

THE NOMENCLATURE OF THE CRESTED WHEATGRASS COMPLEX

A. A. BEETLE

Professor of Range Management,
University of Wyoming, Laramie,
Wyoming

The recent appearance of the name *Agropyron desertorum* (Fisch.) Schult. in range management literature, the continued use of *A. cristatum* (L.) Gaertn., and the employment of the common name "crested wheatgrass" for both has led to a confusion in the literature which needs clarification. Additionally, the closely related species of the *A. michnoi* Roshev. complex as well as *A. sibiricum* (Willd.) Beauv., *A. pachyrrhizum* Camus, *A. mongolicum* Keng, *A. pectiniforme*, R. and S., *A. fragile* (Roth) Nevski, *A. imbricatus* R. and S., and others are poorly defined. The true answers to such nomenclatorial puzzles usually lie in the homeland of the species involved, in this case largely behind the "iron curtain." Pending more detailed field studies in regions where these species are native, Americans would seem well advised to accept the consensus of the best Old World analyses available.

There seems to be general agreement that this group was first introduced and propagated as a mixed germplasm involving both *A. desertorum* and *A. cristatum*. Until the publication of the second edition of Hitchcock's Manual (1952), all of this material was referred to as *Agropyron cristatum*. However, when Swallen revised the *Hordeae* for the second edition he recognized three species: (1) *A. cristatum* (crested wheatgrass), (2) *A. desertorum* (no common name), (3) *A. sibiricum* (no common name). In 1953 Weintraub recognized not only these three but additionally *A. michnoi* and recommended common names as follows:

A. cristatum—crested wheatgrass (Commercial strain: Fairway)

A. desertorum—desert wheatgrass (Commercial strain: Standard)

A. michnoi—transbaikal wheatgrass

A. sibiricum—siberian wheatgrass

This should have answered most of the problems of nomenclature for the principal commercial species, but in 1954 Rogler injected unnecessary confusion by publishing an article entitled "Nordan Crested Wheatgrass" and assigning the technical name *Agropyron desertorum* to it. Apparently all of the present confusion stems from this and subsequent publications (Rogler, 1960) concerning Nordan, which should be referred to as Nordan desert wheatgrass as Miss Weintraub (1953) had already pointed out. All her common names have been derived from Old World literature. The attempt of Hanson (1959) to change these designations is a disservice to orderly recorded data both in the United States and in foreign countries. Hanson has, however, listed the commercial strains under the proper scientific names as follows:

A. cristatum: Fairway, A-1770, Nebraska 3576, Turkish.

A. desertorum: Mandan 2194B, Mandan 2359, Nebraska 10, Nordan, South 15, Summit (from Canada), and Utah 42-1.

It is the conclusion of this author after reviewing such literature as has been available to him that three species groups can be recognized readily and should be keyed as follows:

Plants with long-creeping, branched rhizomes

A. michnoi (related species *A. tanaiticum*, *A. dasyanthum* and *A. cimmericum*).

Plants tufted, sometimes with very short-creeping rhizomes

Spikelets horizontally spreading, crowded on the axis of the broad spike; glumes more or

less contorted, without broad, hyaline margins, tapered to awn, 2 - 5 mm. long.

A. cristatum (related species *A. imbricatum*).

Spikelets narrowly ascending or appressed, forming a narrow spike; glumes not at all contorted, broad, abruptly narrowed to the awn, 2 - 3 mm. long.

A. desertorum (related species *A. sibiricum*, *A. mongolicum*, *A. fragile*).

Further subdivision of this key would involve mostly hairiness, leafiness, length of palea, or differences in awns. According to Melder in Norlindh (1949): "*A. cristatum*, as well as the species centering around it, have many characters which vary excessively, often independently of each other, sometimes running from one into another. Thus, this complex is very confused and in need of a critical revision based on comprehensive material and cultivation experiments."

LITERATURE CITED

- BEETLE, A. A. 1952. The wheatgrasses of Wyoming. Wyo. Agric. Expt. Sta. Bul. 312.1-26.
- BEETLE, A. A. 1955. The wheatgrasses of Wyoming. Wyo. Agric. Expt. Sta. Bul. 336.1-24.
- HANSON, A. A. 1959. Grass varieties in the United States. U.S.D.A., A.R.S. Agric. Handbook in the United States.
- HITCHCOCK, A. S., REV. BY A. CHASE. HORDEAE BY SWALLEN. 1951. Manual of the Grasses of U.S. U.S.D.A. Misc. Publ. 200.1-1051.
- MELDERIS, A. IN NORLINDH, T. 1949. Flora of the Mongolian Steppe and desert areas. Reports from Sci. Exped. to the N. W. provinces in China. Publ. 31.1-55.
- NEVSKI, S. A. 1934. *Hordeae*. Flora, U.S.S.R. 2.590-728.
- ROGLER, G. A. 1954. Nordan crested wheatgrass. N. Dak. Agric. Expt. Sta. Reprint 375 from Bimonthly Bul. 16(4).150-152.
- ROGLER, G. A. 1960. Mowing crested wheatgrass in the western U.S. U.S.D.A. Leaflet 469.1-8.
- WEINTRAUB, F. C. 1953. Grasses introduced into the United States U.S.D.A. Forest Service. Agric. Handbook 58.1-79.