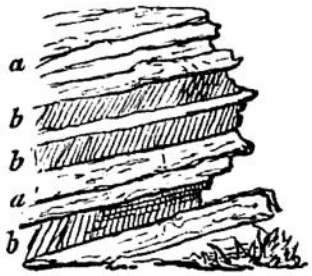
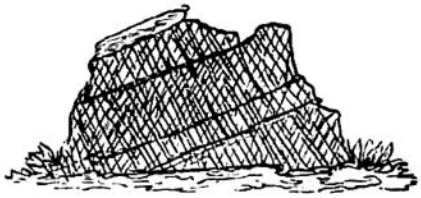
incumbent beds; but slates have received their structure from lateral pressure, and it often crosses the bedding, as in Figs. 126, 127. This structure is

123.



124.



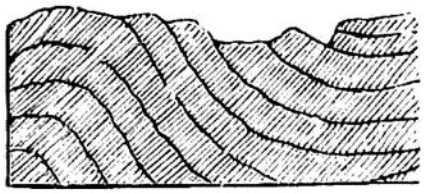
125.

Jointed rocks. De la Beche.

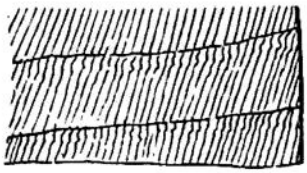
also called the *foliated* structure. The sections represented in Figs. 126, 127 are from the slate region of Columbia County, N.Y.

Occasionally, the lines of deposition are indicated by a slight flexure in the slate near them, as in Fig. 127. In other cases there is a thin intermediate layer which does not partake of the cleavage. Fig. 123 represents an interstratification of clay-layers with limestone, in which the former have the cleavage, but the latter not, though the limestone sometimes shows a tendency to it where argillaceous.

126.



127.



Slaty cleavage, Columbia Co., N.Y. Mather, '43.

Sedgwick first detected the true lines of bedding, and ascertained that the slaty structure was one that had been superinduced upon the clayey strata by some process since they were first deposited.

The schistose structure of crystalline rocks, or their *schistosity*, as it is often termed, may be produced by pressure; and hence all schistose structure, and even the fainter parallelism of the planes of a foliated mineral like mica, as in granitoid gneiss, are often termed *foliated*. The regular fractures producing a jointed or a slaty structure are named *diaclases* by Daubrée, and fractures accompanied by displacement, *paraclases*.

4. *Calculating the Thickness of Strata.*

When strata are inclined, as in Fig. 128, the thickness is ascertained by measuring the extent along a horizontal surface, and also the angle of dip, and then calculating the thickness by trigonometry. The thickness of the strata from *a* to *b* is *bd*, the line *bd* being drawn at right angles to the strata. Measuring *ab* and the dip, which is the angle *bad*, the angles and hypotenuse of the triangle *abd* are given to determine one side *bd*. Or, with the distance *ae*, the side *ce* would be found.

But for correct results, the absence of *faults* must be first ascertained.