Helix, supposing it to have the power of either chemically dissolving or mechanically abrading the stone, could readily have accomplished the work. I am unable to state the height of these blocks above the sea, but their position is considerably more elevated than the High Tor, which rises about 350 feet above the river Derwent. I submit, therefore, that by confirming my former observations as to the irregularity of form and general verticality of direction of these burrows, and by discovering them on a scarp, probably artificial, and certainly at the bottom of a gorge of subaerial erosion, I have shown that the Pholas theory is untenable.

V.—NOTE ON A PRE-HISTORIC DWELLING AND KITCHEN-MIDDEN,
ON THE COAST OF HADDINGTONSHIRE.

By J. W. LAIDLAY, F.S.A., F.G.S.

I HAVE much pleasure in furnishing you with the accompanying rough sketch of the rock on which were discovered, some time ago, the remains of a building and its "kitchen-midden," belonging to a remote period, and in which you took some interest in respect of its bearing upon a geological question of the day, namely, the supposed rise of our coasts within the historical period. The rock in question, situated about three miles east of North Berwick, on the south side of the Frith of Forth, is isolated at spring-tides, but is not at other times separated by the sea from the main-land. The remains of former ages

Peninsula on which Pre-Historic dwelling was discovered near Seacliff,
Haddingtonshire.

found upon the rock, were, first, the foundations of an ancient building, consisting of walls formed of stones, selected apparently from the neighbouring beach, and joined together with only earth or mud; being two to three courses in height, but concealed till recently by a thick coating of turf; a large quantity of very rude pottery in frag-

ments, and, for the most part, roughly moulded by the hands; a number of implements of bone, such as needles, arrow-heads, combs, knives, chisels, etc., very similar to those found in the Swiss Lakes; a vast quantity of bones of oxen (of several varieties, including *Bos longifrons*), sheep, goats, deer, swine, dogs, &c.; of shells, in great abundance, especially those of the *Patella* and *Littorina*; a very rude querne, etc. All of these have been deposited in the Museum of the Society of Antiquaries of Scotland, and are considered, by those best qualified to judge, as belonging to an age as remote as the Roman period, or perhaps extending even beyond it; an opinion confirmed, perhaps, by the absence of every trace of metallic implements, notwithstanding the most diligent efforts to discover any such by laboriously sifting the whole of the soil, within and about the building.

Now the peculiar geological interest of this ancient habitation consists in this: that it lies on the rock, not more, as to its lower part, than 22 or 23 feet above high-water mark; and assuming, as I think we fairly may, that its age extends beyond the historical period, it certainly does seem to me to furnish a very cogent argument against the theory of any material rise of the land since that time. Even as it is, the spray during storms sweeps so unpleasantly over it, that it is difficult to conjecture why so exposed a site should be chosen for a dwelling at all. Were it, however, but a little further depressed the sea would, in bad weather, make a clean breach over it, and render habitation there simply impossible.

VI.—THE BOULDER-CLAY OF CAITHNESS A PRODUCT OF LAND-ICE,

By JAMES CROLL, of the Geological Survey of Scotland.

(PLATE X.)

PART II.

(Continued from the May Number, p. 209.)

WE must consider that the ice from Scotland and England was but a fraction of that which entered the North Sea. The greater part of the ice of Scandinavia must have gone into this sea, and if the ice of our island could not find water sufficiently deep in which to float, far less would the much thicker ice of Scandinavia do so. The Scandinavian ice, before it could break up, would thus, like the Scottish ice, have to cross the bed of the North Sea and pass into the Atlantic. It could not pass to the north, nor to the north-west, for the ocean in these directions would be blocked up by the Polar ice. It is true that in the southern part of Norway there is a comparatively deep trough of from one to two hundred fathoms, extending along the shore. But this is evidently not deep enough to have floated the Scandinavian ice-sheet. But even supposing it had been sufficiently deep, the floating ice must find its way to the Atlantic, and this it could not have done without passing along the coast. But its passage would not only be obstructed by the mass of ice continually protruding into the sea directly at right angles to its