ical action of the wind (p. 561 *et seq.*). As the name denotes, weathering is dependent on meteorological conditions, and varies, even in the same rock, as these conditions change, but is likewise almost infinitely diversified according to the structure, texture, and composition of rocks.

Mere hardness or softness forms no sure index to the comparative power of a rock to resist weathering. Many granites, for instance, weather to clay, deep into their mass, while much softer limestones retain smooth, hard surfaces. Nor is the depth of the weathered surface any better guide to the relative rapidity of waste. A tolerably pure limestone may weather with little or no crust, and yet may be continually losing an appreciable portion of its surface by solution, while an igneous rock, like a diorite or basalt, may be incased in a thick decomposed crust and weather with extreme slowness. In the former case, the substance of the rock being removed in solution, few or no insoluble portions are left to mark the progress of decay, while in the igneous rock, the removal of but a comparatively small proportion causes disintegration, and the remaining insoluble parts are found as a crumbling crust. Impure limestone, however, yields a weathered crust of more or less insoluble particles. Hence, as we have already seen (p. 148), the relative purity of limestones may be roughly determined from their weathered surfaces, where, if they contain much sand, the grains will be seen projecting from the calcareous matrix; should they be very ferruginous, the yellow hydrous peroxide, or ochre, will be found as a powdery crust; or if they be fossiliferous, they will commonly present the fossils standing out in relief. An experienced fossil-collector will always carefully search weathered surfaces of limestone, for he often finds there, delicately picked out by the weather,