North of Chennai. An aboriginal tribe called *Yanadi* dwells in Sriharikota. It is similar to Chenchu community elsewhere in Andhra Pradesh. Inspite of the community being drifted from their natural way of life due to agro-rural development activities, a few aged tribals are still able to furnish traditional ethnomedicinal data. So far no ethno medico-botanical studies are conducted in this area except for list of 50 plants reported for general ailments/ diseases by Suryanarayana et.al (1989). Therefore a detailed study on ethno medico-botanical uses of the tribals of Sriharikota Island was undertaken for the duration three years (1996-1999). During this work about 280 species are collected having a variety of ethno medico-botanical/pharmaceutical values. However the article presents the 20 plant species only having remedial effect for respiratory and bronchial diseases. The study analyzes the habit and plant part (s) used for ethnomedicinal practices by the tribals of Sriharikota Island.

Introduction

An aboriginal tribe called 'Yanadi'dwells in Sriharikota. It is similar Chenchu community elsewhere in Andhra Pradesh. Inspite of the community being drifted from the natural way of life due to agro-rural development activities a few aged tribal men are still able to furnish traditional ethno medico-botanical data. In Sriharikota Island about tribal families are living in 3 colonies viz. Penubakam, Kothachenu and Chengalpalem.

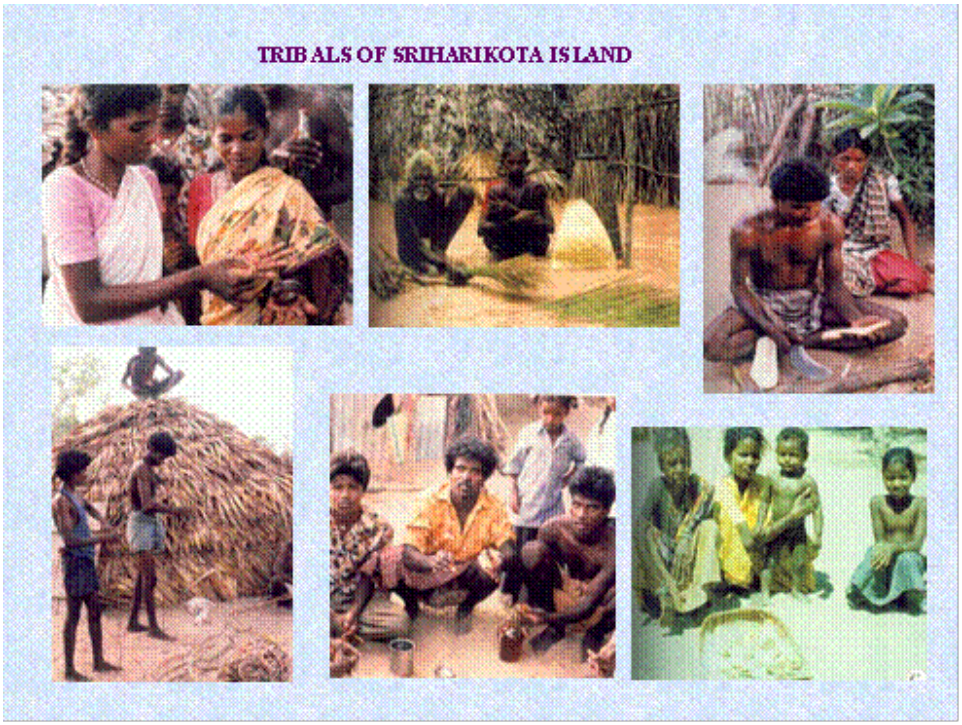
Topography

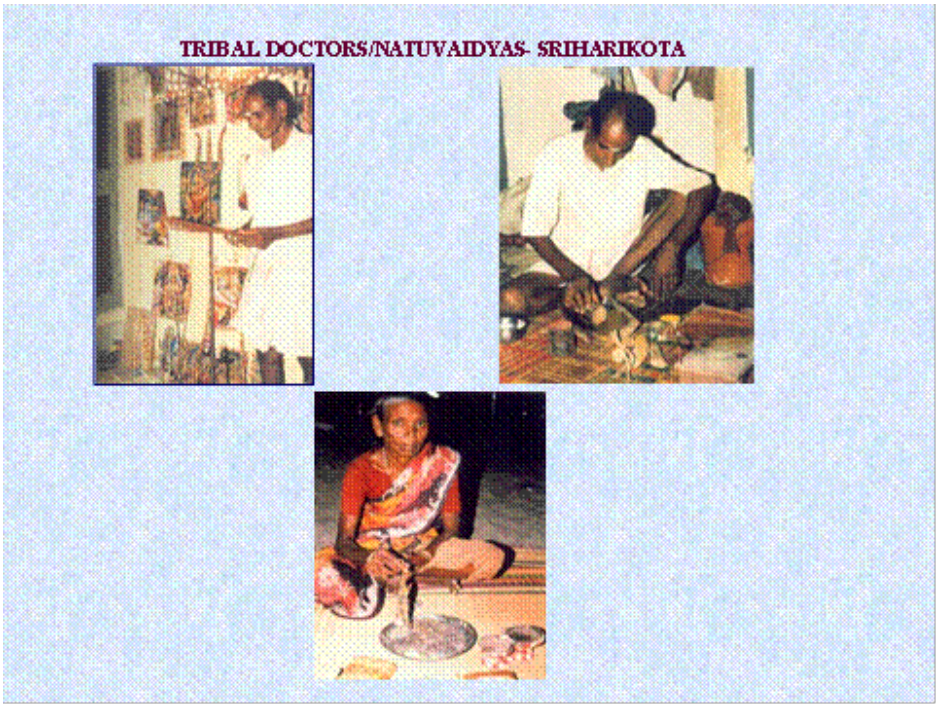
Sriharikota Island is geographically located at 80^0 21'' E and $13^0$22'' N to 14^0 N. it is a spindle shaped landmass sandwitched between Bay of Bengal on the East and Pulicat Lake on the West. It is 18 km East of Sullurpet.The nearest railway station located on Chennai-Kolkata trunk line. Chennai is 98 km away from Sriharikota.

Materials and Methods

An intensive medico-ethnobotanical survey of Sriharikota Island was undertaken for the duration three years (1996-1999). Regular periodical fieldwork is conducted covering all the seasons so as not to miss seasonal elements having pharmaceutical value and collected a large number of specimens in their respective phenological

stages. Ample field notes recorded pertaining to frequency, abundance, edaphic and morphological characters, which cannot be deducted from exsiccata. Local tribal men are contacted to record data related to ethno medico-botanical uses, drug preparation and mode of administration etc. After identification, samples are properly processed, mounted on herbarium sheets and deposited in Visodaya Govt.College Herbarium (VGCH) and a duplicate set at SHAR Herbarium, Sriharikota.





Medicinal Plant Species -Used By Tribal for Respiratory and Bronchial Diseases

Cassine glauca (Rottb.) Kuntze. = *Eleodendron glaucum* (Vahl.) Pers.	*Centella asiatica* (L.) Urban = *Hydrocotyle asiatica* L.
Evolvulus alsinoides (L.) L.	*Hybanthus enneaspermus* (L.) F.v.Muell. = *Ionidium suffruticosum* (L.) Roem. & Schult.
Hyptis suaveolens (L.) Poit.	*Justicia adhatoda* L. =*Adhatoda vasica* Nees.

Leucas aspera (Willd.) Link.	*Ocimum americanum* L. = *O. canum* Sims
Ocimum tenuiflorum L. = *O. sanctum* L.	*Pergularia daemia* (Forssk.) Chiov. = *Pergularia extensa* (Jacq.) N.E.
Pongamia pinnata (L.) Pierre. = *Pongamia glabra* Vent.	*Sapindus emarginatus* Vahl.

Results and Discussion

During these studies a good number of ethnomedicinal plants were collected. However, in this paper, 20 species having remedial effect on respiratory and bronchitis and diseases are enumerated. Latest Scientific name followed by relevant synonyms if any, local name, habit flowering & fruiting season and ethnomedicinal data are furnished for each species. Their other medicinal uses adopted in the Island and elsewhere are given in the Appendix.

Enumeration:

Atalantia monophylla (Roxb.) DC. (RUTACEAE)

Ln: Munkudu, Adavinimma.

Thorny shrubs or small trees.

Common in and forests. F1. & Fr.: June-October. Ld: Penubakam: RBK 9421.

Fresh roots cleaned, dried and cut into small pieces. Root pieces mixed with black pepper and decoction is prepared 10-15 ml decoction is given orally twice a day to get relief from cough with phlegm. (Antitussive)

Cassine glauca (Rottb.) Kuntze. (CELASTRACEAE)
= *Eleodendron glaucum* (Vahl.) Pers.

Ln: Neridi, Nerini.

An evergreen tree, densely foliaceous.

Common in forests. F1. & Fr.: July-November. Ld: Beripeta: RBK 9275.

50g of fresh leaves taken in 200 ml of water with 1 spoonful of turmeric powder, boiled to prepare decoction. 5-10 ml of decoction is taken orally twice a day to get relief from cough with phlegm, for about a fortnight. (Bechic)

Centella asiatica (L.) Urban. (APIACEAE)
= *Hydrocotyle asiatica* L.

Ln: Saraswathi aku, Valluriaku. Sn: Manduka parni.

Pretty herbs, stems creeping, rooted at nodes.

Occasional in the island, trailing in moist places often forming mats. F1: October-November. Ld: Keepakam. RBK 9911.

100g of dried leaves taken and pounded into powder. 1-2 spoonfuls of powder taken orally twice a day for 20-25 days to get relief from cold, cough. This treatment is also taken for asthma for 35-40 days to get relief from asthma. (Antiasthmatic)

Dichrostachys cineraea (L.) Wight & Arn. (MIMOSACEAE)

Ln: Veluturu chettu. Sn: Dirghamula, Veerataru, Viravriksha.

Shrubs or small trees, branchlets modified into thorns.

Common in open dry scrub jungles. F1. & Fr.: September - December. Ld: Chengalpalem: RBK 9172.

100g of fresh leaves ground to paste and applied on head throughly twice a day for 5 - 7 days. After 1 hour of application head bath is taken with warm water. Relief from cough and phlegm will be effective. (Bechic)

Evolvulus alsinoides (L.) L. (CONVOLVULACEAE)

Ln: Vishnukrantham. Sn: Vishnugandhi.

Appressed hairy, prostrate herbs.

Common in dry pasture lands. Fl. & Fr.: December-April. Ld: Palarevu: RBK 9462.

100g fresh plant material squeezed and obtained juice. 10 ml of juice given orally 2-3 times a day for 3-4 days to get relief from fever with cold.

Geniosporum tenuiflorum (L.) Merr. (LAMIACEAE)
= *Geniosporum prostratum* (L) Benth.

Ln: Bhootulasi

Prostrate herbs, branches many, hispid, radiating from a woody root stock.

Common on open sandy coast. Fl & Fr: August – November. Ld: Beripeta: RBK 8946.

100g of fresh leaves squeezed and obtained juice. 10-15 ml of juice taken orally twice in a day for 30-40 days to get relief from asthma. (Antiasthmatic, Bechic)

Hybanthus enneaspermus (L.) F.v.Muell. (VIOLACEAE)
= *Ionidium suffruticosum* (L.) Roem. & Schult.

Ln: Dagguchettu. Sn: Ratnapurusha.

Herbs. Leaves elliptic, entire or minutely toothed.

Common in waste moist places. F1. & Fr.: November-January. Ld: Keepakam:

RBK 9105.

Fresh leaves powdered and mixed with one teaspoonful turmeric powder. 5g of the mixture is taken orally twice a day to get relief from cough. It is continued for 3-4 days to get good relief from cough. (Bechic)

Hyptis suaveolens (L.) Poit. (LAMIACEAE)

Ln: Konda tulasi.

An erect aromatic undershrub, stems tetragonal, leaves cordate, denticulate, acute.

Common along road sides in pure stands. Fl & Fr: October – January. Ld: Chengalpalem: RBK 10077.

100g of leaves ground to paste mixed with 1 spoonful of turmeric powder. It is warmed and applied on head throughly wait for an hour and take head bath with warm water. It is repeated for 3-4 days to get relief from cold with cough. (Bechic)

Justicia adhatoda L. (ACANTHACEAE)
=*Adhatoda vasica* Nees.

Ln: Addasaram, Sn: Vasaka.

An erect shrub.

Occasional on hedges and especially near colonies. Fl. & Fr.: October - February. Ld: Kothachenu: RBK 10064.

Leaves as 100g of fresh leaves taken and made into paste, it is mixed with 1tsp turmeric powder taken orally

twice in a day for 30 days to get relief from cough, asthma. (Antiasthmatic)

Leptadenia reticulata (Retz.) Wight & Arn. (ASCLEPIADACEAE)

Ln: Mukkupala, Mukkutummuduteega.

Twining herbs, latex watery.

Common on hedges or trailing on ground. F1. & Fr.: April- December. Ld: Beripeta: RBK 964.

Fresh twigs crushed and obtained sap; 10-15 ml sap taken orally twice a day for 1 week to get relief from cold with phlegm. (Bechic)

Leucas aspera (Willd.) Link. (LAMIACEAE)

Ln: Tummi. Sn: Drona pushpi.

A diffusely, branched, annual herb; stems hispid.

Common in waste places and fields. Fl & Fr: Through out the year. Ld: Kothachenu: RBK 9170.

50g of leaves squeezed and obtained juice. 2-3 drops of juice dropped into nostrils to get relief from heavy cold. This treatment is continued at regular intervals to get relief from cold.

Ocimum americanum L. (LAMIACEAE)
= *O. canum* Sims

Ln: Kukka tulasi. Sn: Ajaka, gambhira, kuthera.

Erect, annual, aromatic herbs puberulous.

Common in waste places and as weed in fields. Fl & Fr: September – March. Ld: R.V. Chatram: RBK 8949.

100g of fresh leaves taken squeezed and obtained juice. It is mixed with 1 spoonful of turmeric powder. 10 ml of juice taken orally 2-3 times a day for 4-5 days to get relief from cough. (Bechic)

Ocimum tenuiflorum L. (LAMIACEAE)
= *O. sanctum* L.

Ln: Tulasi, Manchitulasi. Sn: Ajaka, brinda, manjari, patra pushpa.

Erect aromatic herbs, branches hispid.

Usually cultivated as a sacred plant and also found as weed in fields and waste places. Fl & Fr: Through out the year. Ld: Malavalamvagu: RBK 9772.

Leaf juice as 100g of fresh leaves squeezed, juice obtained is mixed with 1 spoonful of turmeric powder. 10 ml of juice is given orally twice a day for 30-40 days to get relief from asthma. (Antiasthmatic)

Pavonia zeylanica (L.) Cav. (MALVACEAE)

Ln: Chirubenda.

Erect viscid herbs. Leaves entire or lobed.

Common in open fields and in scrubs. F1. & Fr.: October-February. Ld: Penubakam: RBK 9489.

50g of fresh leaves taken in 250 ml of water boiled and prepared decoction. 5-10 ml decoction taken orally twice a day for 4-5 days to get relief from cough with phlegm. (Bechic)

Pergularia daemia (Forssk.) Chiov. (ASCLEPIADACEAE)
= *Pergularia extensa* (Jacq.) N.E.

Ln: Juttipala, Juttepaku, Dustaputeega. Sn: Phala katanka, Yugma thalika.

An extensive twining herb, latex milky.

Common in hedges near colonies and waste places F1. & Fr.: June-December. Ld: Keepakam: RBK 9682.

100g of fresh leaves cut into small pieces crushed and obtained juice. 10 ml of juice taken orally with 1 spoonful of turmeric powder along 50 ml warm water twice a day for 3-4 days to get remedy from cold.

Pongamia pinnata (L.) Pierre. (FABACEAE)
= *Pongamia glabra* Vent.

Ln: Kanuga. Sn: Angaravalli.

Trees.

Common especially near water bodies. F1. & Fr.: August-December. Ld: Penugaripalem: RBK 8924.

Fresh dried fruits are dipped in turmeric water, made them into garland. It is tied around the neck of a child suffering from whooping cough for relief.

Sapindus emarginatus Vahl. (SAPINDACEAE)
Ln: Kunkudu. Sn: Arishta.

Deciduous trees.

Common all over the island. F1. & Fr.: January-April to May. Ld: Chandrasikupam: RBK 9020.

100g of fresh leaves are ground to fine paste. It is slightly warmed and gently applied on temples and forehead for relief from heavy cold. Recipe is continued once a day for 4-5 days to get complete relief from heavy cold.

Sarcostemma acidum (Roxb.) Voigt. (ASCLEPIADACEAE)
= *Sarcostemma brevistigma* Wight & Arn.

Ln: Pullakadalu, Jemudukadalu. Sn: Soma.

A straggling leafless shrub, stems succulent jointed latex milky.

Common, extensively spreading on bushes. F1. & Fr.: July-December. Ld: Penubakam: RBK 9053.

200g of fresh stem bits ground and obtained juice. 10-15 ml of juice slightly warmed administered orally to children for 4-5 days to get relief from cold.

Sida cordata (Burm.f.) Borssum. (MALVACEAE)
= *Sida veronicifolia* Lam.

Ln: Bala, Kakkuvaidaggu chettu.

A wiry ascending woody herb, branchlets hispid.

Common ascending in the under growth among bushes or trailing on waste places. F1. & Fr.: October-November. Ld: Chengalpalem: RBK 9232.

50g of fresh leaves and 1 spoonful of turmeric powder ground and made into pills of groundnut seed size. 2-3 pills twice a day taken with 1 glass of milk. Recipe is continued for 5-7 days to get remedy from whooping cough. (Antitussive)

Tinospora cordifolia (Willd.) Miers. ex. HK.f. & Thoms. (MENISPERMACEAE)

Ln: Kotari teega, tippa teega. Sn: Amritha, Guduchi.

An elaborate climber with succulent stem with papery bark.

Common in forests on large bushes and trees. F1 & Fr.: August-January. Ld: Kothachenu: RBK 9028.

Fresh roots taken and cleaned. Root pieces ground and obtained sap. 5-10 ml of sap 3 times a day given to children to get good relief from cough with phlegm. (Bechic)

Tylophora indica (Burm.f.) Merr. (ASCLEPIADACEAE)
= *T. asthamatica* (L.f.) Wight. & Arn.

Ln: Kukkapala, Sn: Ajadvishta.

A much branched climbing shrub, branchlets pubescent, latex milky.

Common on bushes and hedges also spreading on ground. F1. & Fr.: March-September. Ld: Ellanthugunta: RBK 9013.

100g of leaves and roots made into small pieces and ground to paste. 1-2 spoonfuls of paste taken orally with 10-15 ml of milk twice a day, for 30-40 days to get relief from asthma and other bronchial complaints. (Antiasthmatic)

Conclusion

A critical study of 20 plant species having respiratory and antiasthmatic properties collected from the tribals of Sriharikota Island, revealed that most of them are also employed in their traditional medicine to prevent and cure various ailments without having any side and adverse effect on body system. Considering the immense ethnomedicinal uses of tribal medicinal species, the study highlights the importance of their conservation, cultivation and proper utilization for the society.

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S.No.	Scientific Name and Family	Local Name (s)	Other uses	
			In Island	Elsewhere
1.	***Atalantia monophylla*** RUTACEAE	Munkudu, Adavinimma.	Seed oil - antiarthritic and rheumatism	Seed oil- for chronic rheumatism and paralysis
2.	***Cassine glauca*** = *Eleodendron glaucum* CELASTRACEAE	Neridi, Nerini.	Wood used in making cots - used for to avoid evil spirits and bad dreams	Root paste applied for swellings
3.	***Centella asiatica*** = *Hydrocotyle asiatica* APIACEAE	Saraswathi aku, Valluriaku.	Leaf juice taken orally for nervine pains, it is also taken for 40-60 days to improve memory power.	Whole plant is used as an alterative, skin diseases, tonic and diuretic.
4.	***Dichrostachys cineraea*** MIMOSACEAE	Veluturu chettu.	Leaf paste administered for emmenogogue Fruit decoction for family planning.	Root astringent, rheumatism
5.	***Evolvulus alsinoides*** CONVOLVULACEAE	Vishnukrantham/ Vishnugandhi.	Leaf paste vulnerary agent. It is applied on wounds and cuts.	Whole plant as tonic, vermifuge and for asthma
6.	***Geniosporum tenuiflorum*** = *Geniosporum prostratum* LAMIACEAE	Bhutulasi	Leaf decoction taken orally to get relief from fevers.	Plant considered as febrifuge
7.	***Hybanthus enneaspermus*** = *Ionidium suffruticosum* VIOLACEAE	Dagguchettu.	Leaf powder is mixed with honey taken orally as Tonic.	Plant as tonic, diuretic
8.	***Hyptis suaveolens*** LAMIACEAE	Konda tulasi.	Leaf juice administered for to get relief from fevers.	Plant used for parasitical diseases
9.	***Leptadenia reticulata*** ASCLEPIADACEAE	Mukkupala teega	Leaf paste with butter milk taken orally for	Leaf & Rt. as antiseptic, rheumatism

			indigestion	and insecticide
10.	***Leucas aspera*** LAMIACEAE	Tummi	Leaves used in curry preparations. Leaf decoction administered for body pains.	Whole plant extract is used for cough and cold
11.	***Ocimum americanum*** = *O. canum* LAMIACEAE	Kukka tulasi	Leaf smoke as mosquito repellent.	Leaf decoction used for cough, dysentery and mouth wash (toothe ache)
12.	***Ocimum tenuiflorum*** = *O. sanctum* LAMIACEAE	Tulasi, Manchitulasi	Plant is considered sacred and worshiped.	Leaf juice catarracht, dyspepsia and skin diseases

APPENDIX: Other Medicinal Uses for Plants of Respiratory and Antiasthmatic Properties Reported First Time from Sriharikota

S.No.	Scientific Name and Family	Local Name (s)	Other uses	
			In Island	**Elsewhere**
13.	***Pergularia daemia*** = *Pergularia extensa* ASCLEPIADACEAE	Juttipala, Dustaputeega	Fresh leaf juice with lime stone ($Caco_3$) water, slightly warmed and applied for body pains.	Leaf juice catarrhal affections, diarrhoea and asthma
14.	***Pongamia pinnata*** = *Pongamia glabra* FABACEAE	Kanuga	Fresh stem bark used for fish poison. Wood used for making chappals are used by tribals to get relief from scraches of feet.	Seed oil is used in treatment of skin diseases and rheumatism
15.	***Sapindus emarginatus*** SAPINDACEAE	Kunkudu	Seed kernel is edible. Leaf sap used as a medicine to prevent eye diseases.	Sd. kernel is used for diarrhoea, paralysis. Root

				expectorant
16.	***Sarcostemma acidum*** *= Sarcostemma brevistigma* ASCLEPIADACEAE	Pullakadalu, Jemudukadalu	Latex dropped into eyes in case of early stages of catarracht. (Suklamu).	Whole plant alterative, emetic, gen. debility
17.	***Tinospora cordifolia*** **MENISPERMACEAE**	Kotari teega, Tippa teega	Fresh and clean warmed leaves applied on painful swellings. (Analgesic)	Dried stem powder used as tonic and in diarrhoea
18.	***Tylophora indica*** *= T. asthamatica* ASCLEPIADACEAE	Kukkapala	Root acts as snake repellent.	Leaf & Root. emetic, expectorant and in diarrhoea.

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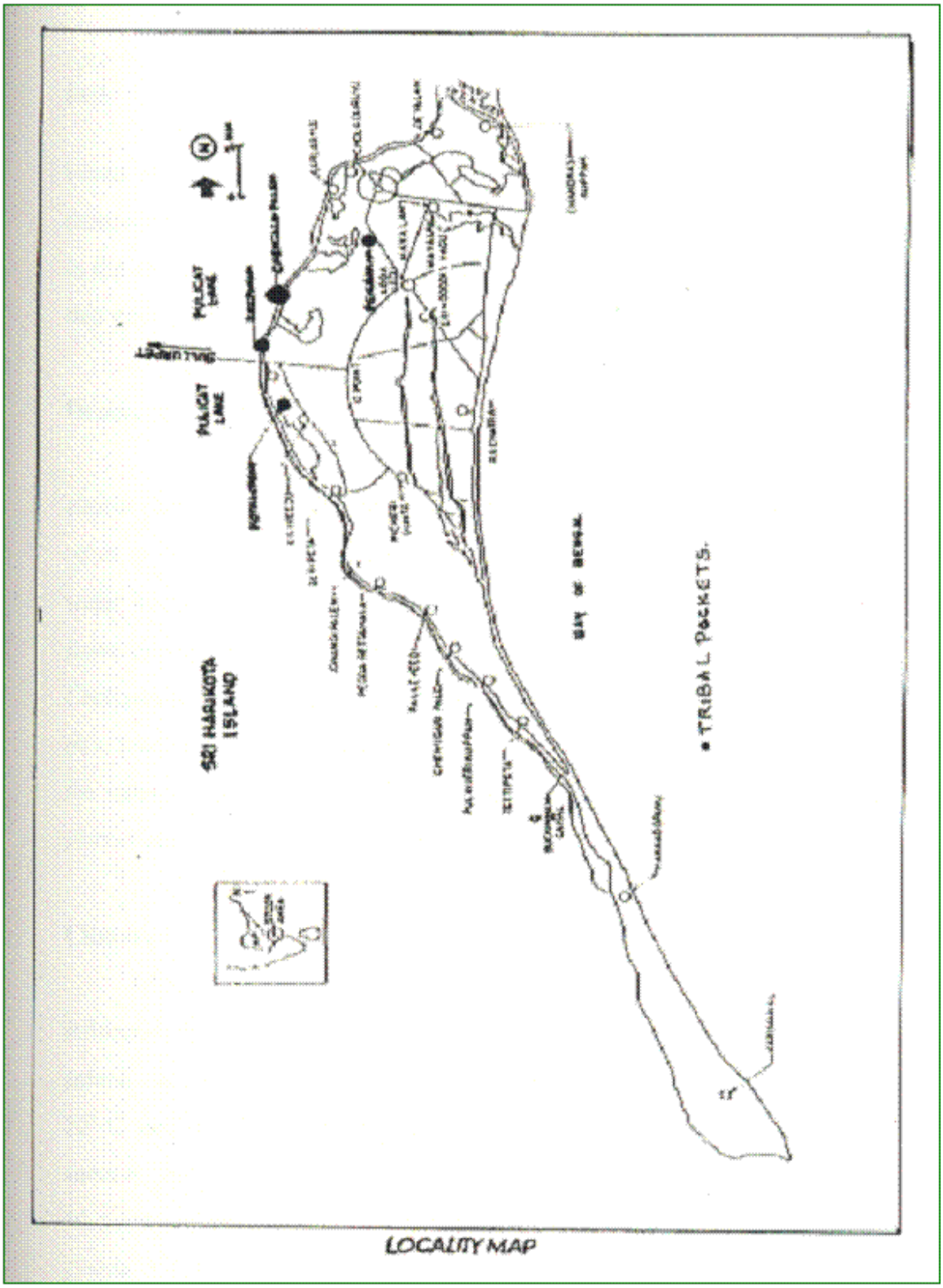
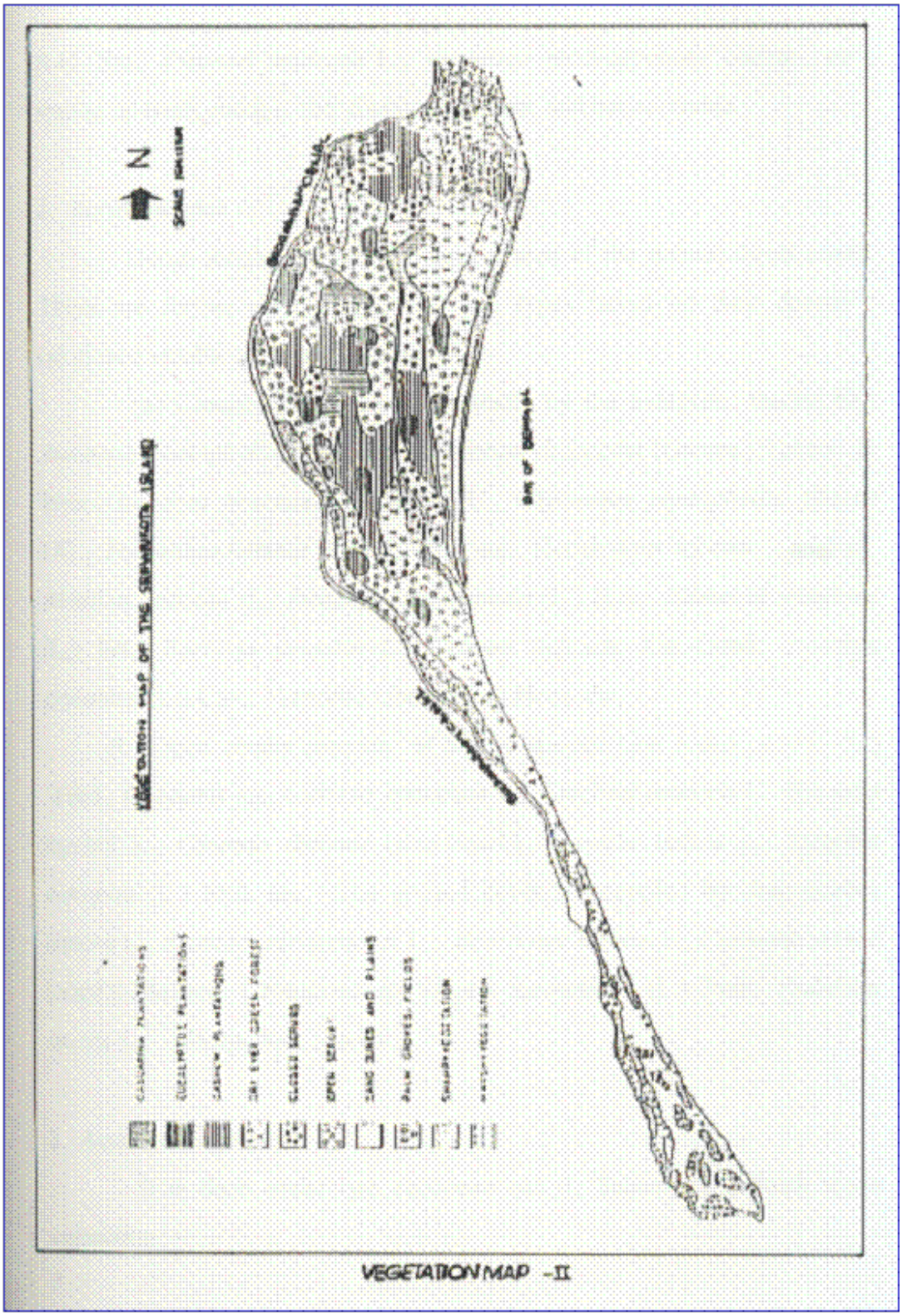


LOCALITY MAP



VEGETATION MAP -II