**Notes**

**THE STATUS OF CRESTED WHEATGRASS**

CRESTED wheatgrass, which has been used extensively for reseeding western range lands, for many years has been considered to be one species, *Agropyron cristatum* (L.) Gaertn. In the early part of the century, seed was introduced of both this species and *Agropyron desertorum* (Fisch.) Schult., and for a time these were carried as separate species. Later on, however, no distinction was made, and all material came to be recognized as *A. cristatum*. Two "varieties" of crested wheatgrass are now grown commercially, "Standard" and "Fairway".

A great diversity of forms has been noted within the Standard variety for many years. More recently, in a study of plants grown at some of the experiment stations of the U. S. Department of Agriculture, two very distinct types, each rather variable, could be distinguished. By far the most common type is one with narrow spikes and appressed spikelets. The other has broad spikes with the spikelets divergent at right angles to the axis. Correlated with these more obvious differences are distinct spikelet characters. It is obvious, therefore, that two species are included in the Standard crested wheatgrass, *A. cristatum*, with horizontally spreading spikelets, and *A. desertorum* with appressed spikelets. These two species may be keyed as follows:

Glumes with broad hyaline margins, abruptly narrowed into the awn, not at all contorted; spikelets relatively broad, ascending or appressed, not crowded on the axis; blades glabrous or scabrous on the upper surface. *A. desertorum*

Glumes with narrow margins, gradually tapering into the awn, more or less contorted, at least in drying; spikelets narrow, horizontally spreading, crowded on the axis; blades usually conspicuously pilose on the upper surface. *A. cristatum*

Both of these species are variable, especially in the hairiness of the spikelets. Three species have been described in the *A. cristatum* complex based primarily on this character. There is a difference of opinion in the literature, however, as to whether true *A. cristatum* is the glabrous or hairy type. There is nothing in the original description to indicate which is correct, and this can be determined only by an examination of the original material. It is possible that more than one species is involved, but for the present it is better to consider the complex as one species. The Fairway variety remains more uniform than other elements in the complex, both in growth habit and spikelet characters, which may be an indication that it should be recognized as a species distinct from *A. cristatum*. For the present, however, all Fairway plants are being identified as *A. cristatum*.

Cytological investigations with crested wheatgrass have been extremely limited. Investigators have reported a 2n chromosome number of 28 for plants of the Standard variety with an occasional aneuploid plant. The taxonomic type of the 28 chromosome plants was not indicated. All chromosome counts that have been reported for Fairway type plants have given a 2n number of 14. Several unsuccessful attempts have been made to hybridize the 28 chromosome Standard type with the 14 chromosome Fairway type. This lack of hybridization and difference in chromosome numbers, in addition to the variation in growth type and wide taxonomic difference between Fairway and Standard, indicates the need for a separate classification of species.

It is evident from recent studies that Standard crested wheatgrass, which is of such great importance for seeding in the western states, is primarily *A. desertorum*. The common name "crested wheatgrass" which was taken from *A. cristatum* is, therefore, somewhat misleading. It is so universally used, however, that it will be desirable, at least for the present, to continue its use for both pure *A. desertorum* and for mixtures of *A. cristatum* and *A. desertorum*. Fairway crested wheatgrass which is more extensively planted in western Canada and which at present is all being classified as *A. cristatum* should retain its common name. — JASON R. SWALLEN, Curator, Division of Grasses, United States National Museum, and GEORGE A. ROGLER, Agronomist, Division of Forage Crops and Diseases, U. S. Dept. of Agriculture.

**"MAYAGUEZ HAIRLESS" — A MUTANT OF TROPICAL KUDZU**

TROPICAL kudzu (*Pueraria phaseoloides* (Sieb. and Zucc.) Benth.), which was introduced into Puerto Rico less than 10 years ago, is today probably the most useful and widely cultivated forage legume on the Island. It is a vigorous, running perennial that grows and produces well on badly eroded as well as on the more fertile soils of Puerto Rico. It seeds abundantly and may be grown successfully alone or in combination with a number of forage grasses. This species is probably a native of Malaya and has been grown as a ground cover for a long time in Java, Sumatra, Malaya, and neighboring countries. Since 1929 it has been used widely in Liberia as a cover crop among young rubber trees. The Firestone Plantations Company, alone, has recently reported planting over 30,000 acres in this area.

In the fall of 1947, while walking through a field planting of tropical kudzu, the author observed some

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1 Contribution of the Federal Experiment Station in Puerto Rico, under a Research and Marketing Act project in cooperation with the Experiment Station of the University of Puerto Rico, BRISAE, and SCS.
