

Teaching Range Facts—The Role of the Schools

VERNON A. YOUNG

Head, Department of Range and Forestry, A. and M. College of Texas, College Station

TEACHING range facts is now definitely the responsibility of the schools. The pioneer stage has passed when the field men of the "old school of experience" were given the responsibility of teaching range management to the young men associated with range positions in state and federal agencies. These old-timers, through their writings, also informed the general public as to proper management practices for range conservation.

Today, range management, as a science, is taught primarily in the institutions of higher learning. However, if the science is to attain its greatest development and touch the lives of all those interested in the management of wildlands, the fundamental principles should be taught in both the elementary and high schools. There are a number of publications on range conservation adapted for adult reading but a very limited number are available for use in the curricula of elementary schools or for guidance in outdoor studies.

A book published in 1949 entitled "Our South, Its Resources and Their Use" (by E. F. Evans and R. L. Donahue. 406 pp. The Steck Co. Austin, Tex., 1949), was one of the first available for the elementary schools which strongly emphasizes in one entire chapter the role of grass as related to range management and conservation. The facts are so clearly and interestingly set forth that many students will no doubt become supporters of grass conservation.

I hope the Society of Range Management will in the immediate future appoint a committee to investigate the possibil-

ities of introducing instruction in grass land conservation into both elementary and high school education. Such a committee should consistently work for this objective until it is accomplished in every State where range conservation is important. In addition, the committee should encourage book companies to select range conservationists to write suitable text books to meet the requirements of the different regions.

In the field of higher education the staff members of range management departments are often obliged to teach ranch people. Thus, they must be exceptionally well trained in both fundamental and applied phases of range management in order to be effective. The range instructor must be able to segregate the facts by rechecking the data and analyzing results of the numerous publications dealing with different phases of range management. In addition, he must also be able to correlate fundamental principles and research data with the applied phases or practices in a clear and interesting manner. In other words a range instructor should be able to outline his course from both fundamental and applied knowledge that he has obtained through his training and experiences.

Thus, the responsibility of the college instructor, in teaching the facts, is one of the greatest in the profession of range management because through his teaching skill he must correlate the facts in such a way that young men will develop perspective, sound judgment, power of manipulation, and the ability to work with people. Therefore, the well qualified college instructor is today the *key* man

in the field of range management and should be one of the most highly paid individuals in the range profession.

If the science of range management is to attain the goal of enlightening the public as to the importance and necessity of range conservation, research and extension must be coordinated in order to disseminate the facts. It is the responsibility of the schools to introduce and carry out such a program.

In teaching range facts the range management curriculum in any given school must play a very important role. The curriculum should lay a foundation composed of courses in basic science and arts in order that the student may understand both the fundamental and applied courses in his major. There should be mathematics (college algebra, trigonometry, and statistical analysis); chemistry (elementary, quantitative and organic); soils (introductory and soil classification and mapping); biology (general botany, general zoology), taxonomy, range ecology, plant physiology and genetics; economics (elementary and advanced courses) and English (grammar, public speaking and both professional and popular writing). In addition, certain social science courses such as rural sociology and psychology, seem pertinent in a range student's training since he is obliged to take part in civic problems and activities. The basic range management courses are well established among range schools and need no further comment. However, the student should also have considerable latitude in the choice of elective courses during his junior and senior years so that he may round-out a well balanced education of his preferred subjects as well as for his profession.

As a final strengthening factor in the curriculum a field course of three weeks duration covering a cross section of a

rather highly diversified range country should be required. Under this environment each student will come directly in contact with a large number of the range problems and practices previously discussed in the class and laboratory, and discover for himself the assemblage of facts and factors that makes a livestock ranch click.

Much emphasis should be placed upon field and indoor laboratory exercises in the range courses because it is there that the theory and applied phases are blended into fundamental principles. It is not sufficient that the students just visit field range areas for observational purposes, but to get practice in the methods and techniques of management practices. The segregation and recording of the field data and the drawing of conclusions in such exercises are important because they give the student a quantitative guidance that may be greatly expanded in the future. Comparisons should be made of the management practices employed on both large and small ranches to determine the effectiveness of each and the economics associated with such operations. Range graduates who accept public employment are extremely short of information that deals with the economics of range management practices and problems. Much of that type of information must be obtained later through graduate training or field experiences. The under-graduate student in the future must be more than exposed to the subject.

Visual aids should be employed frequently in the classroom to correlate subject matter with field practices. With the use of slides and sound projectors, the college instructor is today able to bring many field problems and practices common to distant regions to the attention of the student in a manner not possible less than two decades ago.

In the past, most of the range manage-

ment problems have been handled well but in recent years numerous technical problems have risen that now call for men with additional training in techniques, methods, and organized thinking which requires the services of the Ph.D. degree trained individual. More complex problems will continue to arise in the biotic complex which is now a part of the overall range problem. Schools must prepare to meet the change through graduate training. The A. & M. College of Texas is setting up a graduate program that includes work for the Doctor of Philosophy degree in range management.

Range management departments must rely heavily upon research done by state, federal and other agencies to obtain most of the up-to-date facts to teach undergraduate and graduate students as well as ranch people. However, the the research information made available through technical bulletins and papers lacks appeal to the ranch people and the undergraduate students are highly critical of the subject matter presented. In many instances they must be forced to read publications under the threat of being quizzed on the subject matter.

This is a challenge to researchers to present their results in popularized form with the free use of illustrative material that will be of interest to all readers. It is now common knowledge that the ranch and farm people obtain most of their agricultural information from newspapers, farm magazines and periodicals, whereas only a very small percentage is obtained from technical papers. It is interesting, however, to note from surveys conducted by various agencies, that a high percentage of the research information carried in the popularly written magazines and papers was obtained from technical bulletins.

The colleges have an unusual opportunity to teach range management facts

through the extension Range Specialist who is also in a position to work through the county agents and 4-H clubs who touch the lives of most of the ranch people. Not only can these individuals stimulate the rancher to apply research results but through exhibits, displays and judging contests emphasize most phases of range management. Especially is this true for the instruction of 4-H club members dealing with plant identification and range condition class determinations. As these young club members assume greater responsibilities, they may become active advocates of proper stocking rates, deferred and rotation grazing, and reseeding practices which lead to successful range management.

Short courses, in the field or on the campus, may be given for periods of two or more weeks depending upon the facilities, type of training and information desired. The summer and fall months are the most desirable periods for field courses because of the advantages offered by pleasant weather and fully grown vegetation for field exercises and the inspection of ranches. First hand information may be obtained from the ranchman relative to the various range management practices that have proven either desirable or undesirable on his ranch. Some of the most effective teaching can be done by the operator on his ranch.

Field day meetings and demonstrations, if not too large, are a highly desirable means of teaching range management facts. It is now evident that more facts can be disseminated and better results obtained with small groups of ranchmen and others interested in range conservation than with large groups. Small groups have fewer of the distractions common to large groups, and more attention can be given to problems that are of particular interest to the individual.