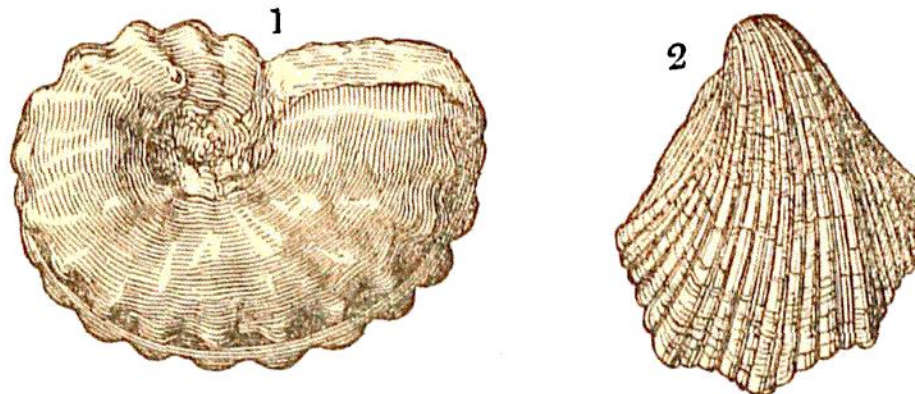


and sea very different from what we now witness. The fossils of the two systems are, however, very materially different, even in the same natural groups, as sponges, crinoidea, stellerida, echinida, cephalopoda, crustacea, fishes, and reptiles, in most of which groups the chalk and green sands contain genera never found in any rocks more ancient or more modern; while oolitic and tertiary genera are not found in the cretaceous rocks. There appears no sufficient evidence in the fossils of this system to justify any positive inference as to the character of the climate then prevailing in the northern zones; but we may be sure that the sea was very little disturbed by inundations from the land, otherwise ferns and other land plants, and not fuci, would have been found in the sandy strata.

The condition in which the zoophyta especially are preserved in the chalk and green sands deserves notice. Sponges are silicified in both deposits — possibly from some peculiar affinity which those organic bodies, even in a recent state, appear to possess for silica; but in the same flint nodules which envelope silicified sponges, the crusts of echinodermata and stellerida are found converted to crystallised carbonate of lime, and lamellar shells of the genus *gryphæa*, and radiated sheaths of belemnites, are not at all changed in texture, and very slightly altered in chemical composition. It is a very common fact that iron pyrites collects around sponges and other organic bodies in the chalk, and, when decomposed, leaves an ochraceous oxide of iron.



1. *Ammonites varians*. *Sowerby*. From the lower chalk, chiefly.  
2. *Pecten quinquecostatus*. *Sowerby*. From the upper green sand chiefly.