Moravian is a two-rowed, rough-awned, spring variety with short, plump, white-aleuroned kernels, and long-haired rachillas. A detailed description has been published.  

'MUNISING' (Hordeum distichum L. emend. Lam.), CI 6009, is one of several selections from 'Blackbull' (CI 878) made in 1920 by F. A. Coffman of the U. S. Department of Agriculture at the Dry Land Field Station, Akron, Colorado. These selections were tested and reselected by D. W. Robertson and J. J. Curtis from 1921 to 1944 under dryland conditions at Akron, in cooperation with the Colorado Agricultural Experiment Station. The variety was released in 1944, due to its superiority in yield.  

Munsing is a two-rowed, semismooth-awned spring barley. Munsing is earlier maturing than Moravian, has short, weak straw, and tends to lodge under conditions of high yields. Under dryland conditions the spike may not emerge from the boot. The rachilla hairs are long. A detailed description has been published.  

Munsing is grown to a limited extent in eastern Colorado and southeastern Idaho. Munsing continues to rank near the top in yield in long-time tests in the Great Plains Barley Nursery.  

'OTIS' (Hordeum distichum L. emend. Lam.) 7557, is a selection from the cross Munsing (CI 6009) X 'Spartan' (CI 5027). The cross was made in 1939 by D. W. Robertson at the Colorado Agricultural Experiment Station. Selections from this cross were tested for several years at the U. S. Dry Land Field Station, Akron, Colo. Six of the best lines of similar agronomic types were compounded, and released to growers as the variety Otis in 1951. Otis is a two-rowed, smooth-awned, spring barley with short straw. The kernels of Otis are white-aleuroned with long-haired rachillas. Otis has a tendency for the heads to remain in the boot, but has a high bushel weight and gives excellent yields under dryland conditions. A detailed description has been published.  

Otis is grown extensively in eastern Colorado, western Nebraska, and western Kansas and, to a lesser extent, in Wyoming.  

3.Registered under a memorandum of understanding between the Crops Research Division, ARS, USDA, and the American Society of Agronomy. Received Nov. 27, 1964.  
4. Research Agronomist, Crops Research Division, ARS, USDA, and Associate in Agronomy, University of California at Davis.  

ATLAS 57, BLANCO MARIOUT, AND GRANDE BARLEYS  
(Reg. Nos. 74, 75, and 76)  
C. A. Suneson  

'ATLAS 57' barley (Hordeum vulgare L. emend. Lam.), CI 10078, is a cumulative product of backcross breeding programs extending over about 25 years, dealing with transfer of CI 10078, is a cumulative product of backcross breeding programs extending over about 25 years, dealing with transfer of  

 THERE IS NO DOUBT ABOUT THE ECONOMIC VALUE OF THE FOUR CHANGED attributes of Atlas 57 as compared with 'Atlas', but over the 25-year period other factors (particularly loss of export and domestic brewing markets) have caused the Atlas types, once dominant, to occupy only 8% of the California barley acreage at the present time. It is also noteworthy that in the total backcrossing program, involving 1 or more loci on all 7 chromosomes, at least 3 derivations—hooded, 2-row, and naked—produced less than Atlas and have not been released for commercial use.  

The premise for developing 'BLANCO MARIOUT' (Hordeum vulgare L. emend. Lam.), CI 10852, held that the dark blue aleurone color of 'California Mariout' (CI 1155) caused it to be discounted frequently in past, and restricted its use in feeds and food. Foundation seed of a composite of 192 F1 lines, typed for white aleurone color under both winter and summer sowing, from the pedigree male sterile 'Club Mariout' X California Mariout was named Blanco Mariout and released in 1960. The California Agricultural Experiment Station and the Agricultural Research Service in the U. S. Department of Agriculture cooperated in its development.  

Blanco Mariout is a six-rowed, rough awned, spring barley. The white (blanco) aleurone and linked mildew resistance, a somewhat larger seed, and less “skinning” of the kernel in threshing, distinguish Blanco Mariout from California Mariout. About one third of the spikes of Blanco Mariout are waxy, in contrast to the non-waxy spikes of California Mariout. A tentative description has been published.  

This variety is primarily a replacement for California Mariout which is presently widely grown under irrigation in California and Arizona. Its quick acceptance was shown by production on 70,000 acres in 1962 from pre-release test plot-derived seed. The California Experiment Station will maintain foundation seed.  

'GRANDE' (Hordeum vulgare L. emend. Lam.), CI 11758 (CAS 1358) is the first non-backcrossed (new) barley approved for release in California in 21 years. This release came more from grower demand for certified seed stocks (based on their experience with "test seed" since 1952) than an experiment station unanimity in interpreting 16 years of test data. Grande is a 1946 selection from the F6 generation of Composite Cross II (CI 5461). The original composite cross involving 28 parents was developed by H. V. Harlan. The terminal breeder's seed of Grande sought to retain some of the mutant and introgressed variation inherent from its long breeding and testing history via a composite of 106 lines from a sample of 120 grown in 1960. Grande is a six-rowed, rough awned, feed type, spring barley, and has a prostrate growth habit during the winter, which suits it to heavy or wet soils. It compares very favorably with other California varieties in its resistance or tolerance to leaf, stem, and scald. Grande is distinguished from other California varieties. A history and description has been published.  

A need for restricted winter growth, and adequate natural rainfall to support the productiveness of a relatively late variety like Grande will dictate its use principally in northern California. Management can be used to obtain greater average production and seed weights (in the range 55 to 70 mg.) from Grande than from other available varieties. The yield advantage of Grande in California tests has ranged from an average of 9% over 'Atlas' to 21% over 'Winter Tennesse', and it has been equal in yield to 'Ariva'. Foundation seed will be maintained by the California Experiment Station which developed Grande in cooperation with the Agricultural Research Service of the U. S. Department of Agriculture.  