

The system upon which M. Agassiz has established his classification of recent Fishes is in a peculiar degree applicable to fossil Fishes, being founded on the character of the external coverings, or Scales. This character is so sure and constant, that the preservation, even of a single scale, will often announce the genus and even the species of the animal from which it was derived; just as certain feathers announce to a skilful ornithologist the genus or species of a Bird. It follows still further, that as the nature of their outward covering indicates the relations of all animals to the external world, we derive from their scales certain indications of the relations of Fishes;\* the scales forming a kind of external skeleton, analogous to the crustaceous or

\* The foundation of this character is laid upon the dermal covering, the skin being that organ which, more than any other part of the body, shows the relation of every animal to the element in which it moves.

The form and conditions of the feathers and down show the relation of Birds to the air in which they fly, or the water in which they swim or dive. The varied forms of fur and hair and bristles on the skins of Beasts are adapted to their respective place, and climate, and occupations upon the land. The scales of Fishes show a similar adaptation to their varied place and occupations beneath the waters.

Mr. Burchell informs me that he has observed, both in Africa and South America, that in the order of Serpents a peculiar character of the scales appears to indicate a natural subdivision; and that in that tribe, to which the Viper, and nearly all the venomous Snakes belong, an acute ridge, or *carina*, along each dorsal scale may be considered as a distinctive mark.