

THE DEVELOPMENT AND DIFFERENTIATION OF TISSUES IN THE STEMS OF GRASSES

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ABSTRACT

This paper is a study of the development and differentiation of tissues in four species of grasses whose mature structures show marked differences in the arrangement of the vascular strands. Those chosen for study are: vascular strands in a single circle as shown by *Agropyron*, strands in two to five circles as in *Spartina* and *Calamovilfa*, and strands scattered as in *Zea* and other *Andropogoneae*. Variations show a definite trend of vascular evolution with the scattered bundles as the highest type in the series. All the grasses studied so far have a cortex and stele, although in the scattered bundle type this is not evident in the mature stems. Within the bundle there is considerable variation in the number of water tubes because of the varying degrees of elongation of the stem.