their chlorophyl, those at the base are empty, hyaline, and elongated; in a few mosses the chlorophyl is wanting, and hence they have a white aspect, as in the family Leucobryaceæ.

Occasionally the basal wing of the leaf is occupied by cells, which differ from the rest, being enlarged or deeply coloured, and the presence or absence of these alar cells has been conveniently used by Prof. Schimper to divide the great genus Dicranum into two sections. When the cell-ends join by horizontal walls, they are termed Parenchymatous, and in one form of these, the cell walls are thickened, and the cell proper reduced to a mere point, producing the dotted areolations of Grimmiaceæ and others (figs. 5, 6). When the cell ends are pointed, we have rhombic areolæ,

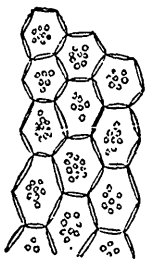

Fig. 5. Areolation of Pottia truncata.

Fig. 6. Areolation of Grimmia apocarpa.

and these are termed Prosenchymatous, as in Bryum (figs. 7, 8). I must add that occasionally stipuliform organs occur intermixed with the stem leaves, as in *Hypnum molluscum;* these are named Paraphyllia.

An anomalous form of leaf occurs in the genus Fissidens, in which it appears to be vertical, and split into two laminæ for a part of its length. This split portion is, however, the true leaf, but the nerve and one wing have taken upon themselves extraordinary development, and there is also a lamina formed along the back of the nerve, these additional parts being named the apical and dorsal laminæ (fig. 9).

THE REPRODUCTIVE ORGANS.—It is now satisfactorily determined that these are of two kinds, male and female, and unless they occur near each other, the fruit is not produced; as an instance, I may refer to *Fissidens grandifrons*, of which male plants only have been found in Europe, female only in America, hence the fruit is unknown.

Hedwig was the first who pointed out the nature of these