

communities. The 7, 13, and 25 year old burns were found to represent open habitats. The 57 year old burned area presented a closed canopy forest with a still extensive ground cover. In the 90 year old burn the undergrowth was still sparse and in the 260 year burn, it was negligible in most areas.

Particular emphasis was placed on studying observable vegetation at the Otter Creek Lightning Burn of July, 1966. In this area, the fire had burned to mineral soil over most of the area, but there was little evidence of erosion. Neither big game animals nor birds avoided the burned area. A canopy coverage analysis was run along an arbitrary transect across the burn. The burn remains largely devoid of plant growth; bare soil and deadfall lie on 95% of the area. Comparison is made of the 1966 Otter Creek Burn and the 1960 Central Plateau Burn (in an area west of the 1966 burn) in regard to canopy coverage. In the 1960 burn, lodge-pole seedlings still cover only 1% of the ground. Other vegetation present at the 1960 site shows that evidently plants which dominate the early stages of recovery appear during the first season after the fire. Analyses of soil at various depths were made in order to predict the potential of the area to support an adequate plant cover in the next few years. These soil samples await more thorough chemical analysis.

Techniques and Uses in the Study of Mammalian Chromosomes Marilee Hylant

The purpose of this study was to learn something of taxonomic identification, especially the techniques involved in the determination of chromosome counts and karyotypes of mammalian species, specifically, Spermophilus armatus, the ground squirrel, and a vole, tentatively identified as Microtus montanus. Since it is often difficult to make identification on the basis of morphology alone, karyotyping and chromosome count become increasingly important in taxonomy. Techniques detailed in this report include trapping, slide preparation, slide staining, photography, karyotyping and Basic Number (N. F.). After preparing and studying chromosome slides of S. armatus, the same methods of chromosome preparation and study were utilized to identify tentatively M. montanus.

A Study of the Variability in Five Species of Castilleja in the Vicinity of Jackson Hole Research Station Susan Jane Noble

The purpose of this project, conducted during July and August, 1967, at the Jackson Hole Research Station, was to study variations within the local populations of Castilleja. Ninety-six specimens were collected from 11 sites at elevations ranging from 6,750 to 9,000 feet in Grand Teton National Park, Teton National Forest, and Yellowstone National Park. Observations were recorded in regard to the site, soil type, and relative moisture and sunlight. Associates of Castilleja were also noted. Various plant characteristics were noted, e.g., plant height, color and shape of bract, length and shape of calyx, etc., and the plants were thus identified and classed into five species and one hybrid. The occurrence of hybrids in the populations sampled was 6.25% of the total number of collected specimens. C. miniata expressed the greatest variations in floral and leaf

characters and was the species most commonly encountered. The only pollinators found were bumblebees, Bombidea, on C. miniata plants.

A Comparative Study of the Nesting Behavior
of Two Species of Digger Wasps
in Jackson Hole, Wyoming
Cleo C. Pierre

This study observes the nesting behavior of two species of digger wasps, Philanthus pulcher and P. crabroniformis, in the sandy banks of the Snake River at Jackson Hole, Wyoming during July and August of 1967. The noting of differences in two species sharing the same habitat was the primary result of this study. P. pulcher nests in July and early August, while P. crabroniformis begins her nesting as P. pulcher dies, thus enabling these two wasps to share the same habitat. Both species nest in firm, sandy loam. P. pulcher digs her nests with her mouthparts, dispersing the soil with her abdomen, thus effectively hiding the entrance to her burrow. She does not however, make distinct orientation flights. P. crabroniformis was seen to dig her nest in the same manner as P. pulcher except that she does not disperse the dirt and thus her nests are quite conspicuous. When she leaves her nest, P. crabroniformis makes circular orientation flights. The prey of P. pulcher are large bees and wasps of various families, usually captured on the flowers of Eriogonum by approaching downwind. The prey of P. crabroniformis are always of the family Helictidae. P. pulcher flies straight back to her nest after capturing her prey and then makes a dash for her burrow, while P. crabroniformis makes short stops on the way back, probably to elude the parasitic S. trilineata, a fly which also pursues P. pulcher. The structures of the burrows of the two species were found also to differ significantly.