

production and for certain pastries. It is at first bearded, but loses its beards at harvest time. It seems adapted to a soil not too rich in humus, with considerable clay and some sand, and a rather warm, dry climate. Should be tried in this country in the western portions of Texas, Oklahoma, Kansas, and Nebraska, in east Colorado, Arizona, and California, and perhaps in some of the Southern States. It is considerably resistant to orange-leaf rust. Amount obtained, 6 bushels.

2958. TRITICUM VULGARE.

Wheat.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

Sandomir Winter wheat. From the government of Radom, in Poland. Mean annual rainfall, 27 inches; for the growing season (May to September, inclusive), 15.5 inches. Mean annual temperature, about 44.6°. Mean harvest time August 6. A rather soft, plump, white wheat, quite susceptible to changes of soil and climate. Best grades of the variety to be obtained only in Poland, near the town of Sandomir. Has already been tried in the United States with some success. Might be of especial value for cracker making and for certain breakfast foods. Should be tried on the Columbia plains, in northern California, and in New York. Amount obtained, 3 bushels.

2959. TRITICUM DICOCCUM.

Emmer.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

Ufa Spring emmer. From the government of Ufa, about 8 miles from the city of the same name. Mean annual rainfall, 16.6 inches; for the growing season (May to September, inclusive), 10.9 inches. Mean annual temperature, 37.5°. For January, 9.5°; for July, 69.4°. Soil a very rich, deep, black loam, the famous "black earth" of Russia. Should be sown quite early in the spring, drilled in at the rate of 2 to 2½ bushels per acre. Period of growth about the same as for oats. This very hardy cereal is little known in this country, but is much valued in Russia and Germany. It is used both for stock feed, similarly to oats, and also as human food, in the form of gruel. Is very resistant to cold and often to drought also, but may suffer some from rust in warm wet seasons. It is a variety of *Triticum dicoccum*, correctly called emmer, but also known as Russian spelt. The Russian name is "polba." Is worthy of thorough trial. Admirably adapted for trial in all the extreme northern States from Minnesota to Washington, and in Alaska; also in arid districts. Amount obtained, 6 bushels.

2960. PANICUM MILIACEUM.

Millet.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

Red Orenburg Broom-corn millet. From the Turgai territory of the Kirghiz Steppes, about 40 miles southwest of Orenburg. Mean annual rainfall, about 15 inches or less; for the growing season (May to September, inclusive), about 8 inches. Mean annual temperature, about 37.9°. Summers short but very hot. Soil differs from the usual "black earth" in being a rather stronger clay with a considerable mixture of sand, making it also grayer in color—the same sort of soil to which durum wheats are so well adapted. Should be sown probably about May 15 or soon after, though in Russia it is sown about the 25th or later. Period of growth 110 to 115 days. A red-seeded, paniced millet (*Panicum miliaceum sanguineum*), quite different from the ordinary forage millets of our prairie States. Grown chiefly for the seed, which is not only excellent for stock feeding, but in Russia is most widely used for human food in the form of grits or gruel and with soups. Well adapted for trial in the Dakotas, Nebraska, east Colorado, Kansas, and similar cold and arid districts. Amount obtained, 3 bushels.

2961. SECALE CEREALE.

Rye.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

Sisolsk Winter rye. From Ust-Sisolsk, in Vologda government, about 61½ north latitude. Mean annual temperature, 31.7°; for the growing season (May to September, inclusive), 56.5°. Normal rainfall not known, but during one year it was 18 inches. Seed obtained from Mr. A. E. Sukhanof, free of charge. Rotation of crops where seed was grown as follows: (1) Fallow without manure; (2) winter rye; (3) spring barley and oats with manure. Variety grown in that region for many years and therefore thoroughly adapted to extreme cold, and rather drought-resistant. Should be tried in Alaska, and perhaps also in the very coldest districts of the United States proper. Amount obtained, ⅔ bushel.