

blue oceanic species, living in the intense light of the surface, the formation of blue pigment is so vigorous that it exceeds the destruction. Light is thus a very important agent in all these processes, bearing on the formation and transformation of pigment in the bodies of crustaceans, but it is not the only one. Other powers may equally influence the conditions of pigmentation. Experiments thus prove that when subjected to low temperatures blue colour developed in the animals; this was in my opinion due to the prevention of the destruction of the blue pigment in the tissues, thus causing an accumulation of this pigment."

I have quoted Doflein's theory because it opens up very interesting questions for future experimental research, though it hardly explains all the colour adaptations presented by the oceanic animals, for instance the mirror-like forms with dark backs and silvery sides, from intermediate layers, nor does it explain the profuse variation in the Sargasso animals and their peculiar conformity with the various colour-shades of the ocean and of the Sargasso weed. I fail to see any necessity for controversy over the two theories, one claiming the colours as due to adaptation serving the purpose of protection, the other explaining them as being due to peculiar processes of assimilation. Perhaps the latter theory alone may in many cases be sufficient, but may it not possibly signify the very mechanism by the aid of which the organisms adapt themselves in order to obtain protection?

A more perfect understanding can only be obtained from an increased knowledge as to the habitats of animals, as to the physical conditions there, and as to their life-history generally. The influence of various physical factors on the animals may be studied by experiment, and several interesting experiments have already been made. Gamble and Keeble, for instance, have proved the variations in colour of *Hippolyte varians* to correspond to variations in the colours of the surroundings. But the significance of such influences in the life of the animals can in my opinion only be understood by studying the life of the animals in nature.

LIGHT-ORGANS

That many organisms possess the power of emitting light has been known from earliest times. The Norwegian fishermen distinguish two kinds of phosphorescence: "dead phosphorescence" and "fish phosphorescence." The "dead phosphorescent light."