

find Glacial deposits down to the level of the sea and passing into it; and near Romford, east of London, there are tablelands covered with Boulder-clay, which overlook the valley of the Thames. These phenomena, taken as a whole, certainly show that all the upper valley of the Thames is of older date than the Glacial epoch, and though Boulder-beds are found at Southend, on the north side of the mouth of the estuary, none occurs on its southern shores, nor in the plains and valleys of the Weald. Therefore, I now see no reason why the lower valley of the Thames west and east of London should not be entirely pre-Glacial, in which case it may be that some of its high-level gravel terraces belong to that date. The question is still in debate among geologists. I use the term high-level gravels to express the fact that thick deposits of gravel and loams having been formed in the valley, this alluvial detritus was subsequently cut into a succession of river-terraces in consequence of changes, slight but effective, in the physical geography of the area, and it is obvious that the highest terrace overlooking the river must be the oldest, and so on in succession till we reach the river-bank of to-day.

Before describing the relation of the river-gravels of the south of England to the Glacial epoch and palæolithic implements and mammalia, it is desirable to explain some of the details of the manner in which rivers have excavated their own valleys in solid rocks where no valleys existed before the drainage of the country took the general direction of its present flow. On the Continent, the Moselle and the Seine form excellent examples, and on a smaller scale many British rivers, including the Thames, have followed the same law.

Suppose a river flowing in a sinuous channel in the