

recent types that when allowance is made for the different stages of growth, the characters of the stem are of much use in the distinction of species. This is especially the case if the number of internodal joints can be ascertained, which is not often possible, however, with fossil stems. But I am more disposed than I formerly was to accept the numerous species described by de Loriol and Quenstedt on the characters of the stem alone. Under these circumstances it is possible that more of the Continental species may eventually be found to occur in Britain, the number at present known being very small.

The geological range of individual species, both of *Pentacrinus* and of *Extracrinus*, seems to be rather limited, no species occurring in all three divisions of the Lias. Out of fifteen species of *Pentacrinus* which are found in the Middle and Upper Lias of Britain, only two are common to the two horizons. Neither of the two Lower Lias species reach the Middle Lias, though *Pentacrinus basaltiformis* does so on the Continent. This and *Pentacrinus psilonoti* are the only Continental species which have yet been recognised in the British Lias. One species of the Kimmeridge Clay, *Pentacrinus sigmaringensis*, also occurs in the White Jura of the Continent.

This agrees very well with the geographical distribution of the Pentacrinidæ in the recent seas, the four West Indian species, though abundant in the Caribbean Sea, not occurring elsewhere; while the remaining two Atlantic species have respectively been found at one and at three stations only. *Pentacrinus naresianus* was obtained in the West Pacific in lat. 29° 55' S., and also in lat. 4° 33' N. (or possibly 9° 26' N.), and has the widest geographical range of any *Pentacrinus*, recent or fossil, that I am acquainted with. Like the Silurian Crinoids, therefore, the species of *Pentacrinus*, both recent and fossil, seem to be somewhat limited in their geographical range.

The genus has, however, a wider geographical range than *Metacrinus*, which is confined to the Pacific Ocean and the East Indian Archipelago. On the other hand, while fourteen species of *Metacrinus* are known, *Pentacrinus* is only represented by eight, together with the doubtful form which I have called *Pentacrinus* (?) *mollis* (Pl. XXXIII. figs. 7-10). The mutual relationships of these eight species are shown in the following table; and it will be seen that they fall into two very natural groups, which have the four Caribbean and the two Pacific species equally divided between them.