



Vivekananda College, Tiruvedakam West, Madurai, Tamil Nadu
VC / DBT-SCS / 2021-2022/ Report –Institutional & Industrial visits

VIVEKANANDA COLLEGE
(Residential & Autonomous – A Gurukula Institute of Life – Training)
College with Potential for Excellence
Re-accredited with “A” Grade (CGPA 3.59 out of 4.00) by NAAC
Affiliated to Madurai Kamaraj University, Managed by Sri Ramakrishna Tapovanam,
Tirupparaitturai, Trichy



Tiruvedakam West, Madurai District-625 234, Tamil Nadu
DBT STAR COLLEGE SCHEME

Department of Biotechnology, Government of India, New Delhi

Chairman & Principal : Dr. T. Venkatesan, M.Com., B.Ed., M.Phil., PGDCA., Ph.D

Coordinator & Member Secretary : Dr. G. Ponraj, M.Sc., M.Phil., Ph.D

**Institutional visit to department of Biotechnology,
Madurai Kamaraj University, Madurai**



VIVEKANANDA COLLEGE
Tiruvedakam West

PG AND RESEARCH CENTRE OF ZOOLOGY

ACEDAMIC VISIT REPORT

Vivekananda College, Post Graduate and Research Department of Zoology was organized a one-day institutional academic visit to School of Biological Science in various departments, Madurai Kamaraj University (MKU), Madurai, Tamil Nadu under DBT STAR College Scheme on 25.2.2022 Friday. Total of 72 students, Nine Professors and one technical assistance were participated in the event. This visits was started exactly at 10:00 am at School of Biological Science, MKU. before that **Dr V. Parthasarathy**, Vice Principal & Associate Professor of Zoology, Vivekananda College briefed the objectives of present academic visit.



Fig: The student participants and staffs at Genetic Engineering Laboratory

Furthermore, **Dr. Shankar**, Professor, School of Biological Science explained various research activities in various departments in School of Biological Science and then we start to visit the laboratory at 10:30 am. First we visited the Molecular Microbiology lab and Immunology lab; the following activities were noticed the production of biodiesel and biogas from the blue green algae. It was addressed by **Mr. Shakthivignesh** Research Scholar of **Dr.**

Varalakshmi, Molecular Microbiology. Furthermore he explained various techniques were associated with bio-fuel production. Interestingly they have testing various organic compounds



Fig: Participants are interacted with resource people at their laboratory at MKU

isolated from various algae to treat various diseases in human model animals especially the Zebra fish. Further he added information about the Principles and application of gel documentation machine, cooling centrifuge techniques, rearing methods of human model animals and various culture techniques. Then proceed to Molecular Genetic Engineering laboratory the Research Scholar Mrs Reghana was explained in detailed the working principles and applications of various instruments such as Autoclave, Incubator, various centrifuges (from 10000 to 50000, cooling), spectrophotometer, Gene pulser for DNA transformation, PCR, Deep freezer various ranges (-20, -80 & Cold Room), Orbital Shaker, various Electrophoresis (Agarose, PAGE, Tube Gel etc), Blotting instruments, Trans-illuminator (white & blue light), Geiger Muller counter, DNA Hybridize Probe, Langendorff, Vacuum Freezer, Lyophilizer and Protein Purification System. At finally Dr. M. Shunmugavelu, Head and Associate Professor of Zoology, Vivekananda College reviewed overall and Dr. G. Ponraj, Sri. R. Muthupandi, Dr. K. Rameshkumar, Dr. T. Ramesh, Dr. K. Kamatchi and Dr. S. Selvaraj received and get students feedback about this visit.

Organizer

Ane

M. Shunmugavelu
Head of the department

2

T. Selvaraj
Principal



Education Trip to Alagar hills, Madurai



VIVEKANANDA COLLEGE
Tiruvedakam

PG AND RESEARCH CENTRE OF ZOOLOGY

Report on Educational Trip to Alagar hills

PG and Research Centre of Zoology organized One day ecological fieldtrip to hills of Alagar Kovil, Madurai on 04.03.2022 under DBT-Star College Scheme. Total of 60 students, nine staff members and two laboratory staff members were participated in the event. The team had breakfast and started traveling to Alagar hills by bus at 7.00 am. Once all reached the spot visit the ancient sculptures and the idols in the premises of Alagar temples. Each and everything which was constructed by our ancestors was much detailed work and even now it was clear. Then the team was started tracking (or) hiking by walk in the dense forest of Alagar hills. **Dr M. Shunmugavelu**, Head & Associate Professor leaded this team and welcomed the participants and **Dr. V. Parthasarathy**, Vice Principal & Associate Professor explained the prime objectives of present visit.

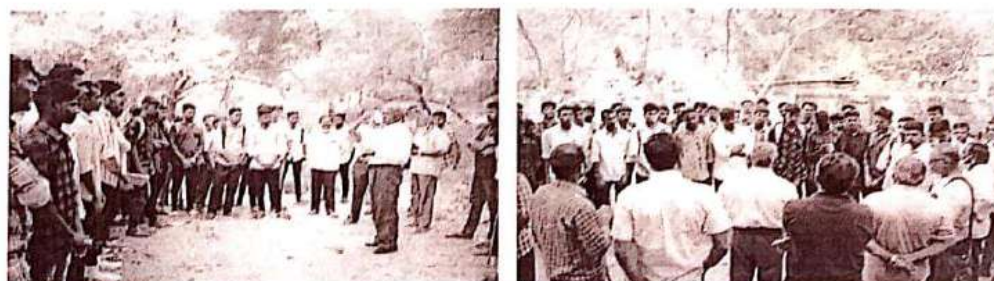


Figure: Team of participants from Post Graduate and Research Centre of Zoology, Vivekananda College

The team was adopted area search method to document the faunal species in the forest. At first the golden backed woodpecker was welcomed us and encountered various bird species

during the survey. The bird species such as white browed bulbul, purple sunbird, asian paradise flycatcher and common hoopoe were documented.



Figure: The active participation and collection of specimens by team members

The staff members **Dr. V. Parthasarathy** Vice Principal & Associate Professor and **Dr. G. Ponraj**, Associate Professor had given a spot lecture on forest type and elevation arrangement of vegetation and medicinal plants. **Dr. K. Rameshkumar**, Assistant Professor and **Dr. T. Ramesh**, Assistant Professor presented a spot lecture on association of animals in aquatic system and different types of winged insects especially the butterflies. **Sri. R. Muthupandi** Assistant Professor and **Dr. M. Pavunraj** Assistant Professor were presented a spot lecture on methods of insect collection and reasons behind tree gall formations. **Dr. C. Kamatchi** and **Dr. S. Selvaraj** Assistant Professor presented a spot lecture on different types of herpetofauna. Total of 36 species of butterflies were encountered during this survey. Species such as pioneer, common sailor, grass yellow, common emigrant, crimson rose, chocolate pansy, great orange tip, blue mormon are very common and species namely southern bird wing were spotted rarely. The explanation given by **Dr. T. Ramesh**, gives a clear idea to find the different types of butterflies and how to collect it, holding it, and preserve it. Interestingly we spotted the butterfly mud pudding, basking and egg laying behavior in the forest ecosystem. Total of four amphibians and one non venomous snake species namely common bronzeback were encountered by crossing and





Figure: Mud paddling of Common emigrants, Monkeys and Indian bison

walking on the lotic stream. Species such as Indian cricket frog, Common tree frog, Indian toad, five finger green frog are documented common in the survey. Furthermore there were so many small fishes roaming in the lotic stream, monkey and their habitat, there were lots monkeys from new born to the adult also noticed the parental care among the monkeys. Interestingly the mammal Indian bison were encountered at the end of survey near Palamuthir solai. Then the team proceeds to college at 04.00 pm.


Trip Organizer


M. S. Srinivasulu
Head of the Department


Principal



Industrial visit to Aavin, Veterinary hospital and fish farm in Madurai



**VIVEKANANDA COLLEGE
TIRUVEDAKAM WEST**



PG AND RESEARCH CENTRE IN ZOOLOGY

**Institutional visit to Government Veterinary multi hospital, Aavin,
Mushroom training centre and Ornamental fish farm-Madurai**

Under DBT- Star College Scheme

08th March 2022, Wednesday

- 7.30am : Departure from the campus
9.10am : Visit the Government veterinary multi hospital, Tallakkulam
11.25am : Visit the Madurai Aavin industry
1.45 pm : Lunch
2.30 pm : Visit the mushroom training centre & ornamental fish training centre,
Kadachanendhal, Madurai.
4.30 pm : Return to the campus

Participants

Final year B.Sc., and M.Sc., students

Staff Incharge

Dr. V. Parthasarathy, Associate professor & Vice Principal

Dr. S. Selvaraj, Assistant professor



VIVEKANANDA COLLEGE
Tiruvedakam West

PG AND RESEARCH CENTRE IN ZOOLOGY

Report on Institutional visit to Government Veterinary multi hospital, Aavin, Mushroom training centre and Ornamental fish farm

PG and Research Centre in Zoology organized one day institutional visit to Government veterinary multi hospital, Aavin, Mushroom training centre and Ornamental fish farm in Madurai on 08.03.2022 under DBT-Star College Scheme. Total of 33 students, two staff members were participated in the event. We reached Government veterinary multi hospital, Tallakkulam at 9.10 am. Dr. Vairavasamy, explained about affected cattle, cat, dog, sheep, goat, various cattle breeds and storage of semen in liquid nitrogen.



Fig.1. Students visited the Government veterinary multi hospital and semen storage room & Artificial insemination techniques



Fig.2. Students observed White diarrhea in cock, Leptospirosis diseases in dog and Ultrasonic scanning centre



Dr. V. Parthasarathy, Vice Principal & Associate Professor explained pasteurization technique, preparation of milk powder, ice cream, butter, cheese and preparation of milk pocket in Madurai Aavin industry.



Fig. 3. Students observed the pasteurization technique, preparation of milk pocket and Ornamental fishes

Mr. Sakthivel sathiyar, explained about Ornamental fishes like Guppy, gold fish, fighter fish and Angel fish etc., and Milky mushroom cultivation techniques, different types of dogs (Indian & foreign), Hen & cock, Birds, Rabbits and Goat from ornamental fish training centre, Kadachanendhal, Madurai. Dr. V. Parthasarathy, Vice Principal & Associate Professor and Dr. S. Selvaraj Assistant Professor accompanied them.

M. S. Shanmugaselvi
Head of the Department

S. Parthasarathy
DBT Star College Coordinator

T. V. Sathiyar
Principal



**Institutional visit to veterinary College & Research Institute &
Krishi Vigyan Kendra (KVK). Namakkal.**

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 Tiruvedakam West, Sholavandan (P.O) Madurai (Dist) – 625 234

PG AND RESEARCH DEPARTMENT OF ZOOLOGY
One Day
Industrial and Biofarming Entrepreneurial visits in
Namakkal District
on 28.03.2022, Monday

PROGRAMME SCHEDULE

S.no	Time	Activities
1	05.30 a.m.	Departure from the Vivekananda College, Tiruvedakam West
2	08.30 a.m.	Visit to Namakkal Anjaneyar temple, Namakkal
3.	09.00 a.m.	Visit to Narasimhaswamy Temple, Namakkal
4.	09.30 a.m.	Break fast
5.	10.00 a.m.	Visit to Veterinary College and Research Institute, Namakkal livestock forms such as Dairy Unit, Sheep and Goat Unit, Piggery Unit, Rabbit Unit and Poultry Farms, Animal Feed Analytical and Quality Assurance Laboratory (AFAQAL)
6.	01.00 p.m.	Lunch Break
7.	02.00 p.m.	Visit to Krishi Vigyan Kendra, Namakkal
8.	04.00 p.m.	Visit to Suguna Chicken farms, Namakkal
9.	05.30 p.m.	Departure to Vivekananda College, Tiruvedakam West

M. S. Srinivasan
 Head of the Department 17/3/22
 Head
 PG & Research Dept. of Zoology
 Vivekananda College
 Tiruvedakam West-625 234
 Madurai Dist

INSTITUTIONAL VISIT TO KRISHI VIGYAN KENDRA (KVK) & TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY (TANUVAS), NAMAKKAL

Post Graduate and Research Centre in Zoology, Vivekananda College, Tiruvedakam West organized A one day Institutional visit to Krishi Vigyan Kendra (KVK) and Veterinary College and Research Institute (TANUVAS), Namakkal on 28th March 2022, Monday.

We Started our journey at 05.30.a.m. from the college campus by Bus and Van. There are 64 Students, 09 Faculty members and 02 Lab assistants were participated. We reached Namakkal by 10.00.a.m. and worshiped Swami Anjaneya. Then we moved to KVK.

I. KRISHI VIGGAN KENDRA (KVK), NAMAKKAL

By 11.00.am we entered into KVK. Dr. PALPANDI of KVK faculty member explained the various farms practiced in the campus, Such as Goat farm, Vermiculture unit, Silage Preparation unit, Spirulina culture, Mushroom culture, poultry unit and cattle fodder varieties.

Eudrilus eugeniae and *Eisenia foetida* was mainly used for vermi composting. Vermiwash is also prepared here. Dr. PALPANDI explained the futures and life cycle of the earthworm.

We also observed the different kinds of ornamental fishes. Then we moved to TANUVAS.

II. TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY (TANUVAS), NAMAKKAL.

After lunch, by 03.00.p.m. we entered into veterinary college campus.

Dr. Thirunavukkarasu, faculty member of TANUVAS, explained the various cattle breeds and their natives. He also discussed the anatomy of cow. We also visited the milking unit, Buffalo farm, Horse farm, Rabbit farm and White Pig farm. Salem Black goats was also seen in the campus. Management of broiler was also explained by the expert.

After the successful completion of the Institutional Visit, we leave the veterinary college campus by 05.15.p.m. and we return back to our college by 09.30.p.m.



**Industrial visit to S.S Vermicompost industry,
Pandiarajapuram, T.Vadipatti.**



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Report of the Industrial Visit

PG and Research Centre in Zoology organized **One day Industrial Visit to S.S. Vermicompost Industry, Pandiarajapuram, T-Vadipatti on 15.03.2022, Tuesday under DBT-Star College Scheme.** We reached the industry at 11.00 a.m. and met Mr. Palanisamy, founder of the industry. He narrated the history and significance of the industry. Then his son Mr.S.Suresh took us to the vermicomposting units and explain the process of vermicomposting, biology of earthworm, physical and chemical characters of Vermicast and marketing of vermicompost. We also observed the precomposting unit. Here the fresh solid organic waste (Cow dung and plant debris) are dumped in the open area under coconut trees. In the second unit, we observed that the employees preparing vermibed with the organic waste. Here the earthworms are introduced and water is sprayed on the bed. In the third unit, we observed collection of earthworm, collection of Vermicast. Finally, we visited the sieving and packing units. UG and PG final year students were benefitted the industrial visit. Dr. M.Shumugavelu, Head and Associate Professor and Dr.K.Kamatchi, Assistant Professor accompanied them.


Organizer


Head of the Department 17/3/22


DBT-Star College Scheme Coordinator


Principal



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Report of the Industrial Visit on 15.03.2022, Tuesday



Entrance of the Industry



Precomposting area



Vermibed



Vermibed



Observation of earthworm



Collection of earthworm




Pandiarajapuram, Tamil Nadu, India
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India
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Long:77.938947°
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Two days industrial visit at CMFRI Rameshwaram



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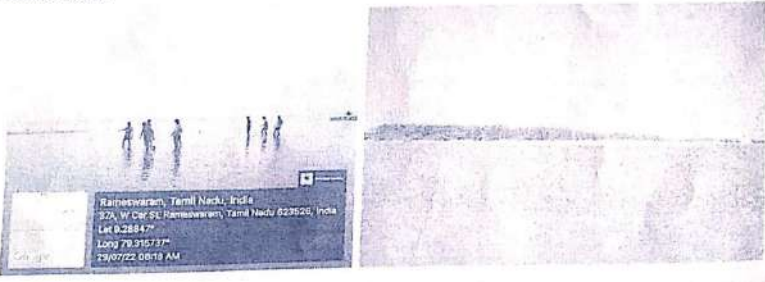
Ecological Field Trip Report 29-07-2022 and
30-07-2022

1. Preface

A study of living organisms becomes completed only when students observe the organism in their native and natural homes. Giving a long lecture – often brings too- about the morphological, physiological and behavioural features will be a total waste unless a student makes a study of the organisms in their natural habitats. It is a must for the biology students to go on a field study. We, the faculty of Zoology of Vivekananda College, organized various study tours and visited the following places: Rameshwaram, Pamban, Mandapam, Mandapam coast, Central Marine Fisheries Research Institute (CMFRI), Olaikuda, Port of Rameshwaram, Kunthukal, Danushkodi and Munaikadu coast in the East coast line of Ramanathapuram District. We had opportunities to observe and collect specimens from a sandy coast, sand and muddy coast, coral areas and rocky coast. We observed rare animals in the zoo and rare specimens in the CMFRI museum. A brief report about the animals collected from various habitats and about the places visited is given in the following pages.

2. Marine Habitat

McCollum believed that the life originated in the sea. The reason being the surprising similarity between the composition of sea water and body fluids. Even Haldane's "Hot dilute soup" theory supports this view. Oceans are not only the cradle of life but also even today the greatest reservoir of life itself and of the vital elements needed for life everywhere. We were able to realize these facts in our visit to Rameshwaram, Pamban, Mandapam, Mandapam coast, Central Marine Fisheries Research Institute (CMFRI), Olaikuda, Port of Rameshwaram, Kunthukal, Danushkodi and Munaikadu coast.



Rameshwaram, Tamil Nadu, India
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Long 79.91573°
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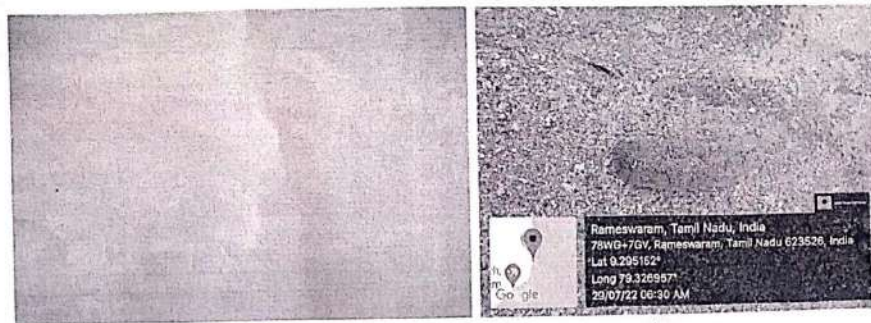


Fig: Various marine habitats of Mandapam and Rameshwaram

3. Advantages of Marine habitat

Of all environments, the sea is the foremost advantageous habitat for living things.

- ❖ About $\frac{3}{4}$ of the living earth crust is covered by marine habitats.
 - ❖ It is so deep and continuous providing greater living space
 - ❖ Tides and upwelling currents help to distribute temperature and food uniformly
 - ❖ The isotonicity of the sea water does not give any osmotic problem
 - ❖ The greater salinity of sea water prevents any fluctuations in pH and it also increases density so that most of the organisms are suspended in it.
 - ❖ The salinity also prevents the deep cooling and ice formation except below the surface layer.
- The safest zone in which a good collection and inspection of animals is the intertidal zone.

4. Intertidal zone

The intertidal zone is a region from the sea shore till the origin of tides in the sea. This can be generally with low tides or very low tides and they will be always shallow. This zone has plenty of light penetration and thus there will be plenty of phytoplanktons and marine plants. The phytophagous zooplanktons are also rich in this zone. As there is continuous water circulation, there will be rich Oxygen. The nutrients are plenty and notable big and hard predators are very less. Apart from these advantages they have to face exposure to rough air, heat of summer, sudden fluctuation during winter and storms, the change in salinity during rainy season also.

5. Field trip

The Department of Zoology organised a study trip for the students of II B.Sc and III B.Sc., Zoology students (31 nos.) to Mandapam, Mandapam Coast, Central Marine Fisheries Research Institute (CMFRI), Rameshwaram, Olaikuda, Port of Rameshwaram, Kunthukal, Danushkodi and Munaikadu Coast in the East Coast line of Ramanathapuram District on 28th, 29th July 2022.

6. Objectives of this Programme

1. Students may be able to locate various species of ocean grazers in their natural environments and to describe structures specific to their survival
2. Students can answer inquiry-based questions in field discussion
3. Students can estimate the faunal species qualitatively
4. To Improve the skills of faunal observation and perception of taxonomy
5. Create awareness of conservation and faunal species enhancement
6. Students will have fun and increase their enthusiasm for science!!!

7. Animals observed at Rameshwaram and Olaikuda Coast

The tour team visited the Rameshwaram Coast and Olaikuda on 29th July 2022 and the coast is found to be sandy and coral inside the deep area. The team observed the following species in their natural habitats 1) Star fish 2) Sea cucumber 3) Corals of different kind 4) Puffer fish 5) Demon crab 6) Porcupine fish 7) Jelly fish 8) *Sea sponges* 9) Giant Spider conch, 10) Sea Dollor, 11) Sea Fan, 12), 13) Brittle star and Large fishes as Sardines, 14 Different types of prawns and rays etc.



Fig: Observed during the specimens collection at Rameshwaram and Olaikuda Coast.

8. Animals observed in Marine Museum at CMFRI

Sea fan, Mallacological shells of different types, Jaw of Whale, Preserved specimens of Dudong, Macarkereel, Different varieties of Star fishes and Jelly fishes, Shell fishes, sea weeds, lobsters, shrimps and Fishing materials used and fishing vessel models were observed.

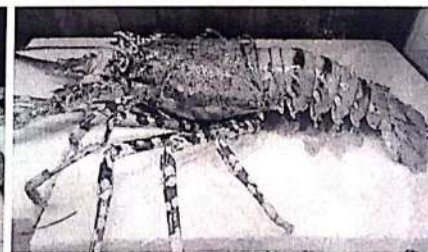
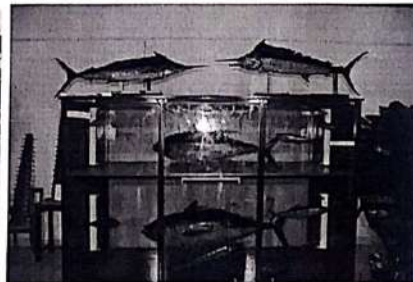


Fig. Various preserved specimens in CMFRI Museum, Mandapam

9. Live animals observed in Marine aquarium of CMFRI, Mandapam

Animals are kept alive and maintained in the Mandapam aquarium for public visit and also for research purpose. The animals observed were Trygon, Starfishes, Clown fishes, Tiger fishes, Sucker fishes, various types of prawns, coral fishes and coral snakes.



Fig. Live animals in Marine aquarium of CMFRI, Mandapam

Students were also taken to fishing market, fishing factories like squid cultures centre and fish preservation units. The students were taken to Kunthukal Mandapam for historical place of our Vivekananda swamiji. The students were further taken to Arichal Munai, Dhanushkodi (where the Church and railway stations were built by the corals on those days. The devastation during 1964 cyclone was shown to them) and Kothandaramar Temple.

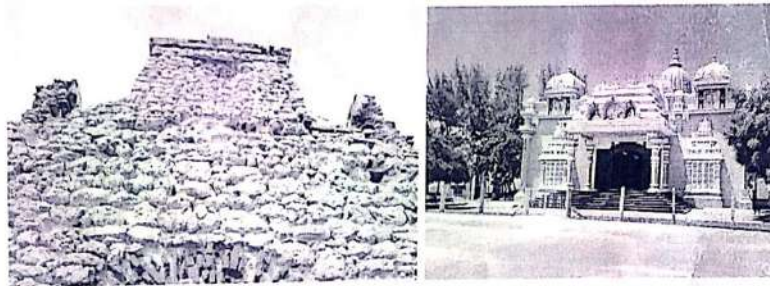


Fig. Devastated church which was constructed at Thanuskodi and Kunthukal Mandapam visit

On the final day of trip students visited Sri Ramanathaswamy temple and finally they reached safely Vivekananda College, Tiruvedakam West on 30th July at 11.00 pm.

10. Acknowledgement

Our tour team acknowledges the valuable contributions given by the Regional Joint Director of Collegiate Education, Madurai, We also thank Sri. Nyamanadha Swamiji for his kind hospitality during entire programme. We also thank Secretary of Vivekananda College, Principal and Head of the Department of Zoology. We also thank the Scientists of CMFRI, Museum and Aquarium Curator.

11. References

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M. Shunmugavelu
G. R. Panthaj
 Coordinator
 DBT - Star College Scheme
 Vivekananda College
 Principal
 VIVEKANANDA COLLEGE
 Tiruvedakam West-625234
 Madurai District

