Pentacrinidæ are very variable in this respect, some individuals remaining fixed throughout life; while others become detached and are henceforward more or less free like the Comatulæ, attaching themselves temporarily by means of their cirri.

Some Comatulæ, however, lose their cirri altogether when mature. The older ones gradually drop off without being replaced, while their sockets become obliterated until nothing remains of the centro-dorsal but a flat plate in the centre of the radial pentagon. This is the case with the *Actinometra jukesi*, *Actinometra stellata*, and the fossil *Actinometra lovéni*. Some specimens of *Millericrinus pratti* reach the same condition, nothing remaining of the stem except a pentagonal disk in the centre of the ring of basals; so that in the absence of other stalked individuals these would naturally be taken for Comatulæ. This suggests the question whether the single plate in the centre of the calyx of *Marsupites* and *Uintacrinus* may not be really a separated top stem-joint, and not a dorso-central plate homologous with that of Urchins and Stellerids as is generally supposed.

It is noteworthy that certain Blastoids, *e.g.*, *Eleutherocrinus* and *Astrocrinus*, were stemless and free just like *Marsupites;* and it is possible that the same was the case with some species of the Palæozoic genus *Agassizocrinus*, at any rate in later life. Other Palæocrinoids, together with some Blastoids and Cystids, must have been almost equally free, as has been already explained in Chapter II. For though a stem was present, it was often quite short, and almost or entirely devoid of cirri; though it was sometimes fixed by coiling itself round other Crinoid stems and similar bodies.

The apparently perfect freedom of many of these forms is very singular and difficult to understand. Much would be learnt about them, no doubt, if the habits of a living *Actinometra jukesi* were carefully watched, for it is well established that Comatulæ which have once anchored themselves by their cirri remain so fixed for a considerable time, except perhaps at the period of sexual activity; and it would therefore be very interesting to know how far the cirrus-less forms remain permanently fixed. Seaweeds, Polyzoan colonies, Corals, and Zoophytes often serve as the anchorage of Comatulæ. Thus in one case that I have met with the cirri were coiled round a *Dendrophyllia*, and in another round the stem and branches of a *Gorgonia;* while it sometimes happens that the cirri of a *Comatula* are fastened round the still larger cirri of a *Metacrinus* or *Pentacrinus*.

The food of a Crinoid is considerably varied in its nature according to the character of the sea-bottom on which it lives. The horny casings of *Entomostraca* and the larvæ of larger *Crustacea* are frequently to be found in the digestive tube, together with the frustules of Diatoms, spores of Algæ, &c. Dr. Carpenter mentions *Peridinium* (*Ceratium*) *tripos*, Ehr., as a principal article of food of the Arran Comatulæ; while in sections of *Bathycrinus*, *Rhizocrinus*, and *Pentacrinus* from deeper water the siliceous shells of Radiolarians may be found in considerable abundance and variety. Foraminifera too form a staple article of food for these deep-sea species. I have frequently found *Globigerina*, *Biloculina*, and other types beneath the covering plates of the food-grooves on