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Unit-I
Topic: The nature and scope of Physical Geography

Physical Geography-I
The nature and scope of Physical Geography

Dear student-friends today's program focuses on the nature and scope of physical Geography and consists of the following sub modules:

1.1 Introduction to Geography
1.2 Scope of Physical Geography
1.3 Interrelation of Physical Geography with other branches
1.4 Place of Geomorphology in Physical Geography.
1.5 Geological Time Scale

1.1 INTRODUCTION TO GEOGRAPHY :

Geography in general is a 'science of distribution of aspects on the surface of the earth'. From historical times it is simply known as 'Geo' means earth, 'graphy' referring to its description of Greek origin. Over the years, it has studied as a subject which deals with influence of physical world – Air water and solid earth like (land forms, soil, natural vegetation) on man and his culture (agriculture, industry, settlements and the like). Alexander, J.W. in his famous book 'Economic Geography' gives a comprehensive and clear definition of Geography- "It deals with 'spatial variations' on the 'Earth's surface'. Here, spatial variable may be anything which varies from place to place which can be physical (mountains, land form, soils, natural vegetation) on 'Cultural' (man-made aspects like agriculture, industry population, fishing, forestry, settlements and the like). In Geography 'earth's face' particularly refers to lower atmosphere, where all weather phenomena happen; lithosphere- solid earth's crust from where man draws minerals, till the soil for agricultural crops, on which also he has built settlements and hydrosphere which covers ¾'s of earth's surface from which he gets a variety of marine resources and has developed water ways.

In this section, let us concentrate on 'physical Geography', where it deals with earth's structure, certain structure related movements, major rocks and their disintegration; particularly at length, the resultant land forms by the work of River, Glacier, Wind, Underground water and Sea waves. Also let us have a glance at the use

of physical Geography in our lives, particularly its knowledge in the management of environmental hazards.

1.2 The Nature and Scope of Physical Geography

Physical Geography is that branch of Geography which deals with natural features of the Earth's surface as distinct from its political dimensions, commercial or historical divisions.

According to W.M. Davis Physical Geography or Physiography may be defined as the study of those features of the Earth which are involved in relation to the Earth and man that is the study of man's physical environment, where it encompasses the physical features like mountains, plains, plateaus, soil, natural vegetation and a variety of land forms.

Due to both internal forces (Earthquakes, volcanoes) and also external forces (weathering, work of river, glacier, wind, under groundwater and sea waves). In this section we can call as Geomorphology and we will return to it later in this topic.

In other words, Physical Geography deals with the physical background of those aspects of air (Atmosphere), land (Lithosphere) and water (Hydrosphere) which are quiet independently of man affect the environment in which we live, which are also almost beyond our control. Off late, to make physical Geography more comprehensive aspects of biosphere i.e., natural soil, natural and fauna vegetations, distributions have been included.

Geography in general is concerned with variation of phenomena (here natural) from place to place and where in physical Geography it explains the relationship between the prevailing land form, soil or natural vegetation and it's relationship with natural forces or factors governing in operating in their formation. There is a dictum about nature of Geography in general that "there would be no Geography if physical and human phenomena were distributed uniformly over the face of the earth" (Alexander J.W. 1963). The atmospheric aspects like temperature, rainfall, weather and climate which form the one of the aspects of physical Geography vary from place to place and they are known as physical spatial variables. Of course they also consist of elevation, land forms, soils and the like. But one must remember that here Geography also has other equally important branch though we do not deal that with i.e., 'Human Geography' which contains man made spatial variables like population, agriculture, industry, settlements (Urban and rural) transportation aspect and the like on the surface of the earth. Any phenomena that differ from place to place are termed as spatial variables and qualify as elements of Geography in general.
Here, geographer whether a physical or human, studies the spatial phenomena either systematic way (topical) or on regional way i.e. forming different sizes of areas and studying them with in the regional frame work. But most of the physical Geography is

a systematic study where aspects by aspects starting from origin of the earth, materials of earth rocks and minerals, atmospheric process, elements, weather and climatic types and their distribution, the endogenic forces – Earthquakes and volcanoes and their associated landform; the exogenic forces weathering, agents of erosion-river, glacier, wind, underground water, and sea waves; soils their formation and types and natural vegetation their types and distribution are studied under systematic method. Depending on the standard of learning these are also studies under regional basis for examples. Climate, physical features, natural vegetation and soils of India or even in state wise say Karnataka or other any state from Kashmir to N.E. States of Indian Union.
Scope of Physical Geography:

Knowledge of Physical Geography helps the students, teachers and others because they will simply observe these earth's phenomena through out their lives, in fact, they are surrounded by them in varying degrees. They may be the path of sun in the sky day after day, they will note the changing length's of day and night in the annual cycle; time in relation to GMT or local standard time. They experience of daily temperature and weather phenomena; persons closer to sea may observer the changing waves, currents and tides. Knowledge of physical processes like Earthquakes, volcanoes and cyclones has immense application in natural hazards management.

As physical Geography deals with also Map projections which are even used in newspapers and magazines (Mollewide or Sinusoidal/Convention types). They also watch passage of cyclonic storms nothing the representation of pressure systems on the daily weather map (IMD or IRS weather maps produced on daily or hourly basis respectively in the newspaper and on the television screen. On their field trips they will see the topographic features across India and generally others on their domestic and international business trips and tours. The beauty of Himalayas, coastal features of S. Australia or Italy, Volcanic landforms of Alaska or Hawaii; Desert landforms of Rajastan or N. Sahara or Limestone caves of Borracaves of A.P. India) or Istanbul etc. are immensely enjoyed and appreciated under the knowledge of physical Geography. The changing soils across India from red soils in South, Laterites in W. Ghats and E. Ghats; the Black Cotton soils of W. India; the less mounds of E. Rajastan and Alluvial of entire Indus-genetic plains are better under stood and appreciated with the knowledge of physical Geography. Same is true with varying types and shades of Natural vegetation across India particularly the vertical sections of our mighty Himalayas. A.N. Strahler says that 'Without explanation, description is unsatisfying and sterile' understanding of physical Geography needs scientific approach and makes person better informed about our earth.

1.3 Interrelation of Physical Geography with other branches :

Physical Geography:
Geomorphology (study of land forms Lithosphere)
Climatology (study of Atmosphere and its processes)
Oceanography (study of Oceans)

Bio-Geography (study of Soils, Flora and Fauna including Human resources to some extent) Environmental Geography (study of Environment and Ecology), Cartography and Mathematical Geography (study of shape of position of earth in space etc.).

The main feature of the study of these physical phenomena of the earth is their distribution and areal variations on earth's surface. Where it employs varying degree of areal analysis, spatial analysis or the very physical process by using models, abstraction through some degree and use of mathematics and increased use of cartography (science of map making here physical maps and diagrams).

1.4 Place of Geomorphology in Physical Geography :

Under Physical Geography, the study of materials of the earth- rocks and mineral their distribution, structure of the earth, plate tectonics forms the basis. A lot of space of physical Geography is occupied by the processes operating from blow the earth's surface e.g., Earthquakes and Volcanoes. Apart from these, still more space is devoted in the study and distributional aspects of land forms created by work and rivers (fluvial land forms), Glaciers (Glacial land forms), Wind (Aeolian landform) Under Ground water (Karst land forms) and work of waves (Coastal land forms).

Each one of them has immense application in our day to day lives, engineering construction activities and hazards management. In a country like ours which is a true continent has all these geomorphic processes operating across India. Over and above, India is a second most populous nation in the world which places enormous pressure on the management of land, water and air of our portion of earth. It inevitably requires scientific study of our land in other words physical Geography.

1.5 Geological Time Scale :

Scientific study and understanding of various aspects of physical Geography particularly geomorphology requires the knowledge of Geological time scale. It provides the date of formation of Rocks, Fossils, various layers /structure of earth, minerals and the very evolution of land forms along with Fauna including man on earth. It consists of Eras, Epochs and Periods for example right now we are in the Cenozoic era and in which in Holocene period which has seen Glacial ages, formation of recent layers and appearance of Human species (see Table).

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