U. S. DEPARTMENT OF AGRICULTURE
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The CLUB WHEATS

THE CLUB WHEATS differ from other classes of wheat in having short, compact heads and small kernels. They are grown almost exclusively in the region west of the Rocky Mountains and are most important in Washington, California, and Oregon. They are best adapted to the subhumid and irrigated sections within these States. About 1,000,000 acres of club wheat are grown annually in the United States, which is less than 2 per cent of the total wheat acreage.

Owing to its soft texture and low protein content club wheat is not well adapted for bread making, but is used in the making of pastry flour or is exported.

There are 14 distinct varieties of club wheat commercially grown. They have either white or red kernels and are grown from both fall and spring sowing. The older varieties are of Chilean origin. Five of the newer varieties are of hybrid origin, resulting from crosses between Little Club and common wheats.

Hybrid 128 is the leading variety of club wheat. It is a white-kerneled winter wheat and is best adapted to the subhumid sections of eastern Washington, Oregon, and northern Idaho. It is very productive, but is of low milling value and also is very susceptible to smut.

Jenkin is the best yielding variety in the humid sections and under irrigation. It is a white-kerneled spring wheat, but is grown from both fall and spring sowing in eastern Washington and northern Idaho.

Hybrid 123 is the most important and productive red-kerneled variety of club wheat and can be grown from both fall and spring sowing. Coppei is a productive red-kerneled variety, grown principally from fall sowing.

Hybrid 143 is a white-kerneled variety that is grown from both fall and spring sowing. Little Club, Big Club, Redchaff, and several other white-kerneled spring wheats were formerly important, but are now being replaced by more productive varieties.

Washington, D. C. January, 1923

THE CLUB WHEATS.[1]

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CONTENTS.

WHAT ARE CLUB WHEATS?

THE CLUB WHEATS have short, thick, and very compact heads and small kernels. Because of these distinctive characters, they usually are placed in a different division or so-called subspecies (*Triticum sativum compactum*) from the common bread wheats (*Triticum sativum vulgare*). Over a million acres, or about 1.7 per cent of the wheat acreage of the United States, are devoted annually to the production of club wheat. There are 14 distinct varieties commercially grown. They have either red or white kernels and are grown from both spring and fall sowing. The grain of most of the varieties is soft and inferior to other classes of American wheats for milling and bread making. Under the Official Grain Standards of the United States the white-kerneled varieties are graded in the subclass (*c*) Western White of the Class (V) White Wheat, and the red-kerneled varieties in the subclass (*b*) Western Red of the Class (IV) Soft Red Winter Wheat.

WHERE GROWN.

The States leading in the production of club wheat are Washington, California, Oregon, and Idaho. A smaller acreage is grown also in Utah and New Mexico. Only limited quantities are grown east of the Rocky Mountains, and none, as far as known, east of the western Great Plains area. In these Western States the club wheats are grown principally in the subhumid and irrigated sections. The distribution of club wheat in the United States in 1919 is shown on the map (Fig. 1).

[1] The information given in this bulletin is based upon (1) varietal experiments conducted by the Office of Cereal Investigations of the Bureau of Plant Industry, United States Department of Agriculture, and the State agricultural experiment stations, either independently or in cooperation; (2) classification studies of all American wheat varieties; (3) a survey of the wheat varieties of the United States, in cooperation with the then Bureau of Crop Estimates, based upon about 19,000 returns from 70,000 questionnaires sent to crop correspondents; (4) several years of personal observations by the writers in the wheat fields in the States where these varieties are grown; and (5) milling and baking experiments conducted by the Milling-Investigations Section of the Bureau of Agricultural Economics in cooperation with the Office of Cereal Investigations.

AREAS TO WHICH ADAPTED.

The club wheats are best adapted to the intermountain sections of the Pacific Coast States where they are now largely grown. This area is characterized by rather mild, rainy winters and hot, dry summers. Club wheat can not be grown with success in regions where rainy or humid weather prevails at ripening time, or where stem rust is of common occurrence, or as winter wheat in sections having severe winters. Club wheats therefore should not be grown in the Great Plains area or in the eastern United States.

In the intermountain sections of the Pacific States club wheats are well adapted, partly because the chaff and heads are firm or tough and shattering seldom occurs in spite of the hot, dry, windy weather. For this reason the club wheats are well adapted to harvesting with the header or combined harvester, where the wheat often is allowed to stand for several weeks after it is ripe before being harvested. The stems of the club wheat also are strong and stiff, so the wheat rarely lodges or breaks over. The meshes (spikelets) of the short, thick heads contain from three to eight kernels and are closely crowded. Owing to this compactness many of the kernels are lopsided or pinched. They also are usually soft and starchy, partly owing to yellow berry. The club wheats under favorable conditions are of medium height or tall, although under dry conditions the plants may be short. In general, these wheats are nearly as tall as and some are taller than the common wheats.

FIG. 1.—Outline map of the United States, showing where club wheat was grown in 1919. Each dot represents 1,000 acres or fraction thereof per county. Estimated area, 1,133,700 acres.

Not all so-called club wheats are true club varieties. Varieties of common wheat having clavate, or club-shaped, heads (widest at the tip) are sometimes, but wrongly, called club wheats. The heads of most varieties of true club wheat are not club shaped, but are more or less oblong, that is, as wide at the bottom as at the top.

The Surprise variety (known also as California Club, California Gem, Golden Gate Club, Imperial Club, Silver Club, or Smith Club) and the Dicklow are white-kerneled common wheats having a clavate, or club-shaped, head, but should not be confused with the true club wheats. Red Russian, sometimes known as Australian Club, also is a common wheat of the soft red winter class. The wheat known in the Southeastern States as Club, Club Head, Double Head, Stub Head, and by numerous other names is not a club wheat, but is the Fultzo-Mediterranean, a variety of soft red winter common wheat. The Sonora variety was formerly classed as White Club in the Federal Grain Standards because in kernel quality it is similar to the club varieties, but it is a common wheat and very different from the club wheats in many characters.

Owing to the soft texture of the kernels of most of the club varieties and the fact that club wheat is mostly grown in sections producing wheat of low protein content, the grain of this class of wheat is not well suited for the production of bread-making flour. Much of the club wheat grown in the United States is exported, and the remainder is used largely in the making of pastry flour and blending with flour of other classes of wheat for bread making.

VARIETIES.

The older varieties of club wheat grown in the United States are of Chilean origin. They were imported from Chile into California and Oregon during the period from 1850 to 1870, when these States were being settled and developed. Several cargoes of club wheat were received and used for seed in both of the above States during this period.

From these early varieties have come several new varieties of club wheat. Some have been developed from mixtures found in fields. In the regions where club wheats are grown, natural cross-fertilization in wheat is of frequent occurrence. It is quite probable that some of the new types of club wheat have arisen from natural crossing with varieties of common wheat.

No less than five varieties of club wheat now grown commercially were developed by artificial hybridization at the Washington Agricultural Experiment Station. These wheats are the result of crosses made by Prof. W. J. Spillman between the Little Club variety of club wheat and different varieties of common wheat. Because they retain the characteristics of club wheat they are still classed as such.

For convenience of discussion the club wheats are divided into seven sections, on the basis of head and kernel characters.

DISTINGUISHING CHARACTERS AND VARIETIES.

SECTION 1.—Heads beardless; chaff glabrous (not velvety), white or yellow; kernels white.
Little Club, Big Club, Hybrid 128, Hybrid 143, Hybrid 63.

SECTION 2.—Heads beardless; chaff glabrous (not velvety), white or yellow; kernels red.
Hybrid 123, Hybrid 108.

SECTION 3.—Heads beardless; chaff glabrous (not velvety), brown or red; kernels white.
Jenkin, Redchaff, Bluechaff.

SECTION 4.—Heads beardless; chaff glabrous (not velvety), brown or red; kernels red.
Dale.

SECTION 5.—Heads beardless; chaff velvety, white or yellow; kernels red.
Coppei.

SECTION 6.—Heads beardless; chaff velvety, brown or red; kernels white.
Wilbur.

SECTION 7.—Heads bearded; chaff glabrous (not velvety), brown or red; kernels red.
Mayview.

SECTION 1.—HEADS BEARDLESS; CHAFF GLABROUS (NOT VELVETY), WHITE OR YELLOW; KERNELS WHITE.

The most important club varieties are included in this section. Of the five varieties four are spring wheats and one is a winter wheat.

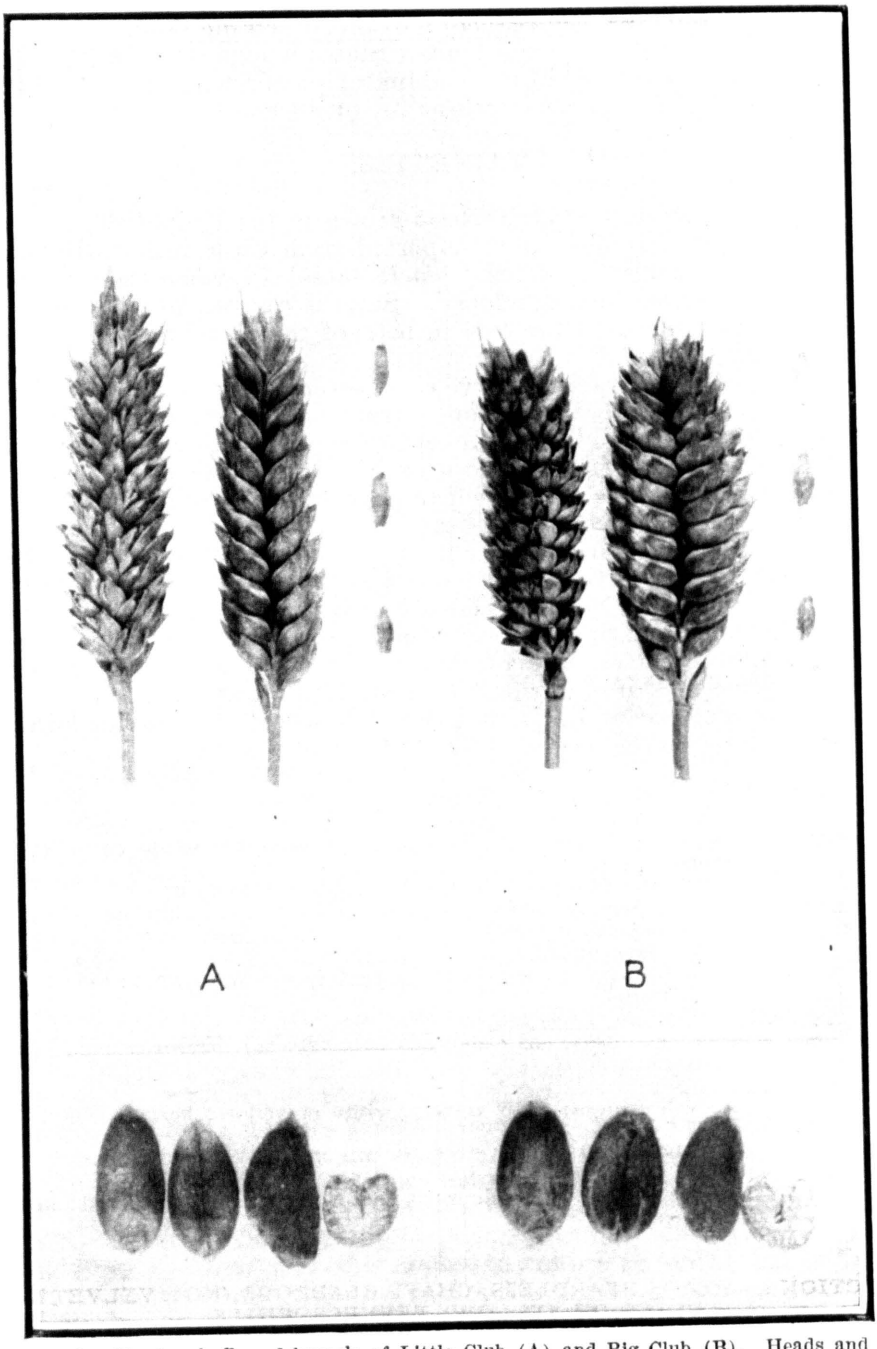

FIG. 2.—Heads, chaff, and kernels of Little Club (A) and Big Club (B). Heads and chaff, natural size; kernels, magnified 3 diameters.

LITTLE CLUB.

The Little Club (or Small Club) is a spring wheat, but it is grown often from fall sowing. It has longer and more slender heads and kernels than the other club varieties. The heads of Little Club usually are 2 to 2½ inches long and are oblong in shape (Fig. 2, *A*). The plants are tall, erect, and late.

The origin of Little Club wheat is not definitely known, but it is believed to have been introduced from Chile. It probably was one of the first varieties of wheat grown in the Columbia Basin section of Oregon and also probably was grown in California at an early date. It was reported grown in Yolo County, Calif., as early as 1878. Little Club was formerly the leading variety of wheat in eastern Oregon and Washington, but in recent years it has been largely replaced by more productive varieties.

The Little Club wheat is grown in all States west of the Rocky Mountains, but principally in the Sacramento Valley of California, in northeastern Oregon, eastern Washington, and western Idaho. It was estimated that more than 100,000 acres of Little Club wheat were grown in 1919. The distribution of Little Club is shown on the map (Fig. 3).

Little Club gives good yields under favorable conditions, but it is not well suited to districts of very limited rainfall. It is well adapted for growing under irrigation. Because of its tall straight straw this variety is sometimes sown around the border or right-of-way of fields of bearded wheat, to be cut for hay. The borders are removed to permit the passage of large harvesting machines. In general, the Little Club wheat could be advantageously replaced by other varieties of club or common wheats. Several varieties of common white wheat will outyield Little Club when fall sown in the Sacramento Valley of California and also when spring sown in Oregon and Washington. In the latter States some true winter wheats usually give higher yields than Little Club from fall sowing. Among these is Hybrid 128, a club wheat.

Like most club varieties, Little Club is of poor milling and bread-making quality as compared with other classes of wheat. It is equal or superior, however, to other varieties of club wheat in milling and baking value.

BIG CLUB.

The Big Club variety (known also as Big Four, Chile Club, Crookneck Club, Montezuma Club, and Salt Lake Club) differs from Little Club in having wider, shorter, and thicker heads and wider and rounded kernels (Fig. 2, *B*). Its chief distinction is the presence of curves and crooks in the stem immediately below the head. The variety is often called Crookneck Club because of this character. In spite of the curves in the stems, the heads of Big Club wheat are erect or nearly so.

Big Club is reported to have been introduced into Oregon from Chile about 1870. It was grown in California as early as 1866, however. The variety was first known as Chile Club and Oregon Club. It was formerly widely grown in the Pacific Coast States, but is now of only minor importance.

Big Club is still grown in scattered areas in California, Idaho, Montana, Oregon, Utah, and Washington. This distribution is shown on the map (Fig. 4).

The yields of Big Club usually have been less than those of Little Club and most other varieties in practically all sections where it is grown. This wheat probably should be dropped from cultivation. Very little is known concerning the milling and baking value of Big Club except that it is not generally considered any better than other varieties of club wheat.

FIG. 3.—Outline map of a portion of the western United States, showing the distribution of Little Club wheat in 1919. Each dot represents 1,000 acres or fraction thereof per county. Estimated area, 106,100 acres.

HYBRID 128.

The Hybrid 128 (Washington Hybrid No. 128) variety is a winter wheat and can not be successfully grown for spring sowing. The heads of this variety can scarcely be distinguished from those of the Big Club (Fig. 5, *A*). The kernels of the two varieties also are quite similar, except that those of Hybrid 128 are more pinched and irregular in shape. The plants of Hybrid 128 are of medium height. This variety is very susceptible to bunt or stinking smut and often is considerably injured by this disease.

Hybrid 128 was originated at the Washington Agricultural Experiment Station from a cross between Jones Fife (a soft red winter wheat) and Little Club. The cross was made in 1899 by Prof. W. J. Spillman. After selecting and testing for eight years, this new winter club wheat was distributed to farmers by the Washington station. It has since become the most important variety of club wheat.

FIG. 4.—Outline map of a portion of the United States, showing the distribution of Big Club wheat in 1919. Each dot represents 1,000 acres or fraction thereof per county. Estimated area 21,700 acres.

Hybrid 128 is grown almost entirely in the southeastern portion of Washington and adjoining districts in Idaho and Oregon. It is of most importance in Walla Walla and Whitman Counties, Wash., and in Umatilla County, Oreg. It was estimated that more than 250,000 acres of this variety were grown in 1919, and since that time its acreage has considerably increased. The distribution of Hybrid 128 in 1919 is shown on the map (Fig. 6).

Hybrid 128 is perhaps the highest yielding variety of wheat in the section where it is now extensively grown. Its production as a winter wheat is limited only by its injury from smut and its low market value. In spite of these handicaps it is a very profitable variety. Outside of the sections of Washington, Idaho, and Oregon where it is now grown, and a short distance beyond these sections, Hybrid 128 is not especially promising. Until it can be replaced with an equally productive variety of higher quality

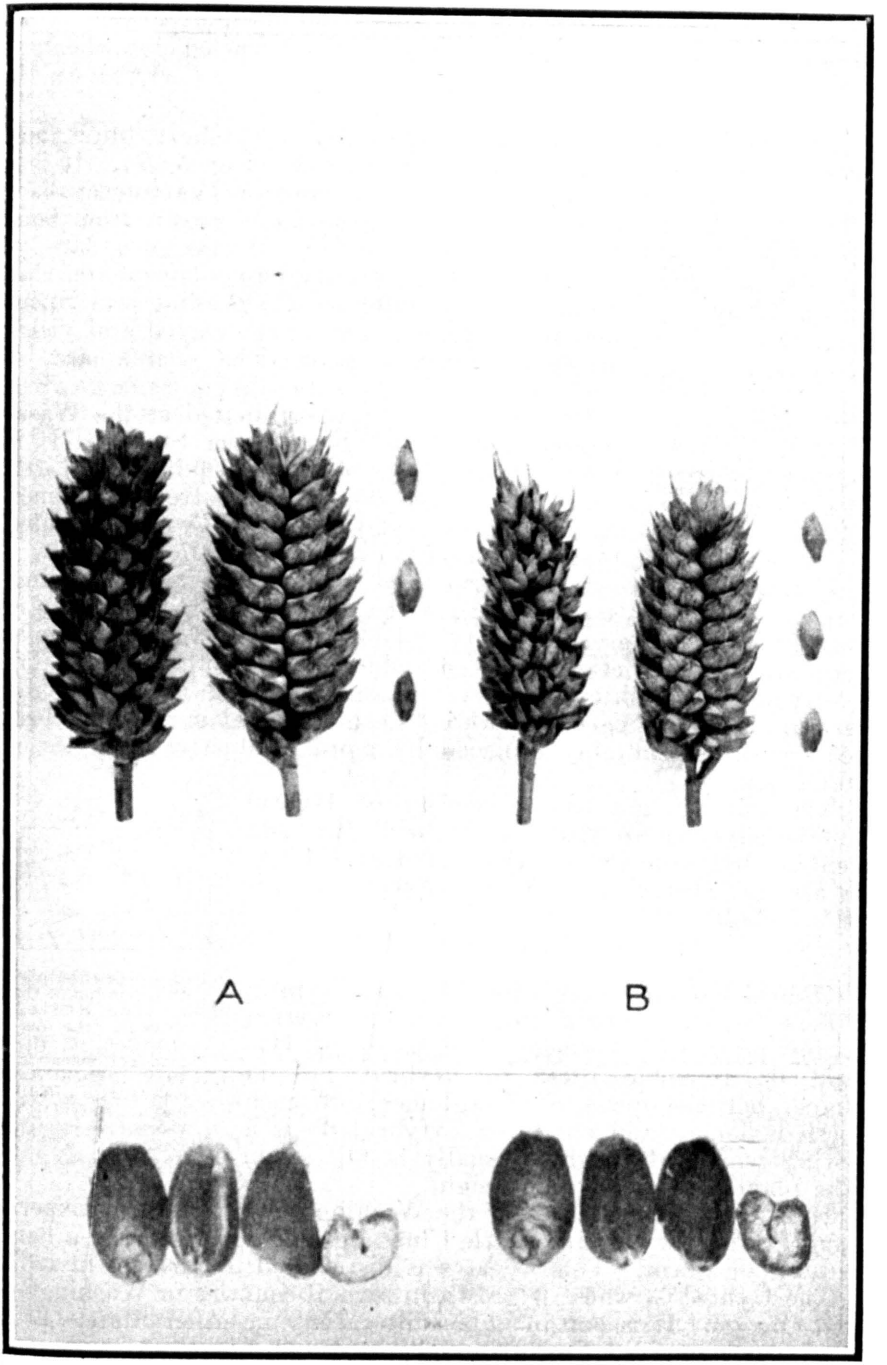

FIG. 5.—Heads, chaff, and kernels of Hybrid 128 (A) and Hybrid 143 (B). Heads and chaff, natural size; kernels, magnified 3 diameters.

and smut resistance, Hybrid 128 should continue to be an important wheat.

Hybrid 128 is a poor wheat for bread making and perhaps is inferior in this respect to nearly all of the white-kerneled club wheats.

HYBRID 143.

The Hybrid 143 (Shot Club) variety has very short, blunt, and blocky heads, and small, short, white kernels (Fig. 5, *B*). It is a spring wheat, but is more or less intermediate in its habit of growth and is grown from both fall and spring sowing. When sown late in the spring this variety spreads out on the ground like a winter wheat; heading and ripening, therefore, are somewhat delayed and yields are comparatively poor. The plants are of medium height.

FIG. 6.—Outline map of a portion of the United States, showing the distribution of Hybrid 128 wheat in 1919. Each dot represents 1,000 acres or fraction thereof per county. Estimated area, 259,900 acres.

Hybrid 143 also was originated at the Washington Agricultural Experiment Station. It is the result of a cross made in 1899 between Little Club and White Track, the latter a common white winter wheat. Hybrid 143 was distributed by the Washington station in 1907.

Hybrid 143 is grown in several counties in southeastern Washington. About 50,000 acres of the variety were grown in that State in 1919 (Fig. 7). The yields of Hybrid 143 usually are not as large as those of other varieties, being outyielded by Hybrid 128 when fall sown and by Jenkin, Little Club, and Redchaff as well as by several common varieties when sown in the spring. Hybrid 143 could be profitably replaced by more productive varieties of better quality.

The milling and baking quality of Hybrid 143 is superior to that of Hybrid 128 and Jenkin, but inferior to that of Little Club. It also is inferior to most varieties of common white wheat.

FIG. 7.—Outline map of a portion of the United States showing the distribution of Hybrid 143 wheat in 1919. Each dot represents 1,000 acres or fraction thereof per county. Estimated area, 49,500 acres.

HYBRID 63.

Hybrid 63, sometimes called Turkey Hybrid, differs from the other wheats of this section in having harder kernels. The heads of Hybrid 63 resemble those of Hybrid 143 in shape, but the outer chaff (glumes) of each mesh is longer and narrower. Hybrid 63 is a spring wheat, although it usually is fall sown. The plants are of medium height.

Hybrid 63 was produced at the Washington Agricultural Experiment Station by crossing Little Club and Turkey, the latter a hard red winter wheat. This wheat was distributed to farmers in 1907.

The Hybrid 63 wheat is grown in several counties in Washington and Oregon. It is not an important variety in either State. Less than 40,000 acres are grown annually.

Hybrid 63 is not as hardy as true winter varieties and should be replaced by Hybrid 128 or better adapted varieties of common winter

wheat. As a spring wheat it also is a poorer yielding variety than Jenkin and several common white wheats. It is best adapted to districts having a rainfall of 15 to 18 inches. Although the kernel is somewhat harder than that of most other club varieties, limited milling and baking experiments indicate it is not of higher quality.

SECTION 2.—HEADS BEARDLESS; CHAFF GLABROUS (NOT VELVETY), WHITE OR YELLOW; KERNELS RED.

In this section are two red-kerneled varieties produced by hybridization at the Washington Agricultural Experiment Station. These wheats usually are designated commercially as Red Hybrid and Red Walla and graded in the subclass (*b*) Western Red under the Official Grain Standards. Both varieties originated from crosses between Little Club and Jones Fife made in 1899. Both varieties are spring wheats and have rather short beardless heads with glabrous white chaff and small red kernels.

HYBRID 123.

Hybrid 123 (known also as Red Hybrid and Red Walla) possesses the characteristics mentioned above. The kernels when free from yellow berry are semihard, but as commonly grown they usually appear quite starchy. Hybrid 123 was first distributed in 1907 from the Washington Agricultural Experiment Station. About 28,000 acres of this variety were grown in eastern Washington and eastern Oregon in 1919. It is a high-yielding wheat, and in some sections outyields Hybrid 128. In milling and baking quality Hybrid 123 is superior to Hybrid 128 and also to Red Russian and Jones Fife, soft red winter common wheats, although its market price is less than Jones Fife.

HYBRID 108.

Hybrid 108 differs from Hybrid 123 in having shorter heads and softer kernels. Its origin and history are the same as these of Hybrid 123. In 1919 Hybrid 108 was reported only in Whitman County, Wash. This variety has not been satisfactory in either yield or quality and should be entirely discontinued.

SECTION 3.—HEADS BEARDLESS; CHAFF GLABROUS (NOT VELVETY), BROWN OR RED; KERNELS WHITE.

The club wheats of this section include three varieties having erect beardless heads, reddish chaff, and soft white kernels. These wheats are tall and have midsized to large heads for club varieties and strong stems. In general, they are adapted to districts having an annual precipitation of more than 15 inches.

JENKIN.

The Jenkin (Jenkin's Club) wheat is the leading variety discussed in this section. It is somewhat similar to Little Club, except in having brown or red chaff and shorter, wider kernels (Fig. 8, *A*). The heads are about 2 inches long and oblong in shape. The plants are very tall and late, being taller than most of the common wheats grown in the United States. It is a spring wheat, but is often fall sown.

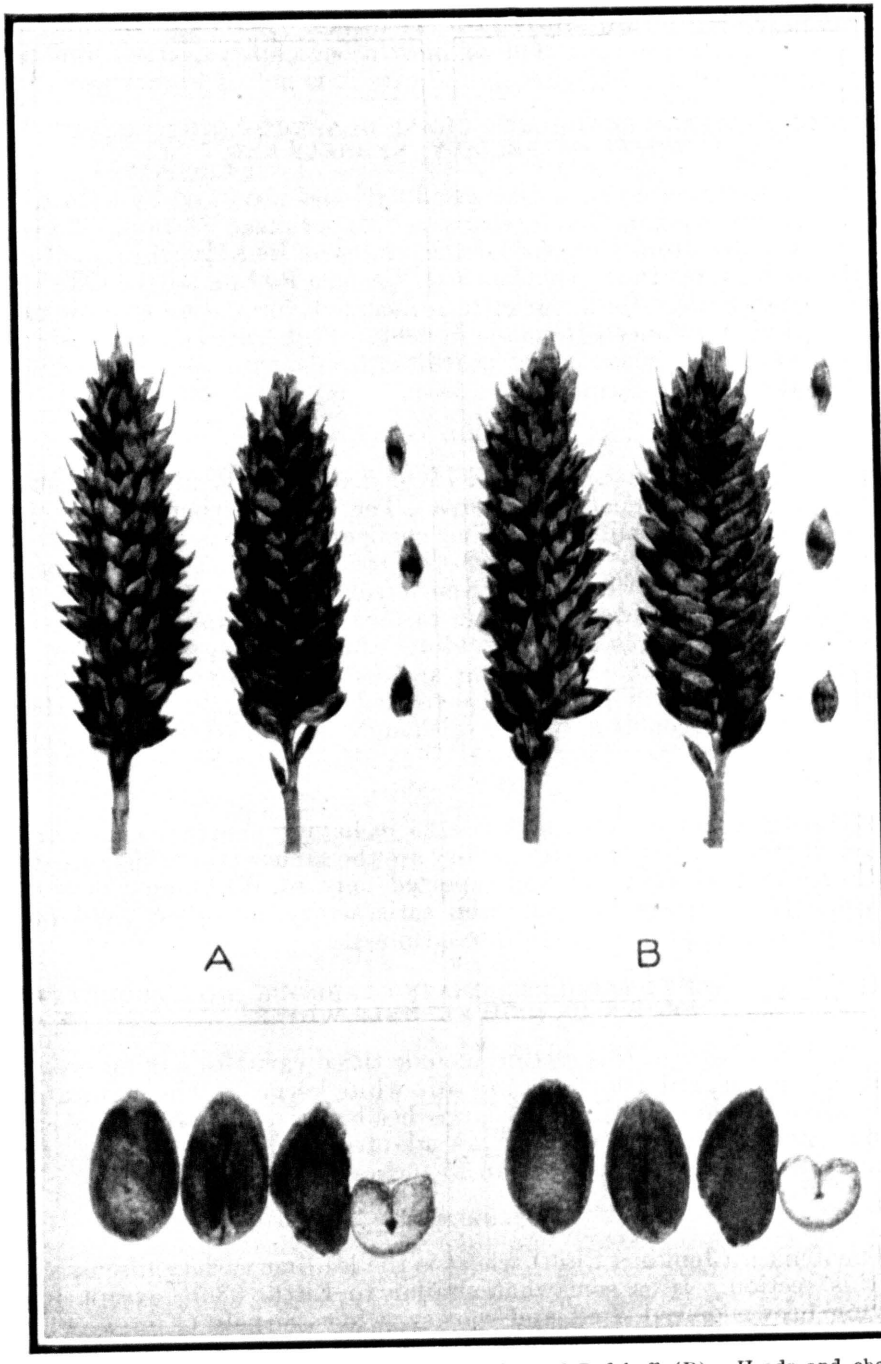

FIG. 8.—Heads, chaff, and kernels of Jenkin (A) and Redchaff (B). Heads and chaff, natural size; kernels, magnified 3 diameters.

The origin of Jenkin is not known. It has been grown in eastern Washington at least since 1895 and since 1900 in the Walla Walla Valley of Washington and in Umatilla County, Oreg., where it is still an important variety. In this and adjacent districts of southeastern Washington and northeastern Oregon it is grown rather extensively from both fall and spring sowing. About 66,000 acres were reported in 1919. The distribution of this acreage is shown on the map (Fig. 9).

FIG. 9.—Outline map of a portion of the United States, showing the distribution of Jenkin wheat in 1919. Each dot represents 1,000 acres or fraction thereof per county. Estimated area, 66,500 acres.

The Jenkin variety is adapted to irrigated lands and to the subhumid and cooler sections of southeastern Washington and northwestern Idaho. It is a high-yielding wheat under these conditions when either fall or spring sown. Under less favorable conditions it should be replaced as a winter wheat by Hybrid 128 or Turkey, a hard red winter common wheat. Because of its late maturity it is easily injured by frost, drought, or hot winds, which often occur when it is spring sown. Jenkin should continue to be an important wheat in the sections where it is adapted. Because of its tall, rank growth, it is an excellent hay wheat and is often grown as such, especially around the borders of fields of bearded wheats.

The milling and baking qualities of Jenkin are but slightly better than those of Hybrid 128.

REDCHAFF.

The Redchaff (Red Chaff or Oregon Red Chaff) wheat differs from Jenkin in being shorter and earlier and in having more club-shaped heads and a lighter brown chaff (Fig. 8, *B*). Although a spring wheat, Redchaff often is fall sown. It is rather tall and late. The chaff is a pale-brown color.

FIG. 10.—Outline map of a portion of the United States, showing the distribution of Redchaff wheat in 1919. Each dot represents 1,000 acres or fraction thereof per county. Estimated area, 40,000 acres.

The origin of Redchaff is undetermined. It has been an important variety in portions of the Columbia Basin of Oregon and Washington since 1907, and perhaps for many years earlier.

Redchaff is not as extensively grown as Jenkin, but it is of considerable importance along the foothills of the Blue Mountains of Oregon. It also is grown in Whitman County, Wash., and to a small extent in other districts of eastern Washington and western Idaho. About 40,000 acres of the variety were reported in 1919. The distribution of this acreage is shown in Figure 10.

The Redchaff is adapted to about the same conditions as Jenkin, but being slightly shorter and earlier, can be more successfully grown in slightly drier localities or on poorer soils. In comparative experiments the Redchaff has not given very high yields and the growing of this variety probably should be restricted to the portions of the Blue Mountain section of Oregon, where it has proved well adapted. In milling and baking qualities Redchaff apparently is about equal to or slightly better than Jenkin and Hybrid 128.

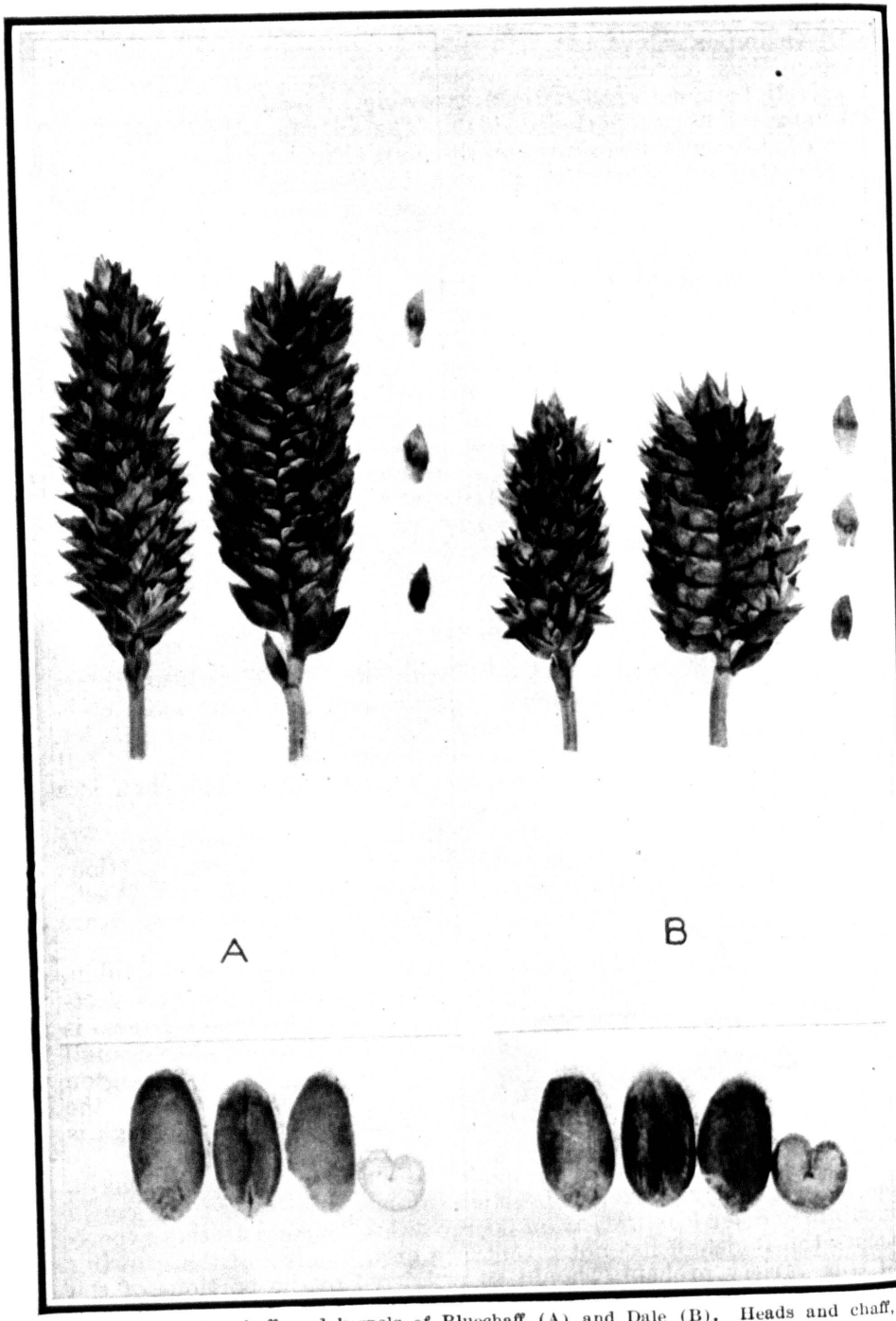

FIG. 11.—Heads, chaff, and kernels of Bluechaff (A) and Dale (B). Heads and chaff, natural size; kernels, magnified 3 diameters.

BLUECHAFF.

Bluechaff (Blue Chaff Calvert Club) differs from Redchaff in having a distinct bluish powder or bloom on the red or brown chaff color and is somewhat later than Redchaff (Fig. 11, *A*). The Bluechaff originated from a plant found in a field of wheat by A. C. Calvert, of Junction City, Oreg., in 1897. From this plant, having seven heads, the Bluechaff was increased until 1904, when it was first distributed in the upper Willamette Valley of Oregon. It is now grown in small quantities in that district and also in southern Oregon.

Little is known concerning the yields or milling quality of Bluechaff compared with other varieties grown in the same sections. In general, varieties of common wheat are more promising in western and southern Oregon than any club wheat. In recent years Bluechaff has given good yields from spring sowing in the upper Willamette Valley, where its acreage has been somewhat increased.

SECTION 4.—HEADS BEARDLESS; CHAFF GLABROUS (NOT VELVETY), BROWN OR RED; KERNELS RED.

This section includes only one commercial variety of club wheat.

DALE.

The Dale (Dale Gloria) variety is distinct among the club wheats in having purple or reddish stems at maturity. The stem of Dale wheat is short and stout; the heads also are short and compact and have a dark-brown chaff (Fig. 11, *B*). The variety, as commercially grown, is somewhat mixed and contains plants having white kernels and both brown and white chaff. It is a spring wheat and ripens earlier than most of the club wheats.

This variety originated from a plant found in a field of wheat by William H. Dale, of Helix, Umatilla County, Oreg., in 1900. The seed was increased to 4,000 bushels by 1904.

A few thousand acres of Dale wheat are grown in northeastern Oregon and southeastern Washington. Not much is known concerning its yielding ability or quality, but apparently it is inferior to other club wheats.

SECTION 5.—HEADS BEARDLESS; CHAFF VELVETY, WHITE OR YELLOW; KERNELS RED.

In this section there is only one variety commercially grown.

COPPEI.

The Coppei (Coppei Club) wheat is easily distinguished from most other club wheats by the velvety chaff (Fig. 12, *A*). It is a winter wheat, but if spring sown will mature late in the season. This variety originated from a plant found in a field of Little Club by J. L. Harper, of Waitsburg, Wash., in 1907. The wheat was found in a field belonging to W. G. Preston, located near Coppei Creek, 3 miles south of Waitsburg. It was grown and increased until 1911, when it was first distributed. From the appearance of Coppei it is believed by the writers to be the result of a natural cross between Little Club and Jones Fife, the latter being a soft red winter common wheat having velvety chaff.

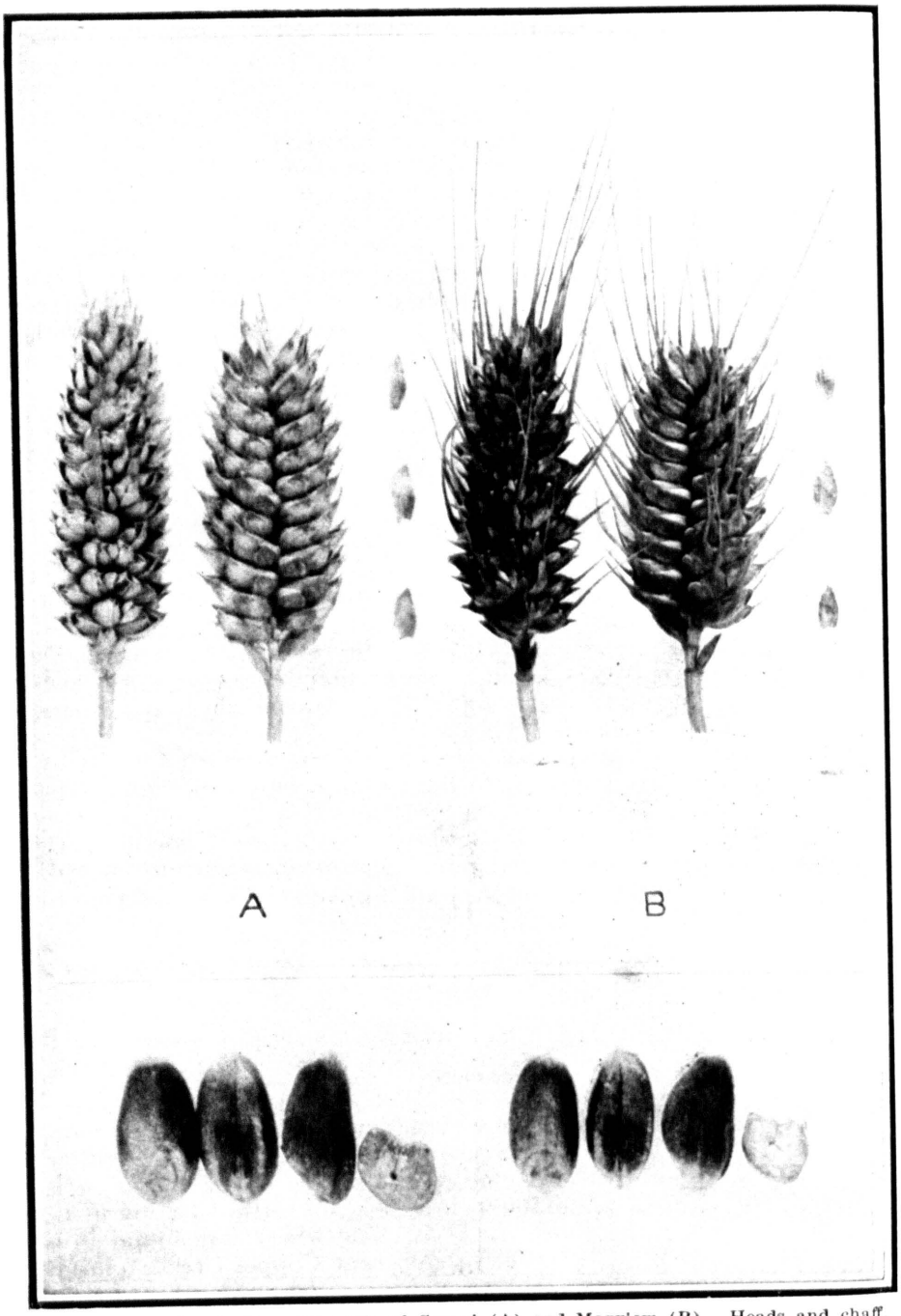

FIG. 12.—Heads, chaff, and kernels of Coppei (A) and Mayview (B). Heads and chaff, natural size; kernels, magnified 3 diameters.

Until recently Coppei has not been extensively grown. In 1919 it was reported only from two counties in southeastern Washington, where about 5,000 acres were grown. Its acreage in recent years has been increasing, especially in Whitman County, Wash.

Coppei yields nearly as well as Hybrid 128. It apparently is not superior to Hybrid 128 in milling and baking value, and it generally has a lower market value.

SECTION 6.—HEADS BEARDLESS; CHAFF VELVETY, BROWN OR RED; KERNELS WHITE.

This section includes one variety, of little importance.

WILBUR.

Wilbur (Early Wilbur) differs from Coppei in being shorter and earlier and in having brown chaff and white kernels. It is grown mostly as a spring wheat. This variety originated from a head of wheat found in a field of Jenkin by W. J. Mariner, of Blalock, Oreg., about 1899. The wheat was named Early Wilbur because of its comparative earliness and because the seed of the Jenkin wheat had been obtained from Wilbur, Wash. Wilbur is now grown only to a slight extent in three counties in eastern Oregon. This variety is better adapted to dry sections than most of the other club wheats, but even in these districts is usually considerably outyielded by winter and spring varieties of common wheat. It could well be entirely replaced by adapted varieties of hard red winter or white common wheat.

SECTION 7.—HEADS BEARDED; CHAFF GLABROUS (NOT VELVETY), BROWN OR RED; KERNELS RED.

This section is represented by a single variety, which differs from the other club wheats in being bearded.

MAYVIEW.

The Mayview variety has bearded club-shaped heads with glabrous brown chaff and soft red kernels (Fig. 12, *B*). The stems usually are white or yellow at maturity, but may show a trace of purple on the lower joints. The plants are of medium height and late. It is a spring wheat, but usually is grown from fall sowing.

Mayview originated from a selection found in a field of Goldcoin or Fortyfold wheat near May View, Wash., about 1911 or 1912. It was named Mayview by Prof. E. F. Gaines, cerealist of the Washington Agricultural Experiment Station, in 1917, when he first observed commercial fields of the variety in Washington. The variety probably originated as a result of a natural field cross between a club variety and a bearded variety of common wheat. Wheat plants similar to Mayview have been found as mixtures in fields in Idaho and Montana.

Mayview was grown in considerable quantity for a few years in the vicinity of its place of origin, but owing to its bearded heads it did not become popular. It has yielded less than Hybrid 128 and apparently has largely disappeared from cultivation.

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