

lation of such masses is impossible. This can be shown, if the component pebbles of the presumed diluvium can be referred precisely to the situations whence they were dislodged, and these situations are separated by natural obstacles from any part of the drainage hollows connected with the locality where the gravel is found. Some gravel is, or may be, of *local origin*, the effect of existing streams, or of waters which may be conceived to have formerly flowed according to the present slopes and physical features of the country; and descriptions of gravel deposits are almost useless, in which the question of local or distant origin of the masses is not examined.

Supposing this point settled, and the deposits to possess the characters of diluvial accumulation, the next thing is to determine how far similar deposits are traceable in the neighbouring districts, and toward the presumed origin of the fragmentary masses, so as to determine the direction really followed by the currents which transported them. The circumstances of the accumulation should be carefully studied. If accompanied by local gravel, does this lie upon, or below, the diluvial masses? for both these cases occur. Is the mass in any respect stratified? Does its composition suddenly vary? Is there oblique lamination of any of its (sandy) parts? Are large and small, heavy and light, masses indiscriminately mixed? Are the fragments angular, greatly rounded, or flatly elliptical? Are bones of quadrupeds or shells of mollusca found in the mass, or lying in marly beds above, below, or inclosed? The problems thus suggested are of great importance toward a correct view of the origin of the diluvial accumulations, and the contemporaneous races of organic beings.

#### OSSIFEROUS CAVES, AND FISSURES IN THE ROCKS.

The land animals mentioned in the last section appear to have been, for a considerable geological period, inhabitants of the countries where their remains are