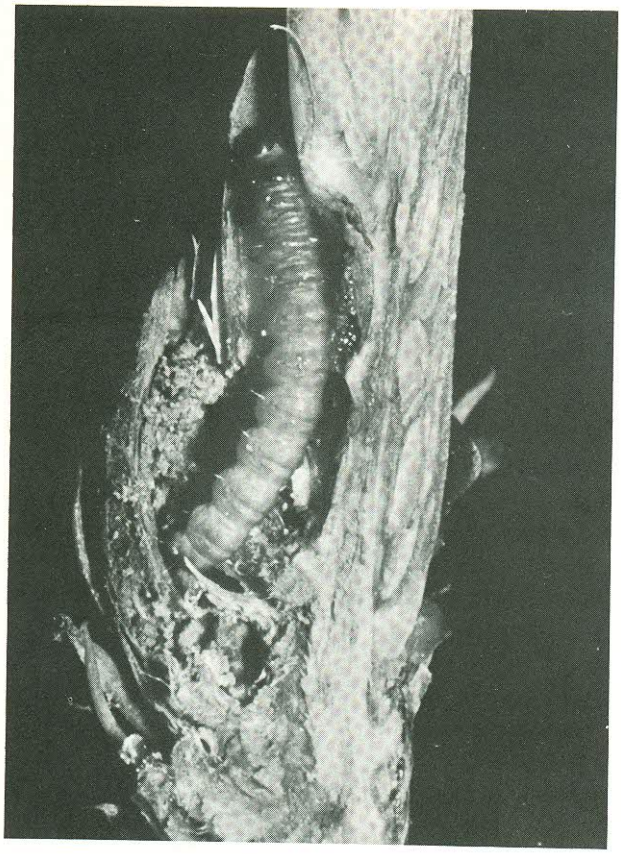

F–518952

Douglas-fir cone dissected to show fir coneworm and damage. (Lolo N. F., Mont.).

CENTRAL ROCKY MOUNTAINS [1]

By DONN B. CAHILL and WILMER F. BAILEY

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Conditions in Brief

The Black Hills beetle remained the most important forest insect in the Central Rocky Mountains. Infestations in ponderosa pine increased on the Black Hills, Roosevelt, and San Juan National Forests. Infestations in lodgepole pine have been found on the White River, Arapaho, and Shoshone National Forests and on BLM and State and private lands in northwestern Colorado.

Efforts to control the Black Hills beetle have been continued through the use of accelerated timber sales; salvage; piling and burning; and, as a last resort, chemical application.

Engelmann spruce beetle populations remained at a low level. This insect is a threat to thousands of acres of overmature Engelmann spruce stands in Colorado and Wyoming. Some small infestations have developed in logging debris and scattered blowdown. These have been kept in check by trap tree logging or piling and burning of slash and cull material.

Spruce budworm-defoliated areas increased in acreage but remained about the same in damage intensity. The egg mass survey showed light to heavy defoliation with no extensive tree injury. Suppression projects are not recommended at this time.

Status of Insects

Black Hills beetle, *Dendroctonus ponderosae* Hopk., has been a serious problem in ponderosa pine on the Black Hills, Roosevelt, and San Juan National Forests. Infestations are located on more than a quarter-million acres. Logging, salvage of insect-infested trees, and chemical control (where logging is not feasible or timber sales do not occur) were continued in an effort to improve this situation.

In the Black Hills, beetle infestations developed from small scattered groups and from some large concentrations. An estimated 21,000 infested trees were found on State and private lands. An estimated 35,000 infested trees were found on National Forest lands. Direct control was recommended where timber harvest has not kept pace with increasing infestations.

Small scattered infestations on the Roosevelt National Forest have concentrated in groups of 25 to 100 trees. Most of these groups are in extremely rough terrain. These infestations should be controlled in areas where merchantable stands are threatened.

Beetle activity on the Glade District of the San Juan National Forest has been centered around old seed trees and second-growth ponderosa pine. This infestation will be controlled by a revised sale program and a limited treating program.

Black Hills beetle activity in lodgepole and limber pine remained about the same as in 1967. Tree mortality continued on State, private, and BLM lands in northwestern Colorado. No control work

[1] Includes forested lands in Colorado, Kansas, Nebraska, South Dakota, and Wyoming.

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Construction of the Dillon, Colo., townsite disturbed the forest microclimate, reduced tree vigor, and triggered a Black Hills beetle infestation. Note faded trees in lower center of photo.

was accomplished in this isolated area. The outbreak in lodgepole pine near Dillon, Colo. was reduced by chemical treating. Continued control was recommended to clean up small infestations on the White River National Forest.

Engelmann spruce beetle, *Dendroctonus obesus* (Mann.) = (*D. engelmanni* Hopk.), damage was not significant in standing spruce timber. A small infestation was found in a new timber sale on Greenhorn Mountain in the San Isabel National Forest. This sale will be cut next year and this should control the infestation. The beetles have been kept under control by salvage logging in the blowdown area and by trap trees and slash disposal in the sale area.

Spruce budworm (western form), *Choristoneura occidentalis* Free. Areas of budworm defoliation have increased by approximately 75,000 acres in 1968, making a total of over 175,000 acres. The heaviest defoliation was on the San Isabel, San Juan, and Rio Grande National Forests. Other infestations were scattered throughout Colorado.

Douglas-fir beetle, *Dendroctonus pseudotsugae* Hopk. Scattered mortality of Douglas-firs was observed on most forests in Colorado and on the Shoshone National Forest in Wyoming. No control is planned.

Western balsam bark beetle, *Dryocoetes confusus* Sw. Scattered groups of alpine fir throughout Colorado and Wyoming were killed by this insect.

Tiger moth, *Halisidota ingens* Hy. Edw. This insect was reported in ponderosa pine on the Poudre District of the Roosevelt National Forest and on private lands near the Pike and Arapaho National Forests. Chemical spraying by some property owners has controlled it around their homesites.

Spear-marked black moth, *Eulype hastata gothicata* (Guen.). Heavy defoliation of birch was observed on the northern Black Hills National Forest. Some property owners were concerned with defoliation of birch on their homesites.

Other insects. The fall webworm, *Hyphantria cunea* (Drury), moderately defoliated broadleaved trees and brush along Boulder Creek of the Roosevelt National Forest. The roundheaded pine beetle, *Dendroctonus adjunctus* Blandf., and the southwestern pine beetle, *Dendroctonus brevicomis* LeC. = (*D. barberi* Hopk.), were found in association with Black Hills beetle on the San Juan and Grand Mesa-Uncompahgre National Forests. The pine engraver, *Ips pini* (Say), is now considered endemic in ponderosa and jack pine on the Bessey District plantation near Halsey, Nebr.

SOUTHWESTERN STATES [1]

By H. W. Flake and C. J. Germain [2]

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Conditions in Brief

Increasing Engelmann spruce beetle activity continues to concern land managers in the Southwest. Vigorous and aggressive beetle populations at four epidemic infestations threaten vast acreages of mature spruce. Cultural and chemical control practices are being used in an attempt to check this pest.

Spruce budworm infestations are at their lowest level in 10 years. Population trend of this pest continues toward the endemic state.

In New Mexico, two Douglas-fir tussock moth epicenters were suppressed by city and State personnel. In Arizona, tussock moth infestations were active at Pinal and Aztec Peaks. The high incidence of natural virus at Aztec Peak is expected to cause a collapse of the population in 1969.

In a pilot control study, dimethoate was not effective in reducing damage caused by the southwestern pine tip moth. Minor infestations of several defoliators and bark beetles were active in the Southwest, but damage was light from these pests.

Status of Insects

Engelmann spruce beetle, *Dendroctonus obesus* (Mann.) = (*D. engelmanni* Hopk.). This beetle is the most serious and aggressive forest insect pest in the Southwest. High larval populations in down host material provide the impetus for standing tree infestations. With the majority of the spruce stands classed as mature and over-

[1] Includes all forested lands in Arizona and New Mexico and National Park Service land in southern Colorado and western Texas.

[2] Seed and cone insect information provided by Dr. H. Grant Kinzer, New Mexico State University, Las Cruces.