Phormosoma, *Pourtalesia*, *Palæotropus*, *Homolampas*, *Hemiaster*, *Aceste*, *Aërope*, *Cystechinus*, and *Urechinus;* while we find as eminently characteristic of the Southern Ocean such strange forms of Pourtalesiæ as *Spatagocystis*, *Echinocrepis*, and *Genicopatagus*, which may hereafter be found to extend north into both the Atlantic and Pacific, if we can judge of the extension of the few species of *Pourtalesia*, *Cystechinus*, and *Urechinus* into the Atlantic and Pacific from their numerous representatives in the Southern and Antarctic Oceans; while thus far as strictly Pacific we have only of the abyssal species *Cionobrissus* and *Argopatagus*, and as strictly Atlantic only *Calymne*, and perhaps *Pygaster*, showing from the bathymetrical range that the abyssal species proper are few in number, are mainly limited to the Southern Ocean, and extend northward both into the Atlantic and Pacific realms. That the continental species form no such restricted littoral faunæ as are characteristic of the species, having a narrow bathymetrical range, but that we have as it were an Atlantic and a Pacific realm, which we are perhaps justified in considering as off-shoots of the great separation which took place, dividing the great Southern Ocean when it extended uninterruptedly over the whole Southern Hemisphere, or at any rate when South America separated the Atlantic from the Pacific only as a large island or an archipelago, geographical off-shoots of a time when the genera characteristic of these two great realms may have been represented in the Atlantic and Pacific Gulfs (to use Thomson's happy terminology) by identical species; these now, in our present epoch, bear to each other much the same relationship which the littoral species on the two sides of the isthmus bear to one another, and measure as in that case the degree of change or time which has elapsed since the separation has taken place, resulting in a condition of things making a separation of the deep-sea forms into an Atlantic and a Pacific continental realm possible. Just as the subsequent further isolation of districts in the Atlantic and Pacific may gradually have brought about a centralisation into littoral faunæ such as are generally recognised; while the species which have a great bathymetrical or geographical range are those which have escaped the influence of these changes, some of them which extend from the littoral to the abyssal going back to the time when the Atlantic and Pacific realms were not yet isolated, and thus explaining the existence of the same species at distant geographical points, while others extending only to the continental range from the littoral, recall the time when the Atlantic and Pacific realms were already separated, and when the species of the continental range appeared as representative species in the Atlantic and Pacific; while those species which extend from the continental to the abyssal have never been subject to the influences which have gone to form either the continental ranges alone, or the littoral range. The genera which have this great bathymetrical range are the following: I have marked with T. genera which occur in the Tertiary, and with C. those which occur in the Cretaceous.