

Report of

Vacation Training Programme on Bioresources for School children

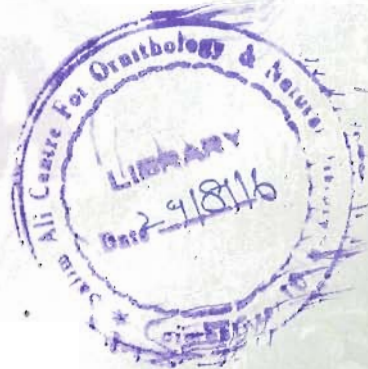
May 19th – June 6th 2010
Andaman & Nicobar Islands



सत्यमेव जयते

Sponsored by

National Bioresource Development Board
Department of Biotechnology
Government of India



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PR158



Salim Ali Centre for Ornithology and Natural History, Anaikatty,
Anaikatty, Coimbatore

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Submitted to Director

[Signature]
Pramod

VACATION TRAINING PROGRAMME ON BIORESOURCES
FOR SCHOOL CHILDREN
Andaman and Nicobar Islands

May 19th – June 6th 2010
Port Blair

A programme of

DEPARTMENT OF BIOTECHNOLOGY
PRESENTS



Report by Pramod P & Rajan P



सत्यमेव जयते

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National Bioresources Development
Board (NBDB)
Department of Biotechnology,
Ministry of Science & Technology,
Government of India



Organised by

Sàlim Ali Centre for Ornithology and
Natural History (SAICON)
Coimbatore – 641 108
INDIA

June 2010

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CONTENTS

	Page
1. Acknowledgments	2
2. Introduction	3
3. Process of selection	4
4. About the Venue.....	5
5. Inaugural session	5
6. Activities conducted during VTP Camp.....	6
1. Nature Walk	8
2. Invited Lectures	8
3. Interaction	16
4. Field Visits	18
5. Institutional Visits	21
6. Competitions	22
7. Equipment Demonstration	23
8. Film Screening	23
9. Project Works	23
7. Wrap up session	25
8. Valedictory session	25
9. List of lectures.....	26
10. List of participants.....	29
11. Snap shots of the events.....	31



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INTRODUCTION

The DNA Clubs (Department of Biotechnology's Natural Resource Awareness Clubs) is a Program launched by National Bioresource Development Board (NBDB) under the Department of Biotechnology (DBT) to develop and enhance better awareness on issues concerning biodiversity and bioresources amongst school children. It is a bold initiative from DBT that seeks to engage school students with the green world of Bio-resources and fight against deterioration of our natural wealth. School students are considered one of the priority target groups to be reached out. DNA Clubs are visualized as a continuous awareness creating programme which go along with student's academic progress and provide maximum chance for exposure on nature.

At the end of each school academic year, i.e., during the period of summer vacation of every year, SACON as the DNA Club – RRA for Andaman, will organize a Vacation Training Programme for the selected students from the DNA Club partner Schools. This programme will not only give them a comprehensive knowledge and awareness on bioresources of the country with special reference to Andaman and Nicobar Islands, also will give them training to sustain the DNA Club activities in future. This Training Course is aimed at students of DNA club member schools who have recently appeared in their X Class examination and are awaiting results. This year it was planned as 18 days long residential programme and the venue was Krishi Vigyan Kendra (KVK), Sippighat, Port Blair.

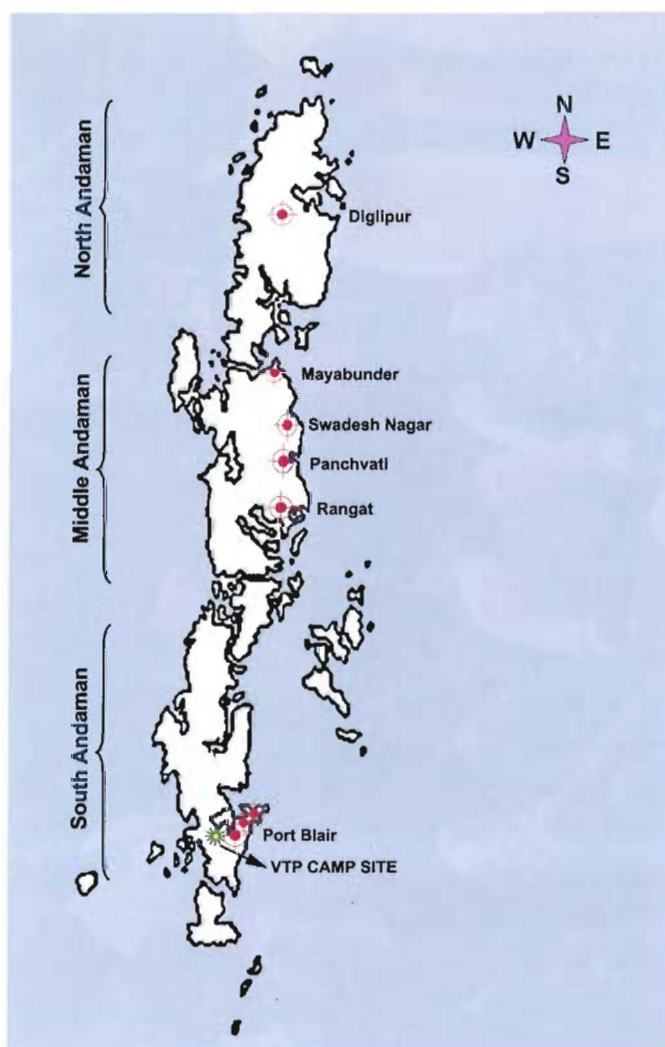
The prime objective of the programme:

- To promote interest and knowledge about the natural resources and the environment among the emerging generation.
- To foster concern to protect the bioresources and natural heritage
- To increase awareness of the economic, cultural, scientific and aesthetic values of fauna and flora.
- To provide opportunities to acquire attitudes, values and skills needed to protect and improve the natural environment.
- To make aware the impact that emerging technologies (including biotechnology) have on maintenance and enhancement of Bioresources.



The Process of selection

The Training Course is aimed at students of DNA club partner schools who have recently appeared in their X Class examination and are awaiting results. We have asked the school principal and DNA club co-ordinator to select a maximum of three students from each DNA Clubs partner schools in Andaman Islands through a rigorous process of selection. Though 30 students were selected from ten schools across the Andaman Islands due to many unavoidable and technical reasons only twenty two students could take part in the Vacation Training Programme'2010. And all participants stayed together in camp site for 18 days along with course director and other staffs from RRA - SACON, Coimbatore.



Map of Andaman Islands showing the VTP Camp site and Position of DNA Club partner schools





=====VTP'2010, Andaman and Nicobar Islands=====

About the Venue:

Krishi Vigyan Kendra (KVK) is a subsidiary centre of Central Agricultural Research Institute (CARI) and is situated in Sippighat, 13 kilometers away from Port Blair city. This centre has one conference hall and another lecture hall with many rooms as office facilities. The accommodation of the participating students was arranged in the Farmer's Hostel in the same campus. The campus is surrounded by many horticultural plantations and fish ponds. Very close by the centre, there is the Horticultural farm of CARI which has many unique plantations including the world coconut germ plasm centre. CARI main campus itself is only five kilometers away from KVK. The KVK campus is surrounded by many kinds of ecosystems including the extensive backwaters, and mangrove areas. This biodiversity rich surrounding was very much suited for directly introducing the participants the wealth of biodiversity of the Islands. The lectures, morning nature walks and night biodiversity surveys and all biodiversity based project works conducted in this area.

Inaugural session

All the participants reached the KVK campus on evening of 19th May 2010. There was an ice breaking session in the evening with project director Dr. Pramod, and research scholars and project staff of SACON. For many of the participants from the north and middle Andaman., it was their first visit to Port Blair.

On 20th morning, Shri S.S. Choudhury, the Principal Chief Conservator of Forest, A&N Islands inaugurated the Vacation training programme on Bioresources for school Children 2010, Inaugural session was presided over by Dr. R.C. Srivatava, the Director of CARI and Dr. P.A Azzez, Director of SACON, gave the Keynote address. Mr. Senthil Kumar Director of Department of Science and Technology, A&N Administration felicitates the programme and the participants. Dr. P. Pramod (SACON), Course director of the programme welcomed the gathering and gave the brief introduction of the programme. Many scientists from organizational partners who helped Salim Ali Centre for Ornithology and Natural History (SACON), such as DST, CARI, BSI, ZSI etc., attended the inaugural session.



Activities conducted during VTP Camp'10

The team was divided into four houses and each was given a name, one of the four major basic elements of nature as Earth, Water, Air and Fire. This division and the naming were emerged naturally from the participants as part of and end of the first day's ice breaking session. Each house took different sub themes for their project to be conducted through out the programme.

Every day the activities started with a nature walk along with the experts from 5.00 to 8.00 a.m. which introduced the participants the world of birds, butterflies, other insects, plants with major emphasis on trees and so on. Each day, they have learned many things with various experts during this early morning field sessions. In the trips they have collected the field level information through the systematic observation for their personal project works. This data they have pooled together in to four major subjects such as plants, birds, insects and agriculture.

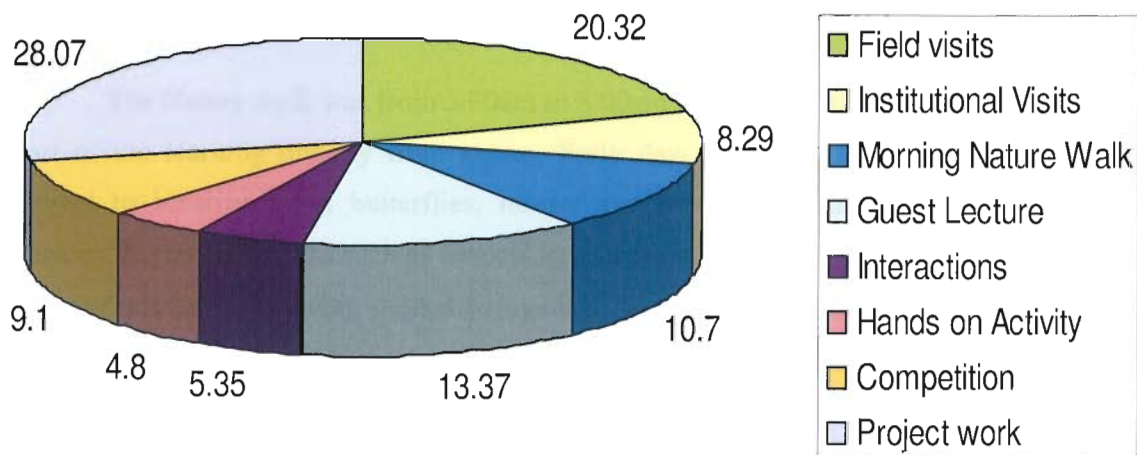
The participants were asked to prepare a note on their reflections or opinion on each of the lecture and field session which they have prepared and submitted on the same day. Moreover all participants were asked to maintain a meticulous diary on all the events with their opinion. There was an award for the best diary writer also announced in the beginning, which made them competitively keeping the diaries.

Following is the list of all the major activities conducted during VTP Camp.

1. Nature Walk
2. Invited Lectures
3. Interaction
4. Field Visits
5. Institutional Visits
6. Competitions
7. Equipment Demonstration
8. Film Screening
9. Project Works

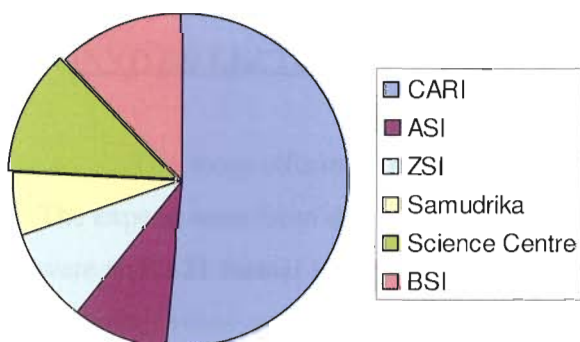


Percentage of time spend for activities in Vacation Training Programme'2010,A&N Islands

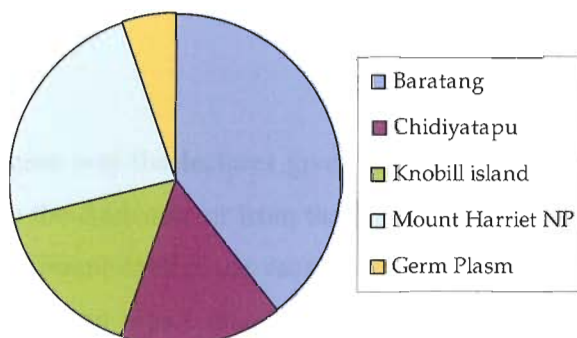


Percentage of time spend for each activities

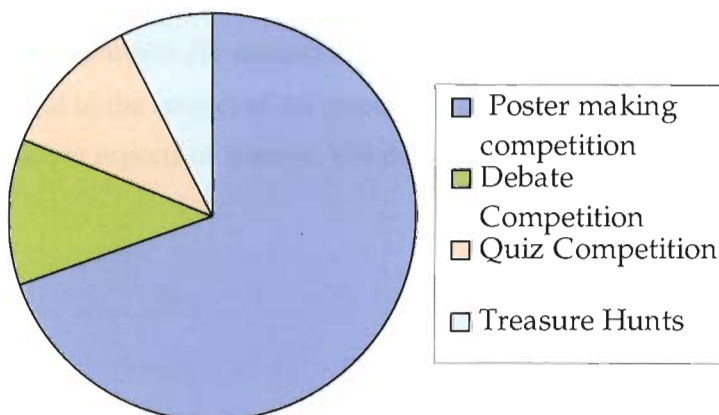
Institutional visits



Field visits



Competitions



1. NATURE WALK

The Nature walk was from 5.00am to 8.00am everyday. This was the most interesting part of the learning directly from nature. Early days of the VTP camp all students were guided to identify birds, butterflies, insects and other organisms with help of resource persons. Some equipment such as binoculars, Birds book, butterflies book, etc were given to the students and they were guided to identify the species. Different birds, Butterflies and insects, the morphology of the tree barks and the flowers were also studied. The data were collected through direct observations as well as with help of equipments. The most of data for the project works assigned to them were collected during the Nature walk. The data collected by the individuals for their personal projects were combined as per the major themes of the houses and a report was submitted as a team in the name of the house.

2. INVITED LECTURES

The most informative part of the programme was the lectures given by the experts. The experts were from different institutes either in the Andaman or from the mainland. There were about 21 formal lectures were delivered on different days of the vacation training by the different invited resource persons. The lectures were on topics related to Bioresources and Biodiversity especially on Andaman and Nicobar Biodiversity and these lectures were delivered with help of power point projections. The sessions were about an hour followed by the discussion of the relevant topics for another one hour. During the discussion the students cleared their doubts related to the subject of the presented lecture. The students were enriched with the lectures on different aspects of science. The details of lectures are listed below.



Details about lectures (most of the write ups direct or modified versions taken from the diaries of the participants)

Lecture - 1: Dr. Debkumar Bhadra, Indian Institute of Geomagnetism

Topic: Climatic change

Dr. Bhadra is a scientist in the Indian Institute of Geomagnetism. He explained the problem of climatic change, the details like solar radiation, earth tilt, continental drift, volcanic eruption and green house effect and many. He also narrated the health impacts of the climatic change, and other impacts such as effect of climatic change on water pollution, the movement of plants and animals towards the hills and cooler areas and so on. He concluded saying that planting trees is one of the best ways to regulate these changes and it is the individual responsibility to do so.

Lecture – 2: Elrika D'souza, NCF, Mysore

Topic: Dugong

Elrika is a research scholar working in the life and ecology of Dugong for many years and works with Nature Conservation Foundation, Mysore. Elrika gave her lecture on Dugong, its habitats, feeding habits and many other different factors necessary for Dugong. Dugong has now become the endangered species because of poaching. There are a lot of interesting information about this mammal is given to them such as, it is a mammal who always lives with their kids. Its size is almost 3m and weight about 400kg. It can live up to 70 years of age. It is vegetarian mammal eats only grasses. It pulls the grass along with the roots and eats only the small grasses because it is easy to eat and easily digested. It eats almost 30kgs of grass at a time. It can stay in 15m of deep water, etc. Children enjoyed the lecture and rated this as one of the first best ten lectures.

Lecture - 3: Vardhan Patankar, NCF, Mysore

Topic: Corals and Coral associated Organisms.

Mr. Vardhan also is a senior research scholar and is working in corals with Nature Conservation Foundation. Vardhan gave his lecture on the life of coral reef system. He



showed various under water photographs on corals. The most interesting part of this lecture was the under water photography on the coral reefs which gave a broad picture and feel of the ecosystem to the students. He also showed cameras which are used to take underwater photographs and gave an explanation the tricks and techniques of scuba diving.

Lecture – 4: Dr. Jomy Augustine, St. Thomas College, Pala

Topic: Vegetation of Andaman

This is one of the realistic talks which thrilled the listener's hearts. It was not teaching, it was learning of nature, it is all about how the nature is and how it speaks with us. This was like a movie were it started off with various terms like "I" and "We" it went on with the beauty of nature especially forests, how the flower speaks, how the forests work as a system and so on. As his words came from his heart and it really gave a feel about vegetation of A&N Islands and made them admire. It also reminded students their role in protecting the nature particularly the forests. He introduced the students wonders of floral wealth of A & N Islands through his lecture.

Lecture – 5: L.B. Singh, KVK CARI

Topic: Common Medicinal Plants in our Surroundings

The Lecture started on with Horticultural crops such as fruits, vegetables, flowers, plantations spices, tuber crops, medicinal and aromatic crops. He explained the classification of the vegetables like Solanaceous, Cucurbitaceous, Cucifereous, and Leguminous, and flowers as loose flower like Marigold etc., and the Cut Flower like Orchids. Major part of the talk concentrated on the medicinal plants found in Andaman like black pepper, clove, nutmeg and cinnamon, plantation crops like coconut and rubber, tuber crops that is Elephant foot yam, sweet potato, Alscassia and tapioca.

Lecture – 6: Dr. T.V.R.S. Sharma, SANE

Topic: Flora and Fauna of Andaman Islands.

Dr. Sharma in his lecture touched many aspects of the ecology of A&N Islands. He spoke on the flora and fauna of the Islands, their usefulness, their conservation importance. He explained the students many details about A & N Islands. He told them about the 572



Islands present in the Andaman and Nicobar Islands. Almost 80% of these islands are covered with forests mostly tropical rain forests. He also explained about various plants species in these Islands which are very precious. He introduced to them the concept of carrying capacity. He also told that there is very close relation between the plants, animals, birds and Insects and all the things in the ecosystem. His narration had a series of examples from the biodiversity of A&N islands. He told the children many associated stories from his observations, like when ants carry soil and keep it at the top of the leaves, then leaves releases some water like substances like juice that is used by ants for their survival. He also spoke about *Mangifera Griffithii* a wild rare variety of Mango in the Islands and he spoke about the Birds present in these Islands and so on.

Lecture – 7: Ajay Saxena, IFS, ANFD

Topic: Coral reefs of A&N Islands

This lecture was also covered many concepts and themes for children. He spoke on the geographical variation of the A&N Islands, the flora, fauna and the carrying capacity of the Islands etc. Each and every Island has its own beauty and own and restricted biota. For example Nicobar Island has Nicobar megapode. This will lay eggs in the nest and just go off when the young once is born it should take care of themselves. He narrated the case story of Narcondom Hornbill, in which females lays the eggs and the male closes the way opening, keeping only a small way to feed. He also mentioned about the geographical history of this island, the tribes, their locality, settlements and food habits.

Lecture – 8: Dr. Jafer Palat, ZSI, Calicut

Topic: Butterflies of India with special reference to Andaman and Nicobar Islands

This was the interesting lecture about the colourful flying Insects, he explained about the life cycle of the butterfly and also the classification of butterflies. He also narrated the differences about the butterflies and the moths, how the scales are arranged and the different patterns in the feathers. From his talk the students got a picture on the world of butterflies, diversity and endemic species of Andaman. All students rated this as very informative talk in their assessment.



Lecture – 9: Dr. P. Pramod, SCON

Topic: Biodiversity: Nurture Nature for the Future.

This is the very enlightening talk on the biodiversity which made us look keenly into the morphological parts of the plants. Students were amazed by the diversity of the barks, leaves, flowers branching patterns etc. and with the help of one of these parts the plant can be identified and studied. He shared his experience with the students in Coimbatore “The power of the students” how they can change the society, what they can achieve with some examples of the students work. This motivated all students and made them conceited. This elicited that they should do something for the conservation of bioresources.

Lecture – 10 :Mr. N.C. Choudhuri, KVK, CARI

Topic: Animal husbandry, poultry farming and cattle rearing

This lecture was more about 1. The Indian cattle breed like the milch breeds, milch and draught breeds, draught breeds and 2. The exotic dairy breeds found mostly in the Punjab, Haryana, Himachal Pradesh, Madhya Pradesh. He also gave the detailed explanation of the milk production of these breeds. He explained about the indigenous breeds of the A&N Islands also.

Lecture – 11: Rajan. P, SCON

Topic: Avifauna of Andaman Islands.

Rajan started his lecture with the brief introduction of the DNA Club programme of Andaman Islands. Then he explained the bird diversity of the A & N Islands, the distribution of bird populations and then continued with the introduced species of birds in the A&N Islands and its significance. He also gave a brief account on how to write a project report, which is very essential for the students for their academic life. He clearly narrated how to identify a bird in general which is very helpful during bird watching.

Lecture – 12: Dr. C. Murugen, BSI

Topic: Plants of Andaman Islands.

His lecture was mainly on the endemic plants of the Andaman and Nicobar Islands. He told that there are 300 species of endemic flora in these islands and also showed the



photographs of many plants species and explained it. He concluded by saying conservation of the plants are very essential, though we have lots of biological Park, Biosphere Reserve, National Park, Wildlife Sanctuaries etc, an individual should take interest of his own.

Lecture 13: Dr. Rajkumar Rajan, ZSI

Topic: Biology of Corals

He spoke mainly about Biology of the corals. The types of corals, the basis of its classification, the biology of corals, the structure in detail, how the tentacles helps in food capturing and swallowing of the food, the relationship of corals and algae, and also the reason for the coral extension like fisheries, the bleaching of the corals etc are dealt with in details. He also spoke about the role of mangroves in coral conservation and the ways to protect the corals and the use of corals also.

Lecture 14: Dr. Nagesh Ram, KVK,CARI

Topic: Mangrove Ecosystem

He presented in detail about the mangroves in the costal areas of A&N Islands and how the mangroves protect the costal areas from erosion. He also focused on the biodiversity of the mangrove forest and its importance to the human being, the different species of birds, animals, and fishes associated with the mangroves. He also added a brief note on the fisheries and its importance.

Lecture 15: Tamal Mandal, ZSI

Topic: Corals of A&N Islands

He narrated the importance of coral reef, how to preserve them, the anthropogenic effects on corals like pollution, sedimentation, destructive fishing practice, global warming and coral bleaching. He also described about the distribution of the coral in the Andaman and Nicobar Islands. He also gave short notes on the earth quakes and volcanic activity and the effects of earthquakes like land slides, tsunami, floods, shaking and ground rupture, fires and human impacts etc...



Lecture 15: P. Krishnan, CARI

Topic: Corals and Climatic Change

The lecture on corals has given a picture about life of coral reefs in the context of climate change. This is the most informative and interesting lecture about corals according to the student's assessment. He spoke on corals and its adaptations, the habitat, the reproduction of the corals etc. He also added the threat like storms, temperature and the coral disease; its how it is important to the humans and Coral Bleaching. He also talked about the fisheries and how the corals are providing the habitat for the fishes and many other organisms.

Lecture 16: Senthil Kumar, IFS, Director, DST, ANI

Topic: Forest Ecosystem

This is one of the important lectures, which gave a general idea about the forests, habitats for the biodiversity conservation and the livelihood to humans, the role of these forests in the storage of the water and the importance of drinking water in the forest. He also told about the other important role of the forests to the environment and the living beings in the world. He discussed with students the issue of human wildlife conflict with a movie clipping of a recent incident of crocodile-human conflict in Andaman.

Lecture 17: Sachidanandha Swain, CARI

Topic: Post Harvest Management of Field Crops

He spoke mainly on the field crops its factors like mechanical injury and the parasitic diseases which cause the post harvest loss. He also narrated the improvement of the technologies and the processing of the post harvest crops for the better marketing. Some of the key issues related to the Post Harvest management were also discussed. He discussed the measures to assure better food safety.

Lecture 18: Dr. Arun, CARI

Topic: DNA and its structure

The basics such as discovery of the DNA, its structure and function, including the various components like Adenine, Guanine, Thymine, Cytosine, and its formation of the



double bands all these were given in a very simple way to the children in his talk. He also explained the replication of DNA and its role in heredity.

Lecture – 19: Prof. Ganeshaiah, UAS Bangalore

Topic: Bio-resources Why Should We Conserve?

This is one of the important and the informative lecture on Bio resources. Children love stories, and stories are the best way to convey the real awareness to children. Understanding this Dr. Ganesaiah, gave the understanding and the spirit of Bioresource conservation to children through three excellent true life stories. He narrated the story of “The lost man in Siberia” and “The Easter Island” which clearly explained how one should not do the basic mistake of overuse of resources and, human survival depends on minimizing the use of resources. He stated that the “Loss of Bio-resources could severely affect our Food base and thus our survival “. He gave a brief account of the fig Trees and its relationship with the fig wasps, exposing the children – another wonder of living world. . He concluded with the pledge which all the participating students and visitors in the audience has taken to conserve the bioresources for future and next generation.

Lecture – 20: Gopal, CPRCEE,

Topic: Biodiversity of A&N Islands

He narrated the beauty of this Island, its fauna, flora and the wealth of the Andaman's. The habitats of different tribes like Great Andamanese, Onges, Jaravas and many more were highlighted. Mangroves are made to protect the marine animals, and also protecting us from the natural disaster like tsunami and Cyclones, stop soil erosion. He also shown them how Andaman's beauty is decreasing due to the pollution.

Lecture – 21: Priya, Research Scholar, SACON

Topic: Genetic Engineering and genetic diversity

She gave a lecture on basics of human genetics including basics of human genes, how the vaccine are synthesized and the biotechnological procedures behind it. The production of the transgenic animals and the clones were also explained. She also explained briefly her



study on the phylogenetic history of Andaman Day gecko using genetic mapping and the significance genetic study in the evolutionary ecology..

3. INTERACTIONS with Scientists

1. Dr. P.A Azzez, Director, SACON, Coimbatore

Participants had a long interactive session with Director of SACON.. Students asked many questions to him to which he responded with a lot of anecdotal case stories from his own research experience. The discussion covered many topics very much relevant to the vacation training programme such, limnology, pH, properties of water, planktons, role of C. Botulinum, SO₂, and Pollution. He also gave a brief introduction on the process of Environmental Impact Assessment.

2. Dr. Ganesh Kumar, Professor of Agricultural Entomology, Tamil Nadu Agricultural University, Coimbatore

Professor Ganesh kumar, in his lecture introduced the participants the world of insects, diversity and the fascinating lifehistory strategies. He lead the participants in to the world of insects by traveling with them to most of their field trips in to forest and the nearly farmlands. In the leisure hours and in night the students interacted with him in various insect study techniques and in identification of insects they have encountered. Through his interactions, the participants developed a special insight into the field techniques to study insects.

(View of the student ... from diaries)

Dr. Ganesh gave his lecture on Insects. First he asked us to write the name of the insects. I wrote some insects like grasshoppers, Damsel fly, Dragon fly, beetles and many other insects. Then he explained about each insect. Then we went to field in search of insects and I Caught five insects, and identified them as grasshopper, Red Bug, Dragon fly, Damselfly and red beetle. It was very interesting. Then we studied the parts of some insects like grasshoppers it has forewings for protection, two hindlegs and one pair of forelegs, like that Cricket has its ears placed on the legs and his eardrum is called tympanum. Then we



studied on the Damsel fly , it has a black spot on the corner of the wings and legs comes from one common point only and having a long tail compared to Dragonfly. Like that I came to know various insects and their parts, their habitats like those of Aphids, which is present in leaves and provide food for ants. I enjoyed a lot on finding insects, I enjoyed a lot while he explained the different parts of the insects especially that of the butterfly.

.....Sunita Dungug

3. Mr. Rishikesh. DST

Title: On motivation the students for science. (View of the student ... from diaries)

Mr. Rishikesh Sir told us more about the importance and the use of the bioresources. First he asked what we expect from this programme, all shared their views like they will be nature friendly, will learn more about the birds and insects that we don't care before this programme.

In this topic he asked what is the importance of bioresources and in what is the way we are going to use it. Then he asked us to tell some problem of this Island. Then Saurav told 'water Scarcity'. Then sir asked us to think why water has become Scarce in these Islands while there is about 3350cm of rainfall. Then we told like the storage buildings were short, most of the rainfall fall go to the sea and also many people do not have the idea of storing water. I told them people do not know how to use the water and they simply waste it. Sir also suggested some reasons and told us to use water in a proper manner. Then he came across the use of electricity he came across to the use of electricity he gave some examples like use of LED lights which takes less energy and gives more lights. Then he explained on the National Action Plan for climate change 2008 which was declared by Dr. Manmohan Singh, in this Plan, how to make house with which we can conserve electricity. The house should be constructed in such a way that natural lights and fresh air may enter the house so that we can save the electricity during the day time.

He asked us that if you do something then do it in a scientific manner. He gave many examples like the story of Carnal Ferrar, who stayed in this Islands in this childhood after collecting the data's of butterfly he became the scientist and wrote the book on the butterfly, which is kept in British National History in London..

.....Priyanka



4. Dr. Sirish Manchi

This is one of the important discussion because this talk was delivered during the field trip to Lime Stone Cave at Bartang. He gave an introduction to the limestone caves in the islands and about the Edible nest Swiftlet, a special bioresources in the cave which is facing a significant conservation problem. Based on his experience in the research of this bird he gave a brief talk in most appropriate place - in front of the its dwellings, the limestone cave.

5. Mr. A. P Zaibin

He discussed with students regarding science and its importance, also he shared his view of science and scientific knowledge. During his lecture most of the students asked many question and they tried to clear their own concept regarding nature. This was really friendly talk and most of the students expressed their own thought for answer.

6. Mr. P. Nehru

His interaction mostly concentrated on Flora of Nicobar Islands. He explained about Nicobar and its plant diversity. This was also a friendly chat with the students. He narrated some common methods to identify common plants and its distribution in Nicobar Islands. At last he cleared students doubt regarding their projects on plants.

4. FIELD VISITS

The field visits were the special activity the children enjoyed very much and learned maximum during the training. During the visits the students were taken with the experts. The experts responded and cleared the quires of the students. Their personal and group Project data's were also collected during the visit. Each visit made to students learns a lot of new things and the involvement of the students in learning things directly from nature was remarkable.



a) Visit to Worlds Coconut Germplasm Centre

The Scientists in the Germplasm Centre of CARI, gave a brief introduction about their work. They have witnessed the 39 varieties of coconuts brought from many countries. During the walk to the germplasm center the scientist explained about the fodder crops also like Guinea crops, importance of inter cropping, and the spice varieties like pepper, cinnamon, clove, etc. They were very much fascinated when they saw the dwarf and tall varieties of coconut and many hybrids varieties, etc.

b) Visit to Mount Harriet National Park

The trip started around 06.45 AM and reached Mount Harriet by 08.15AM, this is second highest mountain in the Andaman Islands. This is evergreen forest protected by the Govt. of India. First they saw a "Vernacular Mango" an endemic wild variety mango marked and displayed there. This national park is famous for large variety of butterflies and birds. Here students observed and recorded a large number of butterfly species such as common crow, yam fly and Andaman tree nymph etc and a number of bird species like Andaman Drongo, Bulbul, Golden oriole, Rocket tail drongo etc. They walked for long distances and amazed by seeing the Biodiversity of the forests. On the way all of them donated some blood to the leeches which also made them to look keenly on the ground. In the forests Dr. Jomy Augustian explained the importance of the forests, and the need to conserve them. He narrated how the forests work as sponges which stores lots of water during rains and releases as streams and rivers. He also suggested drinking forest stream water is good even if it is turbid, as this is the biological water and causes no harm.. They took a lot of notes on all these information and observation from the forests and reached the sippighat around 3.30 PM.

c) Visit to Baratang Islands (View of the student ... from diaries)

When the clock showed 5 in the morning we all left from KVK to Baratang. We entered area of Andaman Island owned by the Jarawas. On the way there were many Jarawas were standing, I remembered the discussion we had regarding their life and some of us discussed that in trip. Reached Middle street and then went to see Mud Volcano. It was amazing and unbelievable. Then we went to the limestone cave, crossing the mangrove forest



for more than one hour on the way.. The boat ride through the root systems in the mangrove creek was excellent. Crossing that we went through forest for some time. Here we saw birds like Andaman Crane, Golden Oriole, Glossy Starling and the butterflies like Psyche, Grass Yellow, Yam Fly etc. Before going to the cave Dr. Sirish, scientist from SACON, gave a brief introduction about the caves in that region. The Andaman Edible nest swiftlets which builds its nest using saliva inside the cave. We saw a swiftlet birds in the nest. Started from the Middle street by 3.20PM and reached KVK by 5.45PM.

.....Saneesh

d) Visit to Biological Park, Chidiyatapu (View of the student ... from diaries)

In Chidiyatapu, first we went directly to the Munda pahad Beach, In nature walk in the forest near the beach we saw many birds butterflies and plants which the experts explained to us. Andaman Drongo, Small Bulbul, Minivet, Common Myna, Brown coucal, parakeets, white breasted kingfishers were some of the birds which we have seen. Yam fly, Yellow Pancy, Common Albatross, Common Mormon were the butterflies which crossed us. During our visit to the Biological Park enclosures in Chidiyatapu, we saw Crocodiles, Monitor Lizard, Wild Pigs, Spotted Deer etc. Many plant species we have identified and recorded in this trip. Some of them are Garjan, Didu, Papita, Mangifera, Jungle jamun and Paduak which is the state tree of Andaman's and Nicobar Islands. This is one of the most interesting place where we spend a lot of time with our experts in learning more about birds, butterflies and plants.

.....Sushmoy Das

e) Visit to Knobill Island

The students visited the Knobill Plantation. This was an island of about 48 acres private plantation with full of different species of spices. Students traveled in boat around 20 minutes to reach this Island. They went around the plantation, collected lots of information regarding the spice crops of the island and also observed some birds, butterflies, etc. Ms. Tanaz, proprietor of this Island guided the students and described all about the varieties of the crops in their Island.



5. INSTITUTIONAL VISITS

During the training programme the students were taken to different institutions. The scientists, research scholars and the experts from those institutes were arranged brief lecture and demonstrations to enrich students with knowledge and also by clearing all their queries. The institutes visited by the students are CARI, Archeological Survey of India, Botanical Survey of India, and Zoological Survey of India. Naval Marine Museum, Science Centre

a) Central Agricultural Research Institute (CARI)

Central Agricultural Research Institute is the leading institute and the largest research centre of the Andaman and Nicobar Islands. Director, R.C Srivastav has kindly agreed the visit and directed the scientists to take the students around and explain all the facilities. Dr. Arun has taken them to the animal husbandry farm, and poultry farm where he explained the facilities in detail. Later he also gave the lecture on the topic "DNA and its structure". They have visited the laboratory and got introduced to the equipments like PCR, LAF, gel electrophoresis unit, documentation system etc. The students were astonished by looking at the amazing butterfly collection maintained by CARI and spend some time there to study that. At about 2.30pm they have visited the library and spend half of the day in collecting detailed references related to the project they to have complete by the end of the programme.

b) Anthropological Survey Of India (ASI)

They spend half day in ASI where anthropological history of A& N Islands are explained in great detail. They have gone through the exhibition materials with a lot of interest. The life of tribals they have learned from there came to many discussion later in the programme,. They got amused by the life that represented in the costumes, weapons, hut, baskets & their utensils used by the Tribes of the Andaman and Nicobar Islands..

c) Botanical Survey Of India (BSI)

They have seen and spend in the BSI herbarium and the Scientists here clearly narrated and explained them how to prepare a herbarium and they also explained more about

SACON Library



PR158



=====VTP' 2010, Andaman and Nicobar Islands=====



the classification system of plants. The explanation of seed preservation techniques was also very useful and beneficial for the students.

d) Zoological Survey Of India (ZSI)

The Research fellows in the ZSI explained all the specimens like Corals, Echinoderms, Butterfly, Moths, Lizards, fishes exhibited in the renovated exhibition in the centre. The students had a very informative session and the scholars cleared all the queries regarding the preserved specimens and exhibits in the museum.

e) Samudrika- Naval Marine Museum

It is one of the small but interesting museums in port Blair. Here they could observe lots of marine living organisms such as Sea star, Sea urchins, plenty of corals and some facts about Andaman and Nicobar tribes also displayed here.

f) Science Centre

This is a very informative centre where the science and Technology innovations were presented in a very creative manner. Many exhibits on force, gravity, life around us, Biodiversity of A&N Islands and Biotechnology were very informative. The participants watched a 3D film about the Magic and the Wild Life here.

6. COMPETITIONS

The competitions like poster making, quiz, treasure hunts and debate were held in different days during the programme. There were two poster competitions from each team. Each team came up with their own ideas. The earth house won the first prize. A Quiz competition on bioresources was conducted; Sanish, Sourav and Rohit got the First, Second, and third prize respectively. All the members actively participated in the treasure hunts, the earth and the water houses together shared the first prize. The Debate was held in two sessions. The members of the programme were split into two teams. The "Forest Fire" was the topic for the first session. The controversial ecological issue "Andaman Trunk Road" was the topic for the other session. Both the teams actively presented their views in both the sessions.



7. EQUIPMENT DEMONSTRATION

There were demonstrations of the use of many different types of scientific equipments such as GPS, Spotting Scope, Compass, Hygro-Thermometer, altimeter etc. After the demonstrations these equipments were given to students for their activities, all participants learned the procedure and uses of these equipments and also the do the following using them.

1. Root marking and positioning with help of GPS
2. Tree height measurement by the use of Compass
3. Behavioural observations of birds with help of spotting scope
4. Daily temperature and humidity reading by the use of digital hygro-therometre
5. Altitude measurement by the help of Altimeter
6. Butterfly spreading methods with help of spreading board and other materials
7. Insect observation with help of lens

8. FILM SCREENING

The Documentary films are played in the evening 7.00 PM-8.00 PM on all days. The movies are mainly related to the wildlife, biodiversity or environment. The movies are played for the 45 min and the questions were asked to the students to enrich them with the knowledge. This will improve the listening skills, observance and the involvement of the students.

9. PROJECT WORKS

The 22 participants were divided into four groups in the first day itself and the topics for their projects were also assigned to them. The four groups were given topic as Farming, Insects, Plants and Birds. There were five to six students in each group. The experts assisted the students in collecting the data, the method and identification of the species. The report was presented by collecting the data from various areas of Andaman such as KVK Hostel,



Sippighat, Chidiyatapu, Baratang, and Mount Harriet. The major part of data collection was done during the morning nature walks and also during the evening hours.

Report on the Study of the birds:

The individuals of this group have worked on six different species of birds namely Magpie robin, Glossy staring, Common Myna, Kingfisher, White breasted waterhen and Bulbul. The data collection was done during the field visits and nature walks. Also they have done a general bird survey wherever they have visited during the period. They sited 9491 birds among which 6763 birds in the Sippighat area, 493 birds in the Chidiyatapu area, 567 birds during the field visits and 968 birds in the Spice Island. Among the birds sited the most common birds they were seen is White Breasted Water Hen and the rarest bird seen is the Wood pecker and the Black-Naped monarch as per their report.

Report on the Study of the Plants:

This group worked on five distinct areas like Mangroves of the Andaman, Insect-plant relationship, medicinal plants, barks of trees and Flowers of the plant. About 10 different species of the mangrove plants were listed with regards to the diversity of the barks, leaves and flowers. The insect-plant relationship was studied, including the fig plant and the Fig wasp, the relationship of 12 plants and the related insects were reported. They also understood through the studies that the plants and the animals are essential for each other's life. They have learned that with the help of parts of the plants like the bark, leaves, flowers etc., the plants can be identified.

Report on the Study of the Insects:

The insects study has divided in to six the study of the Butterflies, flying insects, Aquatic insects, Tree insects, Insects on the Vegetation and Insects on the Ground. They have sited 5633 number of insects which included 16 different species of Butterflies, 15 different species of insects on vegetation, 12 species of flying insects, 16 different species of tree insects and 9 species of ground insects. Among the sighted insects the majority of them were the butterflies and the among the insects found on the trees majority were ants as per their report



Report on the Study of the Agriculture:

This report comprises the study of the food crops of Andaman, horticulture crops, Pisciculture in Andaman, Pests and Diseases and Animal Husbandry. During the course of study, 23 food crops listed in relation to the soil, habitat, and climate, useful part of the plant, season and the areas grown were documented. 15 species of the pests on the vegetables were listed. The areas under Pisciculture were surveyed as 630 hectares in 13 areas of Andaman Islands. Details of the cattle Buffalo, Sheep, Goat and Pigs were also collected.

WRAP UP SESSION

On 5th June 2010 evening, all students presented their report and they shared their camp experience in front of all students and staffs. During this session some of the students felt very emotional. After valedictory session all students with staffs went to Wandoor beach as part of the wrap up session. In Wandoor beach they spent around three hours and enjoyed the last day of life together.

VALEDICTORY SESSION

The programme concluded on the 05th of June, on the day of World Environment Day, with the Valedictory session. Chief guest of the Valedictory session was Prof. K.N Ganesaiah, renowned scientist and Professor from University of Agricultural Sciences, Bangalore and he gave the Key note address on the occasion. Mr. Devdas, Principal State Institute of Education, A & N Islands presided over the function and gave the valedictory address. Dr. P. Pramod, Sr. Scientist, of SACON & Course coordinator, welcomed the gathering and gave a brief report of the programme. Dr. Nagesh Ram Programme coordinator and incharge of KVK, Sippighat and Mr. Rishikesh Sinha, Sr. Scientific Officer, Dept. of Science and Technology A & N Islands felicitated the programme and the participants. The four representatives of student participants shared their experience, and their views about the training programme.



LIST OF LECTURES

SL.No:s	Name of the Resource Person	Address	Delivered lecture/Interactions on
1	Dr. Debkumar Bhadra	Scientist, Department of Geomagnetism, Andaman and Nicobar Field Office, Port Blair.	Climate Change
2	Dr. P. Azeez	Salim Ali Centre for Ornithology and Natural History Coimbatore	Interaction regarding Science
3	Prof. Ganeshaiah. K. N	School of Ecology and Conservation UAS GKVK Bangalore	Bio-resources Why Should We Conserve?
4	Dr. Jomy Thomas	Head of the Department, Dept: Botany St Thomas College, Pala, Kerala	Vegetation of Andaman Islands and Its Importance.
5	Dr. L.B. Singh	Scientist, Krishi Vigyan Kendra (KVK), CARI, Sippighat. Port Blair	Common Medicinal Plants in our Surroundings
6	Mr. A. Gopal	Project officer, CPR Environmental Education, Andaman and Nicobar Islands.	Biodiversity of A&N Islands
7	Mr. Ajay Saxena , IFS	Chief Conservator of Forests, Department of Forest Environment and Forest, A& N Islands	Coral reefs of A&N Islands
8	Dr. Jafer Palat	Zoological Survey of India, Western Ghat Field Station, Calicut, Kerala	Butterflies of India with special reference to Andaman and Nicobar Islands
9	Mr. Rajan. P	Research Scholar Salim Ali Centre for Ornithology and Natural History, Coimbatore	Avifauna of Andaman Islands
10	Dr. N.C. Choudhuri	Scientist, Krishi Vigyan Kendra (KVK), CARI, Sippighat, Port Blair	Animal husbandry, poultry farming and cattle rearing

11	Dr. P. Pramod	Salim Ali Centre for Ornithology and Natural History Coimbatore	Biodiversity: Nurture Nature for the Future
12	Dr. C. Murugen	Scientist, Botanical Survey of India, Port Blair, Andaman and Nicobar Islands	Plants of Andaman Islands
13	Dr. Rajkumar Rajan	Scientist, Zoological Survey of India, Port Blair, Andaman and Nicobar Islands	Corals and Effect of Tsunami on Coral reefs
14	Dr. Nagesh Ram	Scientist, Krishi Vigyan Kendra (KVK), CARI, Sippighat, Port Blair	Mangrove Ecosystem
15	Mr. Tamal Mandal	Research Scholar, Zoological Survey of India, Port Blair, Andaman and Nicobar Islands	Corals of A&N Islands
16	Dr. P. Krishnan	Scientist, Department of fisheries Central Agricultural Research Institute, Port Blair, A&N Islands	Corals, Climatic Change
17	Mr. Senthil Kumar, IFS	Director, department of Science and Technology, Andaman and Nicobar Administration. Haddo, Port Blair	Forest Ecosystem
18	Dr. Sachidanandha Swaine	Scientist, Central Agricultural Research Institute, Port Blair, A&N Islands	Post harvest management of field crops
19	Ms. Elrika D'souza	Research Scholar Nature Conservation Foundation Mysore, Karnataka	Dugong and its Character
20	Ms. Priya	Project Assistant, Salim Ali Centre for Ornithology and Natural History Coimbatore	Genetic Engineering and genetic diversity

21	Mr. Vardhan Patankar	Research Scholar Nature Conservation Foundation Mysore, Karnataka	Corals and Coral associated Organisms.
22	Dr. T.V.R.S. Sharma	Retired Scientist, Central Agricultural Research Institute, Port Blair, A&N Islands	Endemic Flora and Fauna of Andaman Islands.
23	Mr. Rishikesh.	Senior Scientific Officer, Department Of Science and Technology, Andaman Administration	On motivation the students for science.
24	Dr. Shirish Manchhi	Scientist, Salim Ali Centre for Ornithology and Natural History Coimbatore	Edible nest Swiftlet in Limestone Caves
25	Mr. A. P. Zaibin	Research Scholar, Salim Ali Centre for Ornithology and Natural History Coimbatore	Avifaunal Diversity of Nicobar Islands
26	Mr. P. Nehru	Research Scholar, Salim Ali Centre for Ornithology and Natural History Coimbatore	Flora of Nicobar Islands
27	Ms. Tanaz Knobhil	Knobill Plantation. Haddo Port Blair, Andaman Islands	Different type of spices in Andaman and Nicobar islands
28	Dr. P. Arun	Scientist, dept: of Biotechnology Central Agricultural Research Institute, Port Blair, A&N Islands	Basics of Biotechnology

LIST OF PARTICIPANTS

No	Name of the student	M/F	Address of the School	Home Address	Contact Number
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4	Sunita Dung Dung	F	Nirmala. Sr, Sec, School Haddo PO, Port Blair	D/o Emil Dung Dung Manglutan, Hamphrygunj	9933265297
5	Priyanka Tirkey Alvin Singh	F	Nirmala. Sr, Sec, School Haddo PO, Port Blair	D/o Davud Tirkey Medical Pahar, Bambooflat	9933263542
6		M	Nirmala. Sr, Sec, School Haddo PO, Port Blair	S/o Puran Singh, Chattam Timber Yard Section, Chattam	9474266258
7	Vivek Kumar Singh	M	Nirmala. Sr, Sec, School Haddo PO, Port Blair	S/o amen Nath Singh Dendas Point, Namunagar	9476061665
8	Susmoy Das	M	Kendraya Vidyalaya No:1 Port Blair	S/o T. K Das , C-14/3, C.P.W.D Complex, GPRA Complex, Racnchi Basti	9332512584 03192-211598
9	Shabbir Ahammed	M	Govt. Model. Sr. Sec. School Port Blair,	S/o M.D. Rafique, ANIFPDC, Haddo, Port Blair	9933215615
10	Sourav Bhattacharjee	M	Govt. Model. Sr. Sec. School Port Blair,	S/o Pares Bhattacharjee C-16/7, Lambaline Rachi Basthy, Port Blair	9733405371
11	Rohit	M	Kendraya Vidyalaya No2 Port Blair	S/o Mr. K. P. Ram, P 118/6 (IV line), Minibay, Port Blair	9933227580
12	Raman Indwar	M	Kendraya Vidyalaya No:2 Port Blair	S/o Mr. Rajendra Indwar Type 11/1, Minibay Port Blair	9434290055

13	Akshay	M	Kendraya Vidyalaya No:2 Port Blair	3/2, Chandni Roshni Apartments, Nagpur	9933277734
14	Ashish Mazumder	M	Govt. Sr. Sec. School Swadesh Nagar, M.Andaman	S/o Haren Mazumder Billiground, Laxminala Middle Andaman	03192-216269
15	Ushanto Rai	M	Govt. Sr. Sec. School Swadesh Nagar, M.Andaman	S/o Ganesh Ch Rai Ward No.6, Billy Ground Middle Andaman	9476007149
16	Sunity Biswas	F	Govt. Sr. Sec. School Swadesh Nagar, M.Andaman	S/o Sushil Biswas Billy Ground Middle Andaman	94746043845
17	Pronit Mandal	M	Govt. Sr. Sec. School Swadesh Nagar, M.Andaman	S/o Prakash Mandal Ward No: 6, Billy Ground Middle Andaman	9474245142
18	Teeban Kumar	M	Govt. Sr. Sec. School Diglipur, N.Andaman	S/o P. Krishnan Milan Gram Diglipur	9933223481
19	Prosanto Das	M	Govt. Sr. Sec. School Diglipur, N.Andaman	S/o Kajal Das Ramakrishna Gram Diglipur	9933209384
20	Sushanta Das	M	Govt. Sr. Sec. School Diglipur, N.Andaman	S/o Becharam Das Ramakrishna Gram Diglipur	03192-320523
21	Joybroto Ray	M	Govt. Model. Sr. Sec. School Mayabunder	S/o Gautam Ray Near Netaji Sports Club Mayabunder	9474218871
22	Pratik Halder	M	Govt. Model. Sr. Sec. School Mayabunder	S/o S.C Halder Medical Colony Mayabunder	9474215224

SNAP SHOTS OF THE EVENTS



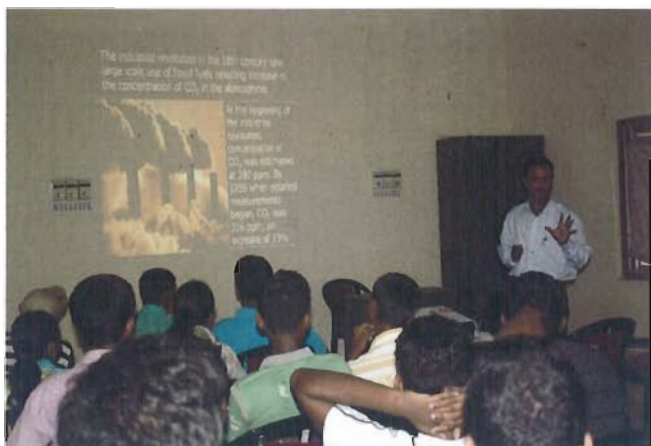
Inaugural session of VTP Camp'2010, Andaman & Nicobar Islands



Daily morning Nature Walk (6am -7.30am) around camp site



Students engaged with Poster Making Competitions



Lecture on Climate Change by
Dr. Debkumar Bhadra,



Lecture on Post Harvest Management of
field Crops by Dr. Schidananda Swaine



Lecture on Andaman FLora by
Dr. Jomy Augustin



Lecture on Common plants of Andaman
by Dr. C. Murugan, BSI



Lecture on Medicinal Plant by
Dr. L. B. Singh



Lecture on Endemism in Andaman
by Dr. T.V.R.S. Sharma



Interaction by Dr. P. A. Azeez
Director, SACON



Interaction by Dr. P. Pramod
Course Director of VTP



Interaction by Mr. A.P. Zaibin & Mr. P. Nehru



Interaction by Dr. Sirish Manchi



Under water camera demonstration by
Mr. Vardan and Ms. Elrika



Insect fixing demonstration by
Prof. Ganesh Kumar, TNAU, TN

Field Visits



Baratang evergreen forest



Mangroves in Baratang



Worlds Coconut Germplasm Centre



Limestone Cave in Baratang



Knobill Island



Mount Harriet National Park

Institutional Visits



Science Centre, Port Blair



Spices Nursery, CARI



CARI Library



Anthropological Survey of India



Biotechnology Lab, CARI



Botanical Survey of India, Port Blair

Project Works



Night Survey



Tree bark Sketching



Water insect Survey



Bird Survey



Data collecting from expert



Insect Survey



Single bird observation



Nocturnal insect survey



Reference Collection from CARI Library



Students experience sharing



Valedictory session



Valedictory session

