Medical academy named after S. I. Georgievsky of Vernadsky CFU

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Human adaptation to environmental conditions -

The human body readily responds to changing environmental stresses in a variety of biological and cultural ways. We can acclimatize to a wide range of temperature and humidity. When traveling to high altitudes, our bodies adjust so that our cells still receive sufficient oxygen. We also are constantly responding in physiological ways to internal and external stresses such as bacterial and viral infections, air and water pollution, dietary imbalance, and overcrowding.

- This ability to rapidly adapt to varying environmental conditions has made it possible for us to survive in most regions of the world. We live successfully in humid tropical forests, harsh deserts, arctic wastelands, and even densely populated cities with considerable amounts of pollution. Most other animal and plant species are restricted to one or relatively few environments by their more limited adaptability.

Humans normally respond to environmental stresses in four ways:

1. genetic change

2. developmental adjustment

3. acclimatization

4.cultural practices

The first three are biological responses. The last three occur during our lifetime without further genetic change.

Resources biospheres and natural limits of the human population.

- Generally speaking, as the human population grows, our consumption of natural resources increases. More humans consume more freshwater, more land, more clothing, etc. ... Scientific and technological innovations mean that we are improving our efficiency at using and harvesting natural resources.

Notions of human adaptation and acclimatization, mechanisms of adaptation.

- adaptations that our species used to conquer the globe.
- 1) Endurance running. ...This allowed prehistoric humans to excel at hunting. ..
- .2) Sweating. ...Many animals sweat, but few use it for evaporative cooling, like humans (and horses) do. ...
- 3) Walking upright.

Mechanisms of adaptation –

In evolutionary theory, adaptation is the biological mechanism by which organisms adjust to new environments or to changes in their current environment. ... The idea of natural selection is that traits that can be passed down allow organisms to adapt to the environment better than other organisms of the same species.

Adaptation is biological and social -

Biological adaptation is a property of phenotypic features of organisms relative. to selection demands of the environment. Adaptive features are ones having properties. of form and function which permit the organism to maintain successfully the synerg.

- In evolutionary theory, adaptation is the biological mechanism by which organisms adjust to new environments or to changes in their current environment. ... An example of biological adaptation can be seen in the bodies of people living at high altitudes, such as Tibet.

- Social adaptation theory applies neo-Piagetian concepts to such content areas as attitude change and advertising effectiveness. The theory assumes that schemata grow as a result of dynamic adaptation through assimilation and accommodation, as well as through internal organization of information.

Geographic aspects of human adaptation -

- Since the beginning of the study of evolution, people have been fascinated by recent human evolution and adaptation. Despite great progress in our understanding of human history, we still know relatively little about the selection pressures and historical factors that have been important over the past 100,000 years. In that time human populations have spread around the world and adapted in a wide variety of ways to the new environments they have encountered. Here, we investigate the genomic signal of these adaptations using a large set of geographically diverse human populations typed at thousands of genetic markers across the genome.

We find that patterns at selected loci are predictable from the patterns found at all markers genome-wide. On the basis of this, we argue that selection has been strongly constrained by the historical relationships and gene flow between populations.

These patterns suggest that selection is often weak enough that neutral processes—especially population history, migration, and drift—exert powerful influences over the fate and geographic distribution of selected alleles.

Ecological differentiation of mankind-

The term niche differentiation (also known as niche segregation, niche separation and niche partitioning), as it applies to the field of ecology, refers to the process by which competing species use the environment differently in a way that helps them to coexist. The competitive exclusion principle states that if two species with identical niches (ecological roles) compete, then one will inevitably drive the other to extinction.This rule also states that two species cannot occupy the same exact niche in a habitat and coexist together, at least in a stable manner.When two species differentiate their niches, they tend to compete less strongly, and are thus more likely to coexist. Species can differentiate their niches in many ways, such as by consuming different foods, or using different areas of the environment.As an example of niche partitioning, several anole lizards in the Caribbean islands share common diets—mainly insects. They avoid competition by occupying different physical locations. Although these lizards might occupy different locations, some species can be found inhabiting the same range, with up to 15 in certain areas.For example, some live on the ground while others are arboreal. Species who live in different areas compete less for food and other resources, which minimizes competition between species. However, species who live in similar areas compete.

Adaptive types of population-

- There are three different types of adaptations:Behavioural - responses made by an organism that help it to survive/reproduce.Physiological - a body process that helps an organism to survive/reproduce.Structural - a feature of an organism's body that helps it to survive/reproduce.

Features of biological and social adaptation of Arctic indigenous peoples, inhabitants of the tropics, arid regions, highlands.-

- Indigenous peoples have inhabited the Arctic for thousands of years. The proportion indigenous people is estimated to be about 10 percent of total population living in arctic areas. There are over 40 different ethnic groups living in the Arctic. Map with fact boxes on Indigenous peoples who are permanent participants at the Arctic Council.

Arctic indigenous peoples include for example Saami in circumpolar areas of Finland, Sweden, Norway and Northwest Russia, Nenets, Khanty, Evenk and Chukchi in Russia, Aleut, Yupik and Inuit (Iñupiat) in Alaska, Inuit (Inuvialuit) in Canada and Inuit (Kalaallit) in Greenland. All of the above-mentioned countries except Iceland have indigenous peoples living within their Arctic territory. Official statistics do not necessarily recognize indigenous populations separately, although differences occur. The number of indigenous people is not accurate because of the definition of indigenousness. See the map Demography of indigenous peoples of the Arctic based on linguistic groups. Tropical ecosystems may consist of tropical rainforests, seasonal tropical forests, dry (often deciduous) forests, spiny forests, desert and other habitat types. There are often significant areas of biodiversity, and species endemism present, particularly in rainforests and seasonal forests

- At present, almost 2.5 billion people inhabit in arid and semiarid lands meaning they are the home to one in three people in the world today. According to UN-Habitat, the 18.5% population growth rate in the arid lands was faster than that of any other ecological zone. Population density increases as aridity decreases.
- it appears that human activities such as land use, aerosols and irrigation in these arid urban environments affect the entire water cycle as well. In the past half-century, cities have begun to expand in some of the Earth's most arid areas.
- The Highlands could not grow as much food per unit area than the Lowlands resulting in low population density in the Scottish Highlands in pre-industrial era (i.e. till around 1800). In most cases, population density increased in the industrial/post-industrial age because of technological advances

Nosogeography as geography industry the spread of diseases and pathological conditions of man-

- Nosogeography/Environmental geology is the branch of geology that is concerned with the interactions between humans and the geologic environment. Environmental geology is an important branch of science because it directly impacts every single person on the planet every single day.
- Geology in everyday life is not restricted to resources. It is also about hazards and risk associated with rock falls, radon, landslides, quick clay, landslides and earthquakes. Geology is detective work. Geology helps us understand climate change in the past, which may help us predict future scenarios

Endemic species-

- Endemic species are plants and animals that exist only in one geographic region. Species can be endemic to large or small areas of the earth: some are endemic to a particular continent, some to part of a continent, and others to a single island
- For example, Endemic species, such as the tortoises of the Galápagos and the lemurs of Madagascar can be found small islands. Big islands also provide the same isolation but on a larger scale. Antarctica Hawaii and Australia are all huge land masses where we can find a lot of endemic species.
- An endemic species are important because they are in the habitats restricted to a particular area due to climate change, urban development or other occurrences. Endemic species are often endangered, so it is important to save the species.

Areals to settle in India-

- Chennai, Tamil Nadu. ...Mumbai, Maharashtra. ...
- kochi, Kerala - Queen of Arabian Sea. ...
- New Delhi, NCR - Melting Pot of Cultures and Cities. ...
- Jaipur, Rajasthan - Best City to Live in India for Heritage Lovers. ...
- Kolkata, West Bengal - Safest City in India. ..
- .Dehradun,Uttarakhand - Home of the Valley
- Chandigarh, punjab - India's first planned city
- Banglore, karnataka -start up city of India
- Indore, Madhya Pradesh - 'The Food City' Famous for its Poha and Immarti.

- *Thank-you*