The purpose of this bulletin is to present the most important features of the principal breeds of swine in this country, and the relationship of purebreds to the commercial swine industry. For information regarding the rules of registry and the issuance of herdbooks, or for lists of breeders, write to the individual associations. The officers and addresses of the breed-record associations change from time to time; hence they are not included in this bulletin. But, on request, the Animal Husbandry Research Division, USDA, Beltsville, Md., will furnish the names and addresses of the secretaries of established associations as last reported.

Although encouraging the development of improved types of swine and other livestock, the United States Department of Agriculture has no jurisdiction over the registration of animals or the operation of the respective associations.

Acknowledgment is made to swine record associations and breeders of purebred hogs, who furnished photographs of animals representative of present-day types.

Growth Through Agricultural Progress

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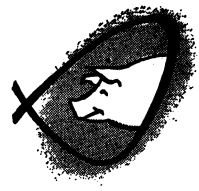
BREEDS of SWINE



By JOHN H. ZELLER, *chief, Swine Research Branch, Animal Husbandry Research Division, Agricultural Research Service*

Classification of Swine

In the United States hogs were classified as "lard" and "bacon" types for many years. That classification has outlived its usefulness. It seems more appropriate now to classify them as (1) lean- or meat-type and (2) fat-type.

Hogs with enough finish, but no more than necessary, to produce carcasses of desired quality are lean- or meat-type hogs, while those with more finish than necessary are fat-type hogs. Carcasses weighing from 200 to 220 pounds and having a backfat thickness of approximately 1.3 inches are the most desirable. Length desired in such carcasses is about 30 to 31 inches from the aitch bone of the split hams to the breast bone at the first rib. Lighter, shorter hogs may have a little less backfat, and yield carcasses of equal quality. Hogs ranging in live weight from 220 to 250 pounds yield carcasses of desirable quality when the backfat averages 1.5 to 1.8 inches and the length ranges from 30 to 32 inches. Carcasses from hogs heavier than about 250 pounds produce an excessive amount of lard, and the cuts are large and less suitable to the average consumer than those from lighter weight hogs.

Individuals More Important Than Breed

The selection of a breed is largely a matter of personal preference. No one breed is perfect in every respect. Choose a breed of the size and color desired and one that seems to be best suited to the conditions under which the hogs are to be raised.

Individual excellence of animals is important and should be stressed in establishing and maintaining a herd, especially if the objective is to produce and sell breeding stock. Records on animals should be considered in selecting not only foundation animals but also the replacements in the herd from year to year.

Production registry of breeding stock is being sponsored by several of the swine record associations. The associations can supply information regarding herds having animals which have qualified under the standards used. Then, too, you can obtain much useful information about the performance of the animals from the breeders.

Litter production, health of the herd, and acceptable growth rate of pigs are some of the most important items to consider in selecting breeding stock. Choose meat-type hogs that will produce carcasses of the most desirable quality and weight.

Old Breeds

Berkshire

The Berkshire is one of the oldest of the improved breeds of swine. It was originated and developed in the Shire of Berks, England, and is still raised extensively in that country. Many animals of this breed have been imported into the United States and Canada from England. Mention is made of Berkshire hogs in England and Scotland as early as 1789.

A mature Berkshire hog is of medium size, generally smooth, and

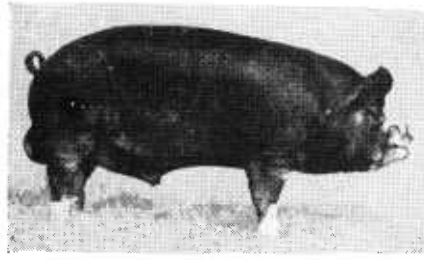


Figure 1.—Berkshire boar.

of suitable length and depth to produce a carcass of good quality. The legs are of medium length and have good bone. The Berkshire is a solid hog and is usually free from surplus outside fat. Its meatiness is evident from the outside. In color, this breed is black with white points on the feet, and usually has a splash of white in the face. The distinctive characteristic is the head, the face being slightly dished and broad between the eyes, the ears erect. The snout is of medium length. Extreme pug heads are undesirable.

Good Berkshire pigs can be fed to reach market weight from 5 months of age up. Mature boars of this breed (fig. 1) in good show condition usually weigh from 700 to 900 pounds. Some attain heavier weights. Mature sows (fig. 2) should weigh from 600 to 750 pounds.

The record association for this breed is the American Berkshire Association.

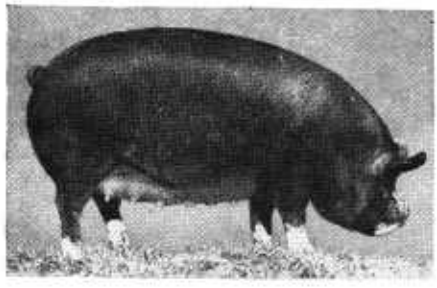


Figure 2.—Berkshire sow.

Chester White

The Chester White breed had its origin in Chester County, Pa. The large coarse hogs in the Eastern States, especially in Pennsylvania early in the 19th century, were a mixture of the Yorkshire, Lincolnshire, and Cheshire, all of which were of English origin. In Pennsylvania these white hogs were crossed on smaller type hogs, but the most successful cross came through using an imported hog from Bedfordshire, England. It was named "Chester County White" in 1848, but the word "County" was soon dropped.

Mature boars (fig. 3) of this breed weigh from 600 to 900 pounds, some individuals weighing 1,000 pounds. The sows (fig. 4) weigh from 500 to 700 pounds. The record association for the breed is The Chester White Swine Record Association.

In 1865, L. B. Silver of Salem, Ohio, accumulated parent stock

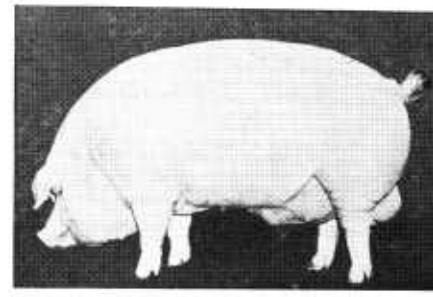


Figure 3.—Chester White boar.

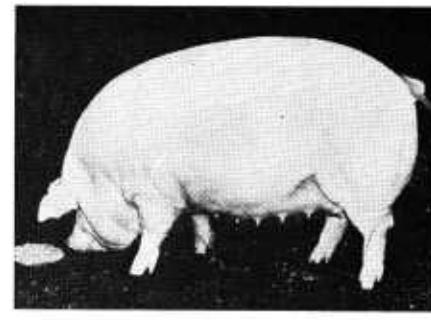


Figure 4.—Chester White sow.

from Chester County, Pa., and used it in combination with existing Ohio stock to develop a hog known as Ohio Improved Chester. Today it is referred to as the O. I. C. hog. The O. I. C. Swine Breeders Association, founded in 1897, now registers only the pedigrees of animals whose ancestors are recorded in the books of that association.

Duroc

The Duroc breed originated in the northeastern section of the United States from strains of red hogs developed in New York and New Jersey. Those in New Jersey were originally called Jersey Reds; those in New York are said to have been developed by a man who owned the noted stallion, Duroc, and people in that vicinity called the red hogs which this man was breeding Duroc hogs. After several years of independent breeding, these hogs were intermingled and the resulting breed was known until recently as Duroc-Jersey. The breed is now known as Duroc, the word Jersey having been dropped to avoid confusion with the Jersey breed of cattle.

The Duroc breed is red without admixture of any other color. Some animals, however, are dark, while others are light. The breed is noted for hardiness and prolificacy.

Pigs attain market weight of 200 pounds from 5 months of age up. Mature boars (fig. 5) generally weigh from 650 to 1,000 pounds. Sows generally weigh from 600 to 700 pounds (fig. 6). In some instances a greater weight is reached.

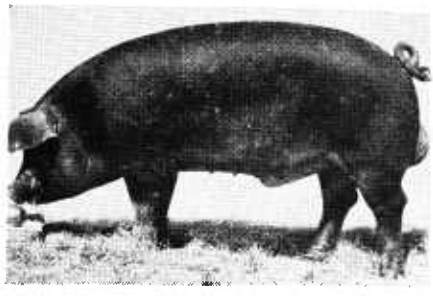


Figure 5.—Duroc boar.

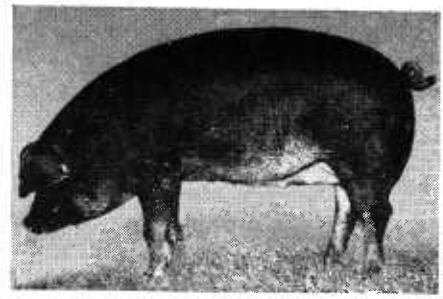


Figure 6.—Duroc gilt.

The association for recording hogs of this breed is the United Duroc Record Association.

Hampshire

The Hampshire breed originated in the English county of the same name and was introduced into the United States during the first half of the last century. When the Hampshire hog first attracted attention in this country it was referred to as a "thin-rind" hog. The Hampshire has become one of the popular breeds.

The most striking characteristic of the Hampshire is the white belt entirely encircling the otherwise black body. The white belt includes both forelegs. The width of belt, according to the Hampshire Swine Registry's standard of perfection, must not exceed two-thirds of the entire length of body. Breeding animals with white hind feet or legs are eligible for registry, provided the white does not extend above the bottom of the ham.

The Hampshire in general appearance is smooth and its bones are of medium weight. Mature boars of the breed (fig. 7) weigh from 600 to 850 pounds, some attaining a greater weight. Mature sows (fig. 8) weigh from 500 to 700 pounds. Animals of the breed are alert and active.

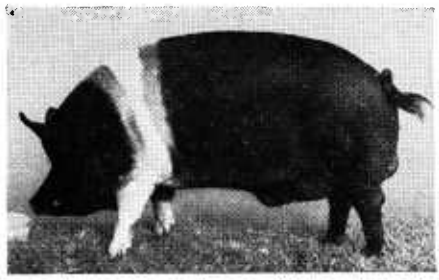


Figure 7.—Hampshire boar.

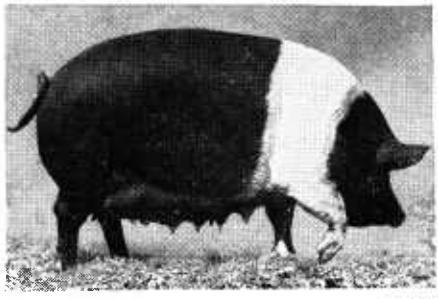


Figure 8.—Hampshire sow.

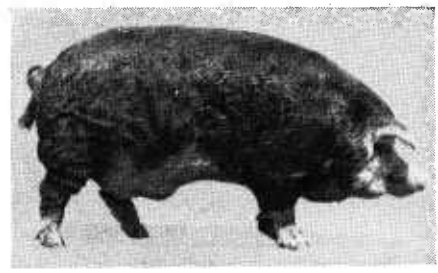


Figure 9.—Hereford boar.

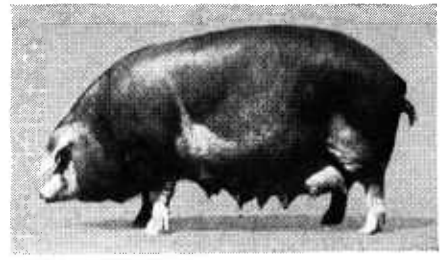


Figure 10.—Hereford sow.

The record association for this breed is the Hampshire Swine Registry.

Hereford

The Hereford hog, sometimes referred to as the "white-faced" hog, has been developed with color markings resembling those of the Hereford breed of cattle. Foundation stock used in the development of this breed was assembled as far back as 1902. The methods used in its development are not too well known, nor is there any accurate information as to the breeds that went into its foundation. However, it has been reported that hogs of Chester White, Poland China, Duroc, and possibly Hampshire breeding were used in the early stages of development.

The color is red with white on the head, ears, feet, underline of body, and switch of tail. The red may vary from light to dark, a cherry red being preferred. Animals offered for registration must have some white on the face and must be not less than two-thirds red.

Mature boars (fig. 9) of this breed weigh about 750 pounds. Mature sows (fig. 10) weigh from 650 to 700 pounds.

The record association for the breed is the National Hereford Hog Record Association. It was formed in 1934.

Poland China

The Poland China hog originated in Butler and Warren Counties, Ohio. This breed undoubtedly was derived from the crossing of several breeds. In the 1870's two Ohio farmers—A. C. Moore and D. M. Magie—advertised their hogs extensively and developed a widespread reputation. Their hogs were known at that time as the Moore hogs and the Magie hogs, respectively. From these hogs the breed now known as the Poland China was developed. Breeders using the names "Poland" and "Big China" claimed their hogs were a combination of Poland and China blood although no satisfac-

tory evidence was produced to support this claim. The word "Poland" was traced back to an animal obtained from a farmer who was a Polander by birth. Because of common usage, the name Poland China was designated officially in 1872 as the name of the breed.

The color of the Poland China generally is black. Many of them have white spots on different parts of the body. Mature boars (fig. 11) weigh from 850 to 1,000 pounds. Some animals attain greater

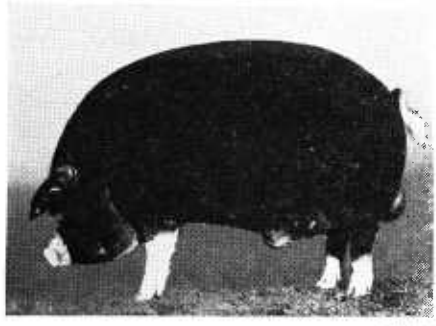


Figure 11.—Poland China boar.

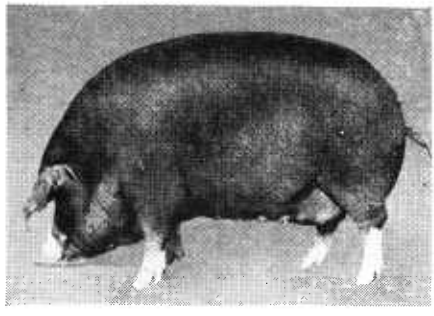


Figure 12.—Poland China sow.

weights. Mature sows (fig. 12) should weigh from about 500 to 700 pounds.

The three record associations recording purebred Poland China hogs were combined, effective January 1946, into one association, which is known as The Poland China Record Association.

Spotted Poland China

The Spotted Poland China in many ways is very much like the Poland China, but there is much more white on the body of the former. The appearance is rather that of a black hog with numerous white spots. The standard requirement of the record association for the breed is that at least 20 percent of the body surface be white.

Some Gloucester Old Spots, imported from England as foundation animals, have influenced the Spotted Poland China breed to a considerable extent. Mature boars (fig. 13) weigh from 650 to 1,000 pounds. Mature sows (fig. 14) weigh from 500 to 700 pounds.

The present record association for this breed is The National Spotted Poland China Record Association which was organized January 1, 1914.

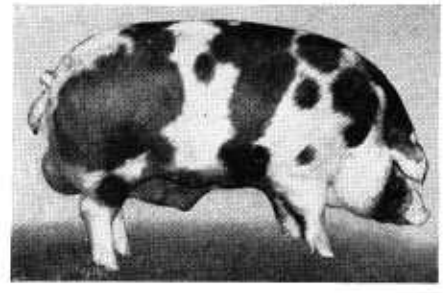


Figure 13.—Spotted Poland China boar.

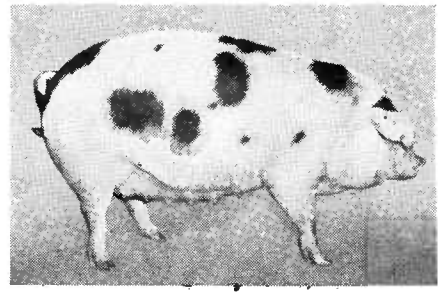


Figure 14.—Spotted Poland China sow.

Tamworth

The Tamworth is one of the oldest of all breeds of hogs. There is evidence of pure breeding dating back more than 140 years. The name of the breed is derived from the town of Tamworth, located on the River Tame, in Staffordshire, England. Some animals of this breed were brought to the United States at least as early as 1881.

The color is red, varying from light to dark, and the ears are erect. Mature boars (fig. 15) weigh

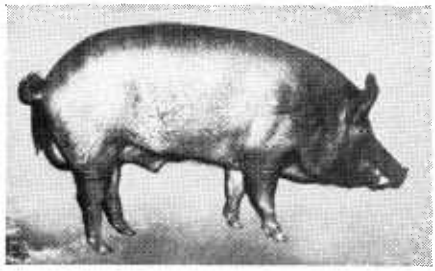


Figure 15.—Tamworth boar.

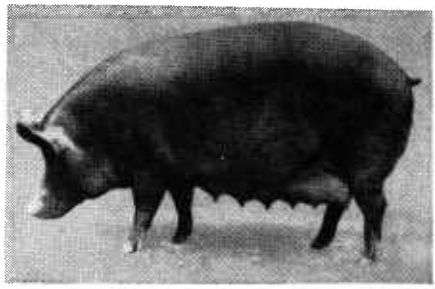


Figure 16.—Tamworth sow.

from 700 to 1,000 pounds. Mature sows (fig. 16) weigh from 550 to 750 pounds.

The association for recording hogs of this breed is the Tamworth Swine Association.

Yorkshire

There are two distinct types of the Yorkshire breed, the Large and the Middle Yorkshires. Both originated in England, where they are known as Large and Middle Whites. The Large Yorkshires greatly outnumber the Middle Yorkshires in the United States.

The color is white, but occasionally there are black pigment spots in the skin of Yorkshires. This does not disqualify them, yet it is objectionable from the standpoint of breeders of purebred stock. Mature boars (fig. 17) weigh from

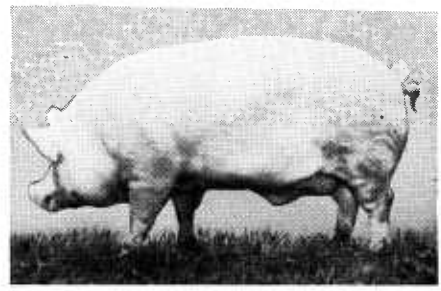


Figure 17.—Yorkshire boar.

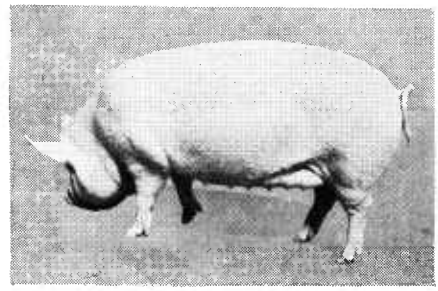


Figure 18.—Yorkshire sow.

700 to 1,000 pounds, mature sows (fig. 18) from 500 to 800 pounds.

The American Yorkshire Club is the recording association for this breed.

New Breeds

As a result of swine breeding research at State and Federal experiment stations, a number of inbred lines have been developed from a crossbred foundation of two or more breeds, and animals of these inbred lines have been purchased by swine breeders. As the number of breeders increased a demand arose for registration of

this stock. Six new breeds are now being registered by the Inbred Livestock Registry Association.

American Landrace

One of the newer breeds of swine in the United States is the American Landrace. American Landrace hogs (figs. 19 and 20) are descend-

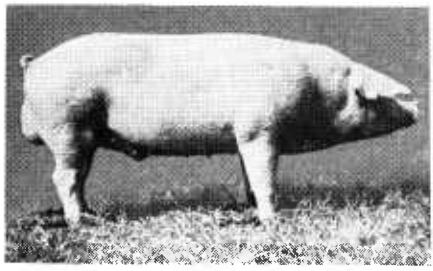


Figure 19.—American Landrace boar.

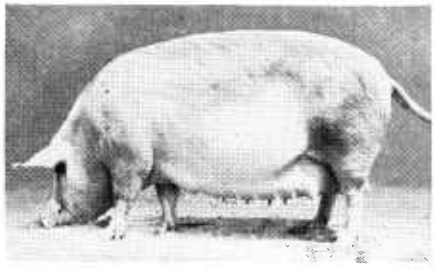


Figure 20.—American Landrace sow.

ants of Danish Landrace hogs imported by the United States Department of Agriculture in 1934. Some of the foundation animals of this breed carried a trace (1/16 to 1/64) of Poland China outcross.

The American Landrace is white, has good length of body with 16 to 17 pairs of ribs, and is prolific.

Mature boars weigh from 700 to 900 pounds, mature sows from 550 to 750 pounds.

Breeders of Landrace hogs in America joined together in 1950 and formed the American Landrace Association, Inc., which records hogs of this breed.

During 1954, 38 head of boars and gilts were imported from Norway, carrying Norwegian, Danish, and Swedish Landrace blood. These importations were made by four individual breeders to instill their vigor into the American Landrace.

Beltsville No. 1

In 1951, the Inbred Landrace-Poland China line developed by the former Bureau of Animal Industry at the Agricultural Research Center, Beltsville, Md., was admitted to the Inbred Livestock Registry Association, as the Beltsville No. 1 breed.

The new breed was developed from crosses made in 1934. It traces to 13 animals (7 boars and 6 sows) of the Danish Landrace breed and 3 Poland China boars. It carries approximately 75 percent of Landrace and 25 percent of Poland China blood, and is about 35 percent inbred.

The color is black with white spots. From 10 to 40 percent of the body may be white, the white being rather uniformly distributed. The hog is intermediate in type, with body conformation similar to that of the Landrace. Its distinguishing characteristics are the long body with little arch of back, a moderate depth of body with a good straight underline, smooth sides, and medium length of legs. The hams are plump and well muscled to the hock. The head is fairly long and narrow with a trim, light jowl. The ears are drooping and moderately large but do not interfere with vision (figs. 21 and 22).

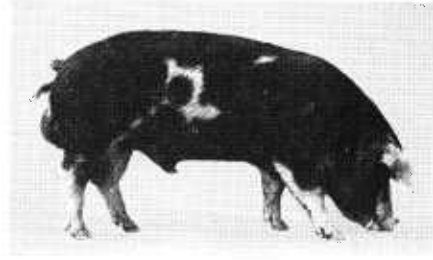


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Figure 21.—Beltsville No. 1 boar.

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Figure 22.—Beltsville No. 1 sow.

Yearling boars in breeding condition range in weight from 400 to 600 pounds and yearling sows from 350 to 500 pounds.

Maryland No. 1

The Landrace-Berkshire line of swine, developed cooperatively in 1941 by the U. S. Department of Agriculture and the Maryland Agricultural Experiment Station at Blakeford Farms, Queenstown, Md., was admitted to the Inbred Livestock Registry Association in 1951 as the Maryland No. 1 breed.

All the resources in land, equipment, breeding animals, and the necessary funds were placed at the disposal of the cooperating agencies by a private organization. The line carries approximately 62 percent of Landrace and 38 percent of Berkshire blood. By 1950 the line traced to 3 Landrace boars and 7 Berkshires (1 boar and 6 sows).

Maryland No. 1 hogs are black and white spotted. They are intermediate in conformation between the Landrace and Berkshire. The head is moderately long. The jowl is neat but somewhat heavier than that of the Landrace. The ears are erect or slightly drooping and intermediate in size (figs. 23 and 24).

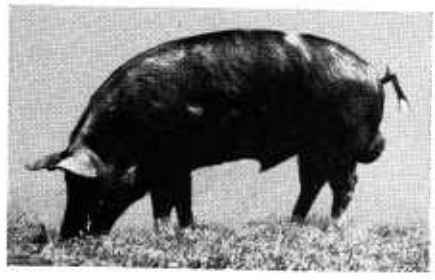

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Figure 23.—Maryland No. 1 boar.

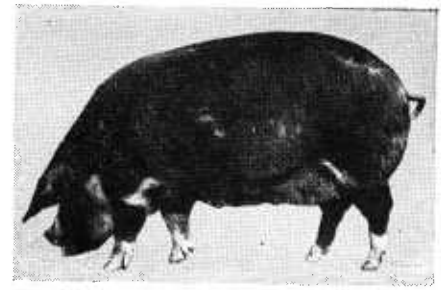

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Figure 24.—Maryland No. 1 sow.

Yearling boars weigh from 500 to 700 pounds, sows from 400 to 600 pounds.

Minnesota No. 1

The Minnesota No. 1 hog was developed by the Minnesota Agricultural Experiment Station at Grand Rapids, Minn., in cooperation with the Regional Swine Breeding Research Laboratory of the United States Department of Agriculture.

Research on the Minnesota No. 1 hog was begun in 1936 with a crossbred foundation of the Danish Landrace and Tamworth. The initial crosses were followed by a system of mild inbreeding to fix definite characteristics. Parents for each generation were selected for their record of fertility, survival of pigs, growth rate, economy of gain, and body conformation. The breed traces to matings involving 14 animals: 2 Danish Landrace boars, 8 Tamworth females, and 4 Danish females. However, only 1 Landrace boar, 1 Landrace sow, and 4 Tamworth sows have become actual contributors. The breed approximates 48 percent Landrace and 52 percent Tamworth blood.

The Minnesota No. 1 breed is predominantly red in color, with occasional small black spots. The breed is long-bodied, and short-legged; it has relatively fine but strong bones, full hams, light shoulders, and a relatively straight back. It has a long face, exceptionally trim jowls, and fairly erect ears (figs. 25 and 26).

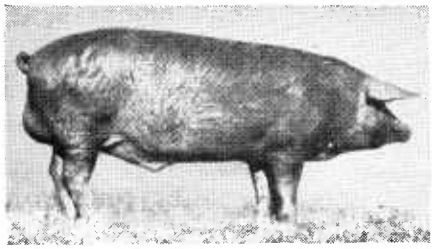

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Figure 25.—Minnesota No. 1 boar.

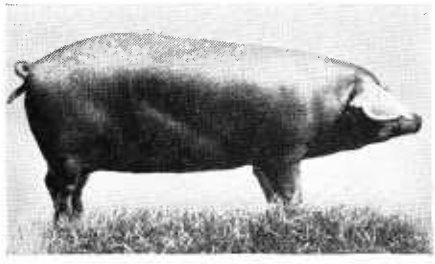

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Figure 26.—Minnesota No. 1 gilt.

On August 24, 1946, farmers who had been using stock from the Minnesota herd at Grand Rapids, Minn., met with station representatives and formed the Inbred Livestock Registry Association. They accepted the strain as a breed and named it Minnesota No. 1.

Minnesota No. 2

The Minnesota No. 2 hog was developed by the Minnesota Agricultural Experiment Station, in cooperation with the Regional Swine Breeding Research Laboratory of the United States Department of Agriculture. The early breeding work in the development of this inbred line of hogs began in 1941 at the Minnesota Northwest Experiment Station, Crookston, Minn. In 1943, a second herd was started at the Minnesota Northeast Experiment Station at Duluth, Minn. In 1948, herds from the two stations were combined into the Minnesota No. 2.

The Minnesota No. 2 hog was begun in 1941 by mating an Inbred Canadian Yorkshire boar with 13 inbred Poland China gilts. Animals of the first and second generations were intermated, and then animals were backcrossed to obtain desirable combinations of characters. The breed traces to a foundation stock of 5 Poland Chinas and 1 Yorkshire. The breed contains approximately 40 percent of Yorkshire and 60 percent of Poland China blood.

The color is black and white. The snout is shorter and the legs longer than those of the Minnesota No. 1. The ears are of medium size and are carried erect (figs. 27 and 28).

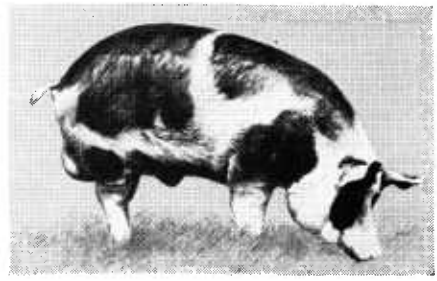

Figure 27.—Minnesota No. 2 boar.

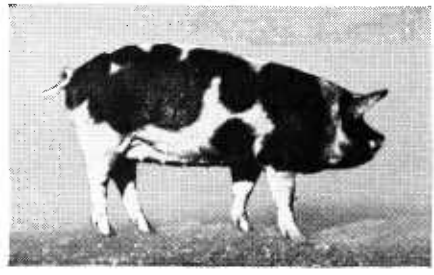

Figure 28.—Minnesota No. 2 gilt.

80155-B

Figure 29.—Montana No. 1 boar.

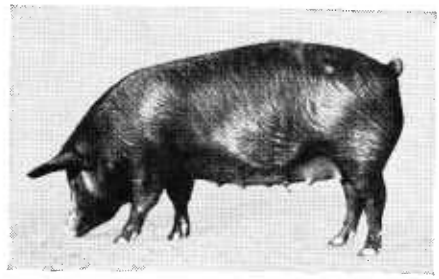

Figure 30.—Montana No. 1 sow.

In 1948, the breed was recognized by the Inbred Livestock Registry Association, and called the Minnesota No. 2.

Montana No. 1

A new breed of hogs originally known as the Black Hamprace has been established through a cooperative agreement between the Montana Agricultural Experiment Station and the United States Department of Agriculture. The work was done at the United States Range Livestock Experiment Station, Miles City, Mont. The breed was developed from crosses made in 1936 and the percentage of blood is now approximately 55 percent of Landrace and 45 percent of Hampshire. The animals are about 32 percent inbred.

In 1948 the Hamprace was admitted to the Inbred Livestock Registry Association. This association renamed the breed the Montana No. 1.

Yearling boars weigh between 400 and 650 pounds and sows between 350 and 500 pounds (figs. 29 and 30).

Palouse

In 1956, the Inbred Landrace-Chester White line developed by the Washington Agricultural Experiment Station at Pullman and Prosser, Wash., was admitted to the Inbred Livestock Registry Association as the Palouse breed.

The new breed was started in 1945 by crossing 3 Landrace boars on 18 Chester White gilts and sows. The Landrace boars were secured from the U. S. Department of Agriculture Research Center, Beltsville, Md. The Chester Whites were of medium type and were selected from the herd of the State College of Washington. In 1946, 2 new Landrace boars and 2 from the previous year as well as 3 first generation crossbred boars were used. Again, in 1947, 2 Landrace boars were used in addition to 2 first generation crossbred boars and 5 boar pigs. Since then, no matings have been made to Landrace boars. The line carries approximately 65 percent of Landrace and 35 percent of Chester White blood.

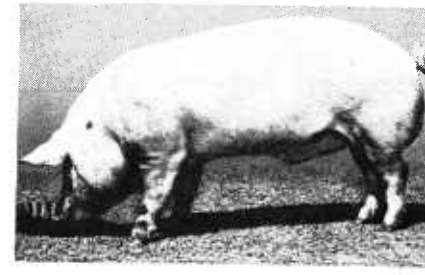

Figure 31.—Palouse boar.

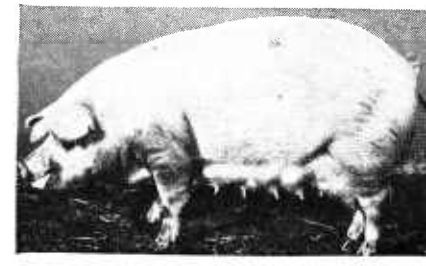

Figure 32.—Palouse sow.

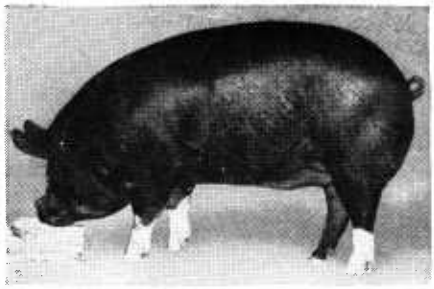

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Figure 33.—Berkshire barrow.

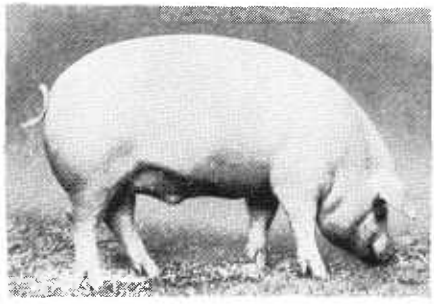

Figure 34.—Chester White barrow.

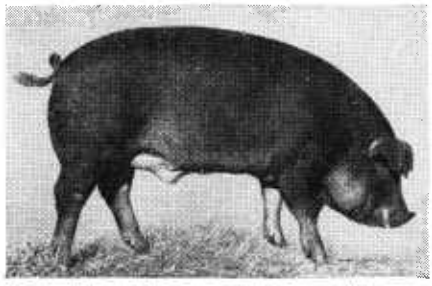

Figure 35.—Duroc barrow.

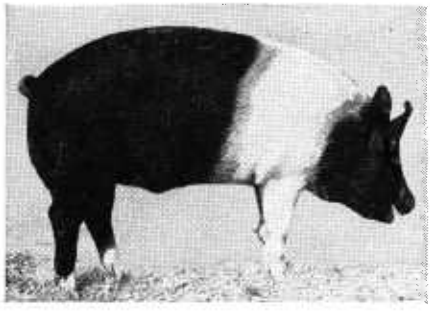

Figure 36.—Hampshire barrow.

Palouse hogs are white. The hog is intermediate type, having body conformation similar to that of the Landrace. The breed carries considerable length of body, moderate depth, and neatly turned loin. The arch of back is moderate, and the underline is straight and smooth. The hams are plump and smooth and are well muscled on the inside and outside of the leg well down toward the hock. The shoulders are smooth and well muscled, and the legs are of medium length. The head is moderate in length, and the ears somewhat erect but inclined forward.

Yearling boars weigh from 400 to 600 pounds and yearling sows from 350 to 500 pounds.

The name of the breed was derived from the area of Washington State in which it was developed.

Market Hogs

The ultimate aim of hog raising is the production of pork for human consumption. Every producer of swine should have as his objective the efficient and economical production of hogs that dress out high-quality carcasses. The consumer demand is for lean meat of good quality. The amount of fat should not be excessive, but enough to make a firm carcass that handles well in trade channels. The most desirable weights for market hogs are from 180 to 240 pounds; the greater percentage of hogs reaching market under normal conditions weigh between 200 and 225 pounds (figs. 33 to 47).

The intermediate-type hog, often referred to as the middle-of-the-road or the meat type, best meets market demands. Intermediate-type hogs in general are superior to extremes in type that were formerly classified as small and large types. Small-type hogs at weights of 220 to 225 pounds are much too fat, while large-type hogs are not finished and must be

carried to weights of 250 to 300 pounds to produce a finished carcass.

The most desirable meat-type hog is one with a natural tendency to yield the maximum percentage of the highest priced cuts—hams, loins, bacon, picnic shoulders, and shoulder butts—with enough finish to insure firmness. The lighter finish means less lard—a product that usually retails for less per pound than the live hog.

No one breed has a monopoly on meat-type hogs. Meat-type hogs can be produced that are fast gainers, utilize feed economically, have a high dressing percentage and high carcass cutout value. Breeders should locate, identify, and certify meat-type animals rapidly to increase numbers of breeding stock so urgently needed to meet present demands.

Many commercial producers raise crossbred hogs for the market. Boars should be selected with care in a crossbreeding program. Since half the inheritance of the litters will come from the boar, he should be sound and of a type calculated to produce the kind of pigs desired when mated to the sows on hand. To get the most from hybrid vigor, which is an objective in crossbreeding, select a boar the breeding of which differs from that of the sow. Rotation of 3 or 4 breeds is helpful in maintaining hybrid vigor in a crossbreeding program.

Detailed information on raising market hogs is contained in Leaflet 429, The Meat-Type Hog. You can get a copy of this leaflet from your county agricultural agent or by writing to the U. S. Department of Agriculture. You may obtain further information and advice from breed associations, your State or local swine growers association, swine testing station, or the National Swine Growers Council.

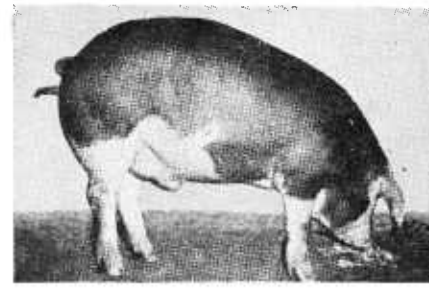

Figure 37.—Hereford barrow.

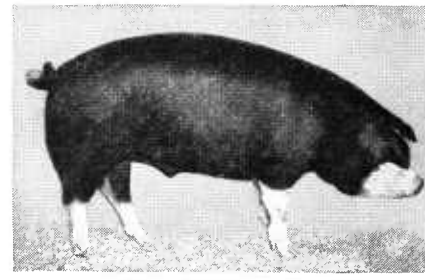

Figure 38.—Poland China barrow.

Figure 39.—Spotted Poland China barrow.

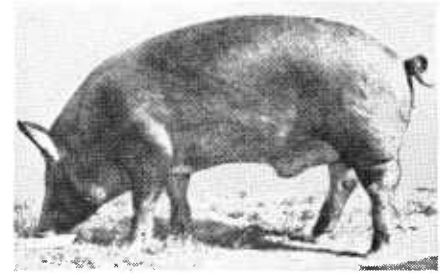

Figure 40.—Tamworth barrow.

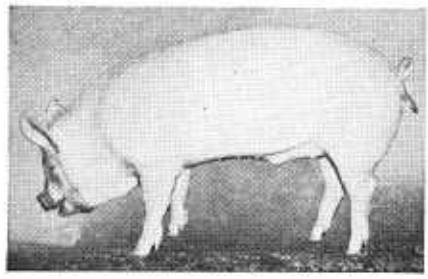

Figure 41.—Yorkshire barrow.

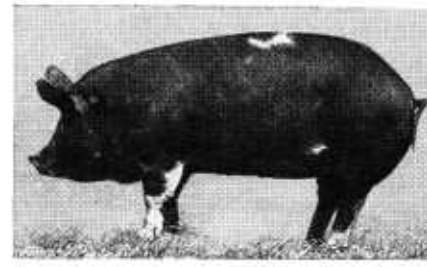

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Figure 44.—Maryland No. 1 gilt.

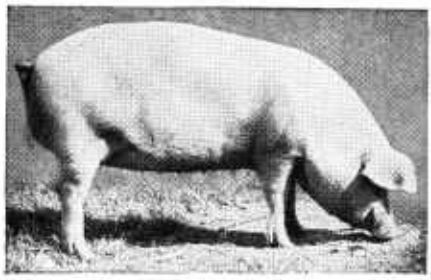

Figure 42.—American Landrace gilt.

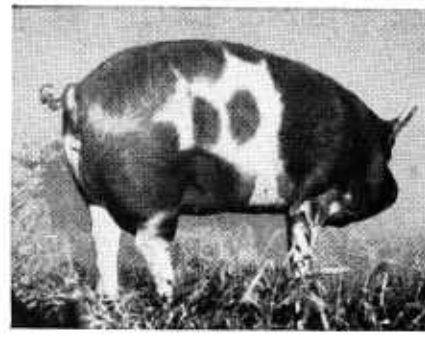

Figure 45.—Minnesota No. 2 gilt.

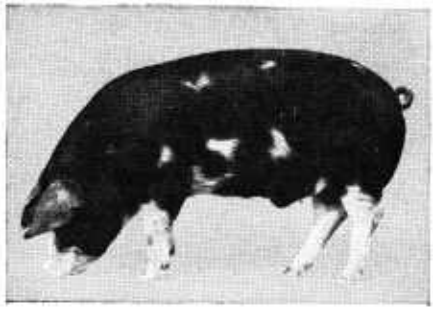

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Figure 43.—Beltsville No. 1 barrow.

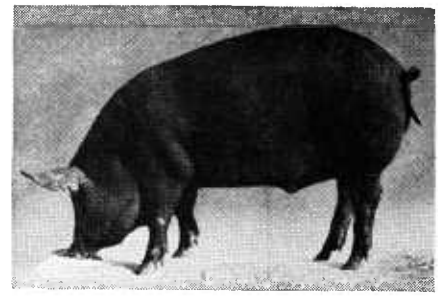

Figure 46.—Montana No. 1 barrow.

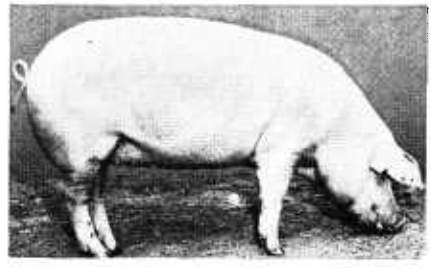

Figure 47.—Palouse gilt.

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Don't take chances with FARM MACHINES

- Keep guards in place on power shafts, belts, and chains.
- Turn off power and block the machinery before unclogging or adjusting it.
- Don't climb over or around a running combine or thresher.
- Don't step over or under moving belts.
- Don't wear loose-fitting or torn clothing, or ragged gloves around moving machinery.
- Keep children away from machinery.
- Keep machinery in good repair.

Farm Machines will save you time . . .

If you use them the safe way