

this cliff occasionally overhangs. The rock composing it is drilled every where by *Pholades*, the holes which they perforated having been afterwards filled with sand and covered over when the newer beds were thrown down. As the older formation is shown by its fossils to have accumulated in a deeper sea (15, and sometimes 25, fathoms deep or more), there must no doubt have been an upheaval of the sea-bottom before the cliff here alluded to was shaped out. We may also conclude that so great an amount of denudation could scarcely take place, in such incoherent materials, without many of the fossils of the inferior beds becoming mixed up with the overlying crag, so that considerable difficulty must be occasionally experienced by the palæontologists in deciding which species belong severally to each group.

The Red Crag being formed in a shallower sea, often resembles in structure a shifting sand-bank, its layers being inclined diagonally, and the planes of stratification being sometimes directed in the same quarry to the four cardinal points of the compass, as at Butley. That in this and many other localities, such a structure is not deceptive or due to any subsequent concretionary rearrangement of particles, or to mere lines of color, is proved by each bed being made up of flat pieces of shell which lie parallel to the planes of the smaller strata.

Some fossils, which are very abundant in the Red Crag, have never been found in the white or coralline division; as, for example, the *Fusus contrarius* (fig. 150), and several species of *Murex* and *Buccinum* (or *Nassa*) (see figs. 151, 152), which two genera seem wanting in the lower crag.

Fig. 150.

Fossils characteristic of the Red Crag.

*Fusus contrarius.*

Fig. 151.

*Murex alveolatus.*

Fig. 152.

*Nassa granulata.*

Fig. 153.

*Cypræa coccinelloides.*

Fig. 150 half nat. size; the others nat. size.

Among the bones and teeth of fishes are those of large sharks (*Carcharodon*), and a gigantic skate of the extinct genus *Myliobates*, and many other forms, some common to our seas, and many foreign to them. It is questionable, however, whether all these can really be ascribed to the era of the Red Crag. Not a few of them may possibly have been derived from older strata, especially from those Upper Eocene formations to be described in the next chapter, which are largely developed in Belgium,