

PUBLICATION 553

FARMERS' BULLETIN No. 26

ISSUED MAY, 1937

REVISION BULLETIN 147

DOMINION OF CANADA, DEPARTMENT OF AGRICULTURE

STANDARD DESCRIPTIONS OF REGISTERED OAT VARIETIES

R. A. DERICK



Agriculture and
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CEREAL DIVISION
EXPERIMENTAL FARMS BRANCH



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FOREWORD

THE high standard of purity for pedigree or registered seed in Canada and the introduction into the trade of new seed stocks from time to time make it necessary for those interested in growing this quality of seed to have ready reference to standard descriptions.


Most growers of registered seed have established a mental picture of the type they are striving to produce. Frequently, however, the tendency is to select for a type with slightly exaggerated characteristics, which in many cases has resulted in the production of a seed stock resembling in general the standard type, but sufficiently different from it to cause concern among those responsible for seed stock verification.

While oat varieties often differ widely in many characters, some of these differences are much less apparent as a result of environmental conditions. In a study made by the writer in 1929, on the effect of environment on character expression in oats, it was found that the amount of variation in some characters, as a result of different conditions of growth, was too great to allow them to be useful for description purposes. It was evident therefore, that because of environmental variation, a careful study of character variability was necessary before even general descriptions could be attempted.

Based on material grown in every province in Canada, descriptions of eight registered varieties were accepted by the Canadian Seed Growers' Association and published in Bulletin 147, Dominion Department of Agriculture in 1931 (now out of print). Since that time, three other varieties have been accepted for registration, namely Gopher, Cartier, and Legacy. Descriptions of these three varieties are included in the present publication along with those formerly recorded in Bulletin 147.

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Standard Descriptions of Registered Oat Varieties

BASIS OF DESCRIPTION

In attempting the description of oat varieties, attention has been given primarily to those characters that have proven relatively constant under widely diverse conditions. In the case of certain physiological characters such as height, however, limits of variability have been established for the varieties based on the amount of variation found. Such characters are useful for verification purposes, only to a limited extent, but measurements have been taken mainly as a matter of record. This is true also to some extent with such characters as grain and straw size, leaf width, rachilla length, etc.

Details regarding the expression of the various characters used in the descriptions follow:—

Early Growth.—Varieties of oats often differ in their habits of growth during the seedling stage. This character expresses itself in three fairly distinct types, namely, prostrate, semi-spreading and erect. All registered varieties in Canada are of the erect type and therefore this character cannot be made use of.

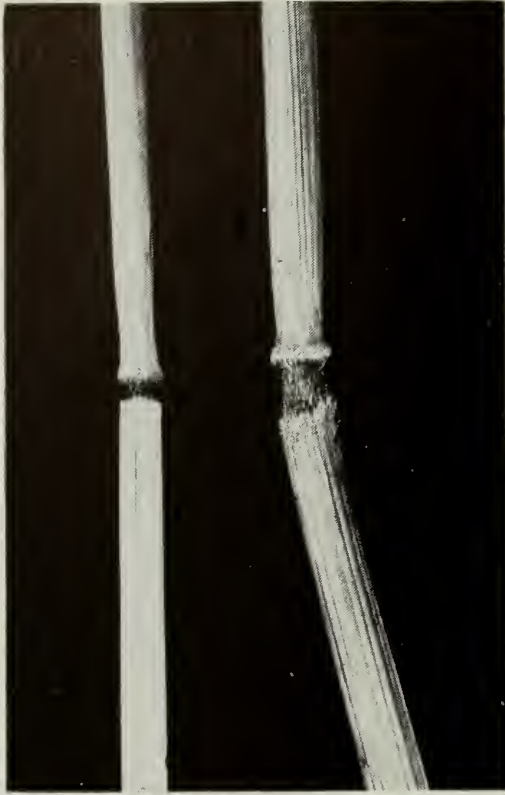
Time of Maturity.—There are often four maturity groups used in classifying oat varieties, namely, early, medium early, medium late and late. The actual number of days from seeding to maturity varies considerably depending on length of day, soil, etc., and therefore it is chiefly by comparison between varieties under any particular environment that the best use of this character can be made.

Straw.—The straw of the oat varieties varies a good deal in such characters as length, size and strength, and when studying varieties belonging to widely different groups these characters become quite useful for identification. With the standard varieties, however, these differences are less apparent and the usefulness of such characters is rather limited. Environmental influences affect the size, length and strength very materially, although the same relative differences usually show up when varieties are grown under a common environment.

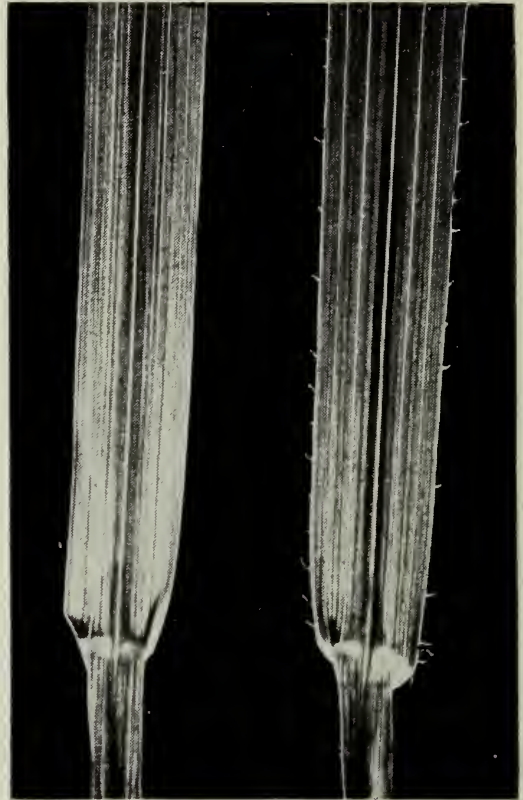
The size of straw in oats can be classed as fine, medium or coarse; and while actual measurements mean very little, fine-strawed varieties usually average about 4 mm. in diameter, while the coarse-strawed varieties will reach 7 mm. or more. Length of straw has been classified as short, mid-tall and tall, the former averaging around 35 inches, the latter 45 inches or more. The colour of straw at maturity is of doubtful taxonomic value since environment is responsible to a large degree for the expression of this character. There is, however, an exception to this statement as applied to the varieties described herein, namely, the appearance of a pinkish tinge towards maturity. This pinkish colour is quite characteristic and can easily be detected at some distance.

The presence of short, fine hairs both above and below the first or second node below the panicle is quite characteristic of some varieties, while on others this pubescence (hairiness) is entirely absent. In other varieties this character

is not constant, the amount of pubescence varying from a moderate amount to practically none. Such varieties have herein been classified as being "medium pubescent."



Pubescence at nodes. Right, extremely heavy pubescence. Left, glabrous.



Leaf pubescence. Left, glabrous. Right, pubescent.

Foliage.—The foliage of oat varieties contributes certain characters useful for identification, the most constant of these being leaf pubescence. These fine hairs appear on the leaf margins, particularly towards the lower portion of the blade. Many varieties are entirely free of these hairs, some have traces at the extreme base of the leaf blade, while others carry marginal pubescence practically the full length. When this character is expressed only as a trace in a variety it is likely that some plants within the variety will be entirely glabrous (smooth) and, therefore, the character becomes of most value in identifying varieties that are either completely glabrous or fully pubescent.

Width of leaf is quite characteristic in some varieties and the classes of narrow, medium and wide have been used in the following descriptions. Varieties will naturally merge into each other for this character and, therefore, the two extreme classes become of most value for description purposes.

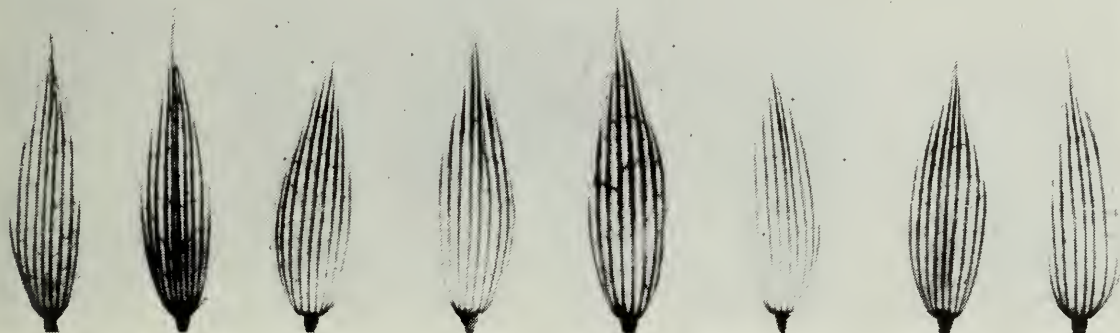
Quantity of foliage can be made little use of for variety identification because of the amount of variation caused by environment.

While different shades of green characterize the young foliage of certain oat varieties, soil fertility has a considerable influence. All varieties described below are classed as normal green except Legacy, which is quite distinctly of a lighter shade.

Panicle.—Among the many minor characters associated with the type of panicle, few can be used except for detailed descriptive purposes. The most distinctive difference between varieties in type of panicle is the spreading type as contrasted with the side and cluster types. All varieties, however, described below are of the spreading panicle type and therefore this character is of little

value here. The general attitude of the panicle rachis, branches and spikelets varies somewhat between varieties, but such differences, being greatly influenced by environment, are difficult to use consistently or even to describe. When one becomes very familiar with the type of a variety, these small differences seem to be more readily apparent. Differences in panicle shape between varieties must be studied at the same stage of maturity since the attitude of the branches changes as the plants become more mature.

Outer Glume.—There are quite often obvious differences between oat varieties in the length-breadth ratio of outer glumes. This character, generally speaking, is correlated with the same dimension ratio of the grain. That is, the long narrow oat grain is usually enclosed in a long narrow outer glume. Veining is somewhat variable within a variety but in certain varieties the range is fairly constant and thus the character becomes of some value for detailed study.



Showing characteristic outer glume shapes and venation of eight varieties.

Grain.—The general characters of the grain vary within wide limits under various conditions of growth and can be used only in a limited way for identification. The grain is classified as long, medium or short, and broad, medium or narrow, based on an average sample of Banner as being medium long and of medium width. The crease of oat grains varies between varieties from wide to narrow and from shallow to full but is greatly influenced by environment. The tip of the grain or lemma tip may be short or long, pointed or blunt, or intermediate between these extremes.



Basal hairs: absent, traces and present.

The presence of hairs on either side of the callus at the base of the grain is a mark of considerable value in identifying oat varieties. These hairs, often referred to as basal hairs, are in some varieties always present under all conditions of growth. In other varieties basal hairs are either absent or appear only occasionally as traces. When only traces are present within a variety environment apparently influences their expression both as regards frequency and length.

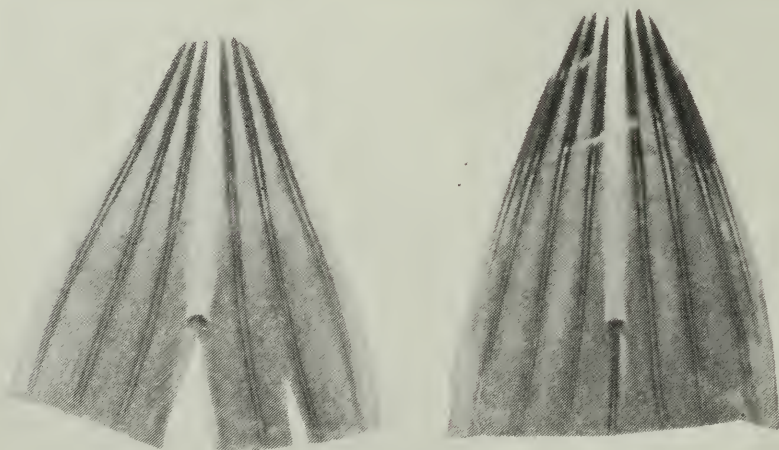
Lemma or flowering Glume.—Among the lemma characters, the colour and awn development have long been used as

distinctive characters in oat varieties. Since most of our common cultivated varieties in Canada are white, colour becomes of little value. In the descriptions following, colour of lemma is used in the case of two varieties, one a yellow and another which shows a pinkish tinge at maturity. The awns of oat varieties are, in many cases, extremely variable, particularly in the case of the weak or medium strength awns. Environment influences not only the degree of awn expression but also the strength. There are, however, varieties that are practically awnless, and others that carry numerous awns under all conditions of growth; general strength and shape of awns is, to some extent characteristic and constant within a variety. It is possible then to use this character quite frequently and with considerable reliability in identifying oat varieties, particularly in a standing crop of mature grain. The number of veins carried by the lemma is more or less constant within varieties when grown under normal conditions. Abnormal or subnormal growth conditions, however, will cause lemma veins to vary accordingly and thus the character becomes of limited use. In awned



Comparative strengths of awn among the varieties described herein. Left to right, strong, medium and weak. *Enlarged 5 times.*

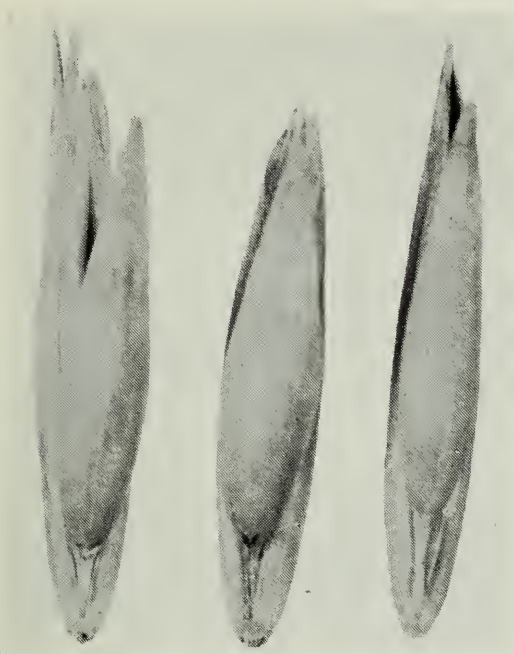
varieties, the awn is a prolongation of the middle vein of the lemma, on either side of which there may be three or four veins present, depending on the variety.



Lemma veins: Note the extra fourth, short vein on each side of the awn vein on the right.

Among the awnless varieties, studied, there are usually but seven veins, three on either side of the central vein. It has been observed that under very favourable growth conditions some varieties that commonly show seven veins will develop an extra short vein at the extreme edges of the lemma.

Rachilla.—This small stalk on which the secondary grain is borne often supplies further assistance in oat variety identification. The rachilla of a variety of oats belonging to the species *A. sativa* may be described as long, medium or short, coarse or fine and pubescent or glabrous. While there is considerable variation within a variety in rachilla characters, yet from observations connected with this study, it is evident that there is justification in using these characters quite freely in identifying varieties.



Rachilla lengths: left to right; short, medium and long.

A brief note regarding the origin of each of the varieties described, together with mention of a few recognized agonomic characters that have been instrumental in bringing the variety to prominence in Canada is given below. It should be pointed out after reviewing the characters used in the following descriptions, that it is only through the combined use of many characters that a satisfactory grouping of varieties can be made or the identity of a variety established.

Certain characters have not been mentioned in the above outline nor in the variety descriptions that follow. These have been omitted either because they did not apply to the varieties in question or because of the amount of variability within a variety due solely to environment.

BANNER

Banner was introduced into Canada from the United States. Nothing definite is known regarding the actual origin of this variety but, according to Dr. C. A. Zavitz, late professor of field husbandry at the Ontario Agricultural College, Guelph, Ont., it was introduced by that institution in 1886 from James Vick and Sons of Rochester, N.Y.

Banner belongs to the medium late group in maturity and possesses many desirable economic characters commonly looked for in a good oat variety. In percentage kernel, Banner averages about 70 to 72 per cent, under normal conditions. It is exceptionally well adapted to a wide range of soil and climatic conditions, but possesses no particular disease resistance.

Description

Plant Characters—

Leaves—medium width, usually glabrous and normal grass-green in colour.

Maturity—medium late, usually about 10 days later than Alaska.

Straw—mid-tall, medium in size and strength; upper nodes carrying slight to medium pubescence.

Panicle Characters—

Size and shape—medium size, equilateral, rachis usually erect, branches medium length, mostly ascending except at full maturity.

Spikelets—semi-pendulous, usually two flowers.

Outer glume—mostly 9 or 10 veins, average length to width ratio a little more than 3 to 1.



BANNER

Grain Characters—

Shape—medium width and length, pointed, average length to width ratio nearly 6 to 1.

Basal hairs—traces often present.

Crease—slightly shallow to full, medium width.

Lemma or flowering glume—creamy white; awns few to numerous, usually slightly twisted at base and occasionally slightly bent; veins mostly 7.

Rachilla—medium length, averaging 2.39 mm., mostly glabrous but often with traces of pubescence.

VICTORY

Victory was originated by the Swedish Seed Association of Svalöf, Sweden, as a pedigreed selection out of Milton, an old mixed variety of Probstier type, with somewhat shorter, plumper grain than the original Probstier. Victory was introduced into Canada for testing in 1911 and quickly proved to be well adapted to Canadian conditions. It possesses many desirable characters such as good yielding ability, fairly strong straw and good weight per bushel. The kernel percentage of Victory is, on the average, approximately the same as Banner. Victory is medium late in maturity, and on account of its rather short, broad grain, makes an excellent exhibition oat. Like Banner, this variety possesses no special disease resistance.

Description*Plant Characters—*

Leaves—medium width, usually glabrous, normal grass-green in colour.

Maturity—medium late, about the same as Banner.

Straw—mid-tall, medium size and strength, upper nodes carrying traces to medium pubescence.

Panicle Characters—

Size and shape—medium size, equilateral, rachis usually slightly drooping near tip at maturity.

Spikelets—semi-pendulous, usually two flowers, usually more clustered than in Banner.

Outer glume—Mostly with 9 or 10 veins, average length to width ratio a little more than 3 to 1.

Grain Characters—

Shape—medium width to wide, medium short, slightly blunt tip, average length to width ratio 5.2 to 1.

Basal hairs—usually absent.

Crease—medium width, usually full.

Lemma or flowering glume—creamy white; awns few, usually weak, often slightly twisted and darkened at base but seldom bent; veins mostly 7, occasionally 8 or 9.

Rachilla—medium short, averaging 2.12 mm., mostly glabrous, traces occasionally present.



VICTORY



ALASKA

ALASKA

This variety was imported from the United States by the Ontario Agricultural College, Guelph, Ont., in 1900. Alaska is classed as early, and while not particularly widely adapted to soils and climate, is of excellent quality and has been popular in Eastern Canada. The yield is usually somewhat lower than the best of our late varieties but in view of its thin hull, the yield of kernel is relatively high. The percentage kernel in comparison with Banner is high, averaging nearly 80 per cent at Ottawa over a period of eleven years.

From work done at Macdonald College, it has been shown that Alaska is less likely to be infected with smut or stem rust than Banner.

Description

Plant Characters—

Leaves—medium narrow, mostly glabrous with occasional traces near base of blades; normal grass-green in colour.

Maturity—early, usually at least 10 days earlier than Banner.

Straw—mid-tall, medium size to small and of medium strength; trace to medium pubescence at upper nodes.

Panicle Characters—

Size and shape—medium size; equilateral, rachis usually slightly drooping, branches widely spreading, medium length, mostly drooping at maturity.

Spikelets—semi-pendulous, usually two flowers.

Outer glume—mostly with 8 or 9 veins, average length to width ratio about 3.5 to 1.

Grain Characters—

Shape—medium width, long, pointed; average length to width ratio about 6.3 to 1.

Basal hairs—traces usually present.

Crease—full to bulging and of medium width.

Lemma or flowering glume—creamy white; awns few to numerous, varying from weak to medium, often slightly twisted but not usually bent; veins mostly 7.

Rachilla—medium long, averaging 2.7 mm., traces of pubescence usually present.

CARTIER

This variety was produced at Macdonald College from a cross between Alaska and Early Triumph 108 M.C. Like Alaska, it is early maturing and resembles this variety very closely in practically all characteristics. In comparative tests, Cartier has proved to be higher yielding than Alaska over a period of years.

Description

Plant Characters—

Leaves—medium narrow, glabrous, normal grass-green in colour.

Maturity—early, usually at least 10 days earlier than Banner.

Straw—mid-tall, medium size and strength; traces to medium pubescence at upper nodes.



CARTIER

Panicle Characters—

Size and shape—medium size; equilateral; rachis usually slightly drooping, branches wide spreading, medium length and mostly drooping at maturity.

Spikelets—semi-pendulous, usually two flowers.

Outer glume—mostly with 8 or 10 veins, average length to width ratio about 3.2 to 1.

Grain Characters—

Shape—medium width, long, pointed; average length to width ratio about 6 to 1. Width carried well to tip.

Basal hairs—absent.

Crease—full to bulging and of medium width.

Lemma or flowering glume—creamy white, awns few to numerous, varying from weak to medium, often slightly twisted but not usually bent; veins mostly 7.

Rachilla—medium long, averaging 2.6 m.m., often traces of pubescence present.

O.A.C. 72

This variety was produced at the Ontario Agricultural College, Guelph, Ont., and introduced in 1911. It is a selection out of Siberian, a variety introduced from Russia. O.A.C. 72 is a medium late variety, ripening approximately at the same time as Banner (a little later at Ottawa), and according to Dr. C. A. Zavitz, is better adapted to soils that are somewhat low in fertility. This variety resembles Banner in many of its economic qualities and when well adapted will produce a more attractive sample. In percentage kernel O.A.C. 72 can be classed with Banner. No special resistance to disease is reported for this variety.

Description*Plant Characters—*

Leaves—medium broad, glabrous, normal grass-green in colour.

Maturity—medium late, approximately the same as Banner.

Straw—medium tall, slightly taller than Banner, medium size and strength, medium pubescence at upper nodes.

Panicle Characters—

Size and shape—medium size; equilateral, rachis usually erect, branches medium length, mostly ascending except at full maturity.

Spikelets—semi-pendulous, usually two flowers.

Outer glume—mostly with 9 or 10 veins, average length to width ratio about 3.3 to 1.

Grain Characters—

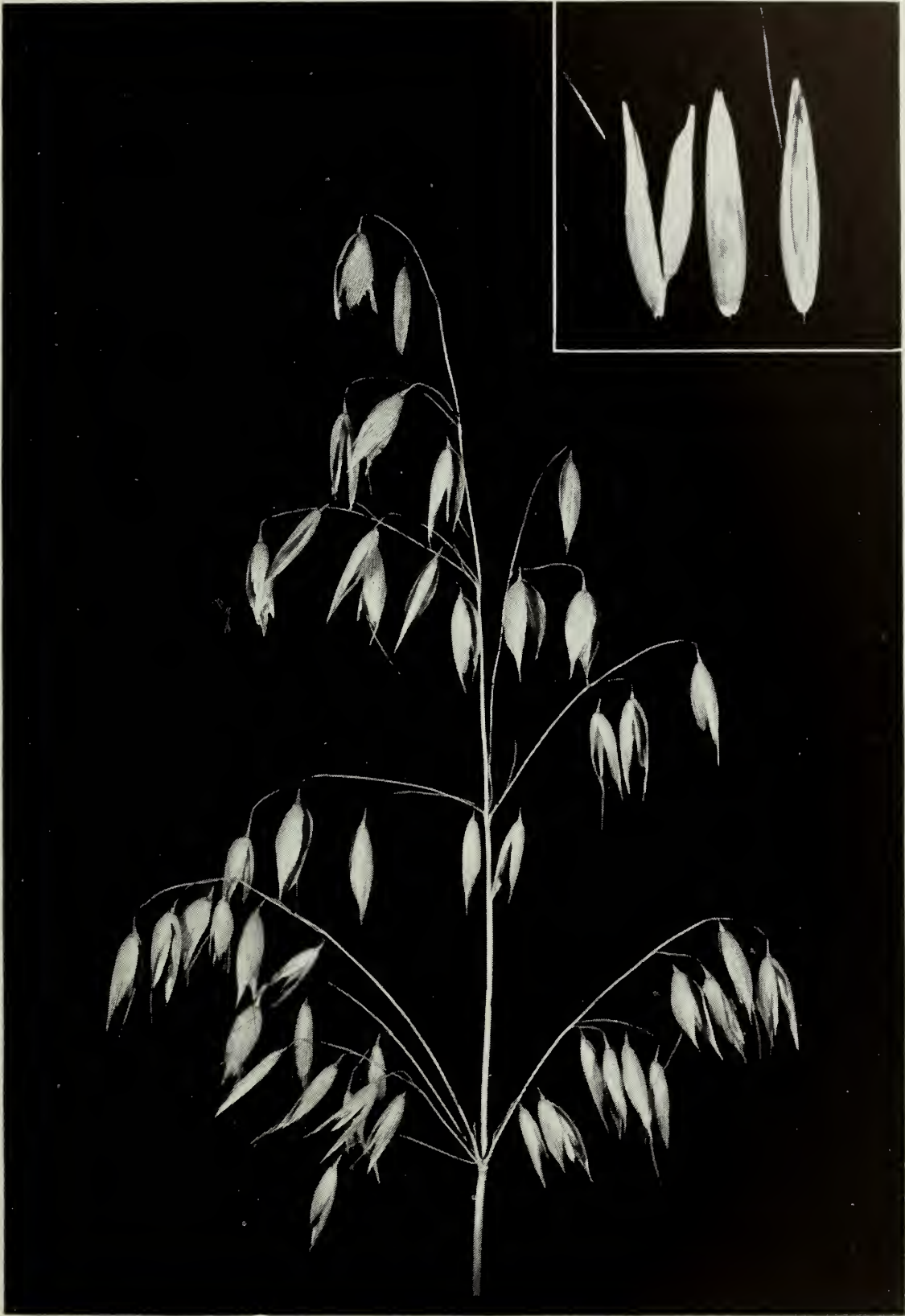
Shape—medium length and width, medium pointed, plump; average length to width ratio about 6.1 to 1.

Basal hairs—traces usually present.

Crease—medium width, usually full.

Lemma or flowering glume—creamy white; awns usually numerous, mostly medium strong, often slightly twisted but seldom bent; number of veins mostly 8 or 9, commonly 9.

Rachilla—short, averaging 2.2 mm., pubescence usually absent.



O.A.C. 72



O.A.C. 144

O.A.C. 144

O.A.C. 144 is an awnless selection out of O.A.C. 72 made at the Ontario Agricultural College, Guelph, Ont. This variety was distributed to the farmers of Ontario in 1923. It is a few days later than O.A.C. 72, has a little longer and stronger straw and is more adapted to a somewhat richer soil than the latter variety. O.A.C. 144 compares favourably with Banner and Victory in kernel percentage and when well adapted usually yields somewhat better.

It has been found at the Ontario Agricultural College that O.A.C. 144 is highly resistant to the oat smuts. No special resistance to other diseases has been observed.

Description*Plant Characters—*

Leaves—broad, short hairs on leaf margins near base of blades.

Maturity—medium late, a few days later than Banner.

Straw—tall and of medium size, usually several inches taller and a little larger than Banner; upper nodes carrying medium heavy pubescence.

Panicle Characters—

Size and shape—medium large, equilateral, rachis mostly erect, branches medium long, slightly ascending, widely spreading.

Spikelets—semi-pendulous, usually two flowers.

Outer glume—mostly 9 or 10 veins, average length to width ratio a little more than 3 to 1.

Grain Characters—

Shape—long, pointed, medium width to wide, average length to width ratio 6.25 to 1.

Basal hairs—present, medium length to short.

Crease—slightly shallow to full, medium width.

Lemma or flowering glume—creamy white with pinkish tinge towards tip; practically awnless, veins mostly 7, occasionally 8 or 9.

Rachilla—medium long, averaging 2.74 mm., usually traces of pubescence.

O.A.C. 3

This variety was originated at the Ontario Agricultural College, Guelph, Ont., as a selection out of Daubeney made in 1904. O.A.C. 3 is early and ripens along with Alaska. It is a little shorter in the straw than Alaska and quite strong. O.A.C. 3 is an excellent quality oat, although carrying slightly thicker hull than Alaska. The variety appears to be better adapted to conditions in Western Ontario. It is not characterized by possessing any particular disease resistance.

Description*Plant Characters—*

Leaves—medium narrow, glabrous and normal grass-green in colour.

Maturity—early, usually from 7 to 10 days earlier than Banner.

Straw—mid-tall, rather small in size, medium strength, glabrous upper nodes.

Panicle Characters—

Size and shape—medium small, equilateral, rachis slightly drooping, branches medium length, little shorter than Banner, mostly drooping at maturity.

Spikelets—pendulous, usually two flowers.

Outer glume—mostly 8 or 9 veins, average length to width ratio 3.5 to 1.



O.A.C. 3

Grain Characters—

Shape—medium long, pointed, rather narrower than Banner, average length to width ratio 6·7 to 1.

Basal hairs—present, usually short.

Crease—medium width, usually full.

Lemma or flowering glume—creamy white; practically awnless, veins mostly 7.

Rachilla—medium length, averaging 2·46 mm., mostly glabrous, occasional traces.

ABUNDANCE

This variety is a product of Messrs. Gartons Ltd., of England, the result of a cross between White August and White Swedish. It is a medium late variety of fairly good quality. Abundance has compared favourably with other good varieties of this maturity group, although the straw is a little coarser than Banner, and the tillering capacity is often rather sparse, particularly on lighter soils. The variety apparently does not possess as wide adaptability as Banner. In percentage kernel, Abundance averages approximately the same as Banner and Victory. It is quite susceptible to the smuts of oats and apparently is not resistant to any of the other common diseases.

Description*Plant Characters—*

Leaves—medium width, slightly wider than Banner; glabrous and of normal grass-green colour.

Maturity—medium late, about the same as Banner.

Straw—mid-tall, medium size and strength but somewhat coarser than Banner, medium to heavy pubescence at upper nodes.

Panicle Characters—

Size and shape—medium size, equilateral, rachis usually erect, often slightly drooping, branches medium length, mostly at right angles to the rachis or drooping at full maturity.

Spikelets—Pendulous, usually two flowers.

Outer glume—mostly with 9 or 10 veins, somewhat coarser than Banner; average length to width ratio 2·9 to 1.

Grain Characters—

Shape—medium length, slightly shorter and wider than Banner, average length to width ratio 5·2 to 1.

Basal hairs—traces usually present.

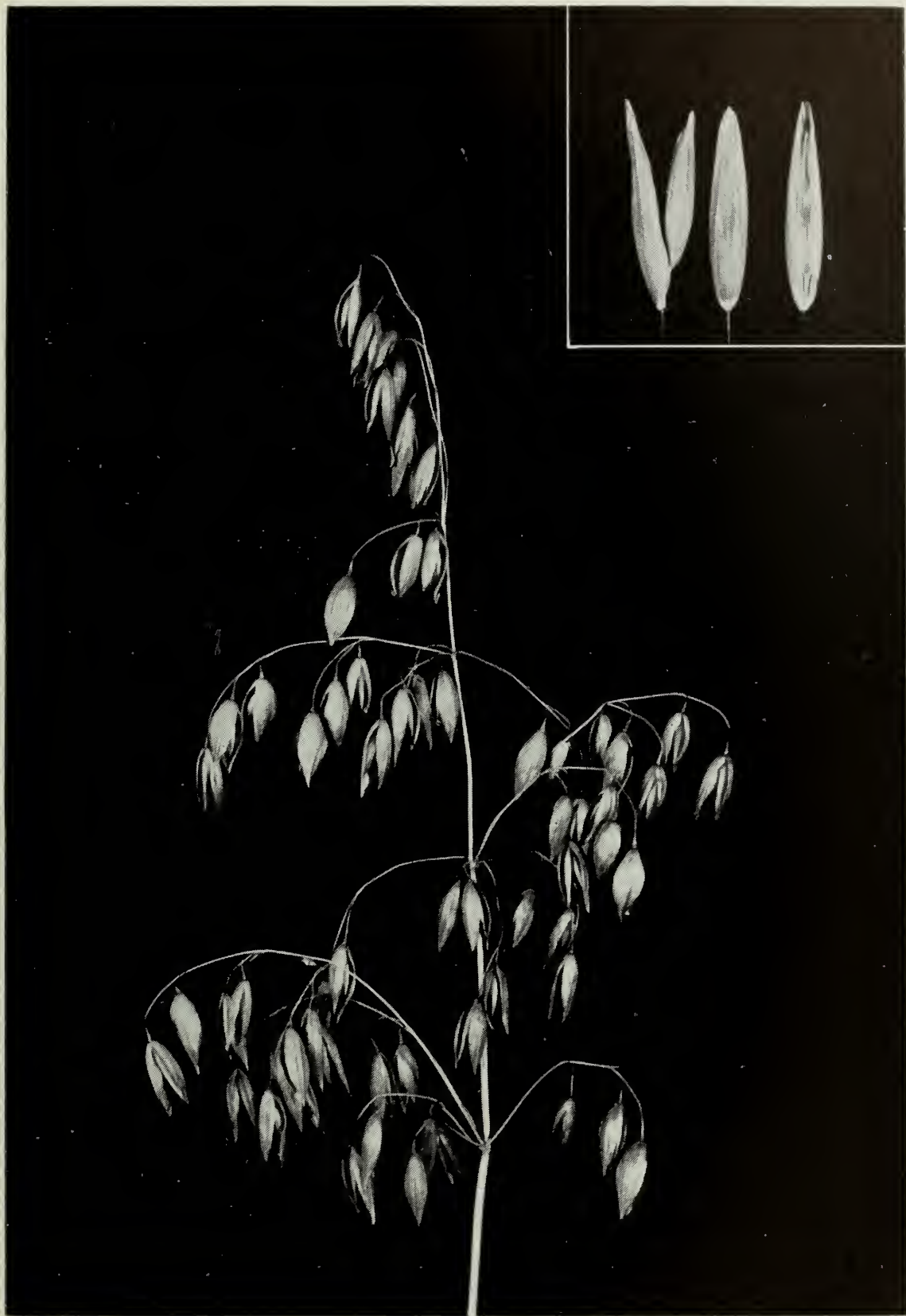
Crease—slightly shallow to full, medium width usually with transverse depression.

Lemma or flowering glume—creamy white; awns usually numerous, medium strong, darkened at base, slightly twisted and often slightly bent; veins mostly 7, occasionally 8 or 9 under abnormal conditions.

Rachilla—medium length, averaging 2·37 mm., glabrous.



ABUNDANCE



GOLD RAIN

GOLD RAIN

This variety is of Swedish origin, a sister sort of Victory and thus a pedigree selection out of Milton. It was introduced into Canada in 1911 by L. H. Newman, then Secretary of the Canadian Seed Growers' Association.

Gold Rain is a yellow oat, a few days earlier than Banner and is apparently fairly widely adapted to Canadian soil and climatic conditions. This variety has good quality, being thinner in the hull than either Banner or Victory. The straw is usually of fairly fine quality. Gold Rain is susceptible to both rusts and smuts.

Description

Plant Characters—

Leaves—medium width, glabrous and of normal grass-green colour.

Maturity—medium, a few days earlier than Banner.

Straw—mid-tall, medium size and strength, light to medium pubescence on upper nodes.

Panicle Characters—

Size and shape—medium size, equilateral, rachis usually erect, branches medium length, mostly ascending except at full maturity.

Spikelets—pendulous, usually two flowers.

Outer glumes—mostly with 9 or 10 veins, average length to width ratio about 2.9 to 1.

Grain Characters—

Shape—medium width, short, blunt tip, average length to width ratio about 5.5 to 1.

Basal hairs—traces usually present.

Crease—slightly shallow to full, medium width to wide.

Lemma or flowering glume—yellow; awns usually absent; veins mostly 7.

Rachilla—medium short, averaging 2.30 mm., traces of pubescence often present.

LEGACY OTT. 678

This variety is of hybrid origin and was produced by the Cereal Division, Central Experimental Farm, Ottawa. It was developed from a cross between Banner Ott. 49 and Sixty Day. While somewhat limited in its adaptation, Legacy has shown up well at certain points in Central Saskatchewan and Alberta and also in parts of Quebec. The variety matures from four to seven days ahead of Banner, is thin in the hull, and where adapted often outyields the standard later varieties. The weight per 1,000 kernels is usually rather low as a result of its slender grain shape.

Description

Plant Characters—

Leaves—medium width, glabrous and somewhat paler green than other varieties described above.

Maturity—medium early, about a week earlier than Banner.

Straw—mid-tall, medium size and strength, upper nodes carrying slight to medium pubescence.



LEGACY OTT. 678

Panicle Characters—

Size and shape—medium small, equilateral, rachis usually erect, branches rather short, mostly ascending except at full maturity.

Spikelets—semi-pendulous, usually two flowers.

Outer glume—mostly 9 or 10 veins, average length to width ratio about 3.3 to 1.

Grain Characters—

Shape—medium width to narrow, medium length, pointed, average length to width ratio about 6.4 to 1.

Basal hairs—traces often present.

Crease—slightly shallow to full.

Lemma or flowering glume—creamy white; practically awnless; veins mostly 7.

Rachilla—medium length, averaging 2.5 mm., usually glabrous.

GOPHER

This variety is a pure line selection out of Sixty Day made at the University of Minnesota in 1917. Gopher has wide adaptations as regards soil, etc., and has proven to be well adapted to many sections of Western Canada, where it is now grown extensively as an early variety. Tests have shown that it may also have a place in parts of Eastern Canada. The hull percentage of Gopher is low and where well adapted gives a good quality sample. The straw, however, is rather short and under western conditions is not suitable as a variety for seeding on stubble.

Description*Plant Characters—*

Leaves—medium width, glabrous normal grass-green.

Maturity—early, similar to Alaska.

Straw—short, medium size to small, medium strength, upper nodes glabrous.

Panicle Characters

Size and shape—medium small, equilateral, rachis usually erect, branches medium length to short, mostly slightly drooping at maturity.

Outer glume—mostly 9 or 10 veins, average length to width ratio about 3.1 to 1.

Grain Characters—

Shape—medium width, medium short, very pointed, average length to width ratio approximately 6.1 to 1.

Basal hairs—traces usually present.

Crease—medium width, usually full.

Lemma or flowering glume—creamy white, awns present, weak to darkened at base and occasionally slightly twisted, but not bent; veins mostly 7.

Rachilla—medium long, averaging 2.5 mm., mostly glabrous, occasionally traces.



GOPHER

TABULATION OF CHARACTERS AS AN AID IN IDENTIFYING THE REGISTERED OAT VARIETIES

In order to facilitate the ready comparison of varietal characteristics, the following tabulation has been prepared listing the more important characters of each variety described:—

Variety	Maturity	Leaf pubescence	Node pubescence	Lemma or flowering glume		Awns	Grain		Glumes		Panicle shape	Rachilla		Basal hairs
				Colour	Number of veins		Length-width ratio	Shape of tip	Length-width ratio	Number of veins		Length	Pubescence	
Banner	Medium late	Glabrous	Pubescent	White	Mostly 7	Present, weak to medium	6:1	Pointed	3-2:1	9 or 10	Medium spreading	Medium	Absent	Traces often present
Victory	Medium late	Glabrous	Pubescent	White	7, 8 or 9	Present, mostly weak	5-2:1	Slightly blunt	3-1	9 or 10	Medium spreading	Medium short	Absent	Mostly absent
Alaska	Early	Glabrous	Pubescent	White	Mostly 7	Present, mostly weak	6-3:1	Pointed	3-5:1	8 or 9	Medium to widely spreading	Medium long	Traces often present	Traces usually present
Cartier	Early	Glabrous	Pubescent	White	Mostly 7	Present, weak to medium	6:1	Pointed to slightly blunt	3-4:1	8 or 9	Medium to widely spreading	Medium to medium long	Traces often present	Absent
O.A.C. 72	Medium late	Glabrous	Pubescent	White	7, 8 or 9	Present, medium strong	6-1:1	Medium pointed	3-3:1	9 or 10	Medium spreading	Short	Absent	Traces usually present
O.A.C. 144	Medium late	Pubescent	Pubescent	Pinkish White	7, 8 or 9	Absent	6-2:1	Long pointed	3-1	9 or 10	Widely spreading	Medium long	Traces often present	Present
O.A.C. 3	Early	Glabrous	Glabrous	White	Mostly 7	Absent	6-7:1	Pointed	3-5:1	8 or 9	Medium spreading narrow	Medium	Absent	Present
Abundance	Medium late	Glabrous	Pubescent	White	7, 8 or 9	Present, medium strong	5-2:1	Slightly blunt	2-9:1	9 or 10	Widely spreading	Medium	Traces often present	Traces often present
Gold Rain	Medium	Glabrous	Pubescent	Yellow	Mostly 7	Absent	5-5:1	Blunt	2-9:1	9 or 10	Medium spreading	Medium short	Traces often present	Traces often present
Legacy	Med. early	Glabrous	Pubescent	White	Mostly 7	Usually absent	6-4:1	Pointed	3-3:1	9 or 10	Medium spreading	Medium	Usually glabrous	Traces often present
Gopher.....	Early	Glabrous	Glabrous	White	Mostly 7	Present, weak to m. strong	6-1:1	Very pointed	3-1:1	9 or 10	Medium spreading	Medium long	Mostly glabrous	Traces usually present

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CEREAL DIVISION

Dominion Cerealists:

L. H. NEWMAN, B.S.A., D.Sc.

Chief Assistant:

J. G. C. FRASER, B.S.A.,
Spring Wheat Breeding and Investigations.

Cereal Specialist:

P. R. COWAN, B.S.A.,
Barley and Pea Breeding and Investigations.

Cerealists:

A. G. O. WHITESIDE, B.S.A., M.S.,
Flour Quality Investigations.
Autumn Wheat and Rye Breeding and Investigations.

R. A. DERICK, B.S.A., M.Sc.,
Oat Breeding and Investigations.

W. G. MCGREGOR, Ph.D.
Flax (for seed), Hemp, Buckwheat and Bean Breeding and Investigations.

DOMINION RUST RESEARCH LABORATORY (CEREAL DIVISION), WINNIPEG.

Senior Cereal Specialist:

C. H. GOULDEN, Ph.D.

Cereal Specialist:

R. F. PETERSON, Ph.D.

Cerealists:

J. N. WELSH, M.S.A.

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