

*Agglomerate.*—In the neighborhood of volcanic vents, we frequently observe accumulations of angular fragments of rock, formed during eruptions by the explosive action of steam, which shatters the subjacent stony formations, and hurls them up into the air. They then fall in showers around the cone or crater, or may be spread for some distance over the surrounding country. The fragments consist usually of different varieties of scoriaceous and compact lavas; but other kinds of rock, such as granite, or even fossiliferous limestones, may be intermixed; in short, any substance through which the expansive gases have forced their way. The dispersion of such materials may be aided by the wind, as it varies in direction or intensity, and by the slope of the cone down which they roll, or by floods of rain, which often accompany eruptions. But if the power of running water, or of the waves and currents of the sea, be sufficient to carry the fragments to a distance, it can scarcely fail (unless where ice intervenes) to wear off their angles, and the formation then becomes a *conglomerate*. If occasionally globular pieces of scoriae abound in an agglomerate, they do not owe their rounded form to attrition.

The size of the angular stones in some agglomerates is enormous; for they may be two or three yards in diameter. The mass is often 50 or 100 feet thick, without showing any marks of stratification. The term *volcanic breccia* may be restricted to those tuffs which are made up of small angular pieces of rock.

The slaggy crust of a stream of lava will often, while yet in motion, split up into angular pieces, some of which, after the current has ceased to flow, may be seen to stick up five or six feet above the general surface. Such broken-up crusts resemble closely in structure the agglomerates above described, although the composition of the materials will usually be more homogeneous.

*Laterite* is a red, jaspery, or brick-like rock, composed of silicate of alumina and oxide of iron. The red layers, called "ochre-beds," dividing the lavas of the Giant's Causeway, are laterites. These were found by Delesse to be trap impregnated with the red oxide of iron, and in part reduced to kaolin. When still more decomposed, they were found to be clay colored by red ochre. As two of the lavas of the Giant's Causeway are parted by a bed of lignite, it is not improbable that the layers of laterite seen in the Antrim cliffs resulted from atmospheric decomposition. In Madeira and the Canary Islands, streams of lava of subaerial origin are often divided by red bands of laterite, probably ancient soils formed by the decomposition of the surfaces of lava-currents, many of these soils having been colored red in the atmosphere by oxide of iron, others burnt into a red brick by the overflowing of heated lavas. These red bands are sometimes prismatic, the small prisms being at right angles to the sheets of lava. Red clay or red marl, formed as above stated by the disintegration of lava, scoriae, or tuff, has often accumulated to a great thickness in the valleys of Madeira, being washed into them by alluvial action; and some of the thick beds of laterite in India may have