

lying clay has the character of genuine Till, and the change in the direction of the striations from those previously noticed, may possibly be due to the pressure of the inferred Scandinavian ice-sheet, which is supposed to have united with that coming from Scotland, and may for a space have deflected the line of its onward march from the NNW. On the other hand, it may be a mere local accident connected with a later part of the Glacial epoch, when a distinct individual glacier flowed from the far western watershed, more than a thousand feet in height, about the sources of the Wear, which may have spread into a fan-shape as it reached what is now the shore. Such smaller glaciers existed, for in these long dales of Durham and Yorkshire there are distinct moraines, which mark the gradual decline of the glaciers, and through which, and through the Boulder-clay, the rivers have cut their modern channels.

Stones derived from the Magnesian Limestone first appear in the Till south of Tynemouth. In the neighbourhood of Sunderland, the percentage of various kinds of rocks seems to be nearly as follows.—

Carboniferous Sandstone	.	.	.	29	} 59 per cent.
„ Limestone	.	.	.	21	
„ Coal	.	.	.	6	
„ Shale	.	.	.	2	
Magnesian Limestone	.	.	.	22	„
Lammermuir grits, &c.	.	.	.	16	„
Greenstones and Basalts	.	.	.	4	„

The cliff is about 30 feet in height, and shows the section given in fig. 82.

The Till seems to have been worn on the surface before the deposition of 3 and 4.

It will be observed by consulting any geological map, that, as in the previous case, the large percentages