the annexed figures. The slug, called *Succinea*, is not strictly aquatic, but lives in damp places, and may be seen in full activity far from rivers, in meadows, where the grass is wet with rain or dew; but shells of the genera *Limnea*, *Planorbis*, *Paludina*, *Cyclas*, and others, requiring to be constantly in the water, are extremely exceptional in the loess, occurring only at the bottom of the deposit, where it begins to alternate with ancient river-gravel, on which it usually reposes.

This underlying gravel consists, in the valley of the Rhine,

Fig. 44

Succinea oblonga.

Fig. 45

Pupa muscorum.

Fig. 46

Helix hispida, Lin.; *H. plebeia*, Drap.

for the most part, of pebbles and boulders of Alpine origin, showing that there was a time when the rivers had power to convey coarse materials for hundreds of miles northwards from Switzerland, towards the sea; whereas, at a later period, an entire change was brought about in the physical geography of the same district, so that the same river deposited nothing but fine mud, which accumulated to a thickness of 800 feet or more above the original alluvial plain.

But although most of the fundamental gravel was derived from the Alps, there has been observed in the neighbourhood of the principal mountain chains bordering the great valley, such as the Black Forest, Vosges, and Odenwald, an admixture of detritus characteristic of those several chains. We cannot doubt, therefore, that as some of these mountains, especially the Vosges, had, during the glacial period, their own glaciers, a part of the fine mud of their moraines must have been mingled with loess of Alpine origin; although the principal mass of the latter must have come from Switzerland, and can in fact be traced continuously from Basle to Belgium.