To,

The Principal
AKPC Mahavidyalaya
Bengai, Hooghly

Sub: Requesting to giving permisson of Excursion

Respected Sir,

We are the students of Zoology (Sem-VI) of AKPC Mahavidyalaya, wish to go an educational tour for completing our practical curriculam. If you given the permisson to conducting the tour as early as possible. We will be grateful to you.

Your's obidiently

Date - 20/02/2019

I. Amrita Ghosh
II. Anupam Nandi
III. Apurba Mukherjee
IV. Dipika Roy
V. Moutusi Pathak
V. Amirul Islam
VI. Sekh Suraj Ali
VII. Prathama Bhowmick
VIII. Riju Majhi
IX. Manisha Ghosh
X. Tanushri Mandal
XI. Sourav Koner
XII. Tulika Laha
XIII. Nitimala Ghosh
XIV. Sadipta Dolui.

AGHOREKAMINI PRAKASHCHANDRA MAHAVIDYALAYA

(ESTD.-1959)
Accredited by NAAC at 'B' level
AFFILIATED TO THE UNIVERSITY OF BURDWAN & RECOGNIZED BY U.G.C.
SUBHASNAGAR ∧ P.O.- BENGAI ∧ P.S. - GOGHAT
DIST.- HOOGHLY ∧ PIN CODE-712 611, (W.B.)
STD.: 03211 ☎: 246 235 / 246 772, Fax: 913211 246 772,
Email: akpc_m@yahoo.co.in Website: www.akpcmahavidyalaya.org

Ref. No. .....

Date: 24-01-2019

To Whom It May Concern

This letter is to inform that the students (Sem-I) of Department of Zoology along with their teachers of Aghore Kamini Prakash Chandra Mahavidyalaya, Subhasnagar, Bengai, Hooghly, West Bengal is going to visit Indian Museum,Kolkata for the Educational Tour according their B.Sc. (C.B.C.S.) Syllabus.

If you kindly help them as required, I shall be highly obliged.

Thanking You
Sincerely,

S. Panja
24.01.2019

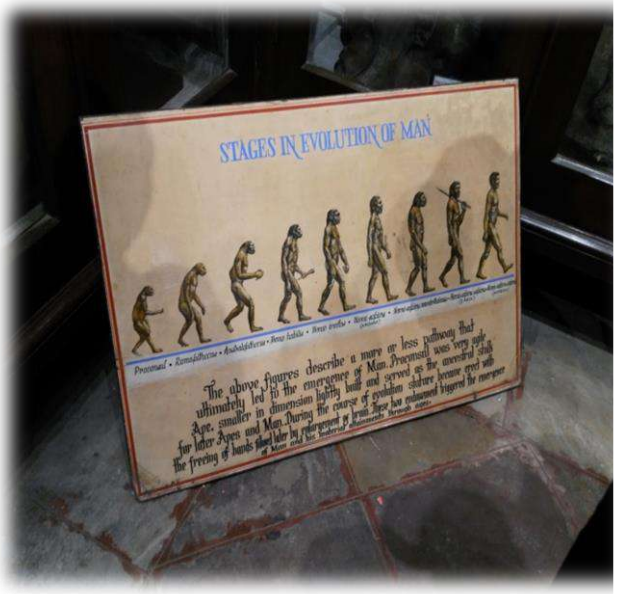
for **(Principal)**

NAME OF STUDENTS AND TEACHERS

SL NO	NAME
1.	ANKITA GHOSH
2.	ARNAB BANERJEE
3.	BILKIS KHATUN
4.	ESHITA DHANK
5.	GARGI MONDAL
6.	ISMATARA KHATUN
7.	MOUTUSI GARAI
8.	NASRIN KHATUN
9.	PRIYOJIT LAHA
10.	RIJIA KHATUN
11.	RITAM MONDAL
12.	RITUSHREE GHOSH
13.	SANDIP DEY
14.	SHILPHA KOLEY
15.	SUTAPA DEY
16.	SUBRATA ROY
17.	SOURAV MONDAL
18.	SUBHADIP GHOSH
19.	SUBHRAJYOTI GHOSH
20.	SUBHADIP ROY
21.	SAMIR BARIK
22.	SRILEKHA DE
23.	TUSHAR ROY
24.	UTSHA DE
25.	Prof. Azizur Rahaman
26.	Prof. Soumyadip Bhuin
27.	MRITUNJAY MAPUI

A FIELD REPORT ON

A VISIT TO INDIAN MUSEUM



Roll No :. 180340100100

Registration No.: 201801040014 of 2018-19

ACKNOWLEDGEMENT:

We are the students of B.Sc Hons (1st Semester), Department of Zoology, A.K.P.C. Mahavidyalaya, Bengai, Hooghly, express our deep sense of gratitude to our respected teacher Mr. Azizur Rahaman (H.O.D.), Mr. Soumyadip Bhuin, Mr. Kousik Roy and Miss. Munna Mondal for their valuable guidance during this field work and necessary suggestion and advices in the preparation of the field note book.

We will grateful to Mr. Mrityunjoy Mapui for his endless help throughout our study period.

We are showing the heartiest gratitude to our friends and family members for mental, financial and other supports from all corners and encouragement.

Last but not the least we must have to mention the overall supports in all respect given by Dr. Paramartha Ghosh, Principal of our college, his total encouragement throughout the course in worth mentioning.

CONTENTS

OUR TEAM

Name of Teachers :

Prof. Azizur Rahaman

Prof. Soumyadip Bhuin

Name of the student :

Ankita Ghosh	Priyojit Laha	Sourav Mondal
Arnab Banerjee	Rijia Khatun	Subhadip Ghosh
Bilkis Khatun	Ritam Mondal	Subhrajyoti Ghosh
Eshita Dhank	Ritushree Ghosh	Subhadip Roy
Gargi Mondal	Sandip Dey	Samir Barik
Ismatara Khatun	Shilpa Koley	Srilekha Dey
Moutusi Garai	Sutapa Dey	Tushar Roy
Nasrin Khatun	Subrata Roy	Utsha De

Tour Programme

- Departure from Arambagh to Park street by bus on 21st February, 2018
- Start our journey by reserve bus at 8.00 a.m. from Arambagh bus stand
- Arrival at park street at 10.45 a.m.
- Arrived at Indian Museum at 10.50 a.m.
- Visit at Indian museum
- Completed lunch at 2.30 p.m.
- Return Arambagh by bus at 5.30 p.m.

PREAMBLE:

Ecology deals with organisms and their environment and it is important that we understand the relationship between them. Probably the most important statement that we can make about this relationship is that different kinds of organisms are not distributed at random amongst different kind of environment. There is a correspondence is between the two. The correspondenceis part of our sense of the order of the things. But, what exactly is the nature of the match between organism and their environment. It is quite impossible to think of an organism without an environment, but easily possible to think of environments without organisms. It is convenient therefore to consider first the variation that exists in environment. Even a sand grain on the surface of the moon has an environment. The climate is one component of this environment and is determined by the radiation, which drives the radiation in its temperature and moves it in atmosphere. The earth is exposed to solar radiation that varies across its surface, depending on its distance from movement around and changing inclination to the sun. Extinction has always been a fact of life, but the arrival of human has injected some novelty into the list of its causes. Over exploitation by hunting was probably the first of this, but more recently a large array of over impact have been brought to bear including habitat destruction, introduction of exotic pest and pollution. Not surprisingly conservation of world-remaining species has come to assume great importance.

Importance of Field Excursion:

Field excursion are very much essential unlike theoretical studies and monotony associated with it, an excursion may help the mind of students to assimilate much information regarding biological diversity and interaction of animals with the environment right from the school of nature, along with lots of a bonus. Study of species population in the natural habitat is the spirit of zoological excursions.

LOCATION:

It was founded by Asiatic society of Bengal in Kolkata (Calcutta), India, in 1814.

Founder-

Curator was Dr. Nathaniel Wallich, a Danish Botanish.

It has six sections comprising thirty five galleries of cultural and Artifacts namly Art, Archaelogy, Anthropology, Geology, Zoology and Economic Botany Mary rare and unique specimens, both Indian and Iranse relating to humanities and natural sciences , are Preserved and displayed in the galaries of these sections the administrative control of the cultural sections.

The museum Directorate has eight co- ordineting service unit : Education , Preservation, Publication, Presentation, Photography , Medical and Modeling and Library. It is one of the oldest museum in the world.

The great museum is reuleutlessly exploring the sea of knowledge, a new configuration of the vast meeting ground of the People coming from various cultural and Social back ground .

HISTORY

The Indian Museum originated from the Asiatic Society of Bengal which was created by Sir William jones 1784. The concept of having a museum arase arose in 1796 from members of the Asiatic Society as a place where man meade and natural objects could be collected Cared for an displayed . The abject began to look achievable in1808 when the society was offered suitable accomodation by the Govt. of India in the chowringhee - Park street area .

In February 2,1814 Dr.Natheniel Walking, Danish Botanist who had been captured in the siege of Serampore but released, wrote a later supporting the formation of a musum if kolkata (Calcutta) which he should have to sections an archeological, ethnological and technical section and a geological and Zoological one . The museum was created with wallich named the Honorary corator and the superintendent of the oriental museum of Asiatic Society.

The Zoological and Anthropolical sections of the museum gave rise to the Zoological survey of India 1916 which in turn gave rise to the Anthropological of survey of India in 1945.

TRENDS OF ELEPHANTINE EVOLUTION

i. Gradual increase in size .
ii. Lengthening of limb bones and development of short broad feet.
iii. Growth of extra ordinarity large skull and cansequnt growth.
iv. Shortening of neck
v. Elongation of lower jaw as and early primarily trend although there is a secondary shortening in many Proboscideans
vi. Growth of trunk and proboscis bifusion and Celongation of upper tip and nose
vii. Hypertrophy of 2nd incissors to from paired tusks (used in defense and fighting)
viii. Limitation of specialisation of cheek teeth in various ways (As adaptation cheuring and grinding plant food)

CHRONOLOGICAL STAGES OF ELEPHANTINE EVOLUTION

Inspite of completeness of fossil records , Palaentologists differ in respect to the starting point of proboscidians evolution. However the view of RS lull (1976), Colbert (1969) and Moody (1962) has been followed here.

Moerithirium-

- **Time of Origin:** Late Eocene and lower olijocenerack .
- **Place:** Near Moeris (an ancient lake) in Fayumdistrict of Libian desert, ~ 60milies south west of Cairo , Egypt .
- **Characters:**

i. Modern Tapir like 3 inch in height
ii. Tapir like short Proboscis.
iii. Skull fairly long , with air cells began to form back area Short tusks on the lower jaw also noted
iv. Teeth - Reduced in number.
Dental formula –
v. Second upper incisor began to form tusks
vi. Molar Iow crowned , each with two transverse crests.

Palacomastodon-

- **Time and Place :** Upper Eocene of North America & Lower Oligocene of Egypt.
- **Characters:**

i. Size relatively larger than Moerithirium.
ii. Tusks : - Relatively well developed upper one and lower one reduced
iii. Skull :- with dipole
iv. Praboscia:- better developed, with reduced nasal opening.
v. Reduction in number of teeth
vi. Dental formula

Paleoloxodon-

- **Time and Place of Origin:** lower Oligocene & Neai lake Moeris in the Egyptian and Gaj horizon of Northern Indian in the Siwalik hills
- **Characters:**
    i. Size :- Much larger 7' hight in shoulder
    ii. Limb :- Exhibit Modern form
    iii. Skill :- Increased materially in height with considarable development of dipole
    iv. Proboscis :- Short extesive and with small nasal whose opening receded in fornt of the orbit
    v. Tusks :- upper pair large , curved down wards with band of enamel on their outer face.
    vi. Lower pair point directly forward.
    vii. Lower jow :- Considerably forward elongated
    viii. Molars :- Lopho bimodont type.
    ix. Dental formula :

Dienotherium:

- **Time and Place :**- Miocene and Plicene deposit of Europa and India.
- **Characters :**
    i. Skeleton :- Typically Proboscidean.
    ii. Skull :- Sharply slants forward at the occipital and with no dipole
    iii. Limbs :- Large
    iv. Proboscis :- Well developed
    v. Tusks :- Upper ones absent, Pairs lower ones bent abruptly downward.
    vi. Molars: low crowned with two transverse crests and a smaller hinder lobe Number more numerous than in Proboscidians in general
    vii. Semi aquatic or swamp dwelling

Trilophon or Gampotherium

- **Time :** Miocene and upper Oligocene.
- **Place:** Europe (France) , Asian , Africa and N America.
- **Characters :**

i. Size : As large as Asian Elephant

ii. Jaw : Lower jaw enormously long with lower tasks
iii. Skull : With increased dipole
iv. Molars : low crowned with 3 cross crests , 2 at a time in the jaw of adult

Tetralophodon:

- **Time:** Miocene and abundant in pleioscene.
- **Place:** Italy and then India, N America and finally South America Mastodon - Dibelodon.
- **Characters:**

i. Jaw :- Not so elongated
ii. Tusks :- Upper pair long and straight, lower pair very small
iii. Molars :- High crowned with 4 cusps/ crests
(Exhibiting a greater complexity)

Dibelodon (South America Mastodon):

- **Time and Place:-** Pleiocene in North America & Pleistocene in South America
- **Character:-**
  i. Loss of lower tusks
  ii. Lower jaw greatly reduced
  iii. Enamel band of upper jaw trend to disappear

True Mastodon :

- **Time and Place:-** Pleiocene and Pleistocene & Ranging from European across Asiato Alaska
- **Characters:**
  i. Size :- 7-9' height
  ii. Limbs :- massive pelvis broad
  iii. Lower jaw :- Shortened with vestigial tusks
  iv. Upper tusks :- huge (~9' in length) curved upward and devoid of enamel
  v. Cranium :- Relatively large
  vi. Dipole :- Largely developed in cranial wall.
  vii. Molars :- Without intervening cusps. 2 fully formed at anylone time in jaw.

True Elephant (Loxodonta , Elephas , and extinct Mammoth)

True Elephant arose from stegodon , which sum to be transitional elephants for sharing features of elephant and Mastodon.

Stegodon:

- **Time and origin:** Upper Miocene and dominant in pleioscene.
- **Place of Origin:** Southern India, Southern and South eastern Asia.
- **Character:**
  i. Molar with more numerous (12-13) transverse crests them in Mastodon.
  ii. Cement between crests --> not as great as it was elephant teeth
  iii. Molar massive in size and replaced by longitudinal methods
  iv. Skull : Short but high
  v. Lower jaw : Short and tusk less
  vi. Upper tusks very long and curved

Mammoth and Elephas:

The step from *stegodon* to Mammoth and modern elephants included a remarkable growth in the height of cheek- teeth crown with parallely running rather V shaped ridges . The pleioscene or the great ice age was age of mammoths all the continents except South America.

Remains of many species (e.g - wooly Mammoth *Mammonteus primigenus*) in Pleistocene of Europe, Asia and North America through Betting strait (existed as a land mark at that time) while Tomer Opined *Loxodonta* origirated through group of Mammoths. Lull considered *Loxodonta* and *Elephas* arose directly but separately from *stegedon*.


ARTIODACTYLA

TRENDS OF EVOLUTION IN MAN:

- **Time of Evolution:**
  i. Available fossil records indicate man originated in between oligocene and recent period.
  ii. Based on potassium - Argon Method Leaky (1961) pointed out that human Evolution started ~ 1 b million years ago (MA) and man appeared only 3 MA
- **Place of Evolution :** Somewhere in Africa and Asia as, oldest fossil recorded form this continents.

Evolution trends in Man:

Characteristic features in Modern Man that exhibit directional progressive character change to evolve man from ape like ancestors are listed as follow

i. Increased Cranial capacity
ii. Upright posture with bipedalism
iii. High fore head without projecting eye brow ridge
iv. Dental arch- a smoothy rounded parabola
v. Vertebral column with lumber curve
vi. No simian gap
vii. Post lower pre molar not sectorial
viii. Loss of opposability of great toe in hind limb
ix. Development and increase in intelligence

Australopithecus(Southern Ape):

This was fossil of Ape man discovered in 1921 from the earth of Pleistocene bed in North Africa. They lived 2-5 MA. They are considered the connecting like between ape and man because they possess a combination of characters of both ape and follows.

Human character of Australopithecus-

i. Vertebral column with distal lumber curve.
ii. Broadly expended Ilium.
iii. Dental arch shortly rounded parabola
iv. First lower premolar non sectional

v. Canine non projecting beyond the level of other teeth.
vi. Palate reduced
vii. Occipital condyle anterior
viii. No simian gap
ix. Basin like pelvic girdle
x. Erect posture with 4'height
xi. Bipedal locomotion, no involving fore limb.

Ape character of Australopithecus:

i. Small cranial case
ii. Brain capacity 600-1000 cc
iii. Lack of chain
iv. Presence of supra or vital fossa
v. Face with large jaw hence prognathus.
vi. Eye brow ridge heavy and projected over eye,

Homo erectus:

Dubois collected fossil fragment of Ape man in central Java and named it Pithecanthropus erectus chang (1960) collected more than 40 fossils in cave near Peking in China and named it Sinanthropus pekinens and later P. Pekinens. The java man and peiling man were so similar that Mayr grouped them together as Homo erectus. They lived about 500000 years ego. They had following features-

i. Upright Bipedal locomotion
ii. About 5` height (i.e. Slightly taller than Australopithecus)
iii. Cranial capacity about 1300 cc intermediate between Australopithecus and modern man
iv. Skull flattened
v. No forehead
vi. Eye brow ridges project forward
vii. Face chinless and prognathus (Snout Protruding forward)
viii. They inhabited caves
ix. Used fire and variety of tools.

Homo sapiens:

They were descendants of Homo erectus, similar to modern man

Homo sapiens neanderthalensis(Neanderthal man)

Fossil collected from Neanderthal valley of Germany. They arose about 150000 years ago and become extinct about 25000 years ago. They flourished Asia, Europe, Africa and characters by-

i. Cranial capacity about 1400 cc
ii. Height Slightly shorter than modern man
iii. Forehead low and slanting
iv. No chain
v. Lacks of heavy high brow ridges
vi. Prepared their tools much more skillfully
vii. Burial was with some sort of ceremony
viii. Bones usually thick(7.2 mm in thickness)

Cromagnon man:

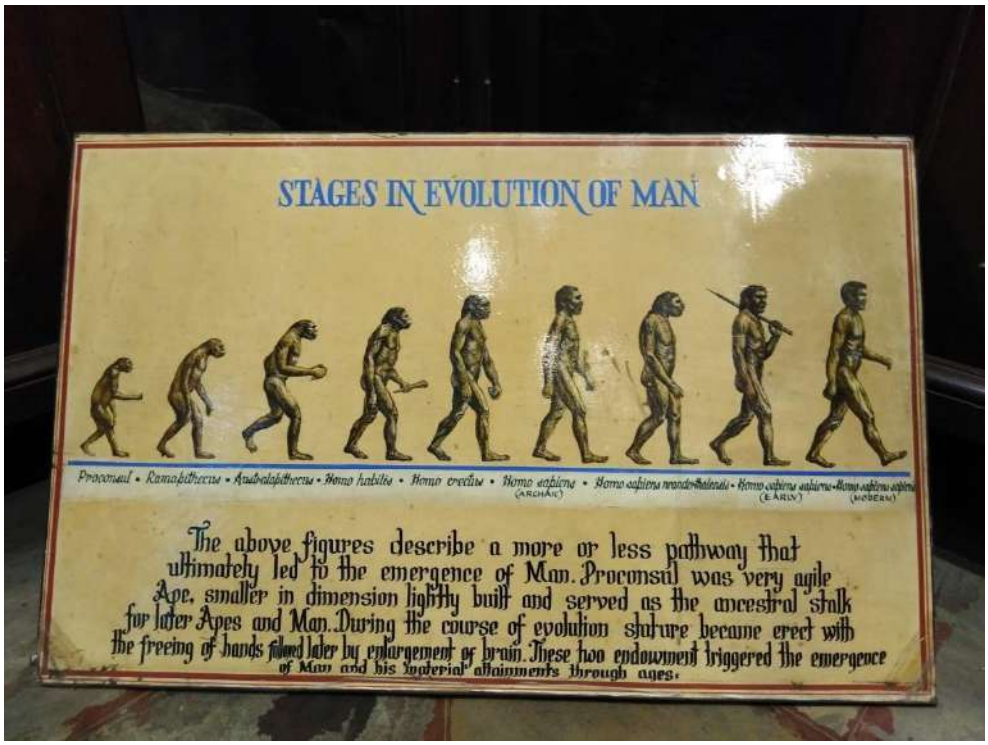
They are Homo Sapiens that succeed the Neanderthal man. They arose 30,000 years ago lived in all over the world, and become extinct about 20,000 years ago. They show characters –

i. Height about 6`and 5.5'
ii. Cranial capacity 1660 cc
iii. Broad face
iv. Rounded fore head
v. Narrow nose
vi. Chin prominent
vii. Lack of eye brow ridge
viii. Upright posture with bipedal locomotion
ix. Lower or skin segment of legs - long

Homo Sapiens sapiens:

Characterised by

i. Cranial capacity 1350cc
ii. High fore head
iii. Lower now with chin
iv. Absence of ridge between supraorbital, sagital and occipital bone
v. Dental arch: Smoothly rounded parabola
vi. Reduced incisor and canine
vii. First lower premolar non-sectorial
viii. Upright Posture with bipedal locomotion
ix. Vertebral column with a lumber curve
x. Broadly expanded Ilium
xi. Pelvis broad busket like
xii. Face orthognathus
xiii. Skull balanced at the top of Vertebral column




सीधा खड़ा होने की ओर क्रमशः अग्रसरता
Towards Erect Posture
সোজা হয়ে দাঁড়ানোর পথে ক্রম অগ্রসরতা
Vertebral Column
Pelvis
Changes in brain

CONCLUSION:

Human evolution is thus example of general mode of gradual change or transition in anatomical structures from ape to man in course of time. Cause of change might be competition in food resource and shelters. These led to changes in their habitat and thus in their structures.