

Quadrant II – Transcript and Related Materials

Programme: FY. Bsc

Subject: Geology

Course Code: GEG 102

Course Title: Physical Geology

Unit: III

Module Name: Wind : Erosional features

Module No: I3

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Notes

Deflation hollow

Deflation, in geology, erosion by wind of loose material from flat areas of dry, uncemented sediments such as those occurring in deserts, dry lake beds, floodplains, and glacial outwash plains. Local areas subjected to deflation may result in deflation hollows or blowouts. These may range from 3 m (10 feet) in diameter and less than a metre deep to several kilometres in diameter and several hundred metres in depth.

Deflation armour

Winds blowing very speedily carry away light and small dust particles but leave behind pebbles and large fragments rolling behind on the ground. Slowly the number of such fragments increases. Due to deflation action, the land is so much lowered that these fragments form a layer. This layer preserves the land from deflation action. It is why, the layer of pebbles is called deflation armour.

Deflation pavement

Some fine pebbles go on escaping from the deflation armour even after its formation. The stone pieces get much compacted as if they have been hammered together. This compact layer is called desert pavement.

Yardangs

These are elongated, low-lying ridges forming overhangs above depression. Their trend is parallel to the direction of prevailing winds. Yardangs are formed in areas where rocks of alternate hard and soft character are lying above one another with a general gentle slope. When such a rock formation is attacked repeatedly by abrasive winds blowing in the same direction, the softer layers get abroad (scoured out) quickly., leaving the harder formation in the form of overhanging ridges.

Ventifacts

On a much smaller scale rock fragments and stones are shaped into highly-polished conical shapes by wind-driven sand. Typically, larger rocks too big to be pushed or moved along by the wind, once they are polished, display smooth faces or facets and are then termed 'ventifacts'. The German term 'einkanter' is used for rocks with one face only polished, but when such a one-sided polished stone falls over, it presents another face to the prevailing wind, and after a second toppling over, three facets are smoothed and polished. Such three-sided ventifacts are known as 'dreikanter'.

Mushroom rock/Rock pedestal/ Pedestal rock

Mushroom Rocks are flat topped rock masses that are characterized with slender lower regions. The top is commonly referred to as an overhang and the support as a pedestal. These are generally only a few meters high. The excessive thinning in the lower region of pedestal rock is attributed to the abrading action by the winds. It is an established fact that a sand-loaded wind carries most of its sand particles in the lower layers, generally within a height of 2 m from the surface. As such the lower regions of a rocks mass (up to 2 m or so high) are abraded much faster than the upper region. This obviously results in a flat-topped mass having a thin support.