

not, I argued, be restricted to the recent geologic periods. They must have existed, like all the commoner phenomena of nature, under every succeeding system in which the sun shone, and the winds blew, and ocean-beds were upheaved to the air and the light, and the waves threw upon the shore, from arenaceous sea-bottoms, their accumulations of light sand. And I was now employed in acquainting myself with the marks by which I might be able to distinguish sub-aerial from sub-aqueous formation, among the ever-recurring sandstone-beds of the geologic deposits. I have spent, when thus engaged, very delightful hours amid the waste. In pursuing one's education, it is always very pleasant to get into those *forms* that are not yet introduced into any school.

One of the peculiarities of the sub-aerial formation which I at this time detected struck me as curious. On approaching, among the sand-hills, an open level space, covered thickly over with water-rolled pebbles and gravel, I was surprised to see that, dry and hot as the day was elsewhere, the little open space seemed to have been subjected to a weighty dew or smart shower. The pebbles glistened bright in the sun, and bore the darkened hue of recent wet. On examination, however, I found that the rays were reflected, not from wetted, but from polished surfaces. The light grains of sand, dashed against the pebbles by the winds during a long series of years,—grain after grain repeating its minute blow, where, mayhap, millions of grains had struck before,—had at length given a resinous-looking, uneven polish to all their exposed portions, while the portions covered up retained the dull unglassy coat given them of old by the agencies of friction and water. I have not heard the peculiarity described as a characteristic of the arenaceous deserts; but though it seems to have escaped notice, it will, I doubt not, be found to obtain wherever there are sands for the winds to waft along, and hard pebbles against which the grains may be propelled. In examining, many years after, a few specimens of silicefied wood brought from the Egyptian desert, I at once recognized on their flinty surfaces the resinous-like gloss of the pebbles of Culbin; nor can