

The Research and Marketing Act Supports Range Research

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Eleven western states and Hawaii are collaborating under a regional range research project, W-25, entitled "Ecology and Improvement of Brush-infested Range Lands." Several federal agencies, including the Bureau of Land Management, U. S. Forest Service, Agricultural Research Service and Soil Conservation Service, have been brought in as cooperators in one or more of the station-contributing projects.

The project was activated July 1, 1954, under the Research and Marketing Act. The W-25 Technical Committee feels that this project recognizes the value of range ecology investigation, both of the individual plants and of the range plant communities, in clarifying many perplexing range management problems and contributing to their solution.

Arizona is contributing with a project on the southwestern grasslands under the leadership of R. R. HUMPHREY. The study will cover the desert grasslands of Arizona, New Mexico, and West Texas and will concentrate on changes in the cover and factors affecting these changes since white settlement. It is expected that an explanation of the causal factors will enable more rapid range improvement through management.

The **California** station is participating with a project under the leadership of H. H. BISWELL, with R. MERTON LOVE as technical committee representative. Studies are being made of brush seedling establishment and growth in relation to the soil fertility level, to determine: (1) If brush increase is related to

soil fertility level, and (2) to what extent brush can be controlled by increasing soil fertility. Specific investigations include the effects of different grass species and densities together with fertility levels on brush seedling survival and growth; the relationship of soil type to competition between grass and brush under different soil fertility levels; the status of soil fertility during successive years following controlled burning; and the effect of time of application of commercial fertilizers on forage density, yield and composition of California brush ranges.

Under the leadership of DONALD F. HERVEY, **Colorado** is participating with a project on forage production and species composition of sagebrush ranges as affected by climate, soil moisture and intensity of grazing. A pasture experiment involving two intensities of grazing has been established and certain soil and microclimatic factors are evaluated in studying the trends in forage production under the imposed grazing conditions.

The **Hawaii** contributing project is led by J. C. RIPPERTON and involves methods of evaluating range improvement practices in the humid lowland pastures of Hawaii. The objective is to define and measure sward renovation practices in terms of species composition, forage yield, carrying capacity and economics. Shrub re-invasion in pastures seeded to different species is being studied under various fertilizer treatments. The Hawaii Station is also studying sward renovation by plowing, disking and chemical treatment. The study includes some grazing investi-

gations on improved and unimproved paddocks. In all phases, the investigation of plant succession is emphasized.

The three stations, **Idaho, Oregon** and **Washington**, have a contributing project under the leadership of E. W. TISDALE, C. E. POULTON, and R. F. DAUBENMIRE, respectively, on the vegetation-soil relationships of the brush-infested range lands in the three states. Current studies in the sagebrush type seek to obtain the factual information on vegetation and soil relationships of the habitat types (site types) represented in the study area and to determine the patterns of change which take place on these habitat types with grazing use. This study is expected to fill a basic need for more detailed information on range plant communities and to provide an improved basis for generalizing research results, for interpreting range condition and trend, and for classification of range lands for range improvement and other management purposes.

Under the leadership of GENE F. PAYNE and F. A. BRANSON, the **Montana** station has a contributing project on the factors affecting germination in big sagebrush (*Artemisia tridentata* Nutt.). This project will provide a better understanding of the factors important in the germination and establishment of this species and thus contribute to management. Greenhouse studies are currently being emphasized.

The **Nevada** station is participating under the leadership of J. H. ROBERTSON, with a project on the management of crested wheatgrass pastures to delay encroachment by undesirable brush. This project seeks to discover the relationship between different grazing practices and the reestablishment of sagebrush and rabbitbrush in newly seeded pastures. This understanding will enable development of practices for increasing the productive

¹Secretary of Technical Committee, W-25, for 1955.

life of crested wheatgrass stands. This project is expected to fill a widespread regional need for information on the management of crested wheatgrass seedings.

The **New Mexico** station has a contributing project on the ecology of creosote bush (*Larrea divaricata* Cav.) on desert grassland range. This project, under the leadership of K. A. VALENTINE, will assemble facts on the autecology and life history of creosote bush. Studies include the influence of good and poor perennial grass cover on the establishment of creosote bush, the influence of range rodents and domestic livestock on the species and the importance of creosote bush competition on the re-establishment of desirable forage grasses.

Utah is contributing through a project on the basic ecology of the salt desert vegetation, under the leadership of L. A. STODDART and C. W. COOK. The study emphasizes the plant-soil relationships responsible for the differences in the desert

shrub ranges. This work is being tied in with the nutritive quality of range plants so that these differences can be related to an ecological base.

The **Wyoming** project, under the leadership of ALAN A. BEETLE, is concerned with factors affecting the germination and establishment of grasses on Wyoming sagebrush ranges. This field and laboratory study emphasizes the significant habitat factors which influence the germination and establishment of grasses on ranges in varying condition, under different grazing pressure and with different brush control practices. In the initial phases, special attention is being given to the factors of soil moisture, soil temperature and the effect of the mulch layer on seed germination and survival.

The W-25 Technical Committee consists of a representative from each participating state and co-operating Federal agency and an Administrative Advisor. Dr. NOLAN

F. FARRIS, representative of the Office of Experiment Stations, consults with the committee. Meetings of the technical committee are held annually and progress reports submitted. The meeting place is changed each year, enabling the members to become more familiar with regional conditions. This committee makes recommendations to the Administrative Advisor, Director C. E. FLEMING of Nevada, who in turn represents the project with the western regional association of directors. Final approval of projects rests with the Secretary of Agriculture, Office of Experiment Stations, upon recommendation of the Committee of Nine elected from among the state agricultural experiment station directors and including one representative of the Division of Home Economics Research. Upon approval, projects become eligible for support under the Research and Marketing Act in accordance with the terms of that act and as funds are appropriated by Congress.

New Publications of Interest

Big Dam Foolishness. By Elmer Peterson. *Devin-Adair*, New York. 224 pages. 1954. \$3.50.

Elements of Ecology. By George L. Clarke. *John Wiley & Sons*, New York. 534 pages. 1954. \$7.50.

Farming with Nature. By Joseph A. Cocannouer. *Univ. Oklahoma Press* Norman, Okla. 147 pages. 1954. \$2.95.

Sheep Management and Diseases. By H. G. Belschner. *McGraw-Hill Co.*, New York. 723 pages. 1954. \$11.00.

Soil. By V. G. Jacks. *Philosophical Library*, New York. 221 pages. 1954. \$5.00.

The Animal Kingdom. Edited by Frederick Drimmer. *Greystone Press*, New York. 2,062 pages (3 vols.). 1954. \$17.50.

The Distribution and Abundance of Animals. By H. G. Andrewartha and L. C. Birch. *Univ. Chicago Press*. 782 pages. 1954. \$15.00.

The MacMillan Wild Flower Book. By Clarence J. Hylander. *Scientific Books and Periodicals*, New York. 496 pages. 1954. \$15.00.

The Nation Looks at its Resources. Report of the Mid-Century Conference on Resources for the Future. Edited by Henry Jarrett. *Resources for the Future, Inc.*, 1606 New Hampshire Ave., Washington, D. C. 418 pages. 1954. \$5.00.

Those of the Forest. By Wallace B. Grange. *The Flambeau Publishing Co.*, Babcock, Wisconsin. 314 pages. 1954. \$4.75.