

of *phryganeæ*, or caddis-worms. Bones of the horse, and deer, also occur in the lower part of this bed.

3. (B. B.)—Clay, containing fresh-water shells, with an intermixture of existing marine species, as the common cockle, (*cardium edule*,) tellina, &c.

4. (C. C.)—Blue clay, inclosing marine shells, viz. cockles, muscles, &c. without any intermixture of fluviatile species. In this bed a skull of the narwal, or sea-unicorn (*Monodon monoceros*,) and of the porpoise have been discovered.

From the nature of these deposits we learn that this valley was once an arm of the sea, and that the sequence of the physical changes which took place was as follows:—

*First*, There was a salt-water estuary, inhabited by marine shell-fish of the same species as those now existing in the British Channel; and into which cetacea occasionally entered.

*Secondly*, The inlet grew shallow, the water brackish, and marine and fresh-water shells were mingled in its blue argillaceous sediment.

*Thirdly*, The shoaling continued until fresh-water so much predominated, that fluviatile shells, and aquatic insects, could alone exist.

*Fourthly*, A peaty swamp, or morass was formed, by the drifting of trees, and plants, from the forest of Andreadswald, which formerly occupied the weald of Sussex; and terrestrial quadrupeds were occasionally imbedded.