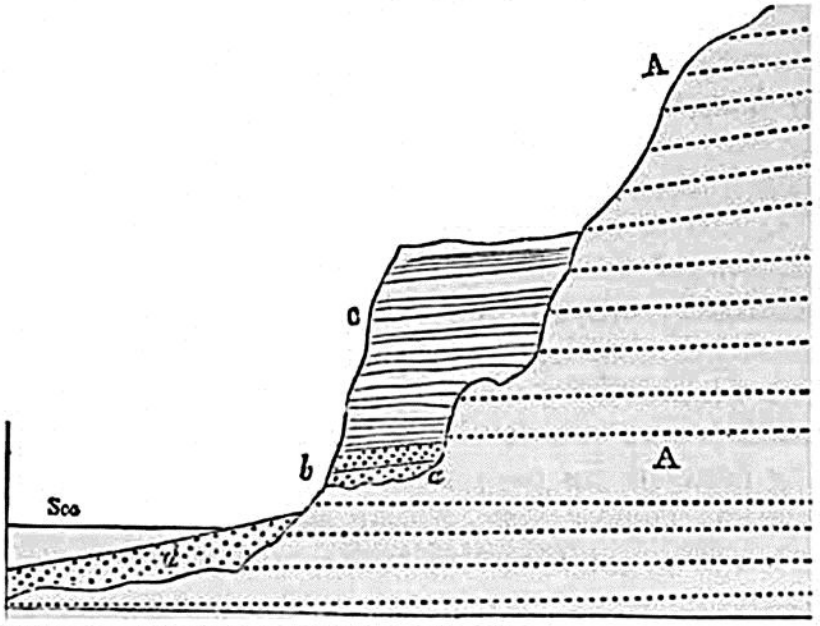
these hollows could have been swept clean except by some extraordinary catastrophe.

The frequent angularity of the flints in the drift of Barcombe and other places is also insisted upon as another indication of denuding causes differing in kind and degree from any which man has witnessed. But all who have examined the gravel at the base of a chalk-cliff, in places where it is not peculiarly exposed to the continuous and violent action of the waves, are aware that the flints retain much angularity. This may be seen between the Old Harry rocks in Dorsetshire and Christchurch in Hampshire. Throughout the greater part of that line of coast the cliffs are formed of tertiary strata, capped by a dense covering of gravel formed of flints slightly abraded. As the waste of the cliffs is rapid, the old materials are gradually changed for new ones on the beach; nevertheless we have here an example of angles being retained after two periods of attrition; first, where the gravel was spread originally over the Eocene deposits; and, secondly, after the Eocene sands and clays were undermined and the modern cliff formed.

Angular flint-breccia is not confined to the Weald, nor to the transverse gorges in the chalk, but extends along the neighboring coast from Brighton to Rottingdean, where it was called by Dr. Mantell "the elephant-bed," because the bones of the mammoth abound in it, with those of the horse and other mammalia. The following is a section of this formation as it appears in the Brighton cliff.*

Fig. 882.



A. Chalk with layers of flint dipping slightly to the south.
b. Ancient beach, consisting of fine sand, from one to four feet thick, covered by shingle from five to eight feet thick of pebbles of chalk-flint, granite, and other rocks, with broken shells of recent marine species, and bones of cetacea.
c. Elephant-bed, about fifty feet thick, consisting of layers of white chalk rubble, with broken chalk-flints, often more confusedly stratified than is represented in this drawing, in which deposit are found bones of ox, deer, horse, and mammoth.
d. Sand and shingle of modern beach.

* See also Sir R. Murchison, Geol. Quart. Journ. vol. vii. p. 365.