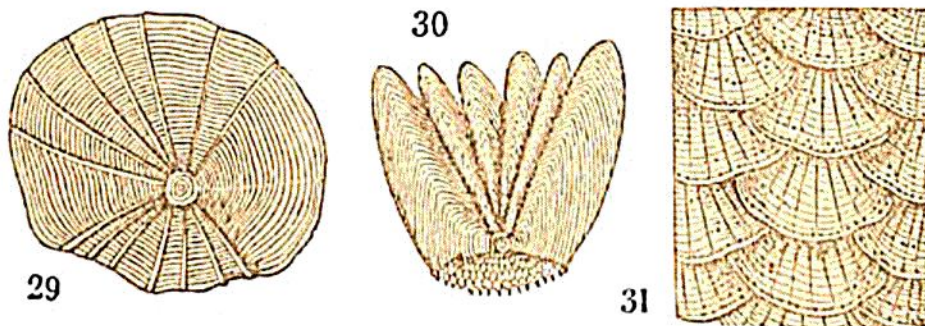


nails, the hoofs, and the claws of quadrupeds, and the scales of fishes, reptiles, and other animals. The integuments of insects, and especially their more solid and horny coverings, contain, however, as will hereafter be noticed, a peculiar chemical principle termed *Entomoline*.

All these parts seem to be but remotely connected with the vital actions of the system with which they are associated; and it is doubtful how far they are to be considered as appertaining to the living portion of the body, or as mere extraneous appendages. Yet, however they may differ in their forms, uses, and external appearance, they all are produced by the same kind of vascular structure, variously arranged to suit the particular circumstances in each case: and the mode of their development and growth is essentially the same in all.

An extremely delicate and finely organized pulp, composed partly of a congeries of minute vessels, and partly of a gelatinous substance, in which these vessels are imbedded, constitutes the apparatus by which the nutrient particles are selected, combined, and elaborated into the materials of the intended structure. The original form, situation, and disposition of this vascular pulp, determines the future figure and extent of growth of the production which is to arise from it. The materials which compose it are deposited sometimes in masses, as in the scales of the crocodile; more



generally in layers, as in hoofs and nails, and also in the scales of fishes;\* and occasionally in filaments, as in hair;

\* The laminated structure of the scales of fishes is easily distinguished by applying to them a high magnifying power. As the breadth of each new layer is greater than the last, its edges project farther, the whole surface