

frosts and snows of the higher latitudes; and it is a curious fact, that in the Gamrie and Castleton deposits we find it of a considerably greater size than anywhere else in Scotland. My largest specimens from the Clyde beds hardly exceed an inch in length; whereas my largest Gamrie specimens are nearly two inches long, and their *breadth* very considerably exceeds the length given as British by Professor Forbes.

Most of the boulder clays,—especially the higher lying deposits,—I regard as more modern than these Banffshire beds. They mark a period when the land sat low in the water, and existed as but a group of wintry islands. To the south of the Grampians, their organisms are but few; they have yielded at wide intervals horns of the rein-deer, and tusks of the northern elephant; but, save in an insulated patch in Wigtonshire, no shells. The boulder clay in Caithness is, on the other hand, rich in shells. They excited the attention of a mineral surveyor, who flourished about the beginning of the present century,—old John Busby,—more than fifty years ago; they also attracted the notice of the late Sir John Sinclair; and in one of my Caithness journeys, I was told by my friend Mr. Dick, that one of the hills on which they occur has borne from a still more early period the name of “*Buckie’s Hill*;” but to Mr. Dick himself, and to Mr. Cleghorn of Wick, has the working out of the deposit been mainly left. And so effectively has it been done, that Mr. Dick, as he informs me, has not for a considerable time past succeeded in finding in it a single new shell. The prevailing molluscs of the deposit are *Cyprina*, *Islandica*, and *Turritella communis*, especially the former; the prevailing *Astarte*, though the *Arctica* also occurs, is *Astarte elliptica*; the prevailing *Tellina*, *Tellina Solidula*. *Tellina proxima* is of smaller size than in the Gamrie beds; and *Natica clausa* less common. Still the deposit is very decidedly a boreal one in its shells, and in its mechanical phe-