

as many fruits enclosed in one perichæcium as in *Mnium* and *Dicranum majus*.

Having made you acquainted with the reproductive organs, we shall be prepared to follow out their functions. As stated, the antheridium at maturity bursts at the apex, and out pass the spermatozoids as a cloud of active particles; the archegonium equally prepares for their reception, the apex of the stylidium ruptures, the edges of the aperture roll back forming a trumpet-shaped orifice, from which we can trace a fine duct passing down to the germinal cell, and more evident now because it has acquired a reddish tinge. Both Hofmeister and Schimper have seen the spermatozoids within this canal.

The germinal cell, now fertilized, immediately commences its own proper development, first downward; perforating the base of the archegonium, it fixes itself in the receptacle or apex of the stem, just as a stake is driven into the earth; then upward to form the seta or fruit stalk, and the contents of the archegonium being thus consumed, its delicate walls are ruptured, the lower part remaining attached to a process of the receptacle, as a little sheath—the vaginula (fig. 13); the upper carried aloft, becomes



Fig. 13. Young fruit of *Orthotrichum crispum*, showing Vaginula and hairy Calyptra.



Fig. 14. Mitriform calyptra of *Encalypta*.

the calyptra, or veil, and the seta, having attained its full length, begins to enlarge at the apex to form the capsule.