

mother-of-pearl, feathers of tropical birds, insects and shells. Sir David Brewster found that the wax impression of a pearl showed rainbow colors like the original pearl. These "interference" colors, due to striations on the surface, or to prism-like transparent parts of animals, illustrate some of the most gorgeous effects observable in living things. The silvery color of many animals is not due to pigment or color, but to glistening smooth surfaces, and thus must be classed merely as "specular reflection."

*Ancestral Coloration.*—The ocean is, as August Weissmann declared, the original birthplace of all animal life. The simple protozoan animals, and larval stages of higher forms, abounding in the sea, are in most instances, of a colorless transparency, at any rate in the earliest period of their lives. Even in such highly organised creatures as the fishes, the minute embryos, at a very early stage of development, are colorless and translucent. Further, the body is not only colorless, but it is wormlike, segmented, or metameric. Annelids, insects, crustaceans, mollusks, ascidians, fishes, reptiles, nay even birds and the highest animals, may exhibit a colorless metameric body.

When color spots first appear in these, they are grouped serially, thus forming transverse patches or stripes from the head to the tail. This metameric coloring is very prevalent in the young of all classes of animals.

If the segmented body be ancestral, then there is strong presumption that repeated stripes and spots are ancestral also. They persist even though their use and meaning may have gone. Like the two buttons on a dress coat which served to hold up the sword-belt when our forefathers were accustomed to carry swords; but are now of no use, though, thanks to the tailor, they still persist, so we find transverse stripes, still appear as the first coloration in a vast number of animals.

A larval cod, a week or ten days after hatching out from the egg, exhibits a series of black stripes, and the young salmon and trout show cross bars, or "parr marks," which may be readily derived from the striped condition just referred to. Now, in some young flat-fishes the bars along the sides of the body divide into spots or large patches, four rows of them, and still preserving the metameric or serial succession from the head to the tail. Thus