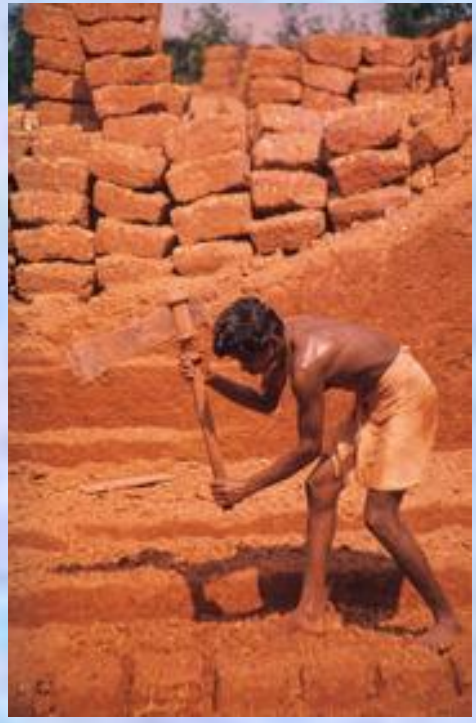
EFFECT OF MINERALS ON SOILS

Two major types of soil

- **Residual and transported**
- **Residual derived in situ from rocks**
- **Transported brought by flowing water or wind from elsewhere, the soil in river valleys, deltas and mountain valleys belong to this type**
- **Soils have been classified into lateritic, red, black, forest, alluvial, marshy, saline-alkaline, desert etc.**
- **Classification depends on climate and rainfall as well as drainage characteristics of the area and physical and chemical composition may also be adopted**

- **Lateritic soil – Rich in iron and aluminium with some titanium and manganese. It is generally red and clayey and is fairly common in the areas occupied by the Deccan traps and some Archean gneisses, particularly in the Weastern Ghats of Mysore, Malabar and Travancore**

Laterites



Laterite brickstone

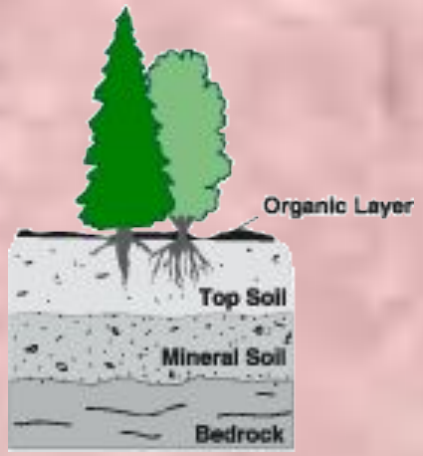
- **Red Soil** – Form a large group and occupy large areas in India. They are light and porous and contain no soluble salts, kankar or free carbonate. Soils are generally developed over Archaean gneisses and are generally deficient in Phosphorus, lime and nitrogen. Red soils are not always red in colour though frequently light red to brown. Colour is due to oxidation and of iron content. Moderately fertile for agricultural purposes. Red soils occur in AP, Assam, Bihar, Goa, Parts of Kerala, Maharashtra, Karnataka, WB

Red Soils

- **Black soil or Regur** - Clayey to loamy soil composed largely of clay material, also known as black cotton soil. It is generally black and contains high alumina, lime and magnesia with low amount of K, low N and P. It is porous and swells on addition of water and dries up with cracks. Swelling is due to presence of montimorillonite. Widely spread in Deccan traps and areas of calcareous rocks, Hyderabad, South Madras, Maharashtra, parts of MP & AP

Black Soil

- **Forest Soil** – May be divided in two groups – One composed of acid soil and humus with low base status favorable for the formation of pod sols, while the other consists of neutral soils with high base status and rich in humus.



- **Alluvial soil** – **Do not really form a definite group. They represent both transported and residual soils which may have been reworked to some extent by water. Most of the alluvial soils are found in valleys and deltas and some may be present in forest and semi desert areas also.**




Alluvial soil

- **Saline and Alkaline soil** – Found in areas of poor drainage with high evaporation or in areas of excessive irrigation without proper flushing out of salts by excess water. Show effervescence of sodium, calcium and Magnesium salts as these are drawn up to the surface by capillary action and dry up at the surface

- **Desert soil** – Are those soil which are found in arid regions under conditions of poor water supply. They often contain some soluble salts which are concentrated by inland drainage.

Peaty and Marshy soil – Found in areas which are water logged due to impeded drainage. Generally rich in organic matter and may be associated with peaty material. Peaty spoils are generally found in Kerala and marshy soils in Coastal tracks of Orrisa, West Bengal and South East coast of Tamil Nadu

← Marshy soil

Peaty soil →

Soils can also be classified according to the parent rocks from which they have been derived, but in such cases, the transported soil will have to be studied in relation to the areas from which they were originally derived.

The soils of Indian Peninsula attained a high degree of maturity as they have been under cultivation for many centuries, and therefore, represent the product of weathering over long ages.

There is naturally a considerable variation in the nature, origin, and characteristics of soils depending on their origin and changes to which they have been subjected during their evolution.