material as it rubs against the floor and sides of stream and river-channels (erosion), and in the accumulation of the transported material as sediments (deposition). The strength of the processes of transportation and erosion depends on the volume and velocity, or the impulse, of the running water. The transportation power of streams and rivers is under ordinary circumstances confined within their channels, but although of limited extent it is a phenomenon apparent to every observer because of the energy of motion displayed. The washing away of rock-material by rain is much less apparent, but it is extended over far vaster tracts of country.

A great incentive was given to the scientific study of surfaceforms and their causes by the brilliant work of the American investigators, Hayden, Powell, Gilbert, Dutton, and others. While they described the wonderful river erosion that had taken place in the table-lands of the western states, European travellers were making known the characteristic forms of erosion in the high and barren territories of inland Africa and Asia. There the irregularities of the surface are chiefly due to the periodic occurrence of torrential rains and the consequent sudden increase or rapid rise of mountain-streams, which rush as destructive floods over the table-lands, and retreat and diminish no less rapidly than they arose.

Earth-pillars or pyramids occur in majestic forms in some places, and offer more familiar examples of the surface-waste accomplished chiefly by rain. In miniature, the formation of an earth-pillar may be observed in any thick foliage wood after a heavy shower of rain. The drops as they fall from the leaves upon the soil sometimes alight upon small pebbles, sometimes upon soft humus. The latter is readily washed away, the pebbles remain and serve as protecting caps to the soil immediately below, so that each pebble and the underlying soil gradually stands out as an individual column. Raineroded pillars occurring on a grand scale in the Hautes Alpes were described in 1841 by Surell; Sir Charles Lyell described pillars in the morainic conglomerate in the Tyrol, where the larger boulders had served as capping-stones. Hayden made known magnificent examples in the conglomerate rock of Sir Archibald Geikie described their occurrence at Colorado. Fochabers, in the north-east of Scotland, in Old Red conglomerates.

Although many writers of the eighteenth century had devoted