

*Rocks covering Transition Rocks (unconformably).*

4. Porphyry, passing into trap or green-stone.
5. Clink-stone, passing into basalt.
6. Basalt.

*Strata covering Transition Rocks (conformably).*

7. The coal measures.\*

*Slate*—of which roof-slate is a well known variety—is called by the Germans *Thon-scheifer* or *clay-slate*; by ancient English geologists, argillaceous schistus; by the modern French, *Phyllade*. The term *slate* is perhaps the most proper that can be used to designate this rock: as the best variety of it, Roof-slate, is well known. Clay-slate is a name given from an erroneous opinion respecting its constituent parts; and the term is liable to create much confusion, as the softer kind of slate in the coal strata is called slate-clay. I shall, therefore, throughout the present volume substitute the term *slate* for clay-slate, and for slate-clay the more intelligible English term *shale*.

Slate rocks abound in most alpine districts, resting either on granite, gneiss, or mica slate. That slate which lies nearest the primary rocks has a more shining lustre than the other, and partakes more of the crystalline quality of mica-slate. As this rock recedes from the primary, its texture is generally more earthy. Its colours are various shades of gray, inclining to blue, green, purple, and red. Some kinds of slate split into thin laminæ, which are well known as forming roof-slates. Slate rocks are commonly divided into beds of various degrees of thickness, which generally are much elevated, and from the natural divisions of the rock, they often form peaked and serrated mountains.

Slate has been described by former geologists as distinctly stratified, because it splits easily into thin laminæ, and the direction of the laminæ is asserted to be in the direction of the beds; but, in opposition to the authority of many eminent geologists, I maintain that slate, unless it be of a soft or coarse kind, approaching to shale or greywacke, invariably, splits in a transverse direction to that of the beds, making with that direction an angle of about sixty degrees;—it has frequently two distinct cleavages.

Few persons, perhaps, have examined more slate rocks, or consulted more workers in slate quarries than I have; and the fact respecting its cleavage is invariably what is here stated, except in very coarse greywacke-slate, and soft slate or shale.

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\* The regular coal strata or coal measures, where they occur in England, separate the transition from the secondary rocks. If they are classed with either, it should be with the former.