talline. We find the process indeed in all its stages, and this enables us to prove that it has actually taken place.

2. The organic remains in these rocks have been sometimes elongated, or otherwise distorted, so as it could have been done only while in a plastic state. More often these remains have disappeared entirely, and a crystalline texture has supervened. This could have been done only by chemical agency, while the materials were in a yielding state. For a change of crystallization can take place only where the particles are free to obey the laws of molecular action for bringing them into new positions.

3. The strata and folia of rocks now highly crystalline, have been subject to remarkable foldings and contortions, such as only a plastic state of the material will explain. Fig. 18, in Section I., represents a block of gneiss, and interstratified hornblende schist, six feet long, obtained from the bed of Deerfield river, at Shelburne Falls, in Massachusetts, and now a part of the geological collection at Amherst College. No geologist will doubt that mechanical pressure must have produced the beautiful curvatures of the layers. It may, indeed, be supposed that the folding took place when the materials were in the form of clay. But it is doubtful whether such great perfection in the curvatures could have been produced in clay, and retained through all the subsequent changes which have resulted in a highly crystalline condition. Moreover, some of the foldings in this rock have an angular sharpness which we have never seen in clay, as in the subjoined sketch in Fig. 140, taken at



FIG. 140.