

must shift inward until the center of the basin is reached and the basin is destroyed. This must happen in every country, provided the streams are strong enough to reach the sea. The divide, in its migration, will come into regions deeply buried in gravel and silt, but the streams must cut through this in time and reach bed rock. When this happens the topography will lose the characteristic forms due to deposition and assume forms determined by erosion along lines indicated by rock structure and rock texture. The whole country will doubtless be deeply shrouded in gravel, the residue of decomposition left after the wind has swept away the finer material, but the main topographic forms will be determined by the character of the rocks, and will so continue until all relief disappears. Therefore, if the center of a basin region is sufficiently elevated above the sea, and if the rainfall is great enough so that some streams reach the sea, the basin character will eventually be destroyed, the major forms due to deposition will disappear, and in old age the arid country will present a topography similar to that of a moist country. The chief difference will be that the moist region will be reduced to a peneplain deeply shrouded in fine soil and densely covered with vegetation, while the arid country will be reduced to a peneplain deeply shrouded in wind-swept gravel and almost void of vegetation.

Under still drier conditions another state of affairs is possible in old age. Suppose that the country is so arid that no stream is able to reach the sea. The divides will migrate until the streams on the two sides have the same grade, and then will sink steadily, though exceedingly slowly, in one position. While this is in progress, the rainfall will still further diminish because of the lowering of the mountains, the streams will grow even shorter, and the heads of the gravel fans will rise nearly or quite to the divides. At last there will come a time when the land forms produced by deposition will dominate the topography of practically the whole country. Gravel fans, extinct playas, and deserts will everywhere prevail, and the little rain which falls will so soon be evaporated or sink into the ever-deepening gravel that running streams will be practically unknown. Whatever transportation of solid matter toward the sea takes place by means of water will be almost infinitesimally small, and the whole result will be an immeasurably slow melting away of the country which will not materially affect the surface. If this were the end we might conclude that in an extremely arid country all the topographic forms of old age are due to deposition, with the single exception of the divides, which to a certain extent survive as the last remnant of forms due to erosion.

There is still one factor, however, which we have disregarded. As the power of aqueous erosion decreases that of æolian erosion increases. In a country which had reached the stage of old age which has just been described, the wind would play an exceedingly important part. It would comminute and strip off the gravels on the surface, and then would begin to erode the underlying rock. The forms produced would be very different from those of aqueous erosion in detail, but they would follow the same guidance of rock-structure and rock-texture. Thus in extreme old age the driest country must be reduced to a peneplain, parts of which may lie below sea-level where the strata are very soft, and all of which will follow the lines of the rock structure. The surface of the peneplain will be strewn with fragments of waste which will increase in size in proportion to the aridity.