

-19-

dorsal root. This operation proved sufficient to prevent sensory nerve regeneration as later sensory tests of the deafferent limb indicated. Sections of these limbs are in process of being impregnated with silver for detailed histological study. Deafferented limbs regenerated with only a very slight delay over normal controls.

3. Asymmetrical Regeneration. There is at present insufficient evidence to choose between two theories of the action of the apical cap. According to the present writer (Thornton, '54-'58) the apical cap serves to bring about the aggregation of mesenchyme cells to form the regeneration blastema. Singer ('59, Growth Symposium) believes that the apical cap starts tissue dedifferentiation which thus provides the cells for the blastema. During the summer I produced asymmetrical regenerates by causing the apical cap to form asymmetrically on the limb tip. This can be done by removing a strip of skin adjacent to the apical cap, but on one side of the limb tip only. When this operation is performed the apical cap, for unknown reasons, forms at the side of the limb tip near the new wound. Three series of experiments were undertaken: a) removal of a skin patch beginning at two days after amputation; b) removal of a skin patch beginning at seven days after amputation; c) removal of a skin patch beginning at 11 days after amputation. In all cases the regenerate projected at a sharp angle from the side of the limb tip. The asymmetry produced is attributed to the activities of the apical cap in attracting blastemal cells, because in the 7-day series, most of the tissue dedifferentiation had occurred, while in the series in which skin removal began on the 11th day all tissue dedifferentiation had already taken place and blastema cell aggregation was the only possibility left for this stage of regeneration. These particular experiments are to be extended to include other experimental approaches to this problem.

Supported by a grant from the National Science Foundation.

Shrub Distribution in Jackson Hole  
Jerry J. Waitman  
University of Wyoming  
Project Number 99

During the 1959 summer field season in the Jackson Hole area, a new project was started. This project, which is supported by the U.S. Forest Service, covers a study of the reproductive capacity and seedling establishment of native and introduced species of browse plants. Especial attention has been given to Rosa, Amelanchier and Prunus. Teton County is particularly rich in shrub species, and most of these have very definite distribution patterns. Reasons for restriction of habitat have been sought as preliminary to studies of seed germination. All of these shrubs are important browse for big game animals.