

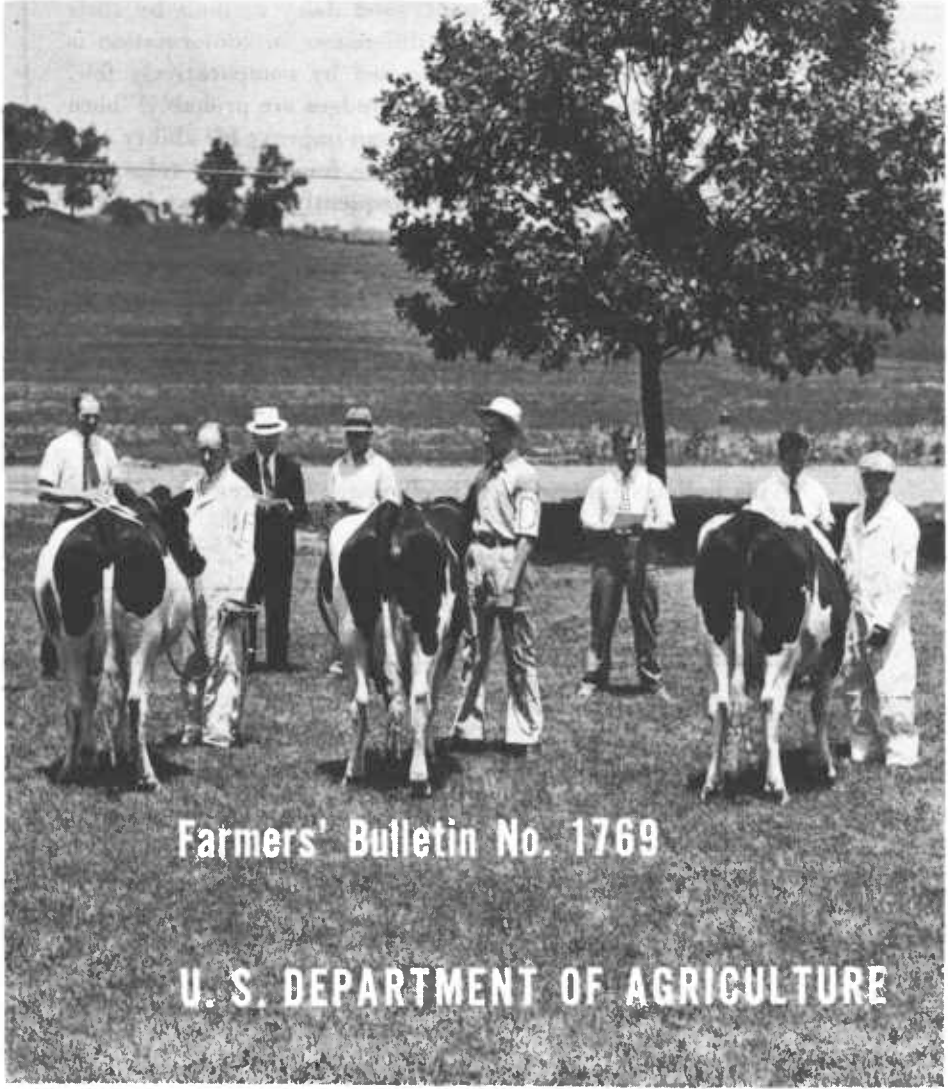
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Dairy Cattle Judging

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Farmers' Bulletin No. 1769

U. S. DEPARTMENT OF AGRICULTURE

THE ABILITY TO SELECT good dairy animals by their appearance and to appraise differences in conformation is desired by all breeders and possessed by comparatively few. Like good artists, really good stock judges are probably "born rather than made"; yet any person can improve his ability as a stock judge by observing some of the fundamental rules presented in this publication and by frequently practicing judging under the guidance of a competent instructor.

Breeders of dairy cattle who are constantly striving to develop and maintain a high-producing herd that is also satisfactory in type must frequently exercise their ability to judge. Instructors in dairy cattle judging are endeavoring to develop their students' latent ability to recognize differences in animals and to estimate the relative importance of these differences. The discussions in this bulletin may be helpful to both classes of dairymen.

This bulletin supersedes Miscellaneous Circular 99, Judging Dairy Cattle.

DAIRY CATTLE JUDGING

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IMPORTANCE OF DAIRY TYPE

In any dairy cattle breeding program the matter of type should be given some consideration. Economy of production and a long life of service naturally should be the principal objectives in the development of a dairy herd, but uniformity in the appearance of the animals in the herd and their fairly close approach to good type are qualities which buyers of breeding stock are seeking and for which they are usually willing to pay some premium. The breeder himself likewise gets greater satisfaction out of caring for a high-producing herd that approaches the accepted standards for good dairy conformation. The breeder, dairyman, and prospective dairyman, therefore, should learn what constitutes good type and how to distinguish between good and poor dairy conformation. The aim of this bulletin is to guide such persons in the practice of estimating the relative merits of dairy animals on the basis of their appearance.

The method presented is the one commonly used by competent judges in making awards in show-ring competition. It is also used, in some cases, for herd selections by practical breeders who attempt to combine good type with ability to produce. So far as selecting good producers solely on the basis of type is concerned, the method has its limitations. High-producing ability and a good dairy conformation do not always appear in the same animal. Many cows well developed and approaching the accepted ideal conformation are inherently low producers. On the other hand, many cows that fall far short of the best dairy type have high-production records. This condition can be attributed to the fact that body conformation and producing ability are probably inherited independently and that such small correlation as does exist between the two has in all probability been brought about through continuous mating of animals that combine the two qualities in a greater or lesser degree.

Since the correlation between good type and high production is far from perfect, it is evident that from a practical breeders' standpoint

greater emphasis should be given to indication of production than to the fine points of breed type. When the difference in production of two cows is slight, it is usually impossible to note this difference in the conformation, but when one is inherently a very low producer capable of producing, say, only 150 pounds of butterfat in a year, and the other is inherently a very high producer having a capacity for producing four or five times as much, a knowledge of the principles of judging makes it easy to determine by conformation alone which one is the low and which one is the high producer. This point is brought out clearly in figures 1 and 2. So far as inherent milk-producing ability is concerned, it is not difficult to determine which of these two cows is the better.

Judging is brought into practical use every time a cow is bought for dairy purposes. No matter whether or not the animal has a record of production, few dairymen would buy without an inspection. Some have so trained their powers of observation as to be able to tell fairly accurately by personal inspection alone whether or not a cow will be a good producer if given proper care and feed.

REFERENCE BOOKS, BULLETINS, AND PHOTOGRAPHS

The possibilities in the use of printed matter and pictures in familiarizing himself with the characteristics of the ideal types of different breeds should not be overlooked by the beginner or the student of livestock judging. A considerable amount of such material is easily available for study as texts or for reference. Many books on livestock judging have been written. The United States Department of Agriculture and the various State colleges of agriculture have issued and distributed many bulletins both on livestock judging generally and on the description of the ideal types of most of the important breeds of cattle. Where it is impossible for the beginner actually to see and handle the animals of a given breed, pictures of prize winners and outstanding animals of that breed often are obtainable. By studying these pictures the person unfamiliar with the breed can, to some degree, learn the desirable points in ideal conformation and appearance of the animals.

MAJOR POINTS IN JUDGING DAIRY COWS

The ultimate objective in dairy cattle judging is to enable one to select cows that will be not only economical producers of milk but also satisfactory in appearance. Therefore the points of conformation that must be fixed clearly in mind are those that are thought to be most closely associated with milk production. According to our present knowledge of the relation of function to form, these major points are: (1) General appearance, (2) dairy character, (3) body capacity, and (4) mammary system. In addition to these points there are what may be called the fancy points, such as pretty head, level rump, small horns, straight back, and wide muzzle. These fancy points are considered more or less carefully in present-day showing judging; but they are probably only slightly, if at all, correlated with producing ability. They do, however, add somewhat to the popular conception of beauty of the animal and thus may enhance its selling value and that of its offspring.

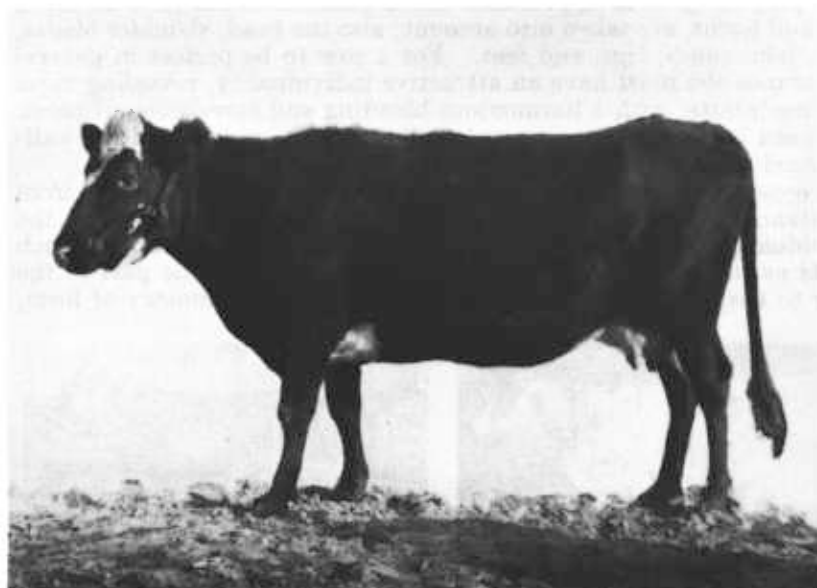


FIGURE 1.—Poor dairy type.



FIGURE 2.—Good dairy type.

GENERAL APPEARANCE

In judging general appearance breed characteristics such as color, size, and horns, are taken into account; also the head, shoulder blades, back, loin, rump, legs, and feet. For a cow to be perfect in general appearance she must have an attractive individuality, revealing vigor and femininity, with a harmonious blending and correlation of parts. She must have an impressive style and attractive carriage with a well-balanced walk.

In considering general appearance it is best to view the animal from a distance. This makes it possible to disregard, more or less, the individual parts of the body and to see the animal as a whole. Such points as the relation of the size and development of one part of the body to that of another, the general carriage and symmetry of form,

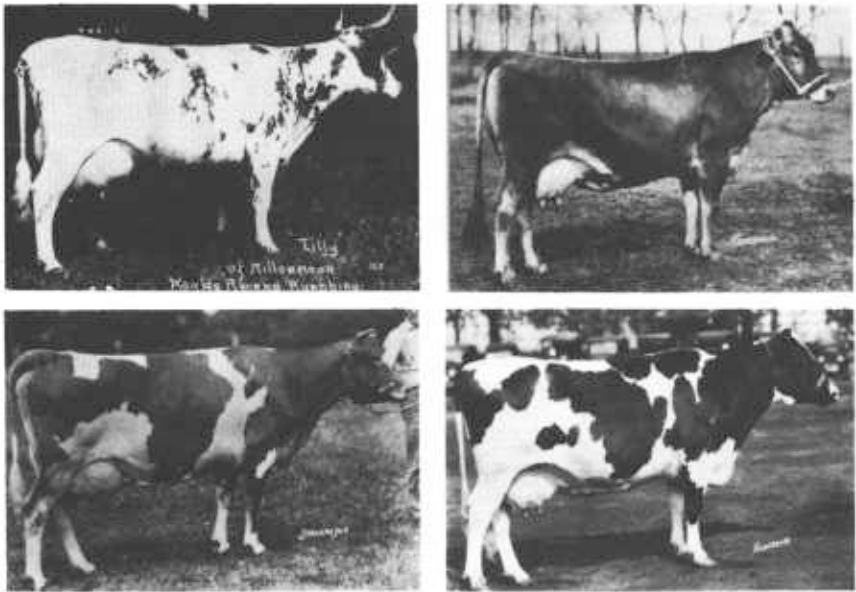


FIGURE 3.—Cows with good dairy conformation and high-production records (Ayrshire, Brown Swiss, Guernsey, and Holstein).

the blending of body lines, and the conformity of the animal to a definite type are considered under general appearance.

Good type refers to the standards for conformation established by the breed associations. This is the type sought for by show-ring judges. Breeders also use this standard as the ideal toward which to work. The purpose of establishing a type standard is to establish a definite form which will be accepted by most breeders.

Models of ideal types of dairy animals, as shown in figures 12-21, (pp. 15 to 20) have been prepared by the respective breed associations for the Ayrshire, Brown Swiss, Guernsey, Holstein-Friesian, and Jersey cows, and for Holstein-Friesian and Guernsey bulls. Although no models have been prepared for Ayrshire, Brown Swiss, and Jersey bulls, the illustrations given have been submitted by the respective associations as representing bulls typical of the breed. Such standards

as these are helpful in fixing in one's mind the ideal form toward which the breed associations are working.

Dairy form may be distinguished from "scrub" form by referring to figures 1 and 2. When the difference is as great as this, it is readily seen. However, one cow may be only slightly poorer in dairy conformation than another. In such a case the various points must be balanced one against the other, and the exactness of such balancing is what determines whether or not a person can judge accurately.

Dairy cows of good conformation are illustrated in figures 2 and 3. These are good producers, and they also compare fairly well with the type fixed as the standard by the breed associations, shown on pages 15 to 18.

Not all high producers have the pleasing conformation possessed by these animals, nor are all animals of this conformation high producers; but the outstanding points of conformation are, in the main, to be found on most cows of high-producing ability.

DAIRY CHARACTER

Dairy character, sometimes referred to as "temperament," is a term for that quality in a cow which indicates that she will convert feed into milk rather than solely or mostly into body fat and flesh. The lack of the blocky, beefy appearance, as shown by angularity, the body not heavily covered with flesh, and the bones fairly prominent, are the main indications of dairy character. In a mature cow the size of the udder is also taken into account.

A nervous temperament is not to be confused with dairy temperament. The former refers to the tendency to be easily excited. A beef cow may be nervous but show a decided lack of dairy character. It is true that good dairy cows have a highly developed nervous system, owing to the fact that the nerves control the many functions of the organs of the body, but this does not necessarily show itself in a nervous disposition. The tendency to become easily excited is not a desirable quality in dairy cows.

In judging dairy character due allowance must be made for stages of lactation and pregnancy. Both cows and heifers heavy with calf, especially the latter, will take on flesh to the point where normal angularity may be obscured. Such animals ordinarily lose sufficient flesh and fat during 2 or 3 months of heavy milking to permit the observance of their actual dairy character. Extreme thinness resulting from improper feeding should not be confused with indications of dairy character.

Ability to draw reasonably accurate conclusions with respect to dairy character requires long experience with dairy cattle and numerous observations and comparisons of individuals differing in type.

BODY CAPACITY

If a large and a small cow of the same breed both have an inheritance for a high level of production, the larger cow is more likely to produce in accordance with this inheritance than the smaller cow, because of the former's capacity for consuming large quantities of feed. There will probably not be as great a physical strain for the larger cow that produces at a high level as for the smaller. On the other hand, large

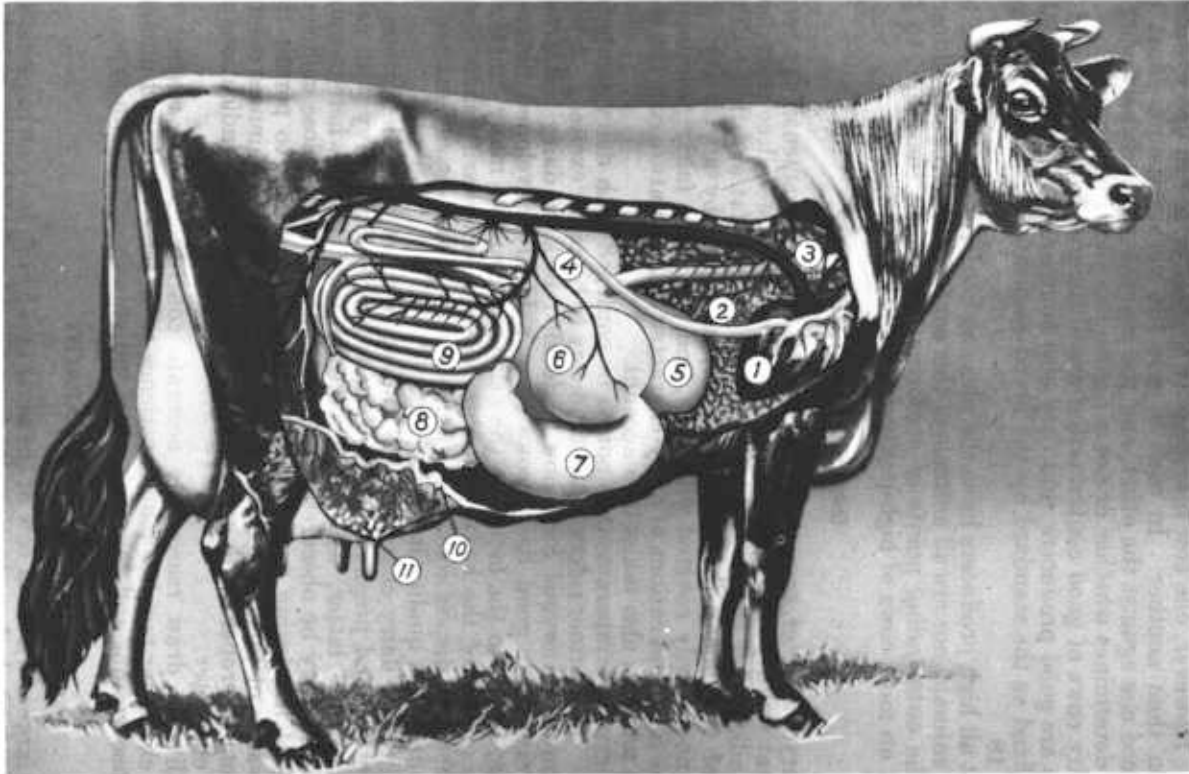


FIGURE 4.—Diagram of cow, showing organs: 1, Heart; 2, lungs; 3, gullet; 4, paunch (rumen or first stomach); 5, reticulum (second stomach); 6, omasum (third stomach); 7, abomasum (fourth stomach); 8, small intestines; 9, large intestines; 10, milk veins; 11, milk cistern.

size alone is no guarantee of high milk-producing ability, because the larger cow may not possess the inheritance for a high level of production.

The various breed associations have established standards of weight for their respective breeds. These are given on the score card (pp. 28 and 29). One should familiarize himself with these standards and learn to recognize the size of an animal that is about the standard for the breed.

Figure 4 shows the relative positions of some of the organs of a cow. The nature of the feed which is taken into her body requires a large storage capacity. It takes feed to make milk, and a dairy cow with the inherent ability to produce large quantities of milk usually has a large capacity for feed also. The four divisions of the stomach of a cow and her intestines must not only be large, but the space they occupy must be roomy. This necessitates well-sprung rear ribs and a long, wide, and deep body.

High milk production requires a plentiful blood supply not only for the udder but for all the processes of digestion and assimilation as well as for the nervous system, and all this blood must be purified by the lungs. This emphasizes the importance of an ample heart and lung capacity, well-sprung fore ribs, and a good breadth and depth of chest. Figures 5 and 6 illustrate differences in body capacity.

HEALTH, VIGOR, AND SOUNDNESS

Health and vigor are factors which must be considered in judging any class of breeding animals. Deficiencies in these points are determined largely by appearance and the apparent frailty and delicacy of the animal. Associated with them are the factors of constitution and fertility. Lack of fertility may sometimes be determined by a laxness or sinking of the muscles around the tail head, producing a depression. Such indications, however, are not infallible. Constitution does not refer to the dimensions of the chest, but rather to the ability of the animal to withstand the strain of heavy milk production. Many of the points pertaining to health and vigor are indefinite and can be evaluated only by those having had considerable cow experience, if at all. Extreme deviations from normal conformation and condition, such as blindness, lameness, knocked-down hips, and blind quarters, are referred to as unsoundness.

Concerning the importance of the major points, then, it may be said that so far as producing ability is concerned, without regard to minor points, that cow is very likely to be the best which presents the best general appearance; surpasses in dairy character; has the largest capacity for consuming feed, as shown by the length, depth, and breadth of the body where the organs of digestion are located; the greatest lung, heart, and circulatory system, as shown by the development of the corresponding part of the body; the greatest development of the mammary system, and at the same time is most nearly perfect in health and vigor.

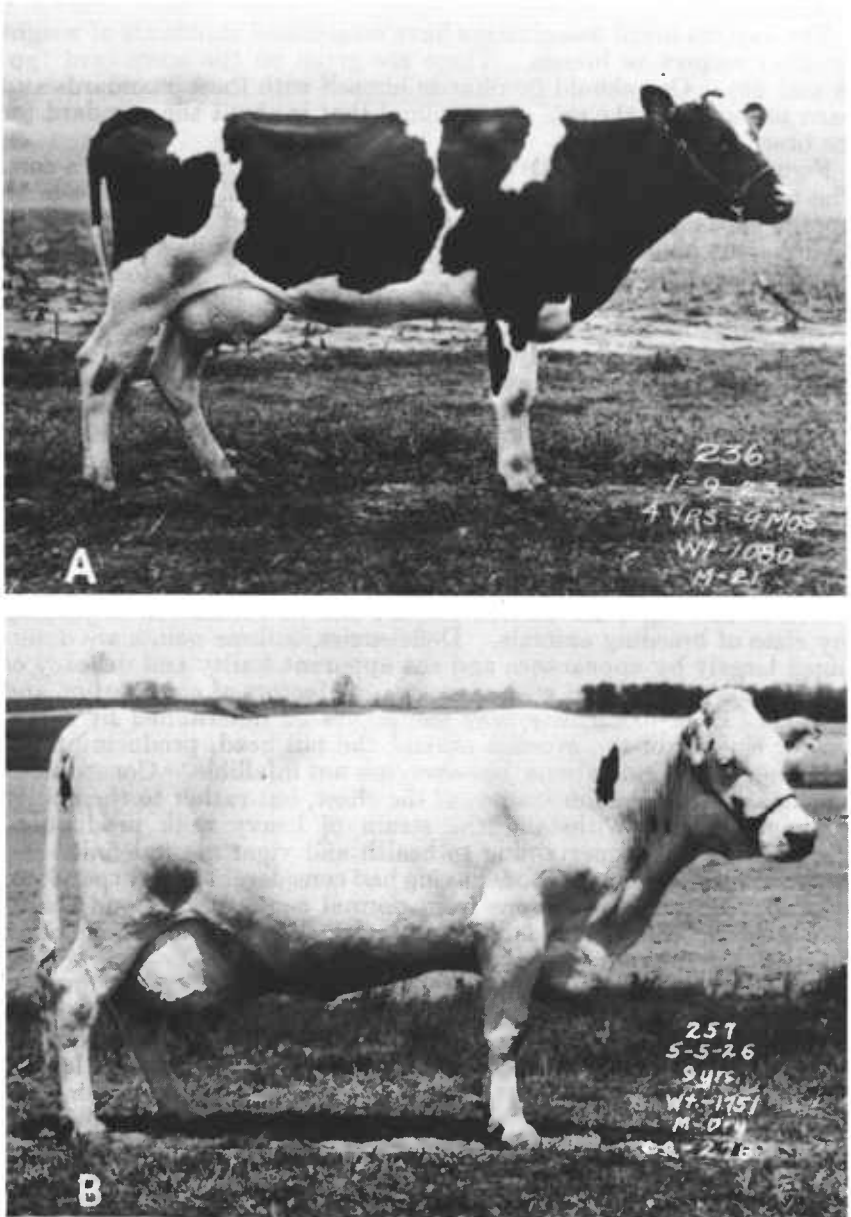


FIGURE 5.—Shallow-bodied (A) and deep-bodied (B) Holstein cows.

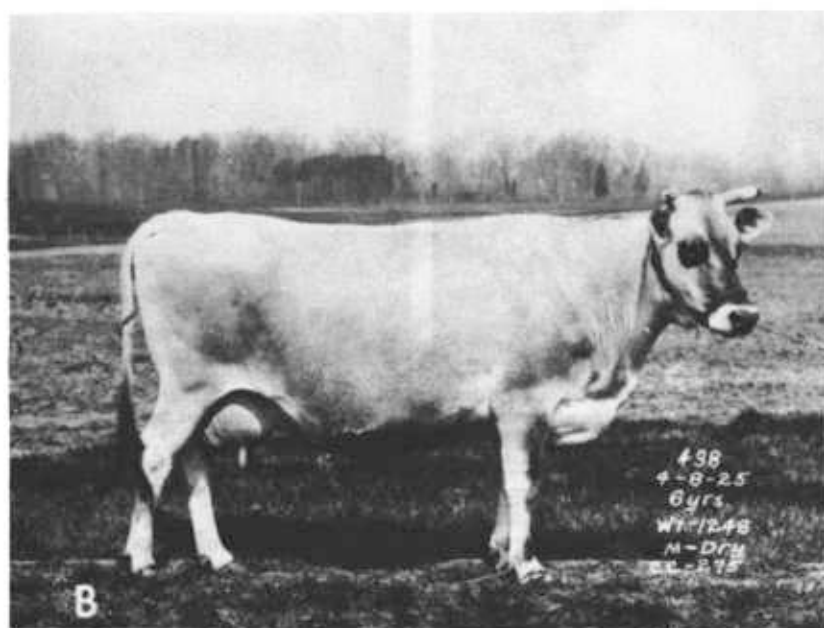
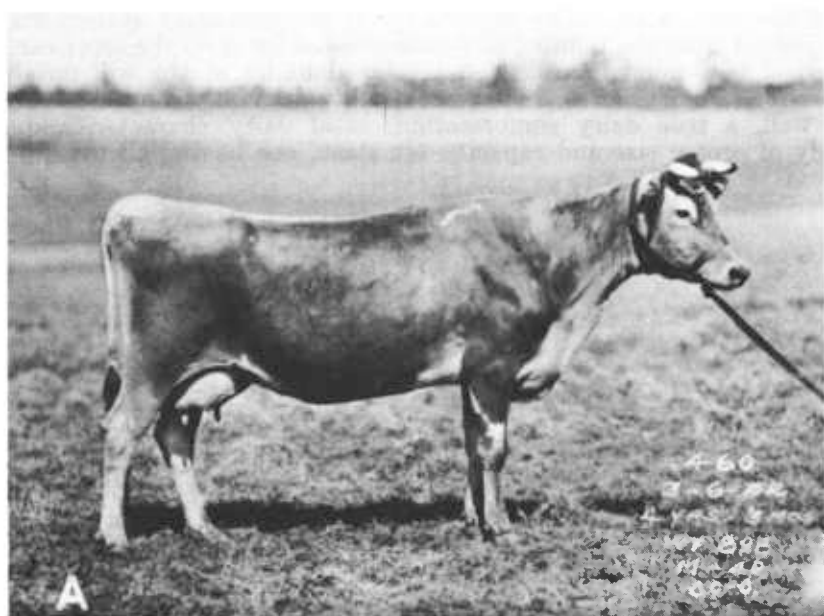


FIGURE 6.—Shallow-bodied (A) and deep-bodied (B) Jersey cows.

MAMMARY SYSTEM

Included in the mammary system are the udder, the milk veins, and the milk wells. The importance of the mammary system may be judged from the number of points allowed for it on the score card. A good cow must have a well-developed udder or she will not be classed as a dairy cow. A cow with good health and vigor and having, as well, a true dairy conformation, ideal dairy character, and a body of proper size and capacity—in short, one having all the other

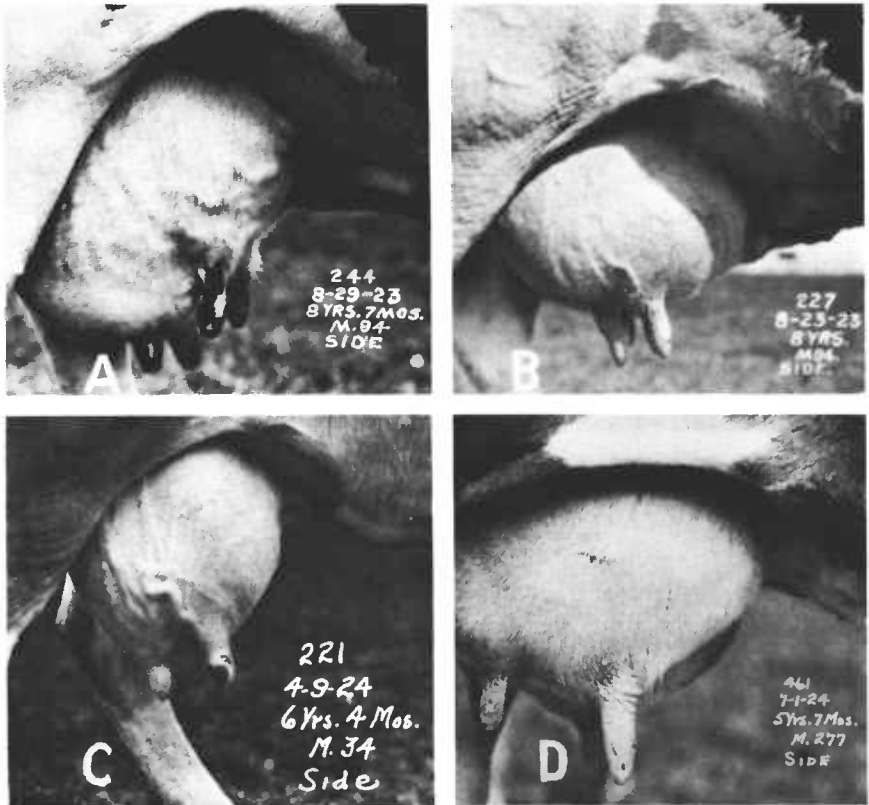


FIGURE 7.—Side views of poor udders: *A*, Deficient forequarters; *B*, teats too close together; *C*, a pendulous udder; *D*, poorly developed rear udder and teats of uneven size.

important dairy qualities—but poor in udder development, should never win first honors in a show ring.

But what constitutes a good udder? When in full flow of milk a good udder is large, extends well forward and far up behind, and is firmly attached to the body. The bottom is nearly level, the quarters are properly balanced with respect to size, and there is no marked separation between them. A good udder is pliable and free from lumps. A hard, meaty udder is not desirable. When milked out, a good udder reduces materially in size, becomes more lax, and some-

times hangs in more or less distinct folds. Laxness occurs also in the case of dry cows except those nearing the time of calving. The skin of a good udder is thin and the hair fine and soft. Views of different types of udders are shown in figures 7 to 10, inclusive.

Teats should be evenly placed, of moderate size, and easy to milk. Judges sometimes compare the milking qualities of udders by drawing a little milk from each quarter. In the larger cattle shows judges

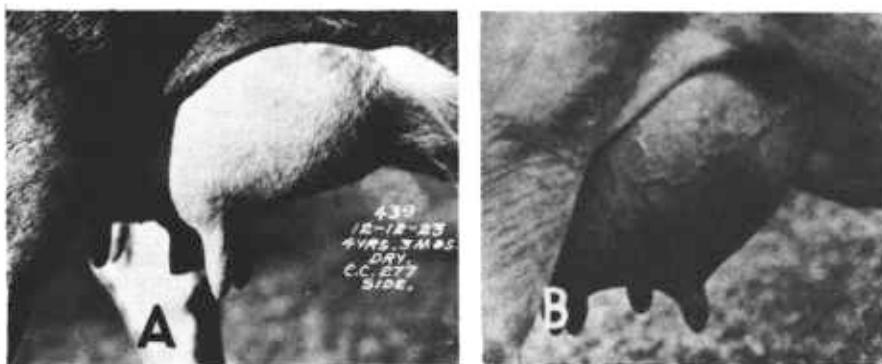


FIGURE 8.—A and B, side views of good udders. Note the perfect balance of udders, with well-placed teats of good size.

many times require the cows to be milked dry in the show ring. Defects in the udder and teat obstructions can thus often be detected.

The size and shape of the teats and the shape of the udder, while not indicative of the producing capacity, are nevertheless important points to consider from the standpoint of disease, injury, and convenience in

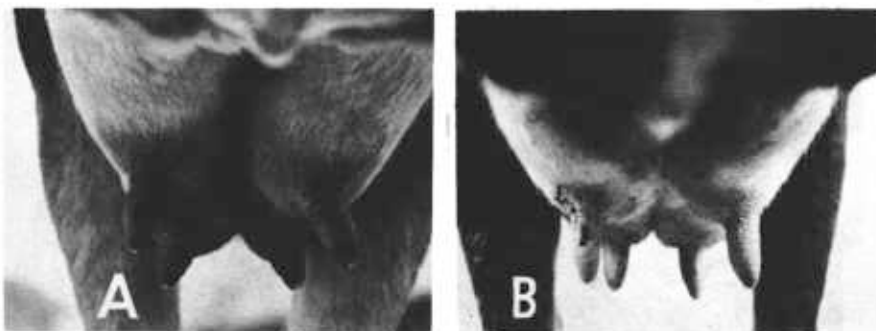


FIGURE 9.—Front views of poor and good udders: A, this udder is cut up too much between halves and quarters; B, udder more evenly quartered.

milking. A pendulous udder is more susceptible to injury than one closely attached to the body.

The large blood vessels usually visible on the under side of the abdomen are called mammary veins. These carry venous blood from the udder back to the heart. Other veins serving the same purpose are hidden from view. Furthermore, they may vary in size; and since the blood does not all return to the heart through the veins that are visible, too much emphasis should not be given to them in judging.

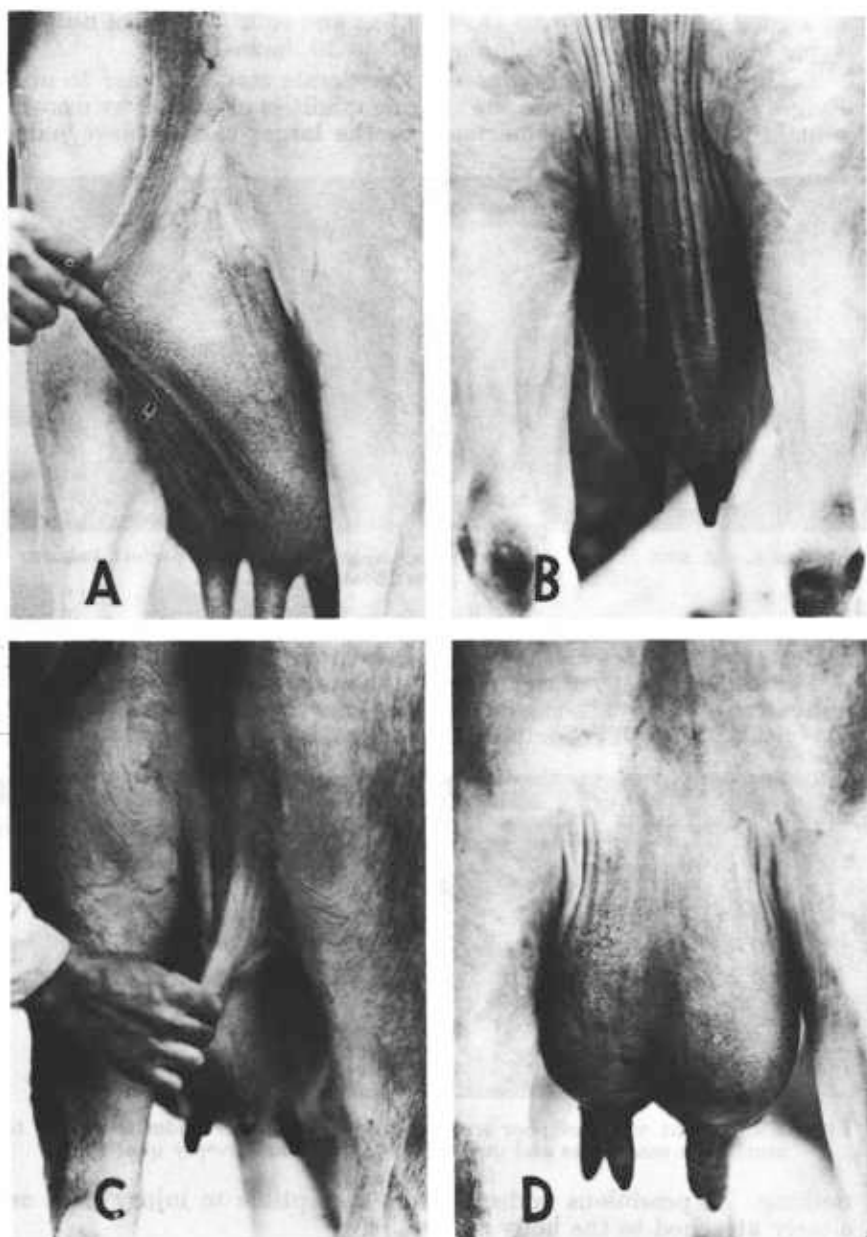


FIGURE 10.—Udder attachments. A good udder when milked out dry should hang in loose folds and show high attachment in rear: A and B, Good udders; C and D, poor udders.

The milk wells are the holes in the body wall through which the visible mammary veins pass to return to the heart. The milk wells vary in size and number; and for the same reason as that given for the milk veins, too much emphasis in judging should not be given to their size and number.

OTHER DESIRABLE POINTS IN CONFORMATION

The aim of breeders of dairy cattle is to combine good type and high production. The standard of type has been fixed arbitrarily by the breeders, but at the same time ability to produce has been kept in mind. A large, well-shaped udder is a valuable point on any dairy cow; but it is more valuable when it appears on one that is straight in the back, wide between the two hip bones, and wide also between the hip bones and the pin bones, because such points add to the beauty of the animal and enhance its selling value. These points of conformation, although they may not show a positive correlation with production, should nevertheless be kept constantly in mind while judging. A U-neck or a narrow forehead and muzzle may be found on a high-producing cow, but the standard of breed type requires that the neck be straight or gently curved and that the forehead and muzzle be broad; therefore, consideration should be given to such points, and deductions must be made according to the severity of the defects.

THE SCORE CARD

The dairy-cow score card, shown on pages 27 and 28, gives the relative importance of the various items of conformation and characteristics to be considered in judging. This score card was prepared and approved by the Purebred Dairy Cattle Association (1943), and may be used in judging cows of any dairy breed.

The detailed items that are listed in the scale of points in the score card are arranged in four main groups: (1) General appearance, (2) dairy character, (3) body capacity, and (4) mammary system. The weights given these groups should be carefully considered in judging. Note that general appearance and mammary system are each allowed a maximum of 30 points, whereas dairy character and body capacity are each allowed only 20 points.

While the scale of points in this score card applies to cows of any dairy breed, ideals of type and breed characteristics must be taken into consideration. Therefore, the score card includes a description of special breed characteristics, such as color, size, and horns, for the five leading dairy breeds used in the United States (Ayrshire, Brown Swiss, Guernsey, Holstein, and Jersey).

EVALUATION OF DEFECTS

The student of judging must not only learn to detect defects in conformation, but must also be able to evaluate properly the defects and unusual conditions he observes. A guide to the evaluation of defects in judging cows, essentially as printed on the reverse side of the dairy-cow score card published by the Purebred Dairy Cattle Association, is as follows:

Guide to Evaluation of Defects and Unusual Conditions in Judging Cows

In a show ring, disqualification means that the animal is not eligible to win a prize. Any disqualified animal is not eligible to be shown in the group classes. In slight to serious discrimination, the degree of seriousness shall be determined by the judge.

EYES

1. Total blindness: *Disqualification.*
2. Blindness in one eye: *Slight discrimination.*

WRY FACE

Serious discrimination.

PARROT JAW

Slight to serious discrimination.

SHOULDERS

Winged: *Slight to serious discrimination.*

CAPPED HIP

Slight discrimination.

TAIL SETTING

Wry tail or other abnormal tail settings: *Slight to serious discrimination.*

LEGS AND FEET

1. Lameness—apparently permanent and interfering with normal function: *Disqualification.*
Lameness—apparently temporary and not affecting normal function: *Slight discrimination.*
2. Bucked Knees, blemished hocks, crooked hind legs, weak pasterns: *Serious discrimination.*
3. Evidence of arthritis, crampy hind leg: *Serious discrimination.*
4. Enlarged Knees: *Slight discrimination.*

ABSENCE OF HORNS

No discrimination.

LACK OF SIZE

Slight to serious discrimination.

UDDER

1. One or more blind quarters: *Disqualification.*
2. Abnormal milk (bloody, clotted, watery): *Possible disqualification. A slight to serious defect.*
3. Udder definitely broken away in attachment: *Serious discrimination.*
4. A weak udder attachment: *Slight to serious discrimination.*
5. One or more light quarters, hard spots in udder, side leak or obstruction in teat (spider): *Slight to serious discrimination.*

DRY COWS

In case of cows of apparently equal merit: *Give preference to cows in milk.*

OVERCONDITIONED

Serious discrimination.

TEMPORARY OR MINOR INJURIES

Blemishes or injuries of a temporary character not affecting animal's usefulness: *Slight discrimination.*

EVIDENCE OF SHARP PRACTICE

1. Animals showing signs of having been operated upon or tampered with for the purpose of concealing faults in conformation, or with intent to deceive relative to the animal's soundness: *Disqualification.*
2. Heifer calves showing evidence of having been milked, in an attempt to deceive regarding natural form of udder: *Serious discrimination.*

In order to make the score card more useful a diagram is given (fig. 11), which names and locates the various parts referred to on the score card. This diagram also was taken from the score card of the Purebred Dairy Cattle Association.

As facts accumulate from research and experimental work, a revision of the list of points of conformation that are thought to be significant may become necessary. Although it is difficult to give a correct value as to the relative importance of the various characters that are listed, it is thought that most of the points shown on the general score card have some bearing on the final valuation of the animal.

An accurate score on any animal cannot be made until a clear picture of the ideal or perfect animal has been fixed in mind. Work with the score card will help to create this mental picture, especially

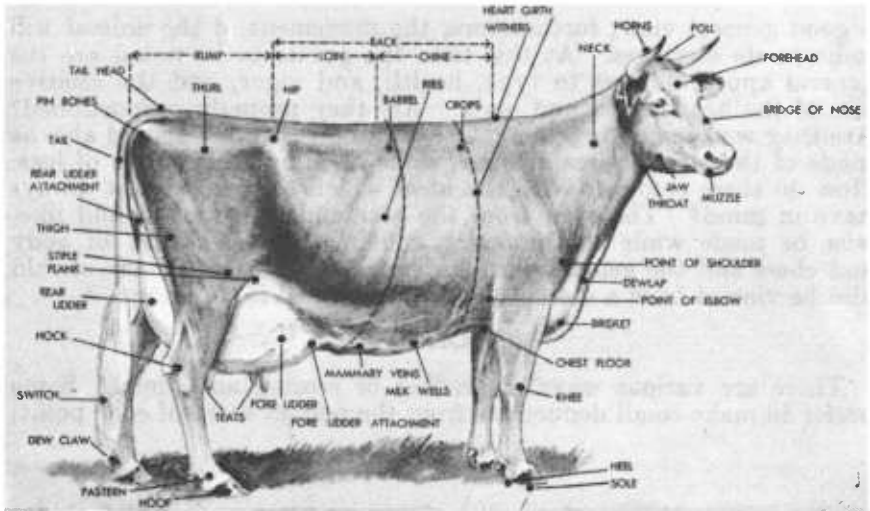


FIGURE 11.—Diagram of cow, showing name and location of parts.

if the beginner can work with animals that are nearly perfect or approach the ideal type. Where such animals are not available for study, photographs of the winners at some of the larger cattle shows, or models of the ideal types previously mentioned (figs. 12 to 21, inclusive) may be used to fix the ideal type in mind.

HOW TO USE THE SCORE CARD

The beginner should first become familiar with the location and name of each point or part of the animal. The animal to be scored is led past the scorer at a distance of 20 to 30 feet. This permits

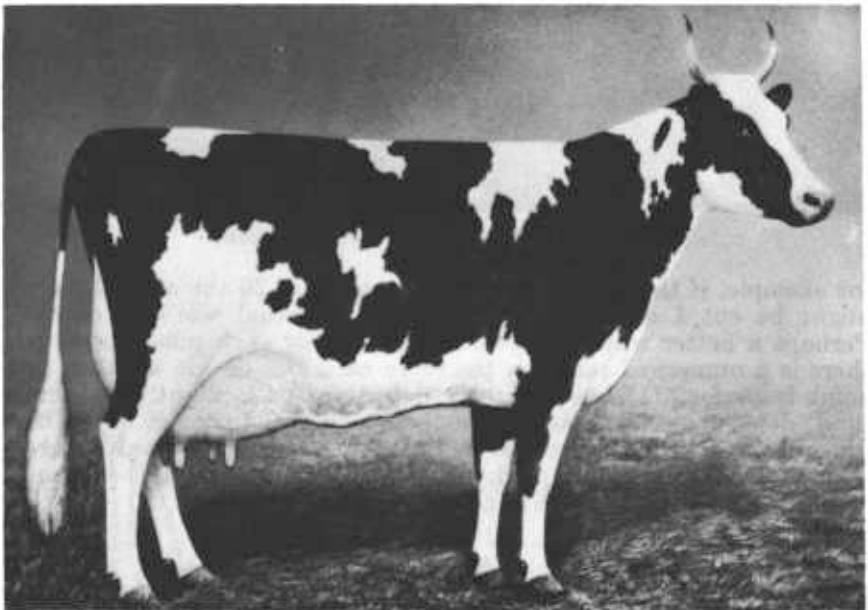


FIGURE 12.—Ideal-type Ayrshire cow.

a good general view; furthermore, the movement of the animal will indicate its alertness. At this time the points to be noted are the general appearance as to type, health, and vigor, and the relative size of the head, neck, and body. Are they properly proportioned? Are they well joined together? A careful observation should also be made of the straightness of back, slope of rump, and length of legs. How do these compare with the ideal which the judge must always have in mind? The view from the rear and the front should likewise be made while the animal is moving and the width of body and chest and the general carriage noted. All these points should also be viewed from a distance while the animal is standing.

SCORING

There are various ways of grading or scoring an animal. Some prefer to make small deductions from the perfect score of each point;

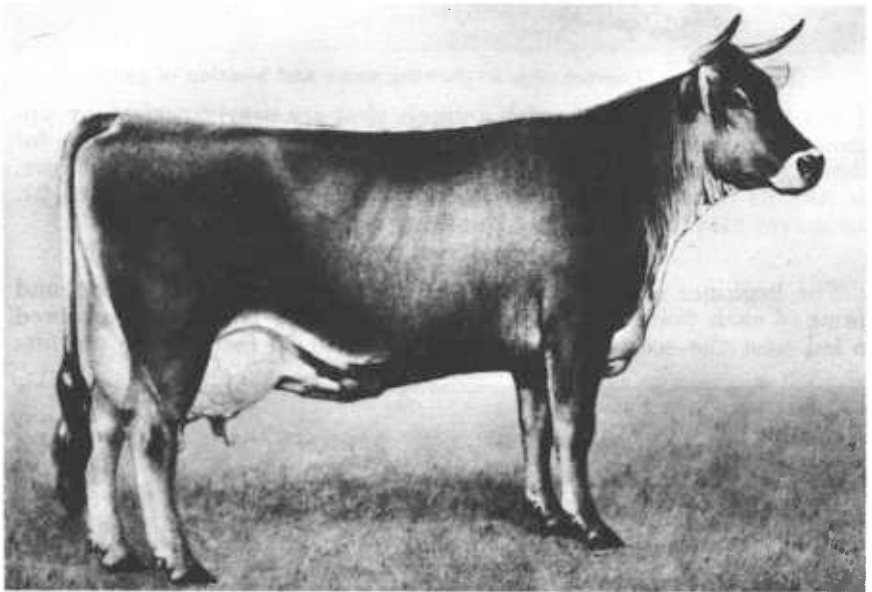


FIGURE 13.—Ideal-type Brown Swiss cow.

for example, if the perfect score of the udder is 20 the animal scored might be cut 1 or $1\frac{1}{2}$ points, making the actual score 19 or $18\frac{1}{2}$. Perhaps a better way is to consider separately each point for which there is a numerical value on the score card and decide whether this point is perfect (1), very slightly defective (0.9), slightly defective (0.8), defective (0.7), markedly defective (0.6), or poor (0.5). Then by multiplying the perfect score for each point by the value given to it, the final score is obtained. The sum of the scores for the various points gives the total score of the animal.



FIGURE 14.—Ideal-type Guernsey cow.

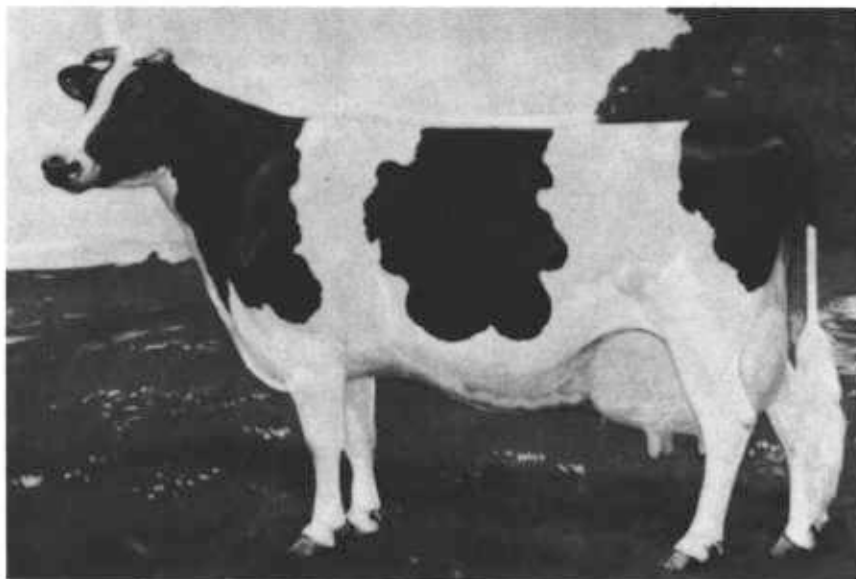


FIGURE 15.—Ideal-type Holstein-Friesian cow.

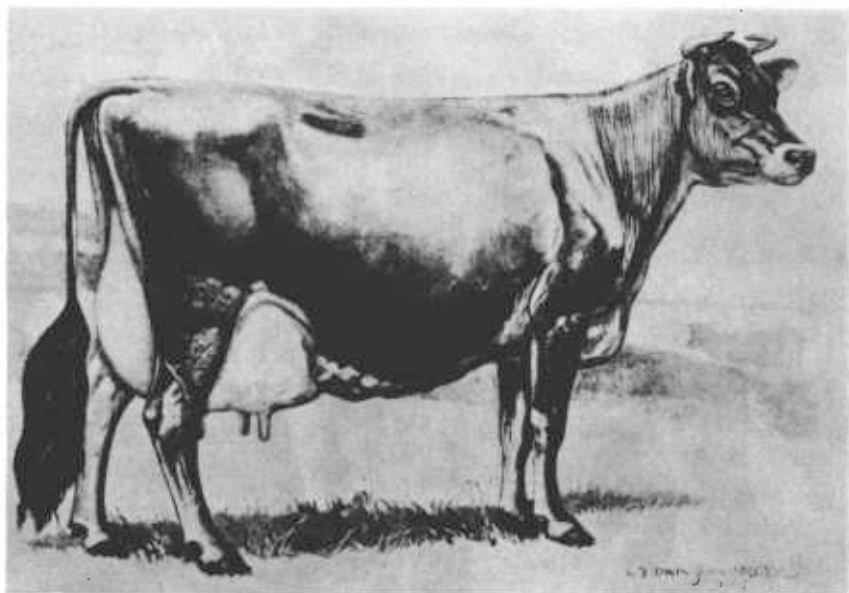


FIGURE 16.—Ideal-type Jersey cow.



FIGURE 17.—Typical Ayrshire bull.



FIGURE 18.—Typical Brown Swiss bull.



FIGURE 19.—Ideal-type Guernsey bull.

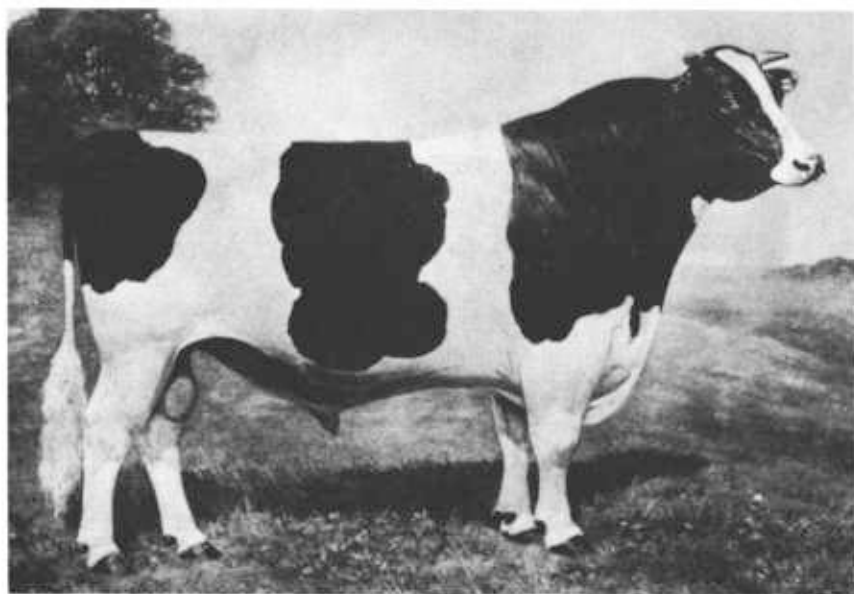


FIGURE 20.—Ideal-type Holstein-Friesian bull.

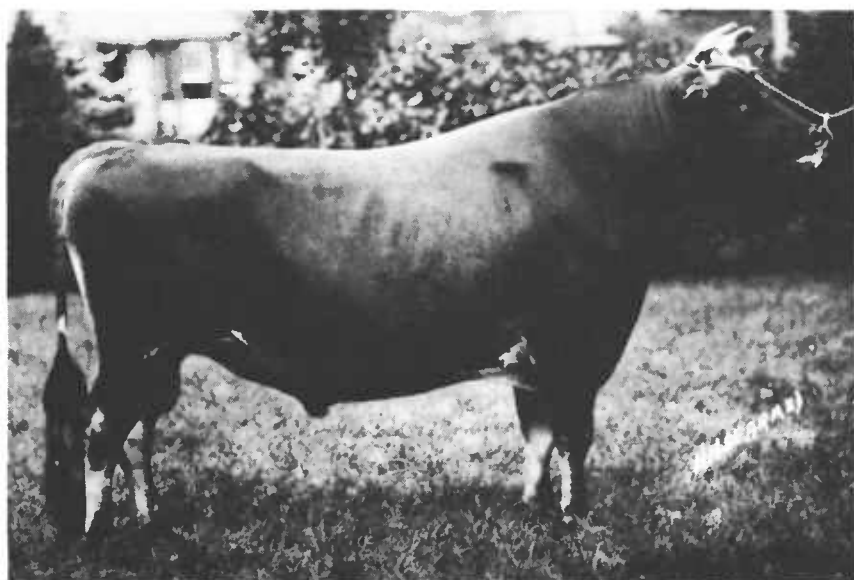


FIGURE 21.—Typical Jersey bull.

COMPARATIVE JUDGING

The powers of observation are developed more rapidly and the most important items to be considered in judging are more firmly established by comparative judging than by the scoring method.

The discussion of comparative judging as applied to teaching and judging contests deals with methods that have been followed with little variation for many years. In 1930, however, the Bureau of Dairy Industry proposed a plan whereby combined ratings for type and production performance may be used in placing a ring of animals. The plan, which was perfected further in 1941,¹ has been tried successfully in numerous places. However, for the benefit of those desiring to conduct comparative-judging classes and judging contests in the old manner the following observations and tabulations are included.

CHOOSING A CLASS OF ANIMALS TO BE JUDGED

A group of animals to be judged is called a class or a ring. For practice judging and for contest work four is the number of animals most commonly used, although a larger number would more nearly simulate show-ring conditions. The animals in a class should be of the same sex and of nearly the same age. They should be selected with the aim of assembling animals fairly uniform in conformation but with enough differences so there will be little possibility of different placing by two competent judges. In other words, when a person is learning to use his judgment concerning the importance of the various points of conformation, he should work on classes of animals that have fairly distinct correct placings.

METHODS OF OBSERVATION

The animals should first be lettered at random, A, B, C, D, etc. This may be done by marking the letters on cardboard to hang on the animals or on the attendants. It is best to lead the animals in alphabetical order before the judges and to keep the animals in that order throughout the observation.

The whole class of animals is led past the judges at a distance of about 30 feet. If facilities permit, the class should be led in a circle having a radius of about 30 feet, with the judges in the center, for about 3 minutes. The animals are led in one direction for half the time and in the opposite direction for the other half. This will expose both sides to the view of the judges. During this time, as in the scoring by use of the score card, a careful observation is made of the general appearance and carriage. Individual points, such as size, length and depth of the body, straightness of the back and the rump, fullness of the chest and the barrel, attachment of the udder, and shape of the head are observed; but these must be viewed from the standpoint of the whole animal rather than from that of the individual parts.

The animals are then lined up side by side a few feet apart to give the judges the front and rear views from a distance and from close-up. This should occupy about 3 minutes. At this time comparisons are made of such points as the head, the width of the chest and the barrel, the width of the rear udder, and the width of the pelvic bones.

¹ FEET, W. W. SELECTING DAIRY CATTLE ON THE BASIS OF TYPE AND PRODUCTION RECORDS. U. S. AGT. FARMERS' BULLETIN 1998, 26 pp. 1948.

The animals are again lined up in single file to give the judges a side view at a distance of 20 to 30 feet. This will allow a further comparison of the points observed while the animals were in motion and should take about 3 minutes. While the animals are standing in this position the final close inspection is made and should take about 6 minutes. At this time such points as the quality of the hair and the hide, the texture of the udder, and the smoothness of the covering are considered. This close inspection is made mainly to confirm the decisions that have already been reached and to take what notes are needed for giving reasons for the placings.

HANDLING THE ANIMAL

In judging contests handling the animals is often prohibited. Under such circumstances it is assumed there are no defects in any animal not visible to the eye. When handling is permitted, it is well to approach the animal with care. Rough handling may annoy it and make observation difficult, if not impossible. Movements of persons while judging should be slow and noiseless. Not more than five or six persons should be allowed to handle an animal at one time, and even fewer than these would make observation easier for the judges and cause less annoyance to the animal.

PLACING AND REASONS

After closely inspecting the animals, each contestant marks his placings on a card and hands it to the instructor or official judge. Giving reasons for the placings is a good practice and should be required for every class where practical. The reasons show to what extent his observations have been correct. If written reasons are required it is customary to allow 10 to 20 minutes for writing them. This should be done without looking at the animals. The points of each animal should be fixed so clearly in mind that reasons can be given from memory. If reasons are given orally, 2 to 3 minutes are usually allowed in each class or ring judged.

A convenient form of card to use is shown below. This should be printed on fairly heavy paper that does not require a stiff back when used in the ring. A card 5 by 8 inches is a convenient size.

Card for Placings and Reasons

Student's name or number.....
 Class.....
 Placings: 1st....., 2d....., 3d....., 4th.....
 Reasons for placing:

.....

.....

.....

HOW TO GIVE REASONS

The reasons for placing must be short and concise. Oral reasons should be given slowly but without hesitation. Comparisons should be specific rather than general. It is not desirable to say that one udder is better than another, but rather that it is larger or less meaty or better for other specific reasons. The points should be compared

in the order of importance. For example, if A distinctly excels B in both length and depth of body, and also in the conformation of the head and straightness of back, it is well to mention the body capacity first. Similarly, the udder comparison should be made first if the differences are outstanding. The following, though somewhat brief, is suggested as a desirable form of reasons:

I place this class of (name of class) B, D, C, A. I place B over D because she has a larger barrel, being longer and deeper in the body with a wider spring of rib. Her udder is larger, has more evenly developed quarters, and the teats are more evenly placed.

I place D over C because she is fuller in the chest and has a straighter back that carries out more nearly level at the rump. Her udder is somewhat larger than that of C.

I place C over A because A has less of the dairy character, being inclined to beefiness. A is heavier over the withers than C, and her udder is also more meaty than that of C.

SPECIAL PLACING CARDS

Persons who have not had an opportunity to learn how to give reasons often take part in judging contests at fairs and cattle shows and are graded on their ability to judge. For such persons a special placing card is desirable. A card which has been adapted particularly for use in vocational students' contests and class work may be used on such occasions. A card filled out to illustrate its use is presented.

Dairy-Cattle Placing Card for Vocational Students' Contest

Contestant's name and number

Class Date

Points for comparison	Placings ¹				Grade
	First	Second	Third	Fourth	
1. General appearance: Attractive individuality, revealing vigor, femininity with a harmonious blending and correlation of parts; impressive style and attractive carriage with a graceful walk. Includes consideration of breed characteristics, head, shoulder blades, back, loin, rump, legs, and feet.	d A	a D	c B	b C	70
2. Dairy character: animation, angularity, general openness, and freedom from excess tissue, giving due regard to period of lactation. Includes consideration of neck, withers, ribs, flank, thighs, and skin.	a C	d A	c D	b B	70
3. Body capacity: Relatively large in proportion to size of animal, providing ample digestive capacity, strength and vigor. Includes barrel and heart girth.	d D	a A	b B	c C	100
4. Mammary system: A capacious, strongly attached, well-carried udder of good quality, indicating heavy production and a long period of usefulness. Includes udder capacity and shape, texture, teats, and mammary veins.	d B	a A	b C	c D	40
Sum of above grades					280
Average grade (sum ÷ 4)					70
Final placing	d A	a D	c C	b B	85
Sum of average grade on comparative points and on final placings					155
Contestant's final score (sum ÷ 2)					78

¹ The correct placings are given in small letters and the contestant's placings in capital letters.

The essential feature of this card is that it provides for a grouping of points so the animals may be placed according to their rank in each of the groups. The contestant himself is subsequently graded on his placing within each group of points as well as on his placing for the class of animals as a whole.

GRADING

In a judging contest or when a grade on the judge's placing is necessary for instructional purposes, grading on both placings and reasons requires a comparison of the contestant's placings and reasons with those of the official judge or instructor.

The placings are usually graded by the use of an arbitrary numerical standard, deductions being made according to the extent that the animals are placed out of the correct order. For example, if four animals in a class are marked A, B, C, and D, respectively, and the correct order of placing as determined by the official judge is ACDB, the contestant making the correct placing would be graded 100. But if the contestant reverses any two adjacent animals, placing the class ACBD, ADCB, or CADB, he would be graded 85. The possible combinations of placings with their respective scores for a class of four animals is shown in table 1.

TABLE 1.—Standard for grading placings

ABCD 100	ABDC 100	ACBD 100	ACDB 100	ADBC 100	ADCB 100
ABDC 85	ABCD 85	ACDB 85	ACBD 85	ADCB 85	ADBC 85
ACBD 85	ADHC 85	ABCD 85	ADCB 85	ABDC 85	ACDB 85
ADBC 70	ACDB 70	ABDC 70	ADBC 70	ABCD 70	ACBD 70
ADCB 70	ACBD 70	ADCB 70	ABCD 70	ACDB 70	ABDC 70
ADBC 55	ACDB 55	ADBC 55	ABDC 55	ACBD 55	ADCB 55
BACD 85	BADC 85	CABD 85	CABE 85	DABC 85	DACB 85
BADC 70	BACD 70	CABD 70	CABD 70	DABC 70	DABC 70
BCAD 70	BDAC 70	CBAD 70	CDAB 70	DBAC 70	DCAB 70
BCDA 55	BDCA 55	CBDA 55	CDBA 55	DBCA 55	DCBA 55
BDAC 55	BCAD 55	CDAB 55	CBAD 55	DCAB 55	DBAC 55
BDCA 40	BCDA 40	CDBA 40	CBDA 40	DCBA 40	DBCA 40
CABD 70	BDAC 70	BACD 70	DACB 70	BADC 70	BADC 70
CABD 55	DABC 55	BADC 55	DABC 55	BACD 55	CABD 55
CBAD 55	DBAC 55	BCAD 55	DCAB 55	BDAC 55	CBAD 55
CBDA 40	DBCDA 40	BCDA 40	DCBA 40	BDCBA 40	CBDA 40
CDAB 40	DCAB 40	BDAC 40	DBAC 40	BCAD 40	CDAB 40
CDBA 25	DCBA 25	BDCA 25	DBCA 25	BCDA 25	CDBA 25
DABC 55	CABD 55	DACB 55	BADC 55	CADB 55	BADC 55
DABC 40	CABD 40	DABC 40	BADC 40	CABD 40	BADC 40
DBAC 40	CBAD 40	DCAB 40	BCAD 40	CDAB 40	DBAC 40
DBCA 25	CBDA 25	DCBA 25	BCDA 25	CDBA 25	DBCA 25
DCAB 25	CDAB 25	DBAC 25	BDAC 25	CBAD 25	DCAB 25
DCBA 10	CDBA 10	DBCA 10	BDCA 10	CBDA 10	DCBA 10
BACD 100	BADC 100	BCAD 100	BCDA 100	BDAC 100	BDCA 100
BADC 85	BACD 85	BCDA 85	BCAD 85	BDCA 85	BADC 85
BCAD 85	BDCA 85	BACD 85	BDCA 85	BADC 85	BCDA 85
BCDA 70	BDCA 70	BADC 70	BACD 70	BACD 70	BCAD 70
BDAC 70	BCAD 70	BDCA 70	BACD 70	BCDA 70	BADC 70
BDCA 55	BCDA 55	BDAC 55	BADC 55	BCAD 55	BADC 55
ABCD 85	ABCD 85	CBAD 85	CBDA 85	DBAC 85	DBCA 85
ABDC 70	ABCD 70	CBAD 70	CBAD 70	DBCA 70	DBAC 70
ACBD 70	ADCB 70	CABD 70	CDBA 70	DABC 70	DCBA 70
ACDB 55	ADCB 55	CABD 55	CDAB 55	DABC 55	DCAB 55
ADBC 55	ACBD 55	CDBA 55	CABD 55	DCBA 55	DABC 55
ADCB 40	ACDB 40	CDAB 40	CADB 40	DCAB 40	DACB 40
CBAD 70	DBAC 70	ABCD 70	DBCA 70	ABDC 70	CBDA 70
CBDA 55	DBCA 55	ABDC 55	DBAC 55	ABCD 55	CBAD 55
CABD 55	DABC 55	ACBD 55	DCBA 55	ADCB 55	CBDA 55
CADB 40	DBAC 40	ACDB 40	DCAB 40	ADCB 40	CBAD 40
CDBA 40	DCBA 40	ADBC 40	DABC 40	ACBD 40	CABD 40
CDAB 25	DCAB 25	ADCB 25	DACB 25	ACDB 25	CADB 25
DBAC 55	CBAD 55	DBCA 55	ABCD 55	CBDA 55	ABDC 55
DBCA 40	CBDA 40	DBAC 40	ABDC 40	CBAD 40	ABCD 40
DABC 40	CABD 40	DCBA 40	ACBD 40	CDBA 40	ADBC 40
DACB 25	CADB 25	DCAB 25	ACDB 25	CDAB 25	ADCB 25
DCBA 25	CDBA 25	DABC 25	ADBC 25	CABD 25	ACBD 25
DCAB 10	CDAB 10	DACB 10	ADCB 10	CADB 10	ACDB 10
CABD 100	CADB 100	CBAD 100	CBDA 100	CDAB 100	CDBA 100
CADB 85	CABD 85	CBDA 85	CBAD 85	CDBA 85	CBAD 85
CBAD 85	CDAB 85	CABD 85	CBDA 85	CADB 85	CBAD 85
CBDA 70	CDAB 70	CBAD 70	CDAB 70	CABD 70	CBAD 70
CDAB 70	CBAD 70	CDBA 70	CABD 70	CBDA 70	CABD 70
CDBA 55	CBDA 55	CBAD 55	CADB 55	CBAD 55	CABD 55
ACBD 85	ACBD 85	BCAD 85	BCDA 85	DCAB 85	DCBA 85
ACDB 70	ACBD 70	BCAD 70	BCAD 70	DCAB 70	DCAB 70
ABCD 70	ADCB 70	BACD 70	BDCA 70	DACB 70	DBCA 70
ABDC 55	ADCB 55	BADC 55	BDCA 55	DABC 55	DBAC 55
ADCB 55	ABCD 55	BDCA 55	BACD 55	DBCA 55	DABC 55
ADBC 40	ABCD 40	BDAC 40	BADC 40	DBAC 40	DABC 40
BCAD 70	DCAB 70	ACBD 70	DCBA 70	ACDB 70	BCDA 70
BCDA 55	DCBA 55	ACBD 55	DCAB 55	ACDB 55	BCAD 55
BACD 55	DABC 55	ABCD 55	DBCA 55	ADCB 55	BDCA 55
BADC 40	DABC 40	ABDC 40	DBAC 40	ADCB 40	BDAC 40
BDCA 40	DBCA 40	ADCB 40	DABC 40	ABCD 40	BADC 40
BDAC 25	DBAC 25	ADBC 25	DABC 25	ABCD 25	BADC 25
DCAB 55	BCAD 55	DCBA 55	ACBD 55	BCDA 55	ADCB 55
DCBA 40	BCDA 40	DCAB 40	ACBD 40	BCAD 40	ACBD 40
DACB 40	BACD 40	DCBA 40	ABCD 40	BDCA 40	ADCB 40
DABC 25	BADC 25	DBAC 25	ABDC 25	BDAC 25	ADBC 25
DBCA 25	BDCA 25	DACB 25	ADCB 25	BACD 25	ABCD 25
DBAC 10	BDAC 10	DABC 10	ADBC 10	BADC 10	ABDC 10

TABLE 1.—Standard for grading placings—Continued

DABC.... 100	DACB.... 100	DBAC.... 100	DBCA.... 100	DCAB.... 100	DCBA.... 100
DACB.... 85	DABC.... 85	DBCA.... 85	DBAC.... 85	DCBA.... 85	DCAB.... 85
DBAC.... 85	DCAB.... 85	DABC.... 85	DCBA.... 85	DACB.... 85	DBCA.... 85
DBCA.... 70	DCBA.... 70	DACB.... 70	DCAB.... 70	DABC.... 70	DBAC.... 70
DCAB.... 70	DBAC.... 70	DCBA.... 70	DABC.... 70	DBCA.... 70	DACB.... 70
DCBA.... 55	DBCA.... 55	DCAB.... 55	DACB.... 55	DBAC.... 55	DABC.... 55
ADBC.... 85	ADCB.... 85	BDAC.... 85	BDCA.... 85	CDAB.... 85	CDBA.... 85
ADCB.... 70	ADBC.... 70	BDCA.... 70	BDAC.... 70	CDBA.... 70	CDAB.... 70
ABDC.... 70	ACDB.... 70	BADC.... 70	BCDA.... 70	CADB.... 70	CBDA.... 70
ABCD.... 55	ACBD.... 55	BACD.... 55	BCAD.... 55	CABD.... 55	CBAD.... 55
ACDB.... 55	ABCD.... 55	BCDA.... 55	BADC.... 55	CBDA.... 55	CADB.... 55
ACBD.... 40	ABCD.... 40	BCAD.... 40	BACD.... 40	CBAD.... 40	CABD.... 40
BDAC.... 70	CDAB.... 70	ADBC.... 70	CDBA.... 70	ADCB.... 70	BDCA.... 70
BDCA.... 55	CDBA.... 55	ADCB.... 55	CDBA.... 55	ADBC.... 55	BDAC.... 55
BADC.... 55	CADB.... 55	ABDC.... 55	CBDA.... 55	ACDB.... 55	BCDA.... 55
BACD.... 40	CABD.... 40	ABCD.... 40	CBAD.... 40	ACBD.... 40	BCAD.... 40
BCDA.... 40	CBDA.... 40	ACDB.... 40	CADB.... 40	ABCD.... 40	BADC.... 40
BCAD.... 25	CBAD.... 25	ACBD.... 25	CABD.... 25	ABCD.... 25	BACD.... 25
CDAB.... 55	BDAC.... 55	CDBA.... 55	ADBC.... 55	BDCA.... 55	ADCB.... 55
CDBA.... 40	BDCA.... 40	CDAB.... 40	ADCB.... 40	BDAC.... 40	ADBC.... 40
CADB.... 40	BADC.... 40	CBDA.... 40	ABCD.... 40	BCDA.... 40	ACDB.... 40
CABD.... 25	BACD.... 25	CBAD.... 25	ABCD.... 25	BCAD.... 25	ACBD.... 25
CBDA.... 25	BCDA.... 25	CADB.... 25	ACDB.... 25	BADC.... 25	ABDC.... 25
CBAD.... 10	BCAD.... 10	CABD.... 10	ACBD.... 10	BACD.... 10	ABCD.... 10

IMPORTANCE OF GIVING REASONS

If a contestant is to be graded accurately on his ability to judge a class of animals, it is necessary for the official judge to know whether or not the contestant observed all the points wherein the animals differed. The giving of reasons for the placings is by far the best way to get this information. These may be either written or oral. The use of a special placing card such as the one shown on page 23 is perhaps the next best; and merely giving one placing on the whole class is the least accurate method.

JUDGING HEIFERS

In judging dairy heifers one must have in mind what the possible development of the animals will be and how much they will produce when mature. The heifer of exceptionally good conformation probably has a better chance of developing into a cow of good type than does one of very poor conformation. However, owing to the fact that many animals change markedly from calfhood to maturity, the judging of heifers is far less significant and satisfactory than is the judging of cows.

The points to be considered in judging heifers are essentially the same as in judging cows. Less emphasis, however, should be placed on mammary development, for many calves and heifers have seemingly well-developed udders for their age because of heavy deposits of fat rather than mammary-gland tissues. Furthermore, the milk veins and wells are, as a rule, not well developed in calves and young heifers. Moreover, dairy temperament is not so pronounced in heifers as in cows. Especially is this true of those that are in calf. These are likely to be heavy at the withers and to appear somewhat fatter than the condition that is usually associated with the best dairy temperament. Heifers should be large for their age and should show vigor and a thrifty, growing condition.

JUDGING BULLS

From the standpoint of economical dairy production the best bull is the one whose daughters will develop into the best cows. It is obvious that this fact cannot be determined in the judging ring. Furthermore, a bull of good conformation and from a high-producing dam may not transmit these characters to his daughters. Therefore, the best way to select a bull is by the performance of his daughters. If a large proportion of the daughters are of good type and are high producers, it is to be expected that the sire will transmit these characteristics to his later daughters regardless of what his own conformation or the record of his dam may be.

When the production records of the daughters of a bull are not available, the records of his dam and her conformation and also the records of his sisters should be used as a guide.

Good size for his age and a long and deep body with full chest are considered desirable points in a bull. He should also be in a thrifty condition and should show masculinity and vigor. A bull should be examined for indications of unsoundness in legs and feet, the cause of many bulls becoming unserviceable. The neck should be medium in length, with a prominent crest. Such points as straightness of back, thin hind quarters, level rump, broad head, clean-cut face add to the beauty of the animal and are usually considered in the show ring; but as with cows, there is no evidence that these factors are associated with the ability to transmit production.

DAIRY-COW SCORE CARD ²

Ideals of type and breed characteristics must be considered in the application of the terminology of this score card.

	<i>Perfect score</i>
1. GENERAL APPEARANCE.....	30
Attractive individuality, revealing vigor, femininity with a harmonious blending and correlation of parts. Impressive style and attractive carriage with a graceful walk.....	
BREED CHARACTERISTICS (see pp. 28 and 29).....	12
HEAD: Medium in length, clean-cut; broad muzzle with large open nostrils; lean, strong jaw; full, bright eyes; forehead broad between the eyes and moderately dishd; bridge of nose straight; ears medium size and alertly carried.....	
SHOULDER BLADES, set smoothly against chest wall and withers, forming neat junction with the body.....	
BACK, strong and appearing straight with vertebrae well defined.....	
LOIN, broad, strong, and nearly level.....	
RUMP, long, wide; top line level from loin to and including tail head.....	10
Hips, wide, approximately level laterally with back, free from excess tissue.....	
Thurls, wide apart.....	
Pin bones, wide apart and slightly lower than hips, well defined.....	
Tail head, slightly above and neatly set between pin bones.....	
Tail, long and tapering with nicely balanced switch.....	
LEGS, wide apart, squarely set, clean-cut and strong, with fore-legs straight.....	
Hind legs, nearly perpendicular from hock to pastern. When viewed from behind, legs wide apart and nearly straight. Bone, flat and flinty, tendons well defined. Pasterns, of medium length, strong and springy. Hocks cleanly molded.....	8
FEET, short and well rounded, with deep heel and level sole.....	

²This dairy-cow score card was prepared and approved by the Pure Bred Dairy Cattle Association, 1943.

2. DAIRY CHARACTER:

Animation, angularity, general openness, and freedom from excess tissue, giving due regard to period of lactation.....	}	
NECK, long and lean, blending smoothly into shoulders and brisket; clean-cut throat and dewlap.....		
WITHERS, well defined and wedge-shaped with the dorsal processes of the vertebrae rising slightly above the shoulder blades.....	}	20
RIBS, wide apart. Rib bone wide, flat, and long.....		
FLANK, deep, arched, and refined.....	}	
THIGHS, incurving to flat from the side; wide apart when viewed from the rear, providing sufficient room for the udder and its attachment.....		
SKIN, of medium thickness, loose, and pliable. Hair, fine.....	}	20
3. BODY CAPACITY.....		
Relatively large in proportion to size of animal, providing ample digestive capacity, strength, and vigor.....	}	12
BARREL, deep, strongly supported, ribs wide apart and well sprung; depth and width tending to increase toward rear of barrel.....		
HEART GIRTH large, resulting from long, well-sprung foreribs, wide chest floor between front legs, and fullness to the point of elbow.....	}	8
4. MAMMARY SYSTEM.....		
A capacious, strongly attached, well-carried udder of good quality, indicating heavy production and a long period of usefulness.....	}	25
UDDER: Capacity and shape, long, wide, and of moderate depth. Extending well forward, strongly attached, reasonably level floor. Rear attachment, high and wide. Quarters evenly balanced and symmetrical.....		
Texture, soft, pliable, and elastic. Well collapsed after milking.....	}	5
Teats, uniform, of convenient length and size, cylindrical in shape, free from obstructions, well apart and squarely placed, plumb.....		
MAMMARY VEINS, long, tortuous, prominent, and branching, with numerous large wells. Veins on udder numerous and clearly defined.....	}	5
Total.....		100

Ayrshire Characteristics

Color.—Red of any shade, mahogany; brown; or these with white; or white; each color clearly defined. Distinctive red and white markings preferable; black or brindle markings strongly objectionable.

Size.—A mature cow in milk should weigh about 1,150 pounds.

Horns.—Inclining upward, small at base, refined, medium length, and tapering toward tips.

Brown Swiss Characteristics

Strong and vigorous. Size and ruggedness with quality desired. Extreme refinement undesirable.

Color.—A shade of brown varying from a silver to a dark brown. Hair inside ears is a lighter color than body. Nose and tongue black, with a light-colored band around nose. Color markings which bar registry are: white switch, white on sides, top, head, or neck and legs above knees or hocks. White on belly or lower legs objectionable.

Size.—A mature cow in milk should weigh about 1,400 pounds.

Horns.—Inclining forward and slightly up. Moderately small at base, medium length, and tapering toward black tips.

Guernsey Characteristics

Color.—A shade of fawn with white markings clearly defined, black or brindle markings objectionable. Skin should show golden-yellow pigmentation. When other points are equal, a clear or buff muzzle will be favored over a smoky or black muzzle.

Size.—A mature cow in milk should weigh about 1,100 pounds.

Horns.—Inclining forward, small and yellow at base, refined, medium length, and tapering toward tips.

Holstein Characteristics

Color.—Black and white markings clearly defined. Color markings which bar registry are solid black, solid white, black in switch, black belly, black encircling leg touching hoof, black from hoof to knee or hock, black and white intermixed to give color other than distinct black and white.

Size.—A mature cow in milk should weigh about 1,500 pounds.

Horns.—Inclining forward, incurving, small at base, refined, medium length, and tapering toward tips.

Jersey Characteristics

Color.—A shade of fawn, with or without white markings.

Size.—A mature cow in milk should weigh about 1,000 pounds.

Horns.—Inclining forward, incurving, small at base, refined, medium length, and tapering toward tips.

Clean Grain



Makes wholesome flour and cereal products

Cleanliness in grain begins on the farm

Insects, birds, and rats and other rodents that get into stored grain cause enormous losses. They waste the nation's food and eat away your profits. You can help cut these losses by making sure that all the grain you store and handle is clean.



Keep rats and mice out with better storage construction. Poison and trap rodents and clean up places where they may hide and live.



Keep insects out. Fumigate old stored grain. Before storing new grain, get rid of insects by cleaning the bins and areas surrounding them. Spray bins with insecticide.



Use screens to keep out birds and poultry. Use $\frac{1}{2}$ -inch mesh hardware cloth or similar material over all windows and other openings.

GRAIN IS FOOD . . . KEEP IT CLEAN