

as a foot, with great rapidity, and prefers escaping in this way to swimming beneath the surface. The fish are very nimble on land and difficult to catch. They use their muscular pectoral fins to spring with, and when resting on shore the fore part of their body is raised and supported on these." Other fishes instead of using the paired fins for movement may use them as anchors like some of the shore gobies, the lump-fish, and the suckers (*Liparididae*) whose ventral fins unite to form a broad sucking disk under the body, enabling them to adhere to rocks and stones with the firmest tenacity.

A study of the nerve-supply and myology of the American hake's hind pair of fins has not yet been made, but it would yield some valuable results. Williamson's research on the gurnard and Harrison Allen's account of the microscopic study of the free rays in the Atlantic sea-robin (*Prinotus*) have shown that these separated rays in the breast fins function as tactile organs, and are really fingers. As I watched, some months ago, the young hake pushing forward their ventral fins like long fingers, poking into crevices with them, and touching particles of food, or climbing over stones, and resting quietly upon these fins just as a dog rests his head upon his paws, the conclusion was irresistible that total change of function had taken place with the change of form in these fins. It is necessary to add that the eyes of these small hake are unusually large and prominent, and the remark of Williamson does not apply in this case that "in many fishes which have comparatively broad heads, and in which the eyes are situated high up on the head, some of the fin-rays of either the pectoral or pelvic fin are filamentous. From the position of its eyes, the fish is unable to see objects of prey close to itself. It therefore depends on organs of touch for aid in the capture of its food."

These fishes illustrate, indeed, a change precisely the reverse of that seen in the bat, for their wing-like fins have been converted into a kind of hand with separated fingers, extremely sensitive as organs of touch, whereas the fingers of the bat have been elongated, and united by membrane to form a fin-like wing.