

pyramidalis, *Nassa reticosa*, *Natica millepunctata*, *Ringicula acuta*, *Trochus noduliferens*, *Turritella incrassata*, *Cardita aculeata*, *Cardium papillosum*.<sup>99</sup>

**NEWER PLIOCENE.**—The British deposits of this age are, so far as we know, confined to the counties of Norfolk and Suffolk. They are separated by a considerable break from the older series, for they lie on an eroded surface of the latter, and pass across it so as to rest upon the Eocene formations, and even on the Chalk. There is likewise a marked contrast between the fauna of the two series. The newer deposits show that the break must represent a long period of geological time, during which a great change of climate took place in Europe, for the southern forms are now found to have generally disappeared, and to have been replaced by northern forms that, following the change of temperature, had migrated from the colder north.

**Red Crag.**—Under this name is classed a series of local accumulations of dark-red or brown ferruginous shelly sand, which, though well marked off from the Coralline Crag below, is less definitely separable from the Norwich Crag above. Judging from the variations in its fossil contents, geologists have inferred that some portions of the deposit are older than others, and that they successively overlap each other as they are followed northward. The oldest part is believed to occur at the southern end of the area at Walton, where it yields a fauna closely similar to that of the Coralline Crag. This portion is lost a few miles further north, where the Red Crag of Butley appears, containing many Arctic mollusca. In the older crag of Walton the advent of a colder climate is indicated by the appearance of the northern shells *Buccinum glaciale* and *Trophon scalariformis*, but many of the southern forms still linger, such as *Cerithium trilineatum*, *Chemnitzia internodula*, *Nassa limata*, *Natica millepunctata*, *Ovula spelta*, *Pleurotoma hystrix*, *Turritella incrassata*, *Cardita corbis*, *Cytherea rudis*, and *Limopsis pygmæa*. In the younger part of the Red Crag the proportion of northern shells greatly increases. Among them are *Cancellaria viridula*, *Natica oclusa*, *Pleurotoma pyramidalis*, *P. scalaris*, *Trophon scalariformis*, *T. Sarsii*, *Cardium groenlandicum*, *Leda lanceolata*, and *Solen gladiolus*. Characteristic shells of the Red Crag are *Actæon Noæ*, *Capulus obliquus*, *Cerithium tricinctum*, *Eulimene terebellata*, *Natica*

<sup>99</sup> C. Reid, op. cit. pp. 59, 236.