

damaged specimen of what I have described as *Caridina typus*, Milne-Edwards, but which I am much inclined to think from its immature condition is the young of the *Atya sulcatipes* that exists in the same locality.

In form these animals have a very peculiar feature in the articulation of the heavy chelate joint of the first two pairs of pereopoda, which has been described at pp. 6 and 7 of this Report and by Dr. Fritz Müller.¹ When the hand is opened, according to Fritz Müller, the hairs upon the margin of the fingers spread like a fan, gather and retain fine mud; when the hand is closed these hairs close round the mud and compress it into a pellet which is passed into the mouth, and so the animal lives on the small organic substances that exist in the mud, which it collects with great rapidity.

These animals, of which the male is smaller than the female, as is frequently the case when they are not provided with offensive weapons, are only known to inhabit fresh water, and singular to relate, although they are inhabitants of distant localities, several of which are oceanic islands, yet all the species bear so close an affinity of form that it is difficult to determine one from the other by any permanent character.

The question naturally arises how, so far asunder as the habitats of these animals are, can they be brought to live without any intermediate connecting influence as far as we can determine?

Mr. Darwin, in his book on Earthworms, says that in every bit of land or distant island worms are found in the soil; considering that they are land and air-breathing animals, it is a matter of curious interest to determine how they get where they are.

M. A. Certes, in the Comptes rendus, says that having taken carefully collected sediment from which he evaporated the water, he three years afterwards treated the residue with boiled and filtered rain-water. All care having been taken to keep out germs from the air, after two months a *Nauplius*-like form was detected which later on took the form of *Artemia salina*. M. Certes points out that in cases of this kind death was only apparent, and that organic conditions and nutritive changes do not cease entirely. Thus it appears that it is quite possible for wading birds to be the means of carrying mud containing either animals or ova to a considerable distance and so transferring species to a great distance from one locality to another.

One of the most abundant in specific forms is the genus *Alpheus*, including those subgenera that are separated more for the convenience of classification than from any distinguishing point of more than specific value, *Paralpheus*, *Synalpheus*, *Cheirothryx*, and *Betanus*. These contain about eighty different species, and with the exception of a single instance they have all been taken within 52 fathoms from the surface. They are mostly recorded from muddy bottoms, but they are frequently found sheltered among Corallines and masses of Sponges. From their frequently being found in ooze and muddy bottoms I am inclined to believe that they burrow more decidedly than is the

¹ *Kosmos*, vol. ix, pp. 117-124, 1881.