

Range Management Education

II. College Training in Range Management

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Range management, which deals with the nature, production and use of the range forage resource, is obviously a field closely related to animal husbandry, the science of the breeding, production and management of the livestock which use the range resource. This close relationship makes it highly desirable for persons trained in either field to have more than a superficial acquaintance with the other. This applies not only to the "technical expert," but also to the practicing stockman who must be proficient in both areas of knowledge to realize maximum long-term benefits from his business. It is in the light of the interdependence of these two technical fields that I wish to discuss briefly college training in range management, and the relationship with animal husbandry at this level.

A glance at the current range management programs in our colleges reveals two striking facts. The first is their widespread and recent rapid rate of increase, and the second is the variety of locations within the college in which such training is given.

At present a major in range management is offered at 16 institutions, all but one of which are located in the 17 western states. Ten of the schools have developed their range curricula since 1940, and the oldest was established only in 1916. In addition, some 16 other colleges offer one or more courses in range management. Thus undergraduate and, in most cases, graduate instruction are now offered far more widely than was the case 10 or 15 years ago.

In the institutions where range curricula are offered, there is great variety in the location of the range teaching staff. In many cases the range courses are given in the Col-

lege of Forestry, either as a subject matter division or a distinct department. In other institutions the location is in the College of Agriculture as a separate department or as a subject matter division within or jointly with animal husbandry or agronomy. In view of this great variety in the organization of range management college staffs, it might be expected that there would be great diversity in the type of training provided. Actually, this is not the case. The matter of location appears to have no significant effect on the overall results, and relatively little on the course offerings themselves. Maintenance of high quality teaching personnel and freedom from excessive restriction by the department or college in which the range training is given appear to be much more important than the exact departmental location within the institution.

In this connection it should be noted that the important point is the recognition of range management as a distinct scientific discipline, a full-fledged field of wildland management. While the exact scope of range management may be difficult to define to the satisfaction of all (Dyksterhuis, 1955) it is certainly *not* included in the fields of agronomy, animal husbandry or forest management. Full recognition of the status of range management as a profession, with a viewpoint geared to the long-term use of non-arable lands is essential for the development of a sound range curriculum as well as for the morale of the range teaching staff.

A further aid to college range training is the existence of an active research program. To my mind, one of the most significant trends in range management during the past decade has been the marked increase in the scope of

range research in the colleges. Active participation in research adds vitality to teaching and helps to keep both teacher and student abreast of problems and new developments in range. There is no better antidote for the "trade school" approach or for the uninspiring attitude that "everything is known." For instruction at graduate level, of course, an active research program is not just desirable; it is essential.

Two committees of the American Society of Range Management, representing the teaching staffs of several of the major schools have studied curricula in range management. Their recommendations, in final form, appeared in this JOURNAL (Stoddart, 1952). This suggested curriculum, while not specifying amounts of credit, does list minimum requirements in three broad fields and several specific subjects. First are listed the basic courses necessary, including English, speech, mathematics, chemistry and economics. Next are the so-called technical courses, including range management, animal husbandry, botany (especially taxonomy, ecology, and physiology), and soils. The third group, of desirable electives, includes courses in forest management, wildlife management, zoology, geology, land surveying, veterinary science, genetics and agronomy (forage crops especially).

While this program is not intended to be imposed by accreditation or other means, a survey of current range curricula indicates that it is being followed, in essentials, by most schools. Its fundamental features are supported by others concerned with training and with employment in the range management field (Sampson, 1954; Reid, 1954). The greatest diversity occurs, as might be expected, in the "elective" group, where each school tends to emphasize those fields in which its strength and local interests lie. One evidence of essential agreement is seen in the ease with which students with majors in range management can fit into

graduate work in other schools in this group.

One factor working against general adoption of the suggested minimum curriculum is the lack, to date, of an assembled Federal Civil Service examination designed definitely for range-trained men. This is a problem which our society is working on, and one that is important for recognition of range as a profession.

Present college range curricula reflect a definite approach, designed to meet the needs of a young and developing profession. These curricula have changed considerably in the past and undoubtedly will change in the future to keep step with new developments. This is as it should be, for any attempt to develop a rigid and unchanging curriculum would lead only to stagnation.

Current trends in range curricula indicate some increase in emphasis on basic training as against applied courses. This is in part a response to criticisms by employers and former students themselves of deficiencies in speech, writing, elementary mathematics and general understanding of the relation of one's profession to the rest of the world. There is a growing awareness of the need for more basic education, and of the weakness of the "trade school" approach which substitutes skills for understanding. To the writer, this constitutes a healthy trend, and one that could well develop farther. There is no room for the "uneducated technician" in the range profession.

In recognition of the importance of the grazing animal, range management curricula normally include a considerable amount of required course work in the animal sciences. This usually includes a beginning course in animal husbandry, a course in animal nutrition and one or more in animal production. Additional work in animal husbandry and veterinary science is required in several schools and is classed in the recommended electives at others. The current average requirement in animal science (zoology excepted) for

range majors is 9 to 10 semester credits.

While this amount of required course work does not constitute a thorough training in the animal sciences, it should be sufficient to provide a fair understanding of this field. In addition, much is done in range courses and field trips to integrate the study of the animal and plant factors involved in the use of range land.

By comparison, most animal husbandry curricula appear weak in requirements of courses in range, or in the associated basic plant sciences. A check of animal husbandry curricula for schools also having range curricula, shows a few requiring one beginning course in range management and none requiring more than this amount. The others usually list range management among the recommended electives. Associated with this is a low requirement in botany, averaging 4 to 6 semester credits for the schools checked. This amount of botany is usually restricted to beginning courses, and provides little of the ecology, physiology and taxonomy needed as background for many range courses. The result is that most animal husbandry majors lack the basic prerequisites for many of the course offerings in range management.

In fairness, it must be stated that the picture is not as bad as might be inferred from the above. Many animal husbandry majors elect courses in range management, and some take more than the required minimum of botany. In spite of this, the general difference still holds—most range majors get a much better grounding in animal husbandry than animal husbandry majors get in range management.

Integration of the fields of range and animal husbandry is more evident in present-day range management curricula than in the animal sciences. It would seem that strengthening of animal husbandry curricula in plant science and range management courses would lead to a greater appreciation of the range resource and its management by students majoring in this field.

How these added courses are to be included in a crowded undergraduate program poses some problems. Certainly it should not be at the expense of existing basic courses in the sciences and humanities. Perhaps existing requirements in agricultural courses could be lowered to advantage in order to achieve this objective. To some extent it may be considered as one of the handicaps of the 4-year curriculum, a problem common to many professional schools.

Fortunately, college curricula do not represent the only avenue by which this gap between range management and animal husbandry can be bridged. The influence of the instructors can do much to aid in this regard, depending on the extent of their own understanding and appreciation of both fields. Student participation in activities of professional societies such as the American Society of Animal Production and our own Society can be most helpful and should be promoted by these groups. Summer employment of the right kind can also aid the student in becoming better informed of the nature and interdependence of these two fields.

In conclusion, it is apparent that greater effort is needed to develop a closer relationship between range management and animal husbandry at the college training level. While this can be achieved in part by means of mutual course requirements, other means, including professional societies and summer employment, can play a large part. Certainly the needs which lie ahead in range management and range livestock production are sufficient to require the integrated efforts of both groups.

LITERATURE CITED

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