and piled up by some mechanical force that has pushed it along over the surface. Yet in some places the materials are somewhat stratified and laminated, as if by water. In other cases we find more or less of an alternation of finer materials, such as sand and gravel, with the coarser unstratified accumulations mentioned above.

All the great bowlders scattered over the surface belong to the unmodified variety. Some of the bowlders are scratched, thus showing collision with other rocks.

A common variety of drift is the *bowlder clay*. This is a heterogenous mixture of a stiff, dark-bluish clay, with rounded and striated pebbles and bowlders of all sizes. It is very common to find it exposed on the banks of streams which are so precipitous as to prevent the growth of vegetation upon them. Marine shells are found in this clay in Scotland and England. Generally the shells are crushed to fragments, which are more or less comminuted. About thirty species have been found, most of which live in the vicinity at the present time, but a few of them are more boreal in their character, being adapted to the climate of Iceland or Greenland.

The coarse drift lies upon some older formation, though sometimes deposits of clay or sand intervene. It is usually succeeded upward by regular stratified deposits of the same materials, which have been reduced to a finer state, sorted into finer or coarser layers, and deposited in more and more delicate layers as we ascend. These deposits, mainly horizontal, may be called *Modified Drift*.

Fig. 94.

aa, Silurian strata, highly inclined;
bb, Drift;
cc, Modified Drift.

Fig. 94 illustrates the position of the unmodified drift; *e. g.*, lying unconformably upon Silurian rocks, and overlaid by modified drift.

Drift is easily distinguished from the subjacent tertiary strata, by superposition, by the marks of a much more powerful mechanical agency in its production, and by the absence of organic remains; for probably in most cases where organic remains have been reported in drift they have been derived from modified drift.

We can see from the preceding remarks that it is not easy to say precisely where is the line between drift and modified drift; but it is easy to distinguish between the coarse irregular beds of bowlders, gravel, and sand, lying immediately upon the older rock, and the fine stratified deposits of clay, sand, and loam, that lie much higher, and frequently form the banks of rivers. We can see that the latter have been produced from the former by the comminuting, sorting, and re-depositing power of water, as the