there are altogether 45 species in the two areas, 10 of which are common to both. A comparison between the West Atlantic (American) and the East Atlantic (European-African) deep-sea crustaceans shows an equally small number of common forms.

These instances show that, in spite of temperatures and salinities appearing identical in widely separated localities, it is possible to distinguish between the faunal communities of the deeper tracts of the ocean, and we perceive accordingly that temperature and salinity are not the only factors which regulate the distribution of species. Unquestionably there are other physical conditions which are of considerable importance, and it must further be remembered that biological factors, such as competition between species, exert a decided influence.[1]

Murray showed in 1895 that the results of the "Challenger" Expedition afforded no confirmation of the opinion that a universal deep-sea fauna was spread all over the floor of the ocean; he compares the catches at six deep-water stations scattered over the Atlantic, Pacific, and Southern Oceans, the total number of species recorded being 290, but not a single species was common to the six stations.[2] At the same time we must remember that whole groups of forms, showing common characteristics in bodily structure, and belonging to types quite distinct from the littoral ones, belong either entirely or principally to the deep sea. These types are as a rule very extensively distributed, even if their species and genera may be limited to more circumscribed areas. Among fishes, for instance, we have the Macrurus-type, which is to be found in all the greater depths of the oceans of the world, although particular species have a comparatively limited distribution. The big group of holothurians known as Elasipoda is a particular type, separated in all essentials from the littoral and sub-littoral forms of holothurians. They belong almost entirely to the archibenthal and abyssal tracts of the different oceans, and are often abundant enough to give a distinct character to the deep-sea fauna. The same is true also of the Echinothuridæ, though in their case there are littoral and sub-littoral species; some species, however, have a comparatively limited distribution. Among crinoids we find survivals from remote ages of the earth, namely, the stalked genera (*Rhizocrinus*, *Bathycrinus*, *Pentacrinus*, etc.), as typical inhabitants of widely

[1] I must, however, point out that in all probability some faunal groups show a greater uniformity in widely separated localities than others.

[2] See Summary of Results Chall. Exp., p. 1438.