

the same point of view the pebbly deposits of an earlier stage in the history of the tertiary strata, viz. the plastic clays and sands of London and Paris. So strong is this analogy, that Dr. Forchhammer has adopted the view of the "boulder formation" of Denmark being one very long series of detrital deposits, including the whole tertiary series, and extending from the plastic clay group beyond the ordinary diluvial epoch.

Whether this be correct or not, it is certain that we must apply, for solutions of the problem of the distribution of the diluvial blocks, to the same agencies which have been invoked to explain the accumulation of the tertiary molasse of Switzerland, and the conglomerates of the red sandstones of England. All these causes we do not know; but the predominant one is known to be great change of the level of land and sea, and the consequent origin of new and powerful oceanic currents.

The principal difficulties of the question relating to the agencies concerned in the dispersion of diluvial detritus would be not removed, nor, perhaps, even diminished, but rendered at least more definite, and therefore more within the scope of geological and physical research, could we be quite sure of the fact whether this mass of heterogeneous materials was deposited by great inundations upon the land, or thrown into the sea. We know that the violence of the watery movement was great, and the accumulation of the materials rapid, since, in some considerable deposits of diluvium, there is no sorting of the materials into portions according to their weight or magnitude; but the finest clay has large bouldered rocks scattered through its whole thickness in the utmost confusion.

Further, it appears from some examples (Holderness, vale of York), that gravelly and detrital beds, intimately associated with ordinary diluvium, and full of blocks and boulders brought from great distances, contain marine shells. If we should consider these to be, like the Lancashire and Cheshire examples, raised parts of the littoral bed of the sea, the diluvial deposits resting