Slate rocks vary much in quality in the same mountain; those which contain a great quantity of siliceous earth pass into flinty slate. When magnesia enters largely into the composition of slate rocks, they are distinguished by their green colour, and pass into chlorite or talcy slate,—a rock before mentioned as occurring also in primary mountains. Whetstone-slate, or hone, is a variety of talcy slate, containing particles of quartz: when these particles are extremely minute, and the slate has a uniform consistence and requisite degrees of hardness, it forms hones of the best quality. Carbonaceous matter is first discovered in slate rocks, and increases in quantity as they approach the secondary strata. Drawing-slate is said to contain 11 per cent. of carbon; where the carbon is very abundant, the slate has a dark colour, and is generally soft. Impressions of vegetables are found in some slate rocks that were formerly regarded as primary; the slate rocks in the vicinity of Mont Blanc, and Mont Cenis, contain impressions of ferns. Slate contains occasionally impressions of fuci, or sea weed.

That fine variety of slate which is used for roof-slate, seldom forms entire mountains, but is generally imbedded in slate rocks of a coarser kind: the beds of roof-slate are sometimes of considerable thickness, and generally rise at an elevated angle. If geologists had not been induced, by an attachment to theory, pertinaciously to adhere to opinions once received, they could not have failed to recognise the effect of crystallization in the cleavage of slate, as evidently as in the laminar divisions of felspar.

Those varieties of roof-slate are preferred for the covering of buildings, that are the least absorbent of water, and have the smoothest surface, and split into the thinnest plates; they are, however, frequently made too thin to be durable, and too light to resist the force of the wind, during storms.

Quarries of slate are worked extensively in Westmoreland, Yorkshire, Leicestershire, North Wales, Cornwall, and Devonshire. The foreign localities of slate are so numerous, that it would be superfluous to name them.

Mountains of slate are seldom so precipitous as those of granite, but have often a sharp serrated outline. They are covered with verdure on their declivities, as they contain less silex, and a more equal admixture of the earths favourable to vegetation.

Flinty slate, as before observed, differs from common slate by containing a greater quantity of siliceous earth; and, as its name implies, it partakes of the nature of flint. Slate and flinty slate not only pass into each other, but frequently alternate. When the latter ceases to have the slaty structure, it becomes hornstone, or what the French denominate petrosilex. If it contains crystals of felspar, it becomes hornstone porphyry: all these varieties may be observed alternating with each other in the same rocks in Charnwood Forest, and in North Wales and in Cumberland.