

B.A./ B.Sc. First Semester
Paper Code: ANT-B101
End Semester Examination, 2014
For Forensic Science Honours
Paper: First (Basics of Biological Anthropology)
Time Allowed: Three hours

1. Who discovered Cro-magnon?
 - a. Raymond Dart
 - b. Donald Johanson
 - c. **M.L. Lartet**
 - d. Leaky
2. Which fossil ape is known as the missing link between man and ape?
 - a. **Homo erectus javanensis**
 - b. Homo habilis
 - c. Australopithecus
 - d. Ramapithecus
3. Olduvai Gorge is associated with which fossil man?
 - a. Homo erectus
 - b. **Homo habilis**
 - c. Dryopithecus
 - d. Neanderthal
4. Homo-habilis is discovered by
 - a. Eugene Dubois
 - b. **Leaky**
 - c. Raymond Dart
 - d. Lewis
5. Primate evolutionary changes occurred in the following sequence
 - a. Chimpanzee, Gorilla, Gibbon, Orangutan, Man
 - b. Gibbon, Chimpanzee, Orangutan, Gorilla, Man
 - c. Gorilla, Gibbon, Chimpanzee, Orangutan, Man
 - d. **Gibbon, Orangutan, Chimpanzee, Gorilla, Man**
6. Progressive Neanderthals include
 - a. La Chapelle-aux Saints
 - b. **Ehringsdorf**
 - c. La Moustier
 - d. La Ferrassie
7. La Chapelle-aux-Saints is a typical example of
 - a. Australopithecus race
 - b. **Neanderthal race**
 - c. Homo erectus race
 - d. Homo Heidelbergensis race
8. Australopithecus group was discovered at
 - a. East Africa
 - b. West Africa
 - c. **South Africa**
 - d. West Africa
9. Leucoderms are
 - a. Black skinned people
 - b. **White skinned people**
 - c. Yellow skinned people. Brown skinned people
10. Ulotrichous is a form of hair
 - a. Wavy form
 - b. Smooth form
 - c. Coarse form
 - d. **Woolly form**

Section-'B'

4x5=20

Note: Write long answer of the following questions. Attempt any **four** questions. Each question carries 5 marks.

2. Explain the theory of Neo-Darwinism.

Answer 2:

Darwin discussed about variation among individuals of the same species and the natural selection of the best adapted individuals that form the population. But he could not explain

- a. How variation occurs
- b. What are the forces behind it
- c. His idea of inheritance was not very clear.

- The first question was answered by the mutation theory of Hugo de Vries in 1901. It provides the raw materials for evolution and it is the source of all variations.

Mutation is a **sudden, random, discontinuous and heritable change** independent of the environment in the genetic make-up of an individual. **Darwin** called such variations as **sports** or **saltations**, whereas **Bateson** called them **discontinuous variations**.

Hugo de Vries observed evening primrose *Oenothera lamarckiana*, which is a biennial plant of 5 to 6' height. The wild variety showed different characteristics in different forms
O. brevistylis -small style, *O. levifolia* -smooth leaves, *O. gigas* -the giant form, *O. nanella* -the dwarf form etc. These characters are inherited to the progeny.

Each of them is called **mutant** and the characteristics are called **mutations**. Mutation is the whole truth of evolution to **Hugo de Vries**, who proposed **mutation theory**. It states that **new full-fledged species originate at once as a result of large, discontinuous variations which appear suddenly**.

- As regard inheritance Mendel's Laws explain the basic processes. There was difference between Darwin and Mendel in respect of the unit of study, which to Darwinian school of evolution is the whole population, while mendelian geneticists put more weight on the individuals.

When population geneticists opened a new dimension, scientists shifted their emphasis to the population and that population is an interbreeding group having relatively smaller number of individuals and the members of the group are exposed to the same environment. This sort of population is now known as the Mendelian population. A population shares a common gene pool. Biologists with the help of statistical methods and experiments understood the evolutionary processes involved in that population and the effects of those processes and developed an idea that evolution is a change in gene frequencies in the gene pool of a population over certain time period.

Through the process of natural selection the frequency of advantageous genes increases and survives in a given environment to reproduce. This is the modern concept of evolution. This theory is called Synthetic theory of Evolution because in this theory the basic concepts of natural selection theory, Mendelism, Mutation theory and population genetics have been synthesized. Hence this is called as the Neo-Darwinian theory as the theory of natural selection of Darwin has been developed giving it a new dimension incorporating the basic idea of the other theories, more particularly that of population genetics.

3. Write short note on

a. Racial determination

b. Biological Anthropology

Answer 3a: Racial classifications are made on the basis of certain genetic traits, which are used in classification of races referred to as racial criteria. The racial criteria should fulfill certain requirements. Boyd suggested a few conditions which should be satisfied by criteria for racial classification. They are:

1. A criterion must be objective, so that different investigators do not show individual variation in identifying and classifying the concerned traits.
2. A criterion should be non-adaptive, so that natural selection cannot play effective role.
3. A criterion should not be modified to a large extent by environmental factor.
4. A criterion should not be subject to a high rate of mutation. So that the nature of the trait does not alter frequently, otherwise the frequency of the trait in a population may show considerable variation from time to time.
5. A criterion should be controlled by a known genetic mechanism. It is always better if the mechanism is simple.

The criteria chosen for human classification and racial determination include;

In the first category,

Some common variable characters, whose hereditary mechanism is not simple and not very perfectly known, i.e. skin color, nose form, face, hair color, eye form, nasal bridge etc.

In the second category,

Some common physiological characters may be included. The genetic process of these traits are quite well known such as ABO blood group, MN blood group type, etc. Test reaction to phenyl-thio-carbamide, color blindness, abnormal traits of human blood etc. are rare genetic characters which occur in low frequencies.

In the third category,

Some of the important racial characters used for racial determination are, skin color, hair, head form, face, nose, eye, stature etc.

Answer 3b:

Anthropology is a discipline, which deals with the study of human being (man) holistically.

Etymologically the term is derived from two distinct greek words, anthropos', the meaning of which is man and the logos' refers to science or study.

Therefore, we define anthropology as a discipline which studies the human beings.

Definition: Anthropology is the scientific study of the origins, the behavior and the physical, social, cultural development of humans. It is the study of humankind, past and present, in all its aspects especially human culture or human development.

Anthropology is

- Holistic
- Comparative
- Dynamic

It is the holistic study of all aspects of culture and society in an integrated and comprehensive manner. it offers a total study of all aspects of culture

Anthropology is a very broad scope social science discipline. In fact, its broad scope is a defining characteristic of anthropology. Anthropology's broad scope is evident in the sorts of questions that interest anthropologists.

For example, questions might be,

- what makes humans different from other animals?
- Is there such a thing as human nature and if so, what is it like?
- How and why do human groups differ, both biologically and culturally?
- Why have human cultures changed so much in the last 10,000 years?
- How are people who live in industrialized urbanized nations different from "traditional" or "indigenous" people?

We want to know why many Canadians and Australians like beef, which devout Hindus and Buddhists refuse to eat.

In short, anthropologists of one kind or another are liable to investigate almost everything about human beings: our evolution, our genes, our emotions, our behaviors, how people organize their living, our language, our religion, our behaviors and so forth. A good way to emphasize anthropology's broad scope is to say anthropologists are interested in all human beings – whether living or dead, Asian or African or European and that anthropologists are interested in many different aspects of humans, including their technologies, family lives, political systems, religions and languages. No place or time is too remote to escape the notice of anthropologists. No dimension of humankind from skin color to dress customs falls outside the anthropologist's interest.

As anthropology is such a broad discipline, no single anthropologist can master the entire field. Therefore, modern anthropologists specialize in one of the five subfields: archaeology, biological or physical anthropology, anthropological linguistics, and applied anthropology.

4. What are the four postulates of 'Origin of Species'?

Answer 4:

Charles Robert Darwin (1809-1882) was an English naturalist born on 12th February, 1809 at Shrewsbury, England. The idea of **evolution of new species by natural** selection influenced his mind in the journey. Darwin was much influenced by three publications namely the essay of **T.R. Malthus**, 1798, titled "*On the principles of populations*" which states that populations increase geometrically and the food sources increase arithmetically, the book written by **Sir Charles Lyell** entitled "*Principles of Geology*" which explained the **gradualism** (earth has changed slowly and gradually through ages) and **uniformitarianism** (fundamental laws operate today on the earth in the same way as they did in the past) and the paper titled "*On the tendency of varieties to depart from original types*" sent to him by **Alfred Russel Wallace**.

Darwin presented the summary of his theory in a joint paper titled, '*Origin of species*', in 1858 to the Linnean society. The four postulates of 'Origin of Species' include;

1. Darwin's theory of Natural Selection :

- Darwin's theory of natural selection is based on several facts and observations.

a. Over production or enormous power of fertility:

- Every organism tends to increase in geometrical proportions in its population, e.g. *Paramecium* divides by binary fission three to four times in a day. At this rate, the mass of protoplasm equals to 10,000 times of the volume of the earth at the end of 9000th generation.

b. Constancy in population of each species in nature :

However, an abnormal increase in the population of any species is not observed in nature. The population of each species remains more or less constant because the offspring die in large number before they become reproductively active.

2. Struggle for existence :

Over population results in severe competition. Darwin called it struggle for existence. These struggles are of three types.

i. Intraspecific struggle: It is the struggle found among the individuals of a species. It is most severe check of the rate of reproduction. This struggle is for food and mating.

ii. Interspecific struggle: It is found between different groups of animals. It is most common because most of the species have same food habits. This competition is for food and other needs. Usually the lower animals are more affected by this than the larger ones.

iii. Struggle with the environment: Living organisms struggle with the adverse environmental conditions like floods, cold waves, heat waves, earthquakes etc. The gigantic reptiles, dinosaurs, struggled very much in cretaceous period and perished.

3. Universal occurrence of variations :

- Variations exist in all organisms. These variations may be **useful** or **harmful** or useless. Harmful variations make the organism unfit in the struggle for existence. The variations may be **favoured** or **unfavoured** by the nature. **Beneficial** variations are favoured by the nature.
- Useful variations are quite significant and make the organism fit in the struggle for existence.
- Such variations are inherited by the progeny, so that the progeny has better chances of survival.

4. Natural selection :

- According to Darwin during the struggle for existence, the organisms with beneficial variations alone will survive. Darwin hypothesised that these variations are sorted out by nature through competition. The organisms which are selected by nature are said to be the fittest. This idea of **survival of the fittest** was proposed by **Herbert Spencer**.
- Variations which are useful to the individual in a particular environment would increase that individual's ability to reproduce and leave fertile offspring. These are favoured by nature.
- Less favourable variations would be at disadvantage and organisms possessing them are reproductively less successful. Differential reproductive success exists among organisms.
- The concept of differential reproductive success of various forms is more accurate. Over period of time, the criterion for the success is the reproductive success. The organism that fails to reproduce cannot be represented in future generations however fit it may be in the struggle for existence.

5. Origin of species :

- Darwin concluded that the struggle for existence leading to the survival of the fittest allows the successive generations to become better adapted to the environment.
- All the modifications caused by variations and selected by nature are accumulated from generation to generation till a generation is produced that is more adapted and has more chances of survival.
- Darwin considered that a permanent racial change is the product of fluctuating variations. He also believed that evolution is a gradual, rather than a sudden, biological event.
- Thus, as per natural selection, **new species** are evolved due to cumulative effect of fluctuating variations.

5. Describe the anatomical and cultural features of Early Hominids.

Answer 5:

In the early Miocene, about 22 million years ago, the many kinds of arboreally adapted primitive catarrhines from East Africa suggest a long history of prior diversification. Fossils at 20 million years ago include fragments attributed to Victoriapithecus, the earliest Old World Monkey. Among the genera thought to be in the ape lineage leading up to 13 million years ago are Proconsul, Rangwapithecus, Dendropithecus, Limnopithecus, Nacholapithecus, Equatorius, Nyanzapithecus, Afropithecus, Heliopithecus, and Kenyapithecus, all from East Africa. The presence of other generalized non-cercopithecids of middle Miocene age from sites far distant—Otavipithecus from cave

deposits in Namibia, and *Pierolapithecus* and *Dryopithecus* from France, Spain and Austria—is evidence of a wide diversity of forms across Africa and the Mediterranean basin during the relatively warm and equable climatic regimes of the early and middle Miocene. The youngest of the Miocene hominoids, *Oreopithecus*, is from coal beds in Italy that have been dated to 9 million years ago.

Molecular evidence indicates that the lineage of gibbons (family Hylobatidae) diverged from great apes some 18–12 million years ago, and that of orangutans (subfamily Ponginae) diverged from the other great apes at about 12 million years; there are no fossils that clearly document the ancestry of gibbons, which may have originated in a so-far-unknown South East Asian hominoid population, but fossil proto-orangutans may be represented by *Sivapithecus* from India and *Griphopithecus* from Turkey, dated to around 10 million years ago.

The great apes are large, tailless primates, with the smallest living species being the bonobo at 30–40 kilograms in weight, and the largest being the gorillas, with males weighing 140–180 kilograms. In all great apes, the males are, on average, larger and stronger than the females, although the degree of sexual dimorphism varies greatly among species. Although most living species are predominantly quadrupedal, they are all able to use their hands for gathering food or nesting materials, and, in some cases, for tool use.

Most species are omnivorous but fruit is the preferred food among all but some human groups. Chimpanzees and orangutans primarily eat fruit. When gorillas run short of fruit at certain times of the year or in certain regions, they resort to eating shoots and leaves, often of bamboo, a type of grass. Gorillas have extreme adaptations for chewing and digesting such low-quality forage, but they still prefer fruit when it is available, often going miles out of their way to find especially preferred fruits. Humans, since the neolithic revolution, consume mostly cereals and other starchy foods, including increasingly highly processed foods, as well as many other domesticated plants (including fruits) and meat. Hominid teeth are similar to those of the Old World monkeys and gibbons, although they are especially large in gorillas. The dental formula is 2.1.2.3/2.1.2.3 Human teeth and jaws are markedly smaller for their size than those of other apes, which may be an adaptation to eating cooked food for more than a million years.

6. Write short note on

a. Prosimii

b. Hominidae

Answer 6a: Prosimii

The suborder Prosimii includes four Infraorders, Tupaiiformes, Tarsiiformes, Lorisiformes and Lemuriformes. Here, Tupaiiformes are discussed under the Prosimii.

Tupaiiformes (Tree Shrews):

Tupaiiformes includes one family Tupaidae, two subfamilies Tupaiinae and Ptilocercinae and six genera. The Tupaiiformes are distributed all over Southeast Asia, Indochina, Myanmar, Thailand,

Malay Peninsula, Java, Sumatra, Borneo, Philippines, Eastern coast of India, Bangladesh, Sikkim, and Nicobar Islands.

The tree shrews are small animals with long feathery tails and fur covered body. In appearance they look like small squirrels. They are usually diurnal in habit. However, some are nocturnal and have night vision. They are not completely insectivorous because they eat whatever they find digestible and perhaps called as omnivorous. They are mostly arboreal in habit. Some run along the ground and occasionally climb low branches and bushes. The animals are capable of grasping things by flexion of digits along with thumb (pollax) or big toe (hallux), which are extremely mobile and to some extent opposable. Their hands and feet resemble those of primates.

Many of characteristics of skull show similarities with those of the Lemuriformes. For example, the bony formation of the interior of the orbit, the auditory chamber, the palatine bone, the visual apparatus, etc., show affinity with the Lemuriformes. In general, the brain is quite complex, approaching that of higher primates. Like the primates, visual centre in the eye as well as in the brain are highly differentiated. The dental formula is 2.1.3.3/ 2.1.3.3. However, the third incisor of the lower jaw is much reduced in size, and in some it has almost disappeared, thereby approaching a primate dentition.

Answer 6b: Hominidae

The **Hominidae** also known as **great apes** form a taxonomic family of primates, including four extant genera.

- chimpanzees (*Pan*) – 2 species
- gorillas (*Gorilla*) – 2 species
- humans (*Homo*) – 1 species
- orangutans (*Pongo*) – 2 species

The term "hominid" is also used in the more restricted sense as hominins or "humans and relatives of humans closer than chimpanzees. In this usage, all hominid species other than *Homo sapiens* are extinct. A number of known extinct genera are grouped with humans in the Homininae subfamily, others with orangutans in the Ponginae subfamily. The most recent common ancestor of the Hominidae lived roughly 14 million years ago, when the ancestors of the orangutans speciated from the ancestors of the other three genera. The ancestors of the Hominidae family had already speciated from those of the Hylobatidae family, perhaps 15 million to 20 million years ago.

The family Hominidae is formed by one genus called *Homo* which has only one species, *Homo sapiens*. This *Homo sapiens* is represented by humans. Man has many diagnostic characteristics by which they are distinguishable from the other members.

General features:

- Man walks bipedally with fully erect posture, for which several modifications in the human skeleton have taken place.
- In man, in relation to the weight of the body of adult, that of newborn is much greater.
- Man has the power of articulated speech.
- Man has long span of life.
- Growth period is long. Rate of growth development is slow in humans.

7. Write about the fossil remains of Pleistocene time.

Answer 7: The Quaternary period is divided into two epochs-Pleistocene and Holocene. The evolution of man from an ape like creature to Homo sapiens was largely accomplished in the Pleistocene epoch. Therefore, this period may be regarded as the epoch of man. Various fossil remains of ape like man, early man and Homo sapiens were discovered from the deposits of this epoch.

Three major stages are recognized in the sequence of Hominid evolution, they are;

- a. Australopithecine
- b. Homo erectus
- c. Neanderthal man

There are many hominids evolving in each stage of Hominid evolution, Let us describe any one species belonging to the first stage.

- a. **Australopithecine:** A well preserved fossil skull of the first of the Australopithecine group was discovered at Taung in Bechuanaland, South Africa by Raymond Dart in 1924. Subsequently, many remains of the members of the Australopithecine were discovered from different parts of Africa and also from China, Java and Palestine.

Many species such as Australopithecus africanus, Plesianthropus transvaalensis, Paranthropus robustus, Australopithecus Prometheus, Paranthropus crassidens, Telanthropus capensis from South Africa and Zinjanthropus boisei, Homo habilis from East Africa and Meganthropus palaeojavanicus from Java, Australopithecus species from West Africa, Palestine, and China etc. exists.

Australopithecus africanus:

Remains of Australopithecus consisting of an almost complete skull of a young individual, probably not more than five years of age, were first discovered in 1924 at Taungs in Bechuanaland, South Africa. The skull contained twenty milk teeth and four permanent first molars in good condition. Some important characteristics are as follows;

- i. The size of the cranium and facial portion closely resemble that of the chimpanzee. The head is dolicocephalic.

- ii. The face is prognathous, concave and premaxilla are well marked.
- iii. A diastema is present in the upper jaw between the lateral incisor and the canine
- iv. The cranial capacity is 520 c.c.
- v. The nasal aperture is high, the nasal bones are short, broad and separated by inter nasal suture.
- vi. Higher foreheads, lesser jaw projection, and a more horizontal and forward position of the foramen magnum than the adults of the species.
- vii. The jaw is massive, molar teeth are very large but quite humanoid, canines are small and their crowns are in the same level along with that of the other teeth.
- viii. The incisors are small in size and almost vertical in position, while in apes it is sloped.

8. Elucidate B.S.Guha's classification of races.

Answer 8: B.S. Guha's Classification (1935)

The reliability and standardization of measurements were emphasized by Dr. B.S. Guha of the Zoological Survey of India. His work was published in the Census of India (1931) based on an analysis of 29 characters and 63 crude coefficients of racial likeness of different measurements of 2511 persons belonging to 34 groups. His survey was claimed to have the great advantage of standardization of the anthropometric techniques of the International Agreements of 1906 and 1912. This was regarded as a very important landmark in the racial history of Indian Anthropology. His extensive applications of Karl Pearson's coefficient of racial like-ness proved very useful for biological relationships among the different populations of India.

According to Guha (1931), the classification of racial groups determined 6 main races with 9 subtypes:

1. The Negritos

Morphological Features: Skin Colour – Dark Brown to Dark Black; Hair - Woolly in form; Head Form - Small, Round, Medium or Long; Forehead is Bulbous; Supraorbital Ridges - Smooth; Eyes - Dark in Colour, Nose Form - Straight, Flat and Broad; Stature- Very Short height or Pygmy.

Represented by the Kadars, Pulayans (Cochin and Travancore, Irular and Primitive tribes of Wynad. They are considered to be autochthones of India.

2. The Proto-Australoids

Morphological Features: Skin Colour - Dark Brown; Hair - Dark in Colour; Wavy and Curly Hair form; Head - Long (Dolichocephalic); Forehead - Less Developed and Slightly retreating; Supraorbital Ridges - Prominent; Eyes - Dark in Colour; Nose – Broad, Depressed at the Root; Stature - Short, Limbs are delicate.

This type is represented by Urali (Travancore), Baiga (Rewa), the tribal groups - Chenchu, Kannikar, Kondh, Bhil, Santal, Oron belong to this group. Their morphological features wavy hair is different from the Negritos who are having frizzly or woolly hair.

3. The Mongoloids

This group is characterised by straight hair, obliquely set eyes showing Epicanthic fold; scanty hair on body and face, flat face with prominent cheek bones.

They are represented by two groups - (i) Palaeo - Mongoloids who are categorized into (a) Long - headed and (b) Broad - headed and (ii) Tibeto - Mongoloids:

(i) Palaeo – Mongoloids

(a) Long - headed:

Morphological Features: Skin Colour - Dark to Light Brown; Hair - Dark Colour Straight form; Head Form – Long (Dolichocephalic), Face - Short and Flat; Surpraorbital Regions - Faintly developed, Cheekbones - Prominent; Nose Form - Medium; Stature – Medium height.

The peoples of sub - Himalayan Region represented by the tribal groups of Assam (Sema Nagas); Nepal (Limbus)

(b) Broad - headed

Morphological Features: Skin Colour - Dark; Hair - Dark Colour, Straight form; Head Form – Broad (Brachcephalic); Eyes - Obliquely set eyes which show marked Epicanthic fold; Nose - Medium; Stature – Medium height.

They are represented by Lepchas of Kalimpong; Hill Tribes - Chakmas, Maghs of Chittagong.

(ii) Tibeto - Mongoloids:

Morphological Features: Skin Colour - Light Brown; Hair - Dark and Straight form; Head Form – Broad (Brachycephalic) and Massive; Face - Long and Flat; Eyes - Oblique having marked Epicanthic fold; Nose - Long to Medium; Stature – Tall Height.

The Tibetans of Bhutan and Sikkim are representing this type.

4. The Mediterranean: They have been categorized in three different racial types:

(i) Palaeo - Mediterranean: They are considered like more ancient people.

Morphological Features: Skin Colour - Dark; Hair - Dark Colour, Wavy to Curly hair form; Head Form - Long (Dolichocephalic) and narrow with bulbous Forehead; Projecting Occiput and high vault; Face – Narrow; Chin – Pointed; Eyes - Dark in Colour; Nose Form - Small and Broad; Stature – Medium height.

The Tamil Brahmans of Madura, Nairs of Cochin, and Telegus Brahmans are representing this type. The Dravidian speaking people of South India show the preponderance of this type.

(ii) Mediterranean

Morphological Features: Skin Colour - Light; Hair - Dark Colour; Head Form - Long (Dolichocephalic), Head with Arched Forehead; Face - Long; Chin - Well Developed; Eyes - Dark Brownish to Dark Colour; Nose Form - Narrow and Prominent; Stature - Medium to Tall and slender body built.

The Numbudiri Brahmans of Cochin, Brahmins of Allahabad, Bengali Brahmans, and Marathas are representing this type. The people of this group are inhabitants of Uttar Pradesh, Bombay, Bengal, and Malabar.

(iii) The so - called Oriental sub - type of the Mediterranean

Morphological Features: The Oriental type has been described by Fischer and the people represent all most all the characteristics of the Mediterranean type except the nose form which is long and convex.

Punjabi Chettris and the Pathans is representative of the group. The people of Punjab, Sind, and Rajputhana etc. are representative of this group.

5. The western broad headed people of Brachycephals consisting of three types:

(i) The Alpinoids

Morphological Features: Skin Colour - Light; Hair - Dark Brownish to Dark Colour and Form - Wavy; Head Form - Broad (Brachycephalic) with rounded occiput; Face - Round; Eye – Dark Brown in Colour; Nose - Prominent; Stature - Medium and body is thickly set.

The representatives of this group are Bania of Gujarat, Kathi of Kathiawar, and the Kayasthas of Bengal among others.

(ii) The Dinarics

Morphological Features: Skin Colour - Darker; Hair - Dark in Colour; Head Form - Broad (Brachycephalic) with rounded occiput and high vault; Face - Long; Eyes - Dark in Colour; Forehead - Receding; Nose Form - Very long and often convex, Stature – Tall height.

This type is represented among Brahmans of Bengal; Kanarese Brahmans of Mysore and the inhabitants of Bengal, Orissa, and Coorg. The Alpino - Dinaric people are considered to enter India through Baluchistan, Sind, Gujarat, and Maharashtra into Kannade and than Sri Lanka (Ceylon). This type has been observed in the Indus Valley site, Tinnevely, Hyderabad.

(iii) The Armenoids

Morphological Features: The Armenoids are having most of the morphological features similar to Dinaric. They are having more prominent, narrow and aquiline nose and occiput is more marked.

The best representative of this group is the Parsis of Bombay.

6. The Nordics

Morphological Features: Skin Colour - Fair Complexion; Hair - Brown to Dark in Colour Wavy hair form; Head Form – Long (Dolichocephalic), protruding Occiput and arched Forehead; Jaw - Strong; Eyes - Mostly Bluish Tinge; Nose - Fine, Narrow; Face - Long and Straight; Stature - Tall with powerfully built body.

Inhabitants of Northern India, mainly the people of Punjab, Rajputana are representative of this group. Kaffirs, Kathash belong to this group.

Guha considered that the Negritos are the earliest racial element in India and believed that the Kadars, Irulas and the Pulayans of South India have a Negrito strain.