

through many degrees of longitude, but few of latitude. As a class, however, they prefer a depth rather beyond 20 fathoms,¹ beyond the reach of very violent climatic vicissitudes. They are conspicuous things, showing usually sufficiently bold specific characters, and thus they are less liable to confusion than most other groups. They involve in their history and economy several of the principal questions discussed in this volume; while giving, therefore, such a brief sketch as the space at my disposal and the amount of my present information may permit, of the additions which have been made during our dredging cruises to the knowledge of the other invertebrate classes, I will use the echinoderms and the protozoa principally for the purpose of general illustration.

Littoral and shallow-water species of animals must be much more liable to have their migrations interrupted by 'natural barriers,' such as deep water through which they cannot pass, or currents of warmer or of colder water; they must likewise be much more affected by local circumstances, such as extreme differences between summer and winter temperature; so that they might be expected to be more circumscribed and local in their distribution than the denizens of greater depths—and they certainly are so. The conditions of the bottom in the zone from 20 to 50 fathoms are much more equable than near the surface. Direct solar radiation in temperate regions affects this zone very slightly, so that it probably

¹ *Distribution of Marine Life.* By Professor Edward Forbes, F.R.S., President of the Geological Society. (From the *Physical Atlas of Natural Phenomena*, by Alexander Keith Johnston, F.R.G.S., &c. Edinburgh, 1851.)