The Place of Range Research in Our Expanding Economy

It is a matter of common observation that we live in a period of rapidly growing demand for livestock products and hence for range and pasture forage. The big problem ahead appears to be that of producing enough meat and allied products to keep up with this demand, and of producing it on about the same amount of land that is now available!

Under the circumstances, it seems pertinent to consider the place of range research in meeting this situation. What sort of guidance has research provided for the range industry in the past and what are the prospects for the future?

Anyone who considers the history of range research can hardly fail to be impressed with the length of time by which the "art" preceded the "science." The use (and misuse) of grazing lands dates back into the early history of mankind, while the scientific approach is so recent that the earliest investigators have in their own lifetime spanned the interval from the pioneering stage to the present. Research on pasture lands in Europe and Great Britain can be traced back a little farther, but even here the field is new. Small wonder that we do not yet have all the answers!

Viewed from the standpoint of its comparative infancy, the past performance of range research is a creditable one. Starting almost from scratch with such essential tools as plant ecology, soil science, and animal nutrition themselves still in an early stage of development, a considerable knowledge of the range resource and its efficient use has been built up. The pioneers in range research developed sound principles of management, including such things as the effects of grazing on plant succession, allowable levels of forage utilization, and proper seasons of use.

Until the middle 1930's, the size of the total group engaged in range research was extremely small in relation to the importance of the resource involved. At
this time the pace was quickened as more personnel and funds became available. The successful development of large-scale range reseeding introduced a whole new approach to range renovation and increased production. More recently, the development of range condition and trend techniques has brought new vitality and usefulness to range survey and management planning. Other recent advances worthy of note include studies of the economics of range management, of the nutrition of livestock on the range and of the ecology and control of undesirable range plants.

In spite of these accomplishments, range research will not lack for tasks in the years ahead. Emphasis on more intensive use of grazing lands will require a better understanding than we now possess. We still know relatively little about the long-term response of many range types to different kinds of grazing use, or about the life history and requirements of many important range plants. Economically feasible means have still to be worked out for reasonably fast renovation of many range types, such as shadscale and desert shrub. The encroachment of undesirable plants still presents a serious threat to forage production in large range areas. These are only a few of the more obvious problems that must be attacked in the near future.

As members of the Range Society, we have a vital interest in the ability of range research to meet the challenge created by the need for higher, sustained production. How then can each of us help to ensure the success of research? To answer this, we must consider what factors are involved. Two of the most important are the quality of research and the effectiveness with which research findings are put to use.

Quality of research is of the utmost importance and depends mainly on quality of personnel. The research worker, in range as elsewhere, needs to be an individual of keen mentality, with the best training obtainable, and an absorbing interest in his work. To attract and to hold the kind of men needed are problems for research institutions these days, in view of the greater financial rewards available in many other occupations. The need for advanced training has increased as the science of range management has advanced. Encouragement of graduate study and some concrete recognition for staff members who undertake such studies can constitute a valuable contribution by research agencies. At the same time the colleges need to strive continually to improve the quality and usefulness of their instruction. An effective type of graduate work, especially for relatively inexperienced men, is that involving research fellowships. Here the student gets valuable training in actual research by taking part in well supervised college research programs, using some of the data so obtained for his thesis.

Even the best of research is of little value unless its findings can be put to use within a reasonable time. That a gap exists between available knowledge and common practice in range management is evident, and has been the subject of several articles in this Journal. We are all concerned with ways in which this gap can be narrowed. Obviously three main groups are involved, namely research workers, the extension services, and the range users or administrators. Each of these groups can help in this vitally important business of getting research results disseminated and put into practice.

The researcher can help by planning and conducting his studies in such a way as to obtain clear-cut results, and then presenting this information in clear, readable and logical form. Study of any representative group of publications will reveal many which fail to
deliver an effective message because (a) the experiment did not produce conclusive results or (b) the author failed to give a clear and complete picture of the information obtained. These faults, rather than excessive use of technical terms seem to be the major factors reducing the effectiveness of the written word, which should be the mainstay of the research worker.

The second group needed is that of the extension men. Actually, they are the key group, for it is their particular job to create a connecting link between research and the land user, and this function has long been recognized and promoted in the fields of cultivated agriculture. In the past, range management has been weak on the extension side; this has been a principal reason for the frequent failure of research to carry through to the range user. The suggestion sometimes made that range research men should do their own extension work reveals a lack of understanding of the function and responsibilities of research as well as an under estimation of the particular training and personality needed for successful extension effort.

The recent appointment in several states of range extension specialists is helping this situation, but there are still states without such workers, and in some states one man constitutes a rather small force. Appointment of county agents with good range training for work in predominantly range counties is still not as common as one might expect. Further development of range extension both state and federal, is a real need.

The third group involved in this matter is that of the range users and administrators themselves. They can help greatly by maintaining a receptive attitude and a willingness to discard old practices and adopt new ones when the evidence indicates that this is desirable. By showing an interest in using proven results and sympathy for the difficulties and limitations of research, range users can do a great deal to encourage and stimulate the range research worker.

What we have said here might be boiled down to a statement that the range industry consists of mutually dependent groups, all of whom are seeking the common goal of the best possible management. With a reasonable amount of mutual understanding and cooperation, all can help to ensure the ability of range research to meet any task which lies ahead.—E. W. Tisdale, Head, Range Management, School of Forestry, University of Idaho, Moscow, Idaho.