

affecting the first one or two hundred fathoms, they were enabled to survive, the deeper part of their habitat having suffered but little alteration.

Sir Charles Lyell says: "The reader should be reminded that in geology we have been in the habit of founding our great chronological divisions, not on foraminifera and sponges, nor even on echinoderms or corals, but on the remains of the most highly organized beings available to us, such as mollusca. . . . In dealing with the mollusca, it is those of the highest or most specialized organizations which afford us the best characters in proportion as their vertical range is the most limited. Thus the cephalopoda are the most valuable, as having a more restricted range in time than the gasteropoda, and these again are more characteristic of the particular stratigraphical subdivisions than the lamellibranchiate bivalves, while these last again are more serviceable in classification than the brachiopoda, a still lower class of shell-fish, which are the most enduring of all." With great deference to Sir Charles Lyell, I cannot regard the most highly specialized animal groups as those most fitted to gauge the limits of great chronological divisions, though I admit their infinite value in determining the minor subdivisions.

The culmination of such animal groups, such as we find in the marvellous abundance and variety of both orders of cephalopods at the end of the Jurassic and the commencement of the cretaceous period, undoubtedly brings into high relief, and admirably illustrates to the student, the broad distinctive characters of the mezozoic fauna; but speaking very generally, the more highly a mollusc is specialized