

bling in their arrangement the fibres of a camel-hair pencil. Each tuft contains about ten or twelve filaments, growing from the upper ends of bulbous roots implanted in the skin, and which are the rudiments of the organs that afterwards form the feathers, of which this down, serving the purpose of a first garment, hastily spread over the young bird, is but the precursor; for the tufts generally soon fall off and disappear, except in the rapacious tribes, as the eagle and the vulture, where they remain attached to the feathers for a considerable time.

While this temporary protection is given to the integument, extensive preparations are making underneath for furnishing a more effective raiment, adapted to the future wants of the bird. The apparatus by which the feathers are to be formed is gradually constructing; and its rudiments are receiving the necessary supply of nutrient juices, and of vessels for their circulation, together with their usual complement of nerves and absorbents. When first visible, this organ has the form of a very minute cone, attached by a filament proceeding from its base to one of the papillæ of the skin, and establishing its connexion with the living system. In the course of a few days, this cone has become elongated into a cylinder, with a pointed extremity, while its base is united to the skin by a more distinct bond of connexion, formed by the enlarged vessels, which are supplying it with nourishment. It is in the interior of this cylinder that all the parts of the feather are constructed; their earliest rudiments being formed at the upper part, or apex of this organ; and the materials of the several parts of the feather being successively deposited and fashioned into their proper shapes in different places: for while the first laminæ are constructing in one portion of the cylinder, the next are only just beginning to be formed in another; and while the outer covering of the stem is growing from one membrane, the interior spongy tissue is deposited in other places, in various stages of softness or consolidation: so that the whole composes a system of operations, which may be said to resemble in its