

LIBRARY
BUREAU OF
PLANT INDUSTRY

THE BELLMAR, SOUTHLAND, AND REDHEART STRAWBERRIES

By GEORGE M. DARROW, *Senior Pomologist*, and GEORGE F. WALDO, *Assistant Pomologist, Division of Horticultural Crops and Diseases, Bureau of Plant Industry*

INTRODUCTION

The three new strawberries described in this circular are considered adapted to entirely distinct regions of the United States and to different purposes. The Bellmar is introduced for trial as a general market berry in Maryland, Delaware, New Jersey, eastern Pennsylvania, and Virginia, and in States with similar conditions. The Southland is introduced for trial as a high-quality home-garden variety for the Southern States from North Carolina to southern Georgia. It also produces well in the central and southern parts of California, and fairly well northward from Maryland along the Atlantic coast to New Jersey. The Redheart is introduced for trial in Oregon and Washington as a canning berry. It may prove to be of some slight value in the northern part of the eastern United States.

THE BELLMAR

ORIGIN AND ADAPTATION

The Bellmar (U. S. D. A. No. 655) strawberry originated from a cross of Missionary \times Howard 17 (*Premier*) made in 1923 at the United States Plant Field Station near Glenn Dale, Md. The Bellmar was among the selections from this cross made in 1925, and plants were first sent out for trial in 1927. In 1928 it was considered promising at several points in Maryland and one in Delaware. Again in 1929 it was selected as a promising market sort in these States. In Michigan, Kentucky, and Wisconsin it has been promising, but apparently did not do as well as it did farther East. In southwestern Georgia and in eastern North Carolina it has produced heavy crops of superior fruit, but it matures too late in those States to become a leading sort. It has not succeeded in western Oregon, or Washington.

Because of its superior characteristics it is recommended for trial in Maryland, Delaware, and New Jersey, and it should be tested in comparison with the Howard 17 wherever that variety is adapted for the general market. It may also be grown as a relatively late high-quality variety for home-garden and general market use from Georgia to Virginia.

CHARACTERIZATION

Because the Bellmar is suggested for conditions under which the Howard 17 succeeds and has shown some points of superiority over that variety it is compared chiefly with the Howard 17 in the following discussion.

The plants are much more vigorous and produce runners much more freely than is the case with Howard 17, at least from Maryland southward, and they produce runners a little more freely even than Missionary in North Carolina. The common leaf spot (*Mycosphaerella fragariae*) has never proved serious on the Bellmar. Leaf scorch (*Diplocarpon carliana*) in the Southern States affects this variety slightly more than it does Missionary and more than it does Howard 17. The plants grow somewhat more in the short days of late fall and of early spring than do those of Howard 17, but much less than those of Missionary or Blakemore. The blossoms are perfect and contain about as much pollen as Howard 17, but not so much as Blakemore. Some of the petals persist even until the fruit is ripe. Its pistils are not red tipped like those of the Blakemore.

In North Carolina it is at least a week later than the Blakemore, a few days later than Missionary, and about a week earlier than Howard 17. In Maryland it is slightly earlier, though it has very nearly the same season as Howard 17. It produces a heavy "ground" crop in the South from fall-formed fruit buds and a smaller "crown" crop from spring fruit buds. In Maryland its season is about as long as that of Howard 17.

In Georgia and North Carolina the Bellmar has yielded nearly as much as the Blakemore, and better than the Blakemore when the stand of plants is dense. At the plant field station near Glendale, Md., it has been more productive than Howard 17 and has produced a better grade of berries. In North Carolina it has produced about the same percentage of United States Standard No. 1 grade of berries as the Blakemore. In Maryland and New Jersey the clusters are large, the earliest ones low branching, the later ones with stout erect stems.

The berries of the Bellmar are larger than those of most sorts and on good soil are as large as those of Howard 17. They are long-conic in shape (fig. 1, B, fig. 2, and pl. 1, A), usually, however, with a broader shoulder and a longer neck than the Howard 17. In North Carolina, but not farther north, the berries are often flattened on one side. They are exceptionally bright red (pl. 1, A), darker than Blakemore, very close to Howard 17 in color, but not as dark as Missionary. The color darkens somewhat on storage, but not seriously. The berries have a very large green calyx and a gloss which has caused this variety to be selected as the handsomest among hundreds. They are firmer than Howard 17 and are very easy to pick and cap (hull). They are not so acid as Missionary, and under North Carolina and Maryland conditions they rank high in dessert quality, much higher than Howard 17. As compared with the Blakemore, the Bellmar is too dark and not acid enough to be a commercial preserving sort.

TECHNICAL DESCRIPTION OF THE FRUIT

Form, long-conic with broad shoulder and distinct neck; size large; pubescence on pedicels slight and adpressed; calyx reflexed in mature berries, very large; apex ripens uniformly; color bright red; seeds yellow or reddish, even with surface; flesh light red, texture tender, firm, rarely with cavity, juicy; shipping quality good; flavor subacid, aromatic; dessert quality very high. Season about the same as Howard 17 in Maryland, earlier in North Carolina.

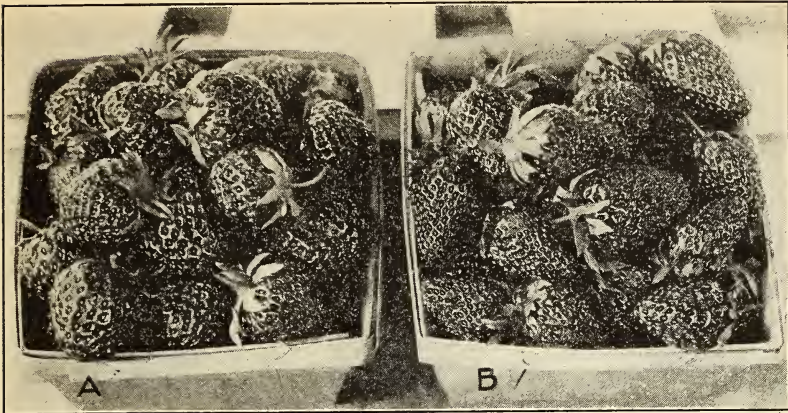


FIGURE 1.—Boxes of Southland (A) and Bellmar (B) strawberries grown at Willard, N. C.

NAMING AND INTRODUCTION

The Bellmar is named for the electric-railway stop, Bell, Maryland), at the plant field station. It is being introduced by cooperating nurseries in the Middle Atlantic States and by the Coastal Plain Branch Station of the North Carolina Department of Agriculture, Willard, N. C. The United States Department of Agriculture has no plants to sell or distribute.

THE SOUTHLAND

ORIGIN AND ADAPTATION

The Southland (U. S. D. A. No. 44) strawberry originated from a cross of Ettersburg 80×Howard 17 made in 1920 in the greenhouse in Washington, D. C., and was selected in 1922 for further testing at the United States Plant Field Station near Glenndale, Md. Although of exceptional quality and beauty, it did not regularly yield heavily and was not sent out for trial until 1927. However, its remarkable plant growth (fig. 3) and productiveness at Willard, N. C., and at other southern points since then has indicated its value for the Southern States. At Willard it grows more freely than any other sort, even during the winter, and for this characteristic, for the beauty and quality of its fruit, and for its productiveness it is recommended for trial as a home-garden sort from North Carolina to Georgia and westward to southern California. It probably is not firm enough for the general market. From Virginia northward it may not yield so much as farther South and may sometimes be injured by late spring frosts. In the Northwest it is generally regarded as too soft and is sometimes hollow.

CHARACTERIZATION

The Southland is not readily compared with any known variety and is suggested for growing in southern areas where there is no satisfactory home-garden sort. It is distinct from other sorts in all regions because of its huge dark-green glossy foliage, which is exceptionally free from leaf-spot diseases of all kinds. Though it may produce runners very freely under some conditions, the leaves

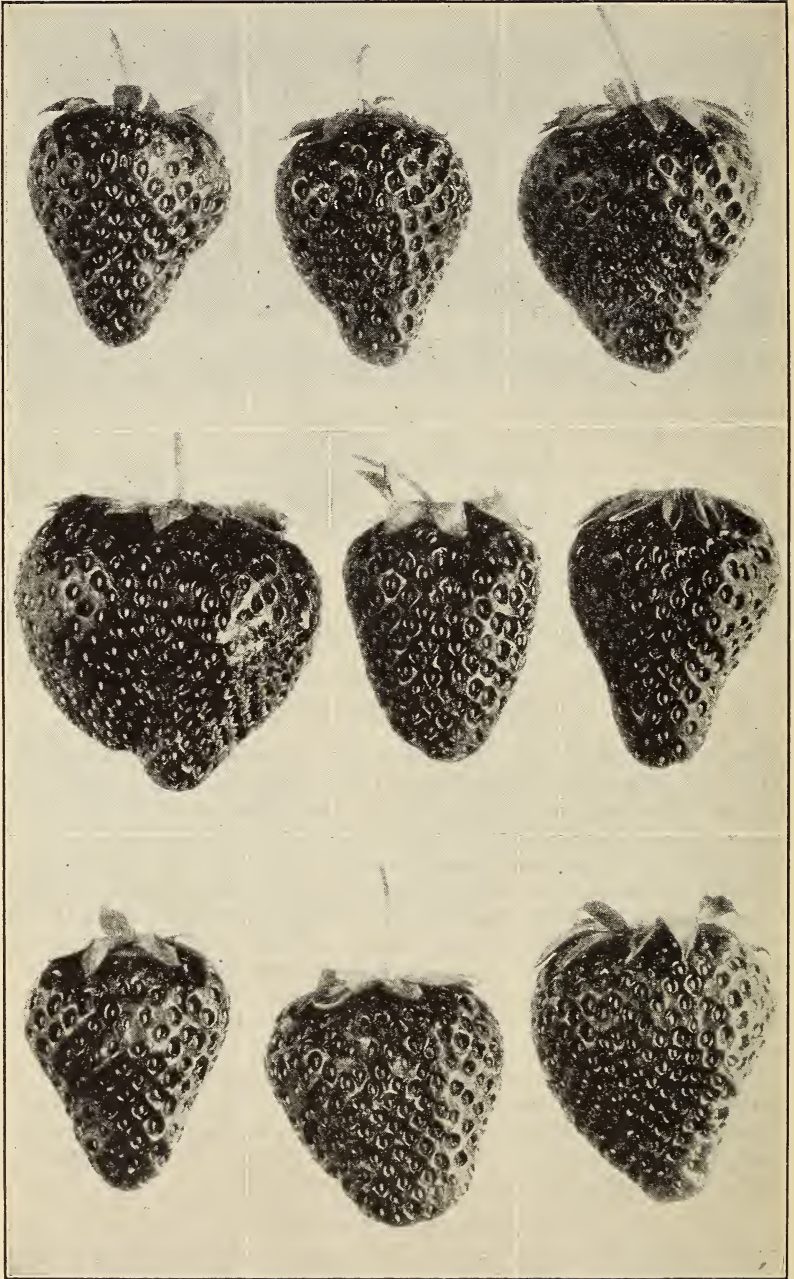


FIGURE 2.—Variations in shape of strawberries of the Bellmar variety grown at Glendale, Md.



A



B



C

L. C. C. KRIEGER, PINX

Typical color and shape of strawberries of the Bellmar (A), Southland (B), and Redheart (C) varieties



FIGURE 3.—Klondike (left) and Southland (right) strawberry plants grown at Willard, N. C., showing difference in vigor. The beds were set after the fruiting season of 1929

are so large that not so many plants are found to the row as with many other sorts.

It is notable in the South for the green appearance of its foliage in the winter, and it makes a more vigorous growth during the short days and the cold weather of winter than any other sorts tested. Its fruit buds do not begin to form until very late in the fall, much later than those of most other sorts. Very few of its flowers open during the winter, and hence few are killed by cold. This is in contrast to other varieties, many flowers of which open during warm spells and are killed by cold. Because it grows throughout the winter in the South whenever the temperatures are high enough, its fruit buds continue to develop, and it is one of the earliest to blossom and to mature fruit in the spring. Its bloom may then be caught by late spring frosts. The blossoms are perfect and contain more pollen than those of most other varieties. Its calyx is very large, green, and healthy, and contrasts well with the berries in the baskets.

Under the favorable conditions at Willard it has produced the fewest cull berries of any sort yet tested there. In one series of tests it had 14 per cent, Klondike 61 per cent, Missionary 48 per cent, and Blakemore 24 per cent culls. The berries are large, globose, or sometimes slightly conic in shape (fig. 1, A), bright red with a glossy surface. (Pl. 1, B.) The seeds are slightly sunken. The berries are sweet, much less acid than are those of Missionary and Klondike, and are very high in dessert quality. The chief objection to this variety for the general market is that the fruit is not so firm as that of the Blakemore and the Bellmar. A second objection is that in 1927 in Maryland a late frost injured its flowers more than those of many other varieties. This also occurred at one point in 1930. The third objection is that it makes its fruit buds during the short;

est winter days and forms relatively few fruit buds in the spring in some years. Hence, although it may produce a heavy early crop, it does not produce so much crown fruit in the South that ripens in the latter part of May and in June as does Missionary or Klondike.

TECHNICAL DESCRIPTION OF THE FRUIT

Form, globose to globose-conic; size large; pubescence on pedicel slight and adpressed to spreading; calyx clasping, very large, and green; color bright red; seeds yellow and reddish, slightly sunken; flesh light red, texture tender, rarely with cavity, juicy; shipping quality only fair; flavor mild subacid, aromatic; dessert quality very high. Season as early as that of Missionary in North Carolina, but does not last as long.

NAMING AND INTRODUCTION

The Southland is named for its apparent adaptability to southern conditions, especially as a local market berry. It is being introduced by cooperating nurseries in the Middle Atlantic States and by the Coastal Plain Branch Station of the North Carolina Department of Agriculture, Willard, N. C. The United States Department of Agriculture has no plants to sell or distribute.

THE REDHEART

ORIGIN AND ADAPTATION

The Redheart (U. S. D. A. No. 632) strawberry originated from a cross of Euresko×Howard 17 made in 1923 at the United States Plant Field Station near Glenndale, Md. The seeds were planted as soon as the berries ripened, and the seedlings were set in the field in the fall of 1923. The Redheart was among the selections of this cross made in 1925. Plants were first sent out for trial in 1927.

In cooperation with J. S. Caldwell and C. W. Culpepper, of the Bureau of Plant Industry, canning tests of many different selections and varieties were made in 1926 and in each year since. The Redheart was found by them to give the best canned product of any sort tried. It was also found superior in canning tests made by a cannery at South Haven, Mich., in cooperation with Stanley Johnston, superintendent of the South Haven Horticultural Experiment Station, and in tests made by the Oregon Agricultural Experiment Station, Corvallis, Oreg. The Redheart has been found uniformly productive at several points in western Oregon and Washington. It is therefore especially recommended for trial in the latter region. It is also suggested for testing on the heavier and richer soils of the Northern States from New England to Maryland and west to Wisconsin and Missouri, where a canning berry of deep red color, high quality, and firm texture is desired.

CHARACTERIZATION

The Redheart may be compared with the Ettersburg 121, now the principal canning variety in the Pacific Northwest. The plants are about as vigorous on the soils to which the Ettersburg 121 is adapted in the Northwest, but the Redheart is far more vigorous and productive in the Northeast than the Ettersburg 121. It produces runners fairly freely, somewhat more freely than Howard 17 under conditions where they have been tested together. The foliage is relatively susceptible to leaf scorch, and this is apparently its chief weakness in the Eastern States. Its foliage has been very healthy, however, in

ERRATUM

U. S. Department of Agriculture Circular 171, The Bellmar, Southland, and Redheart Strawberries.

Page 6, ~~seventh line from bottom~~ should read:

“a cross of Portia × Euresko” instead of

“a cross of Euresko × Howard 17.”





FIGURE 4.—Strawberries of the Redheart variety grown (A) at Glenn-dale, Md., and (B) at Corvallis, Oreg. Though the ridging shown in the Maryland-grown berries is also characteristic of the variety in the Northwest, it is much less pronounced in the latter region

the Northwest. In the Eastern States this variety should be grown on richer soil than many others. The flowers are perfect, containing more pollen than almost any eastern variety and equaling Ettersburg 121 and Marshall in this respect.

The Redheart is a medium-early variety, responding very quickly to warm weather in the spring. It matures much earlier than Howard 17 in the Southern States, several days later in Maryland, and several days before Ettersburg 121 in the Pacific Northwest.

The first berries to ripen are very large and showy, being irregular long-conic shaped. (Fig. 4 and Fig. 5, A-C). The later berries are much smaller and are uniformly blunt-conic in shape. (Fig. 5, C-H). They average much larger than Ettersburg 121. The color is a dark rich red, and it darkens still more in storage. (Pl. 1, C.) The calyx contrasts well with the berry. These berries are much firmer than most sorts, agreeably acid in flavor, and rank high in dessert quality, above most varieties. The flesh is bright rich red.

TECHNICAL DESCRIPTION OF THE FRUIT

Form, long, irregular, conic to blunt-conic; size large to medium; pubescence on pedicels ascending to spreading; calyx large, reflexed; apex ripens uniformly; color dark red; seeds yellow to red, raised above surface; flesh rich red, texture tender, very firm, rarely with cavity, juicy; shipping quality excellent; flavor acid, aromatic; dessert quality very high. Season medium early, later than Howard 17 in the Northern States and several days earlier than Ettersburg 121 in the Pacific Northwest.

NAMING AND INTRODUCTION

The Redheart is so named because of its rich red flesh, which is desirable in a canning berry. It is being introduced by cooperating nurseries in the Pacific Northwest. The United States Department of Agriculture has no plants to sell or distribute.

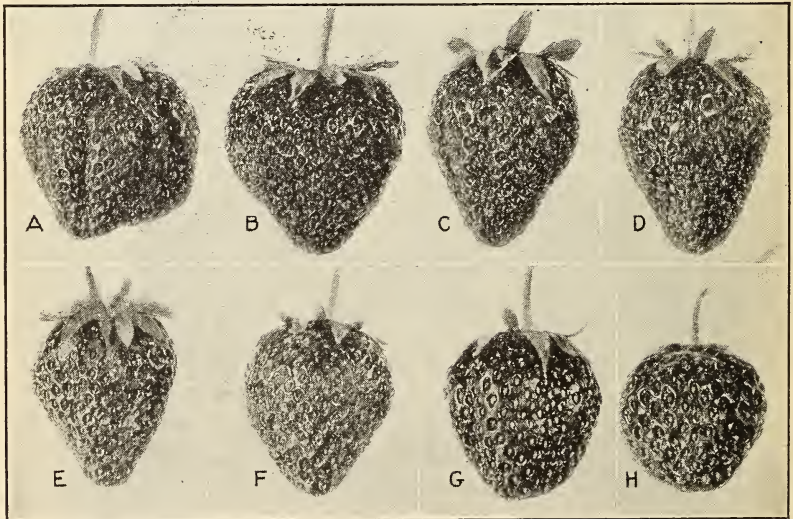


FIGURE 5.—Different shapes of strawberries of the Redheart variety. The first part of the crop (primary and secondary berries) has shapes resembling those in the upper row and the latter part of the crop like those in the lower row