

proofs of change of level. A beach or space between tide-marks, where the sea is constantly grinding down sand and gravel, mingling with them the remains of shells and other organisms, sometimes piling the deposits up, sometimes sweeping them away out into opener water, forms a familiar terrace or platform on coast-lines skirting tidal seas. When this margin of littoral deposits has been placed above the reach of the waves, the flat terrace thus elevated is known as a "raised beach" (Figs. 75, 76, 77, 78). The former high-water mark then lies inland, and while its sea-worn caves are in time hung with ferns and mosses, the beach across which the tides once flowed furnishes a platform on which meadows, fields, gardens, roads, houses, villages, and towns spring up, while a new beach is made below the margin of the uplifted one. A series of raised beaches may occur at various heights above the sea. Each terrace marks a former lower level of the land with regard to the sea, and probably a lengthened stay of the land at that level, while the intervals between them represent the vertical amount of each variation in the relative levels of sea and land, and show that the interval between the changes was too brief for the formation of terraces. A succession of raised beaches, rising above the present sea-level, may therefore be taken as pointing to a former intermittent upheaval of the country, interrupted by long pauses, during which the general level did not materially change, unless in regions where there is reason to believe that the surface of the sea has undergone a change of level from the accumulation or melting of large masses of snow and ice (*ante*, p. 43).

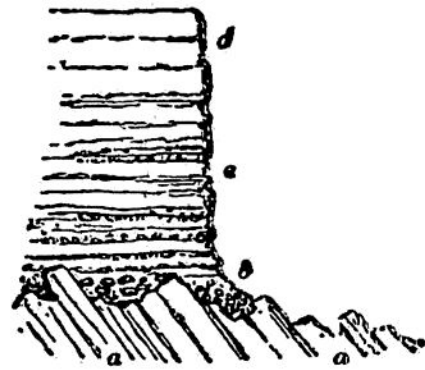


Fig. 76.—Section of a Raised Beach composed of gravel and sand (b c) resting on upturned slates (a), and passing up into blown sand (d) compacted by the decay of abundant land-shells. Fistrall Bay, Cornwall (B.).

Raised beaches abound in the higher latitudes of the northern and southern hemispheres, and this distribution has been claimed as a strong argument in favor of the view that they are due to a fall of the local level of the sea-surface from the disappearance or diminution of former ice-caps. That some at least of the raised beaches in these regions may be due to this cause may be granted. The gradual rise of level of the beaches when traced up the fjords, which has been repeatedly asserted for some dis-