

Definition of Soil Geography. The function, Formation and Characteristics of the Soil.

Ans: —

What is Soil: The term "Soil" means the uppermost, superficial layer of loose or unconsolidated material, overlying the crustal rocks, in which plants may grow. Soil is closely related with geological substratum but it usually differs in a number of ways from the underlying rock on which it rests and from which it is often derived, e.g. in colour, texture, structure, physical constitution, chemical composition and biological characteristics. Soil is a dynamic zone where complex physical, chemical and biological activities are going on. The scientific study of soil is known as 'Pedology' and it is in geography known as 'Soil Geography'.

The Function of the Soil: — The soil has a five fold function.

(1) It act as a medium in which plant seeds, spores, etc., may germinate. Seeds need the protection, warmth and moisture of the soil to enable them to commence their life cycle.

(2) It provides a support for growing

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plants. Apart from species which grow in water or on bare rock, or on other plants, e.g. lichens and parasites, soil is essential as an anchorage for plants.

(3) It is the main medium where by water is brought to the roots of plants. Soil, being porous, is capable of holding moisture, and air, both of which are necessary for plant life.

(4) It supplies the nitrogen, potash, phosphorus, iron and numerous other mineral substances essential to plant life.

(5) It functions as a habitat for organisms whose biological activity is responsible for the recycling of mineral nutrients derived from organic matter.

Formation of Soil: Factors of Soil Formation:

soil is composed of four main constituents —

- i) mineral matter
- ii) organic matter
- iii) soil solution
- and iv) air.

various soil-forming processes and influences govern the physical, chemical and organic properties of the soil and these are commonly referred to as the soil formers.

Parent material: Parent materials acts as a passive soil former.

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Much of the silt and sand fractions of soil come from quartz, a mineral present in abundance in many rocks.

Topography: Topography and altitude affect the formation and nature of soils in a passive way. The conditions of sun, shade, moisture, shelter, etc. affect plant life, which influence the development and character of the soil.

Time: Time is a factor - a passive condition - in the soil equation. The amount of time required for a soil to reach its mature form varies widely according to the circumstances: it depends upon the environment - locality, parent rock, climate, plant cover etc. and therefore time is necessary for soil formation.

Climate: climate is an active agent for soil formation and takes great role for soil formation. The dominant climatic controls in soil development are precipitation and temperature. climate is of importance because it is largely responsible for the rate at which weathering, leaching and organic decomposition take place. Hence climate is responsible for the basic division of soils into pedocals (lime-accumulating soils) and pedalfers (non-lime-accumulating soils).

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soil characteristics :

Soils have many physical and chemical properties which cause them to vary from one another and which are important from the point of view of their cultivability and fertility. Among the more important characteristics are

- i) Texture, ii) Structure, iii) thickness
- iv) colour and v) lime content.

SOIL PROFILES: The term "soil profile" is used to describe the arrangement of the different layers which are observable in a vertical section of soil from the surface to the bedrock.

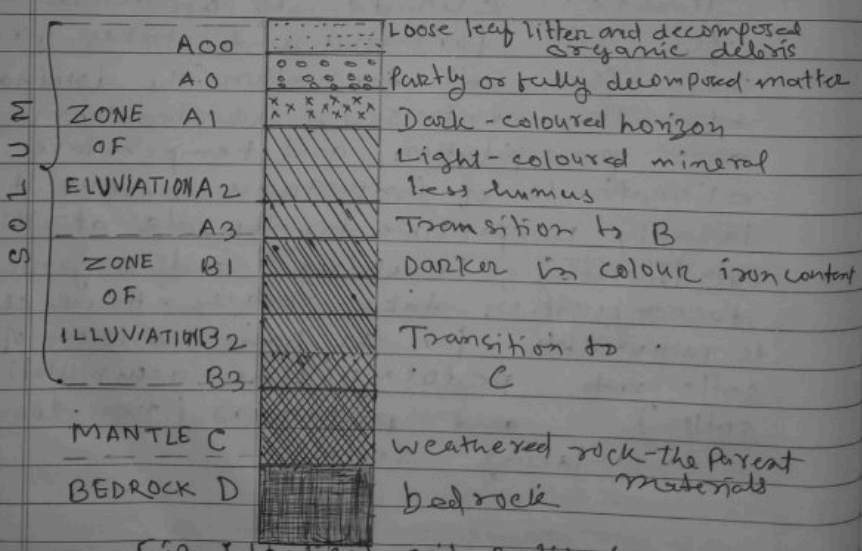


Fig. Idealised soil profile (soil Horizon)