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# Barringtonia speciosa in Neulo method of fishing: An Anthropological Study among the Nicobarese tribe of Car Nicobar Islands

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**Abstract**
Present study applying anthropological methods of fieldwork in fifteen villages attempts to examine usages of 'Barringtonia speciosa' popularly known as 'Kinyav' in a traditional method of fishing known as 'Neulo' among the Nicobarese tribe of Car Nicobar Islands. The study was conducted residing with the Nicobarese of the Car Nicobar island in pre-tsunami and post-tsunami phase at Big Lapathi, Kinmai and Mus villages. The study finds that due to culture contact with outer cultures and various forms of media, the Nicobarese are getting more and more aware to conservation of biodiversity and their environment but on the same time demand and market forces are leading to overharvesting of aquatic resources through modern machines and chemicals which is urgently required to be controlled. Also, the Barringtonia speciosa which was an important fauna of the Car Nicobar needs to be protected as part of their natural habitat. The tree has several medicinal as well as timber usages. So, sensitizations and awareness at local level shall be part of environment building efforts.

**Keywords:** Kinyav, Barringtonia speciosa, Neulo, Nicobarese tribe, Car Nicobar

## Introduction

Plant species have always been an important source of food as well as ethnomedicine since time immemorial. There are many evidences reported regarding usage of various parts of plants in intoxication and healing process during prehistoric times too. There are several instances in India where species of herbs, bushes and scrubs and plant as well as plant extracts are used in treatment of various diseases by many tribal populations. Parts of plants are used in therapeutic process on one side on the other these are used in various economic activities to procure food during fishing and hunting by several tribes in our country. Fishing, using plant extracts/toxins have been an integral part of tribal culture. Piscicidal characteristics of leaf, bark and seed extracts of various plant species help tribes to harvest fish in water bodies available around their habitations. In Jaunsar-Bawar area of Uttarakhand, the Jaunsarese tribe uses extract of Timoor/ toothache tree/Tejphal (Zanthoxylum aramatum) for intoxication of fish during fishing in fresh water bodies (Patel, 2010) [1]. Sharma *et al*. (2016) [2] talks on Maund mela/ fish festival of Garhwal Himalaya of Utarakhand where the Timoor bark powder is used in large quantity as poisoning substance during fishing. Singh *et al*. (2010) [3] has focused on the piscicidal nature of leaf and bark extract of Thevetia peruviana plant. There is widespread interest in including fishing poisons in modern pest management because they are effective on many aquatic pest species and are usually less expensive (Bagalwa and Chifundera, 2008) [4]. Ramanujam and Ratha (1980) [5] consider such vegetative toxins as more environment friendly in fishing activities. Several ethnobotanical and ethnopharmacological studies support that presence of various alkaloids like resins, tannins, saponins, nicotine, diosgenin give toxic nature to plant extracts.

In this backdrop, the present paper attempts to examine use of Kinyav/Barrintonia speciosa during fishing as an important secondary economic pursuit of the Nicobarese of the Car Nicobar island.

In anthropology the field work tradition is one of the most important features which provide anthropology a superior place in comparison to other social sciences. For maintaining objectivity and reliability and to reach a logical result researcher decided to select two initial villages for intensive field work. These were 'Kinmai' and 'Big Lapathi' which represented almost all the traditional and modern features of Car Nicobar Island. Later on other villages were also covered under study.

Andaman & Nicobar Islands is a Union Territory consisting of 293 islands (of which 39 are inhabited) situated in the Bay of Bengal with administrative headquarter at Port Blair. This Union Territory consists of two districts, Andaman and Nicobar. Andaman group of Islands consist of North Andaman, Middle Andaman, South Andaman and Little Andaman besides many smaller islands. Nicobar group of islands comprises of Greater Nicobar, Car Nicobar, Nancowry, Katchal and Chowra. The Nicobar district consists of two Tehsils, *viz*. Car Nicobar and Nancowry. The head quarter of Nicobar district is Car Nicobar.

The Nicobar Islands are situated in the south east of Bay of Bengal between 6° - 10° N latitude and between 92°- 94° E longitude. There are all together 22 large and small islands, of which, only 12 are inhabited. The most northerly island of the group is Car Nicobar, which is 143 miles i.e. 228.8 Kms from Port Blair and about 75 miles i.e. 120 Kms from 10° channel, which separates it from Little Andaman. The Nicobar stretch over 36 miles with an aggregate of 635 sq. miles. There are only 22 islands in Nicobar district in which only 12 are inhabited. Inhabited islands are - Car Nicobar, Chowra, Terresa, Bompoka, Katchal, Kamorta, Nancowry, Pula milo, Kondul and Great Nicobar. The area of the whole Nicobar archipelago is 1841 sq. km and that of Car Nicobar is 126.9 km. There are 15 villages in Car Nicobar and list with increasing population includes Mus, Tamaloo, Perka, Malacca, Sawai, Kenyuka, Big Lapathi, Chukchucha, Small Lapathi, Kakana, Tee-Top, Kinmai, Tapoiming, Arong and Kimios.

The physical characteristics of Islands of Nicobar vary from island to island. Car Nicobar is remarkably flat except for some cliffs in the north and small hilly areas in the interior. It is roughly oval in shape with a tapering projection on the north east. It is bordered by a silvery beach and the areas of flat ground consisting of coralline diluvium. The coral extends in places to the higher ground and appears to have been raised considerably above sea level. There are small streams in the northern and southern tips.

**Material and Methods**

This paper attempts to examine the use of Barringtonia speciosa; Forst. & Forst. in fishing activities among the Nicobarese of Car Nicobar island. In the present study 45 Nicobari Tuhets (extended joint families) of 15 villages are studied applying qualitative research methods and anthropological fieldwork staying with the tribal people administering a semi structured interview schedule. 200 subjects and 45 tuhets were chosen on the basis of random sampling. The collected information was further cross-checked from elderly members of the tuhet (ma-kuo-tuhet) and sometimes from the village captains too. Leaves, fruits, bark and twigs of Kinyav tree were identified with the help of native healers and elderly men and women of Car Nicobar island residing in the villages.

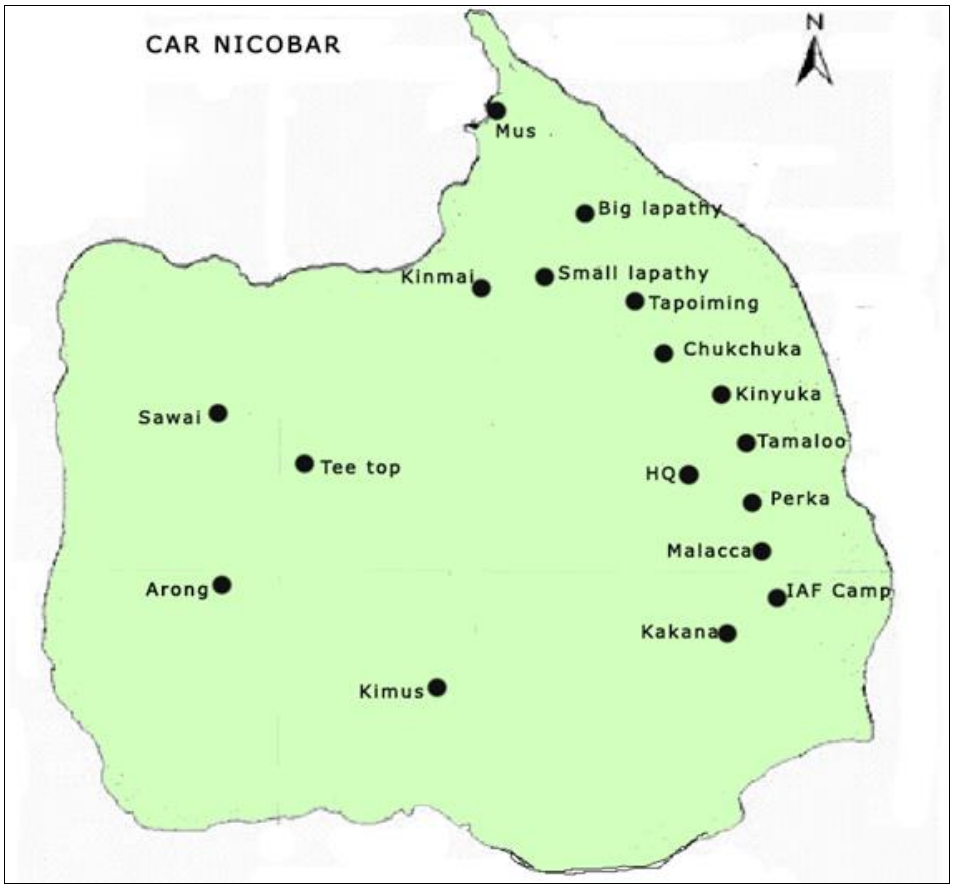


**Plate 1:** MAP OF CAR NICOBAR (source: www.google.com)

**Population composition of Andaman & Nicobar Islands**

The population of Andaman & Nicobar Islands comprises of 6 tribes namely Jarwa, Sentinelese, Onges, Great Andamanese, Shompens (all PVTGs) and Nicobarese. Nicobari tribe of mongoloid racial stock lives in all the 12 inhabited Islands of the Nicobar district of A&N Union Territory with a major concentration on Car Nicobar. Out of total population of 19,000 on Car Nicobar, approximately 80% are the Nicobarese.

**The Nicobarese of Car Nicobar**

Nicobarese tribals are ought as Mongoloid origin. But, in absence of any collective memory, it is not possible to trace their past links both ethnic and cultural, with other Mongoloid people in the south East Asian region. They are believed to have been living in the Archipelago of Nicobar from time immemorial. The elderly people of Car Nicobar say that, their ancestors were a group of exiles from the Tenasserim coast of Burma; who had to leave that land in the wake of violent revolution. According to this, they are descendants of the Burmese. They also revealed linguistic similarities with the Talainy of Burma; in words like Sainy (Rice), Hayom (Fowl) etc. Yet this does not necessarily imply the relationship.

**Physical features of Car Nicobarese**

Car Nicobarese men range from 146.1 cm to 173.7 cm in stature with a mean of 158.7 cm. Women are of an average 148.7 cm. They may thus be characterised as people of short stature. But, relatively their sitting height is moderately high. They are fairly muscular and obesity is seldom noticed in them. The mean weight is 55.03 kg and the mean Pelidisi index is 97.8, indicating a more or less normal nutritional status. They are heavier than the people of the remote southern Islands. About 2/3rd of the population is dolichocephalic and less than 1/3rd are mesocephal. Mesens predominate with Leptens, ranking second in the strength of

number. Platyrrhines are commoner in Car Nicobar than in other Islands of the group. Thus, general appearance of Car Nicobarese is Mongoloid and hence they belong to Mongoloid race. The Nicobarese of Car Nicobar reside on 15 villages of Car Nicobar. Following table no. 1 enlists 15 villages with their indigenous names:

**Table 1:** Villages and their indigenous names with their meaning

| S. No. | Name of the village | Indigenous Names | Meaning of the Indigenous Names |
|---|---|---|---|
| 1. | Mus | Hanyoich | To dry in sunlight |
| 2. | Kinmai | Totchak | Sound of liquid inside coconut fruit |
| 3. | Small Lapathi | Poncho | you will do this |
| 4. | Big Lapathi | Seti | knife that has been kept |
| 5. | Tapoiming | Hongchu | Keep moving |
| 6. | Chukchucha | Pompai | absurd term of Mumbai |
| 7. | Tamaloo | Timlo | to complete |
| 8. | Perka | Ke-e-ro | word for granted |
| 9. | Malacca | Urekka | first cook food than do other work |
| 10. | Kakana | Sapeha | walking with the puffy chest |
| 11. | Kimios | Ohrahoon | did not get anything |
| 12. | Arong | Haran | put ladder |
| 13. | Sawai | Otkasip | loose |
| 14. | Kenyuka | Saraki | slipped |
| 15. | Teetop | Rittop | Delta (English term rittop ) |

The Island is divided into these 15 villages in such a way that the tail of all the villages touches each other in centre of the Island and the villages thus become almost triangular in shape whose base is the sea coast. The common shape that emerges out for every village can graphically be represented in a triangle since the Island is roughly oval.

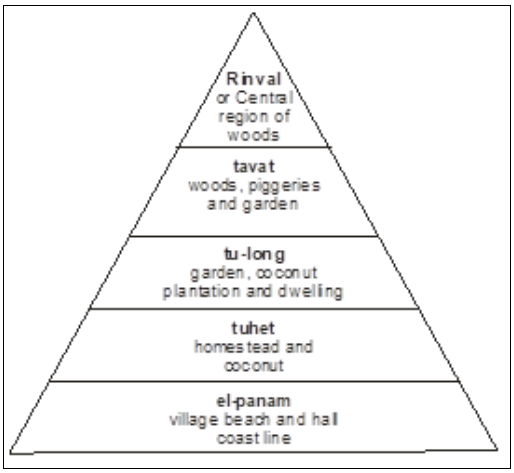


**Diagram 1:** Village Structure of Car Nicobar

## Findings and Discussions

### Economic Organizations of the Nicobarese

The Nicobarese are largely dependent upon their traditional economic pursuits. Their economy is horticultural in nature. Of late some of them have been taking up modern economic pursuits since coming in contact with people of developed cultures. Small scale agriculture with support of various government schemes, large scale horticultural activities including coconut (Cocos nucifera, Linn.) and supari (areca catechu Linn.) plantation, animal husbandry with focus on pig herding, shallow as well as deep sea fishing and hunting in dense forests are important bases of tribal economy.

### Fishing

When the sea is calm the people set out for deep sea fishing in their outrigger canoes. Shallow water fishing is sometimes carried out when the weather, time and other conditions are appropriate. They are fond of fish and is taken with delicacy in food. The fishing is done for domestic consumption and also for selling to earn money and for economic gains. So, fishing is a subsidiary occupation for earning money for the tuhet. They go for fishing in groups of 4-5 or 6 persons and catch 25-30 kgs of fish in one trip. Major portion of the catch is sold in the society and remaining part is used for domestic purpose by members of the tuhet. Car Nicobarese are well developed in the art of basketry & these traps are result of this art and skill itself. (Upadhyay & Patel 2005) [6]

### Methods of fishing: Neulo

The traditional method of catching fish is known as ‘neulo’ and this indigenous method of fishing is still prevalent on Car Nicobar. Though the tsunami of 2004 on December 26, has affected the geo-morphology of the island has reduced the quantum of fishing to certain extent. In ‘neulo’ the Nicobarese of almost all the villages collect seeds of ‘Barringtonia speciosa’ locally known as ‘kinyav’ in native language.

> During fieldwork the researcher met few Nicobarese who were pounding on green and brown coloured fruits having peculiar shape of lantern or box near sand beds along sea coast. Earlier it was ignored but when he observed this activity for many days around pools of shallow water then it encouraged him to conduct a focus group discussion (FGD) with the people involved in such activity. People informed that this tree locally called ‘kinyav’ is also known as fish-poison tree and its fruits are used in stupefying and stunning fish by poisoning while fishing in logged water and shallow bed during low tide. Due to this poison the fish get paralysed and it becomes easy to catch and collect them in fishing baskets. The seeds are used in fishing but bark and roots are consumed by the tribals to treat fever due to malaria, paste of leaves is used in wound healing on the advice of ‘tamiluono’ the local healers on Car Nicobar island. The logs of tree are used in making nicobari huts and ‘machaans’/platforms of their beehive huts (Chanvis) and rectangular huts.

Kinyav (Barringtonia speciosa) which grows as mangrove associate on rocky and sandy sea shores belong to the

family Lecythidaceae also known by names of Duppy coconut, Sea Putat, Sea-poison tree, Putat Laut etc. Seeds of this tree are derived from both raw (green colour) and ripe (brownish colour) fruits and are rich source of 'Saponin' which constitutes to poisonous nature of the tree (Barrau,1955) [7]. It is known for ichthyotoxic property (Ravi Kumar *et al*. 2015) [8]. The height of the tree is on an average 15m to 30 m with shiny, sessile, large, spirally arranged and stalkless dark green leaves. This grows along sea shore on Car Nicobar island. Grating and pounding of the fruit helps in collection of seeds. The grating is mostly done on sea shores itself.

Fishing is done by sprinkling vegetative poison (derived from kinyav seeds) directly in shallow/stagnant water pools formed during low tides of full moon day. This is prepared from herbal mixture of kinyav seeds and a small quantity of grated, mashed kernel. This method of catching small fish occurs at low tide when the water is only ankle or shin deep. Before sprinkling the poison into the pool of confined sea water, the 'tamatu' fishing trap baskets are sunk and fixed on the bottom in a suitable place or attached to rocks. They then throw the mixture into water directly or adding grated powder in dough of wheat flour. After consuming it fish get paralysed and stupefied. Some are found dead at the sea bottom, others float on the surface due to toxic nature of the seeds, while quite a few are trapped in tamatu. Often large quantities of fish both large and small sized are caught.

Another typical method of catching fish and octopus is by spearing and chopping them with the dao (chopper) or knife & small harpoons. Usually they undertake this type of fishing at night, with the aid of torch made from a dried bundle of coconut leaves. The prey is attracted by the glow of light and is killed by spearing and chopping. Fish are also caught by using cast nets, seines, inhal, kinval, diving masks and large detachable harpoons. (Upadhyay & Patel 2005) [6]

Now a days canoe with modern Yamaha engines are being used in deep sea fishing. Going to sea in canoe and deep sea fishing is performed by males but females and children help them in collecting the catch. However, boys are involved in 'neulo' method of fishing i.e. fishing by poisoning with adult males. Children also do fishing by using fishing line.

In post-tsunami phase, a new thing is replacing the use of 'kinyav' in traditional fishing. Now, the Nicobarese are using bleaching powder in place of kinyav seeds to poison fish. They are of the opinion that it helps them to harvest fish in large quantities in less time which ultimately aid them to organize big feasts during celebrations. When asked 'whether they are aware of bad and toxic effects of a chemical in the form of bleaching powder on water resources' most of them informed that despite knowledge of negative effect of bleaching powder, island people are using it to get large size catch in order to fulfil demand of native people.

Very important aspect of 'sustainable resource management' came to my knowledge during FGD with the Nicobarese of Car Nicobar island. They informed that during 'neulo' the size of harvest, poisoning of fish and quantity of use of kinyav seeds was controlled and regulated at tuhet level by 'ma kuo tuhet'/'ma rooto'(head of the tuhet) and by 'ma panam' (village captain) at village level. If they failed in disposing their duties in the case of inter-villages disputes, the matter was taken to 'Kui' the chief captain of Car Nicobar and also to Island Tribal Council. This information was certified by Mr Thomas Philip, the then chief of tribal council. Provision of punishment was also there when people did not followed the laid down rules regarding use of kinyav seeds for poisoning in order to protect small aquatic life forms and biodiversity conservation.

The findings in preceding paragraph are in line with findings of Berkes (1999) [9] (examined also earlier by Patel, 2012 [10] while studying indigenous knowledge) where Berkes while studying traditional ecological knowledge (TEK) and resource management of Cree Indians of James Bay Cree says-

Cree adopt eco-friendly fishing practices. Pantheism (a profound feeling of reverence for nature, natural resources and wider universe) is part and parcel of Cree world view. Regulations regarding fishing and hunting are strictly followed by Cree hunters through the institution of 'stewardship'. As Cree are efficient hunters, their unregulated activities may lead to depletion of resources. Hence, it is 'steward' who decides where to fish or hunt and when to go for fishing or hunting. Other than steward, 'Tallyman/uuchimaau' entrusted with the duty of controlling the fishing and hunting activities. He knows where to hunt and as senior grassroots manager, it is his duty to ensure no territory is over harvested as well as no Cree also goes hungry. If a steward/Tallyman fails or is incompetent or not able to control mismanagement of resources, he would not be able to retain his status.

## Conclusion

Due to culture contact with outer cultures and various forms of media, the Nicobarese are getting more and more aware to conservation of biodiversity and their environment but on the same time demand and market forces are leading to overharvesting of aquatic resources through modern machines and chemicals which is urgently required to be controlled. Also, the Barringtonia speciosa which was an important fauna of the Car Nicobar needs to be protected as part of their natural habitat. The tree has several medicinal as well as timber usages. So, sensitizations and awareness at local level shall be part of environment building efforts.

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