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Sarat Centenary College

Dhaniakhali, Hooghly

Founded: 1976

Recognised Under UGC 2F&12B

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Affiliated to The University of Burdwan

No: SCC/

Date:

Certified that the following students of the Department of Zoology of our college of 2022-23 session has performed the Excursion as a mandatory programme of the Course curriculum of The University of Burdwan.

Programme name	Program Code	List of students undertaking project work/field work/internship
Excursion/Field Visit (Zoology- Hons)	ZOOH	SK SAHEB
Excursion/Field Visit (Zoology- Hons)	ZOOH	SOURI CHAKRABORTY
Excursion/Field Visit (Zoology- Hons)	ZOOH	SATHI BERA
Excursion/Field Visit (Zoology- Hons)	ZOOH	AFROJA KHATUN
Excursion/Field Visit (Zoology- Hons)	ZOOH	NARGISH PARVEEN
Excursion/Field Visit (Zoology- Hons)	ZOOH	SIKTA MANNA
Excursion/Field Visit (Zoology- Hons)	ZOOH	SRIZA MONDAL
Excursion/Field Visit (Zoology- Hons)	ZOOH	SK ARMAN AHAMED
Excursion/Field Visit (Zoology- Hons)	ZOOH	HAKIMUDDIN MALLICK
Excursion/Field Visit (Zoology- Hons)	ZOOH	SURJYA NARAYAN GHOSH



A. K. Basak

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**BIODIVERSITY STUDY OF SITONG AND ALLIDE AREAS INCLUDING
AHALDARA OF KURSEONG UNDER DARJEELING DISTIC, WEST BENGAL**

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PREFACE

Biology is the study of life endowed with patterns of diversity and uniformity within every kind of lives encountered on earth and to get ideas that might cause such patterns. A great deal of biological studies involve observing living organisms particularly in their natural habits. The present study includes the analysis of their behaviour, interrelationships, habitat and niche profile, coupled with their surrounding environment that includes soil, light, air, temperature relative humidity with velocity and other organic and inorganic edaphic factors. All these factors are invariably linked with their habitats as well as ecological efficient food web pattern within certain causes of optimality on one hand and the influence of various anthropogenic pressure that ultimately either maintain a harmonious relationship or threatens their existence. All these factors together with different interlink patterns are the backbone of biodiversity studies. For proper acquaintance with the vast ecosystem, a compulsory field trip for studying biological diversities have incorporated indifferent curricula of biology of the University of Burdwan. Accordingly, a field trip to sittong and allied areas including Ahaldara of Kurseong under Darjeeling district, West Bengal had been organised by department of zoology, Sarat Centenary College, Dhaniakhali, Hooghly, 712302 affiliated to the University of Burdwan, with the 1sem student of zoology honours students, CCP-2 for studying biodiversity and wild life resources and also for obtaining and overview of the existing ecosystem of those areas.

Once in a field a zoologist should have objective to :

- 1) Gather practical knowledge about wild life and their interaction among themselves and with nature.
- 2) Acquire knowledge regarding habit and habitat of animals.
- 3) Introduce ourselves with the basic field methods for studying the forest and coastal ecosystem and its biodiversity.
- 4) Enumerate endemic flora and fauna.
- 5) Figure out the anthropogenic disturbances caused by ecotourism pressure, grazing pressure, poaching and various natural calamities like flood, erosion etc.
- 6) Preparation of check list of observed fauna on the basis of the different behavioural aspects recorded during the field study.
- 7) Study of structure and sexual dimorphism of animals. Apart from academic benefit, it also helps to develop the interactive relations amongst the student and standing skills, patience mind, discipline, punctuality and observation power etc.

Hence an attempt has been made to present primary information and data of the biodiversity that may become relevant in future work to assess and develop the biodiversity of our selected field study area.

ACKNOWLEDGEMENT

At first I wish to express my deep sense of gratitude and indebtedness to our respected teacher Dr. Jagannath Chattopadhyay, Associated professor and Head Department of Zoology, Sarat Centenary College, Dhaniakhali, Hooghly – 712302 for his constant help, guidance and encouragement to complete this field study .

I am also grateful to our Laboratory Attendant Dada, Sri. Surajit Bhattacharaya who helped us in various ways during the whole tour programme.

I shall not forget the help and cooperation of my class mate during the course of our group field study .

I also grateful to our respected teacher Baishali Chatterjee Sraker , for her constant help and guidance and encouragement to complete this field study .

I am also grateful to the principal ,Dr. S.K. Basak , of this college for allowing us to take part in the field study .

Date – 31.12.2022 ;

Roll No: 32

Place – Dhaniakhali ;

Reg No:

Signature of the student :

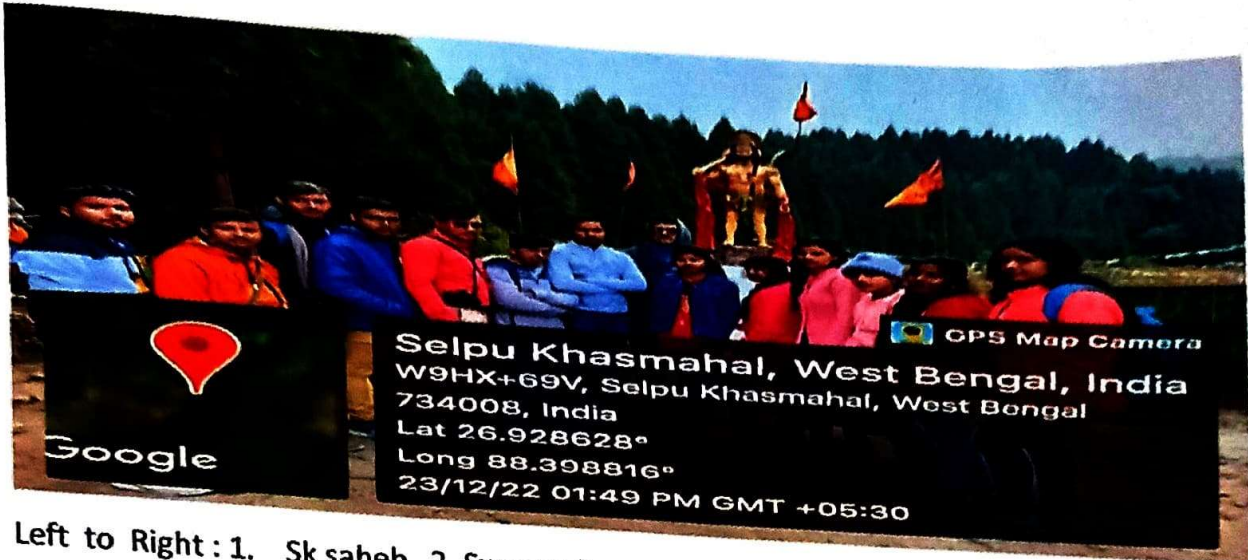
Krishnendu Pal

INTRODUCTION

There is no doubt that all the branches of science have their full significance only when they are given much importance to the practical work rather than merely giving knowledge from the books. Previously the term 'Zoology' had been restricted only to know morphology, anatomy, histology & physiology of various parts of animals in the laboratory. Most of the representatives of Animal kingdom are found in each and every Zoological Museum but the knowledge remains incomplete unless and until they are observed in their original habitat.

An educational tour is always something special for a student of Zoological science. The Zoological excursion gives us an opportunity to investigate behavioural actions and ways of different animals in their natural habitat. This kind of study is unique and its taste cannot be obtained through reading merely text books. With this perspective, we the students of B.Sc. Zoology (Hons.), sem-1 under CBCS system of Sarat Centenary College, Hooghly affiliated to B.U. have participated in an educational tour to Sittong and allied areas including Ahaldara of Kurseong as a part of the University of Burdwan. Our field study mainly of Ahaldara and allied areas (under Darjeeling district) including Pine forest, West Bengal.

EXCURSION TEAM



Left to Right : 1. Sk saheb 2. Swarup Goswami 3. Krishnendu Pal 4. Dr. Jagannath Chattopadhyay (Associated professor and Head) 5. Sathi Bera 6. Afroja Khatun 7. Nargish Parvin 8. Sriza mondal 9. Sikta Manna 10.. Soumi Chakrobarty.

The field study was planned and organized by the Department of Zoology, Sarat Centenary College, Dhaniakhali , Hooghly -712302 . The team consisted of the following members:

1. Krishnendu pal	7. Afroja Khatun
2. Sathi Bera	8. Nargis Parvin
3. Swarup Goswami	9. Sriza Mondal
4. Sikta Manna	10. Surajit Bhattacharya(lab attendant.)
5. Soumi Chakrobarti	11. Dr. Jagannath Chattopadhyay (Associated professor and head)
6. Sk Saheb	12. Abhijit Adhikari(Tour Guider)

EQUIPMENTS, CHEMICALS & ACCESSORIES REQUIRED

Instruments, Equipments and Accessories:

1. Dissection box
2. Bone cutter
3. Magnifying glass
4. Injection syringe
5. Collecting net
6. Large & small forceps
7. Needle
8. Dropper
9. Scalpel
10. Measuring cylinder
11. Glass made funnel
12. Digging rods
13. Cotton
14. Petri dish
15. Torch light
16. Photographic camera/ Android Mobile
17. Surgical Gloves
18. Umbrella

Chemicals:

1. Formalin
2. Bouin's fixative
3. Chloroform
4. Glycerine
5. Narcotizing agent (Chloral hydrate)
6. Ethanol

Containers:

1. Polythene jars
2. Plastic trays
3. Cans
4. Polythene packets
5. Bags

Note book & pencil/pen

First-aid-box

ABOUT THE JOURNEY AND DAILY DIARY

Day1 : 21/12/2022, Wednesday :

- i) I am a student of Zoology (honours), Sem -1 of Sarat Centenary College met at Sibaichandi railway station , boarded at Burdwan – Howrah Chord-line Local train at 12:10 pm and reached Howrah junction at 1:30 pm .
- ii) This was our first educational tour in life with the peer group and with teacher . So, we were very much excited.
- iii) We resume our journey from Burdwan Junction at 3:22 pm by Intercity Express (Train No: 13456)toward Malda junction , and reached Malda Junction at 10:30 pm . we could see Farakka Bridge during this journey .
- iv) We take our dinner with ruti- tarka at 11 pm in Malda station . we were waiting at the station whole night for the next mail (Brahmpurta Exp.) . It was 5 hours late .

Day2 :22/12/2022, Thursday:

i)The Brahmputra Exp. reached Malda Junction at 5:30 am . My seat no. is (s6 / 50) . we reached New Jalpaiguri Station at 10:30 am.

ii) We started our road journey by two TATA SUMO from the station to Sittong . We reached a hotel for our lunch ai 1:30 pm. and finally we reached our Greenland Homestay at pm 3:25`pm.

lii)We could see Teesta River during this journey.

lv)We take our dinner at 9:30 pm.



Pic : Teesta river

Day 3: 23/12/2022, Friday :

- I) At early morning (7am) we could a clear view of Kanchenjunga form our homestay with a cup of tea.
- II) Then we take our breakfast with luchi and dal .
- III) Then we started our journey and visited Shelpu Hills, here we can see Cinchona Garden , Tiger hills , kurseoung hills, Mongpu hills, and it is famous for to get 360 aerial view point of Eastern Himalays range.
- IV) The we visited a monstry near Lord Pancher.
- V) Then we reached Namthing Pokhri at 12: 30 pm (Pokhri means lake). Here we saw Pine forest .



Pic : Cinchona Garden

- vi) Then we returned home at 3:30 pm . .Then we take our lunch and take a rest .
- VI) We spent our time with many compitions and discussing all about the information that we collected.

Day 4 :24 / 12/ 2022, Saturday:

- i) In the morning after breakfast we went to nearby Tea garden of Sittong .
- ii) Then we started our journey Rabindra Bhaban in Mongpu . Here We could see many old script of Rabindranath , his hand writings etc.
- iii) Then we reached at Jogi Ghat Bridge which is made with Steel .It connected Labda and Mongpu . It is 74 m long.
- iv) Then we visited orange garden at 4 :30pm which is memorable for us
- v) We returned our home stay at 5:30 pm . Then we take our lunch .
- vi) In the evening we went for a little soaping to the nearby market of Sittong.
- Vii) Retuning home , we take our dinner at 9 pm



Pic : Orange Garden

ABOUT THE JOURNEY AND DAILY DIARY

Day 5 25/12/2022, Sunday :

- i) In the early morning (5 :30am) we departed from our guest house and set out for Jalpaiguri Road Railway station by car.
- ii) We reached the Jalpaiguri Road station at about 8:30 am to board into HDB KOAA SF Express (Train No: 12364)Where we had pre- reserved berths for sitting during backward journey to Burdwan.
- ii) We reached Burdwan Junction Railway Station at about 7 :30 pm
- iii) We departed from Burdwan to each of our own residential destination(Sibaichandi) at 8 :45 pm .

BIODIVERSITY STUDY OF SITTONG AND ALLIDE AREAS INCLUDING AHALDARA

Description of a few species of insects and animals including mammals and birds are given as follows:

- I) **Red headed Trogon(*Harpactes erythrocephalus*)** : A brightly - coloured bird of dense evergreen forests , usually seen perched quietly on a mid -story perch . Varies in coloration throughout its range but always follows the same general colour scheme :male has a dark red head and belly , a brown back , and barred black -and white wings. Female has amore faded -red belly and a brown head .Both sexes, when seen from below, have a sharply contrasting and graduated black-and-white tail pattern .Sluggish and typically stationary and difficult to see; listen for its high - pitched gulping hoots.
- II) **Hill Cat (*Felis domestica*)** : The cat is a domestic species of a small carnivorous mammal .It is the only domesticated species in the family Felidae and is commonly referred to as the domestic cat or house cat to distinguish it from the wild members . Cat are commonly kept as a house pets but can also be freely and avoids humans for companionship their ability to kill rodents .
- III) **Hill Dog (*Canis familiaris*)** : The dog 9 *Canis familiaris* is a domesticated descendant of the wolf . Also called the domestic dog , it is derived from the extinct Pleistocene Wolf , and he modern wolf is the dog's nearest living relative. Dogs were the first species to be domesticated by hunter - gatherers over 15000 years ago before the development of agriculture .Due to their long association with humans , dog have expanded to a large number of domestic individuals and gained the ability to thrive on a starch - rich diet that would be inadequate for other canids .
- IV) **Abisara fylla** : Male upperside rich dark brown. Forewing with a cream coloured even band from middle of costa to tornus ,” bent slightly inwards at each end ; a subterminal transverse , very obscure , pale fascia ending anteriorly in a white dots. Hindwing : postdiscal and subterminal very obscure pale transversa fasciae; the latter with a superposed series of seven oval black sport each with a white dot on the outer margin and inwardly pale - edged; the preapical two and posterior two of these sports only clearly defined , the others obsolescent, the preapieal two the larger. Understating duller brown ; the marking as on the upperside ; the hindwing with indications of a sub basal pale fascia in addition to the others. Antenna, head, thorax and palpi thorax and abdomen paler; antenna with a white dot at apex .

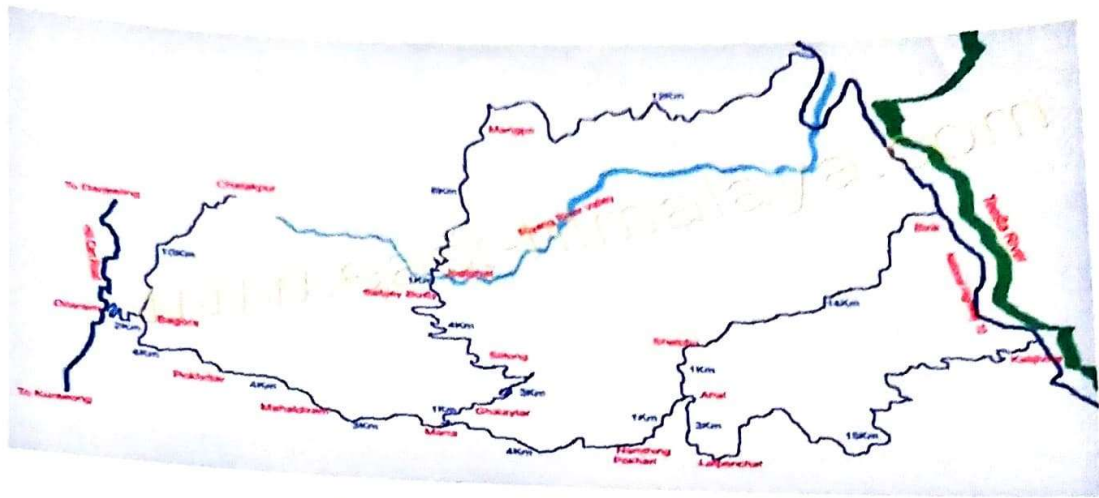
CINCHONA : Cinchona has been historically sought after for its medicinal value ,as the bark of several species yields quinine and other alkaloids .These were the only effective treatments against malaria during the highest of European colonialism which made them of great economic and political importance .Trees in the genus are also known as fever trees because of their anti-malarial properties .

The artificial synthesis of quinine in 1944, an increase in resistant forms of malaria, and the emergence of alternate therapies eventually ended large - scale economic interest in cinchona cultivation . Cinchona alkaloids shows promise in treating falciparum malaria, which has evolved resistance to synthetic drugs. cinchona plants continue to be revered for their historical legacy; the national tree of Peru is in the genus Cinchona

TEA PLANT (*Camellia sinensis*) : Tea leaves is an evergreen shrub or small tree that is usually trimmed to below 2m when cultivated for its leaves . It has a strong taproot. The flowers are yellow- white, 2.5 - 4 cm in diameter, with seven or eight petals. The seed of *C. sinensis* and *C. oleifera* can be pressed to yield tea oil, a sweetish seasoning and cooking oil that should not be confused with tea tree oil , and essential oil that is used for medical and cosmetic purposes, and originates from the leaves of a different plant. The leaves are 4-15 cm long and 2 - 5 cm broad . Fresh leaves contain about 4% caffeine, as well as related compounds including theobromine .

ORANGE TREE : Orange trees , as all citrus, are trees with one main timber. Their principal arms normally sprout from the trunk at a height of 23 -46 inches from the ground. Their shank is typically spherical, although the shape can vary depending on how the trees pruned. Orange trees although evergreen are characterized by a tendency to constantly renew their foliage. During the first few years until the completion of the tree development , the annual amount of newly leaves that tend to fall. Young leaves come in light green colour and receive a deeper green colour gradually. The fruits is a berry in orange coloured skin and orange to red flesh, depending on the variety. Both the surface of fruit and leaves in full of oleaginous glands, which give orange its characteristic smell. Orange trees usually bloom in spring . Although they produce a large number of flowers, only a small percentage of these finally develop into ripe fruits . orange flowers are normally white , with a very pleasant odour.

DESCRIPTION OF OBSERVATION FAUNA & FAUNA OF SITTON ALLIED AREAS INCLUDING AHALDARA OF KURSEONG UNDER DARJEELING DISTRICT ,WEST BENGAL.



LOCATION IN WEST BENGAL, INDIA

FIG-A: LOCATION OF SITTONG IN WEST BENGAL

About Sittong & allide areas:

Sittong is a "KhasMahal" in the Kurseong division of the Darjeeling District. It is not one village, but a cluster of village in a large area known as Sittong Khasmahal. This place has become famous among tourists as it is the heart of the orange-growing countryside of Darjeeling hills.

The hill cart road connecting Darjeeling with the plains, and the Teesta river, the lifeline of the region, geographically can be considered as almost two parallel lines. Suppose you imagine a line connecting Kurseong on the hill cart road and Kalijhora beside the Teesta river to form imaginary H. In that case, Sittong is exactly in the middle of this connecting line.

About Ahaldara :

Ahaldara is a hilltop situated 5 kms away from Latpanchar with an exotic 360 degree view. Ahaldara is famous for its breathtaking view of sunrise and snow-capped Kanchenjunga peaks. On a clear sunny day the Gantok, Kalimpong, Algara, Bagora, Tinchuley hills are visible from Ahaldara. It is located in Mahananda Wildlife Sanctuary. It's a bird watcher's paradise.

Mahananda WLS is home to 36 mammals and more than 240 species of birds, the most sought after being the endangered Rufous-necked Hornbill. Namthing Pokhari, a seasonal Lake situated a few kilometers away from Latpanchar is one of the final refuges of the extremely rare Himalayan Salamander.

CONCLUSION

The utility of zoological excursion has great importance in our study life. Our knowledge cannot be fulfilled without practical experiences. Complete education is always accomplished by remaining close contact with natural habitat at least during some part of the academic life of a student. During excursion we have collected an excellent knowledge about the process of specimen collection and their preservation. We also became acquainted with the habit and habitat of different kinds of specimens in their natural conditions.

A field note is an essential declaration of practical knowledge of the various investigated specimens. It reflects our daily life during the educational tour, utility of the tour and how close we were to our Mother Nature. This kind of excursion has given us an opportunity to study behavioural actions and ways of life of different animals in their natural habitat. We were surprised to see the variations of faunal composition in different closely related zones studied by us. We could know how ecological factors are controlling the distribution pattern of fauna. This idea would have remained incomplete if we did not participate in this field study programme. During the whole tour programme, we have also enjoyed very much the way of sharing and group living with our fellow class mates, teachers and others and this will remain as a deep impression in our memory through my life.

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THE END

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