Technical Cooperation in Small Grain Improvement
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The classical research which produced Marquis wheat was largely the work of one man—Dr. C. E. Saunders. From the unselected mass of segregating material left by his predecessor, who had made the cross, Saunders selected lines with desirable plant characters and later chewed some of the grain of each line to determine which had the best quality of gluten. Thus, we credit Marquis to the work of one individual—an agronomist or plant breeder who also considered disease and quality problems. There were, of course, pathologists and cereal chemists in those days, but they were engaged in other than breeding problems. Many other examples of the research conducted 25 to 40 years ago could be cited to illustrate the general tendency for independent work in very closely related fields.

With increased support for research and a great increase in the mass of accumulated information, research workers have become more and more narrowly specialized. At the same time, the problems to be solved have become more complex and the requirements to be met more exacting. Instead of one cerealist such as Doctor Saunders to plan and conduct a breeding program on a major crop, it is now necessary, or at least very desirable, for several specialists and often for several research agencies to cooperate in order to carry the program out most efficiently. For example, some 30 plant breeders, agronomists, pathologists, entomologists, and cereal chemists representing five state experiment stations and three federal bureaus cooperated in the development of the new hard red winter wheat varieties, Pawnee, Comanche, and Wichita. These varieties, each approved and released by three or more state experiment stations, are increasing very rapidly in the region.

The coordinated programs for the improvement of the small grains, wheat, oats, barley, and rice, are examples of the integration of the knowledge, skill, and resources of technicians in the fields of plant breeding, agronomy, pathology, cytogenetics, entomology, cereal chemistry, and physiology from state, federal, and private agencies. It should be helpful to consider some of the problems encountered in these programs and some of the procedures that have proved useful in promoting efficiency and harmony among the workers and the agencies that they represent. It should not be implied that cooperation is limited to the small grain programs nor that cooperation on these programs is perfect, but they do present an opportunity to discuss some of the problems and some of the advantages as well as the difficulties encountered in carrying out coordinated programs.

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