

means of a garb of movable 'flimmer-hairs' (Latin, "cilia"), swarms about in the water. All of these swimming ciliated larvæ of the lower animals have developed out of the same common germinal form, that is, out of the *Gastrula* (Plate V., Fig. 8, 18); and it too is originally capable of migrating, owing to its garb of movable "flimmer-hairs."

But the power of free locomotion, and hence, also, of active migration, is not confined to animals alone, but many plants likewise enjoy it. Many lower aquatic plants, especially the class of the Tangles (*Algæ*), swim about freely in the water in early life, like the lower animals just mentioned, by means of a vibratile hairy coat, a vibrating whip, or a covering of tremulous fringes, and only at a later period adhere to objects. Even in the case of many higher plants, which we designate as creepers and climbing plants, we may speak of active migration. Their elongated stalks and perennial roots creep or climb during their long process of growth to new positions, and by means of their widespread branches they acquire new habitations, to which they attach themselves by buds, and bring forth new colonies of individuals of their species.

Influential as these active migrations of most animals and many plants are, yet alone they would by no means be sufficient to explain the chorology of organisms. *Passive migrations* have ever been by far the more important, and of far greater influence, in the case of most plants and in that of many animals. Such passive changes of locality are produced by extremely numerous causes. Air and water in their eternal motion, wind and waves with their manifold currents, play the chief part. The wind in all places and at all times raises light organisms, small animals