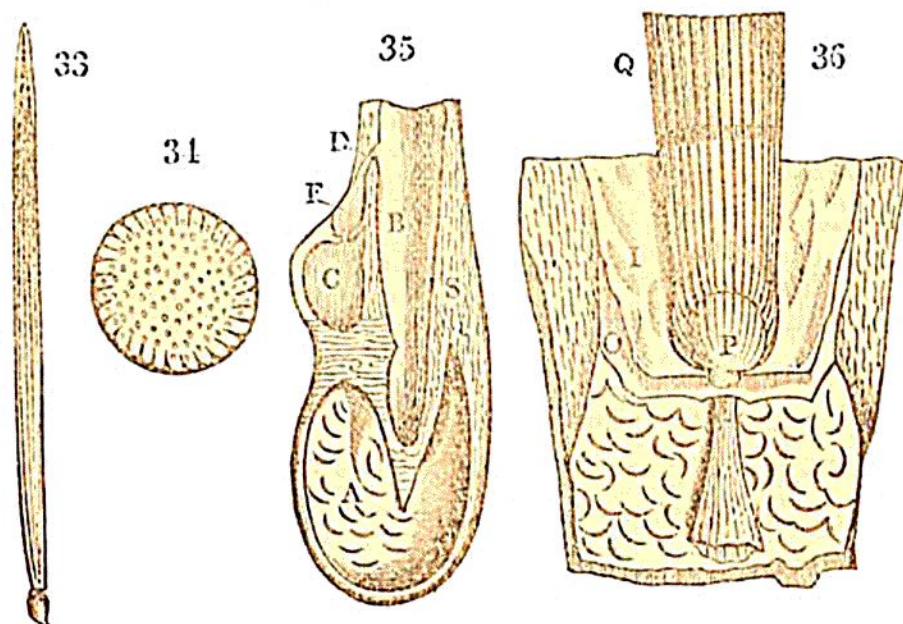


branes, the one enveloping the other. Fig. 36 shows the bulb laid open by dividing the membranes and turning them aside. The horny portion of the quill is secreted by the



internal membrane, *i*, and deposited in successive laminæ. The external membrane is seen at *o*. The pulp itself, seen at *p*, is still more curiously organized; its surface being fluted, or formed into longitudinal processes. The horny matter, being deposited on these processes, is moulded to their shape, and concretes into laminæ which converge from the circumference of the cylinder towards the centre. The section (Fig. 34) shows these converging laminæ, which, being of a dark colour, give to the surface of the quill the appearance of being grooved: this, however, is merely an optical illusion, occasioned by the dark laminæ being seen through the transparent exterior covering; as may readily be detected by viewing the surface with a magnifying glass.* After a certain period of the growth of the quill, the pulp ceases to supply the materials for forming the spongy substance which occupies the interior of the quill. But although it no longer secretes, it still retains its place; and the capsule continuing to deposit horn, the quill becomes a hollow tube of considerable diameter. When it has attained a certain size, the

* It is observed by F. Cuvier, that this striated appearance is peculiar to the quills of porcupines of the old world. Those from America have no such arrangement of laminæ.