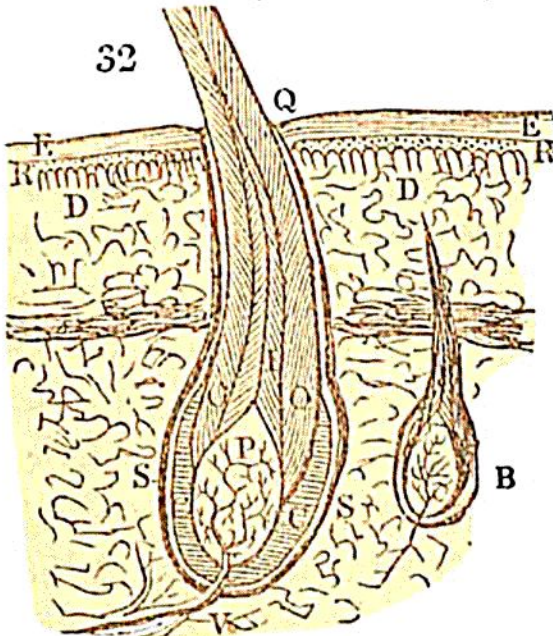


which latter, again, are often agglutinated together by a strong cement, uniting them into a hard and solid structure, of which the horn of the rhinoceros is a remarkable example. In all cases, the portions thus successfully produced, are no longer susceptible of being nourished, and from the moment of their deposition, undergo no farther change, except from the action of external agents. By the continual additions which are made to them at their base, or root, where the vessels deposite fresh materials, they gradually increase in size, protrude through the skin, and continue to grow by the same process as long as these vessels continue in activity.

The nature of this process is well exemplified in the growth of hair. Fig. 32 shows the apparatus employed in its construction, in an imaginary section of the root, on a magnified scale. Every hair takes its rise from a minute vascular pulp, *p*, of an oval shape, which is implanted below the corium, or true skin, *d*.* This pulp is invested by a



sheath or capsule, *c*, which, together with the contained pulp, and the root of the hair that grows from it, composes the *bulb* of the hair. The bulb itself is contained in a small cell formed by condensed membranes, *s*, to which it has no attachment excepting at the lower part, *v*, where the vessels and nerves of the pulp are passing into

having that concentric striated appearance which renders it an interesting object for microscopic examination. Fig. 29 exhibits the striated surface of the scale of the *Cyprinus alburnus*, and Fig. 50 that of the *Perca fluviatilis*. The imbricated arrangement of these scales, resembling that of the tiles on the roof of a house, is shown in Fig. 31. All these figures represent the objects highly magnified.

* In the above figure *e* is a section of the Epidermis, or cuticle; the dotted part, *n*, represents the situation of the subjacent *rete mucosum*, and *d*, the derm, or corium.