

GENETICS

Better Farm Animals Bred

Animal improvements will include unwrinkled sheep, cattle that can stand hot weather, leaner hogs and small turkeys with lots of white meat.

See Front Cover

► NEW model animals are being bred for future American farms in much the same way that automobile engineers already have the new cars of 1950 on their drawing boards.

Here are some of the animal improvements promised by animal geneticists of the U. S. Department of Agriculture:

Unwrinkled and smooth-faced sheep.

Cattle that thrive in hot climates.

Steers that make better beefsteaks.

Leaner hogs.

Chickens without great pin feathers.

Small, white-meated, family-size turkeys.

Sheep that don't have to be "shaved" mean savings in dollars. Open-faced Rambouillet ewes at the U. S. Sheep Experiment Station near Dubois, Idaho, weighed five pounds more after shearing than those that were wool-blind.

Sheep without the wool over their eyes can see to find food and water and are better able to keep out of trouble. They also have produced more than 10% more pounds of live lambs a year than woolly-faced ewes.

Finer Fur Coats

Finer fur coats will become available as scientists "press" wrinkled sheep. When the pelts are processed for mouton fur, the wrinkles don't come out but leave streaks. Scientists can breed the wrinkles out by crossing sheep without excess skin folds. This also pays in better wool, for the wool on the wrinkles is coarse. Wrinkled sheep are hard to shear, and often the wool gets bits of skin mixed with it—which is hard on the sheep as well as on the quality of the wool.

More beautiful Navaho Indian rugs will result from other scientific experiments in sheep breeding. Observation on the Southwestern Range and Sheep Breeding Laboratory at Fort Wingate, N. M., and on the Navajo reservation is leading toward development of the type of sheep best suited to Navaho needs. Results of this research work in crossbreeding are being applied on the Navajo

reservation as fast as conditions will permit.

One of the aims is a long-staple wool better suited to weaving and also to commercial uses. Demand for wool for Navaho weaving far exceeds the supply.

Fat hogs used to be the goal of hog raisers. Now they grow them lean. Vegetable fats have given lard such competition that lean pork gives more profit now. Another improvement in breeding is the development of hogs that are ready for market with the least amount of food.

Developing Best Strains

The Department of Agriculture's Research Center at Beltsville, Md., is crossbreeding with American strains until they get a line with the best characteristics. Then they will inbreed to stabilize these characteristics. One of Denmark's best strains is the Danish Landrace, which is being crossed with Duroc,

Hampshire, Yorkshire and Poland China hogs. The Landrace breed is white, and because of its thin skin it gets sunburned. So scientists have developed red and black strains of the Landrace. At Beltsville accurate records are kept on mothering ability, rate of gain and feed utilization.

Hybrid Hogs Are in Use

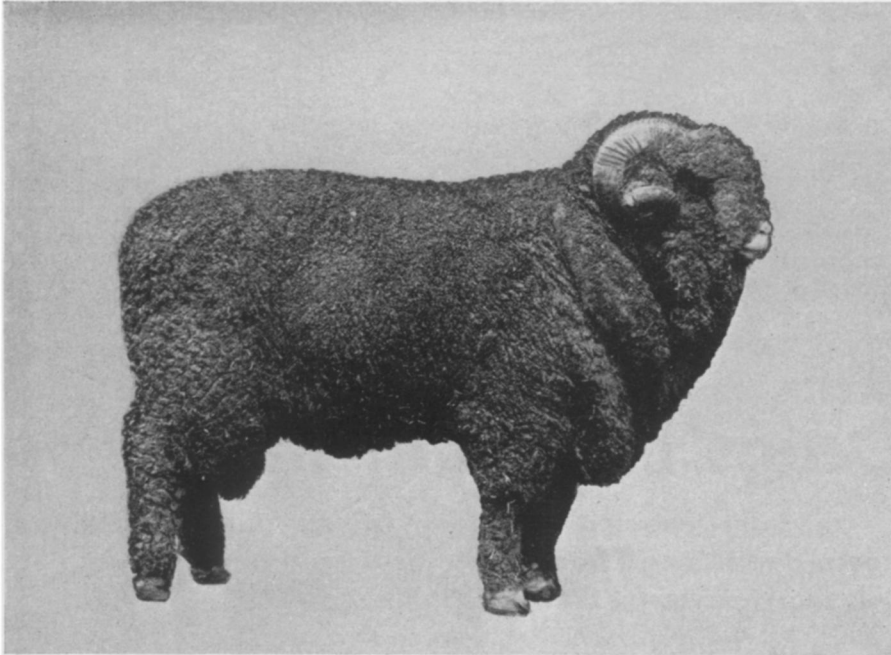
Hybrid hogs are already in use on American farms. Some of the boars of the new strains have been sold to hog breeders so that they can find out how good their hogs are. By mating some of the sows to the new boars they can compare the offspring to those produced by matings in the herd. These hog raisers are expected to keep records to send the Research Center, thus helping in the plan for breeding better hogs.

The bodies of hogs of the new strain are long, deep and smooth. The hams are wide and thick, and carry down well to the hock. The new strains average nine to ten pigs per litter.

Science is making cooler cows and better beefsteaks. Cattle can stand only small changes in their body tempera-



IRONING OUT THE WRINKLES—When the pelts of these sheep are processed for mouton fur the wrinkles leave streaks so scientists are crossbreeding them with smooth model sheep. This will also result in better wool since that on the wrinkles is coarse.



BETTER WOOL—This champion Merino ram demonstrates the success scientists have had in solving the problem of wrinkled sheep by cross-breeding.

ture of 101 degrees Fahrenheit. This would be hot enough for any man as well as for cattle, but the hot climate near the Gulf of Mexico taxes the animals' self-cooling systems. Zebu, Aberdeen-Angus, Africander, Hereford and shorthorn bulls were used in crossbreeding at the Iberia Livestock Experiment Station at Jeanerette, La. From one-fourth to one-half zebu blood is needed to make the animals better able to stand hot weather, scientists believe, though further research has yet to reveal just the proportion. Zebu cattle, the humpbacks from India, have better heat-regulating bodies than European cattle.

Superior Cooling System

An indication of the superior cooling system of zebras is their grazing habits. On hot days they continue grazing most of the day, while Angus cattle lie in the shade.

Better beefsteaks are designed to make everybody happy—those who can afford them, that is. Selective breeding plays an important part in insuring tender, juicy steaks. There are many characteristics that even experienced cattlemen cannot see in mating cattle. But some good characteristics can be bred into a line of cattle by selecting steers that are heavy when born, grow fast, and provide tender steaks when slaughtered.

Some of the things hard to judge are the ability of the steer to turn feed into flesh, the value of the animal when ready

for slaughter and the merit of the carcass. By studying eight or 10 offspring it is possible to judge the sire's value.

U. S. Department of Agriculture scientists are stressing the breeding of low-set, compact cattle as shown on the cover of this week's SCIENCE NEWS LETTER. However, the size should not be reduced too much by restricting length and height to get compactness.

Hybrid Vigor Studied

Corn hasn't any monopoly on hybrid vigor. Steers of shorthorn bulls mated to Hereford cows gained more rapidly than purebreds, were heavier at time of marketing and had fewer digestive disorders.

Further research, with carefully kept records, is necessary to tell how valuable crossbreeding is in producing better beef cattle.

Meanwhile poultry is not being neglected. Housewives will be able to buy chickens with fewer pin feathers to pull out. Fast-feathering chicks are the answer. Selective breeding has developed a strain of the new Columbian chicken that has well-developed tail and wing feathers. Higher quality meat and eggs, and more eggs are also objectives of poultry scientists at the Department's Beltsville Research Center.

The average hen on your father's farm laid 86 eggs a year. Now the average hen lays 118 eggs, and in some flocks the

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Do You Know?

Moose are powerful *swimmers*; so are mice.

Bed sheets made of paper may become common some day.

A *rat* may have six litters of young each year, with from six to 22 in each litter.

The iris is the source of *irone*, one of the most odoriferous substances for perfumes provided by nature.

The *gas-turbine* is particularly suitable for locomotives because it combines good thermal efficiency with freedom of water requirements.

Fire-fighting benefits by the use of *organic chemicals* which, mixed with the water used, give an increased extinguishing action of 200% to 400%.

A South American native plant known as *naranjilla*, botanically *Solanum quitoense*, yields a delicious and refreshing fruit juice; in shape, color and acidity the fruit is similar to the orange.

Highly concentrated *hydrogen peroxide*, used with calcium permanganate to launch Nazi V-1 bombs, may some day be used to operate small power plants where the factors of space and weight per horsepower are important.

Doorbell that automatically gives different signals when the front door or rear door button is pushed lets the housewife know immediately at which door her visitor is.

number is twice that. Good feeding and sanitation and selective breeding have made this record. A breeder mates birds that have superior egg-laying ability and can pass it on to their offspring.

Getting all-white meat in chickens is not worrying scientists, but producing more meat for every dollar spent on food is a problem of both scientists and of the farmers. It has been found that cross-breeds usually produce more meat for the amount of food than the purebred parents. Crossbred pullets and hens tend

to be broody oftener than purebreds.

The Beltsville Small White turkey, already on the market, is the answer to family needs. It is a relatively small bird, with lots of white meat. Several thousand have been produced and hatching eggs have been distributed to commercial breeders. The toms weigh 12 to 17 pounds alive at market age, and young hens weigh 7½ to 10 pounds, roughly about two-thirds the weight of mature standard-size birds.

Science News Letter, January 17, 1948

MEDICINE

Drugs Endanger Infant

Pain-relieving methidon, given during childbirth, has a depressing effect on the new-born baby's breathing. It is more powerful than morphine.

➤ DANGER to the new-born baby when its mother is given one of the new drugs for relieving pains during its birth is reported by Drs. Allan C. Barnes, Fred B. Hapke and John H. Holzaepfel of the College of Medicine at Ohio State University.

The drug, known variously as methidon, amidone, dolophine and 10820, was synthesized in Germany in 1939 and kept secret during the war. It is two to four times as powerful as morphine in relieving pain, but like morphine can probably cause addiction.

The danger of methidon for new-born babies comes through its depressing effect on breathing. When a certain size dose of methidon was given to the mother two hours or less before the baby's birth, there was a significant delay before the baby started to breathe and gave its first lusty cry. When a smaller dose, two-thirds the amount, of methidon was given, regardless of how short or long a time before the baby was born it had no significant effect on the baby's breathing.

Methidon, like other pain-relieving drugs, may not be the only drug given to a mother in childbirth. Combinations of drugs are often used to ease labor pains. The possibility that using methidon with other drugs may increase its harmful effect on the baby must be considered, the Ohio State doctors point out, though their studies give no information on this.

Almost equally important with the finding of methidon's danger, they think, is the method they devised for studying it. Each of the 25 women given methi-

don, and each of 30 not given it and studied as controls, was given either caudal or saddle block spinal anesthesia for the last few hours before the baby's birth.

This method makes possible the study of the effects of a single drug, such as methidon, on the baby's breathing because no other pain-relieving drug need be given the mother. No other study of the effects of a single drug on the new-born baby's breathing has been made, so far as reports going back to the year 1904 show.

Details of the current study are reported in the first issue of the *Health Center Journal*, (Dec.) new medical journal issued by Ohio State's College of Medicine and Dentistry.

Science News Letter, January 17, 1948

GENERAL SCIENCE

Books Pay Subscriptions To Polish Science Journal

➤ TO keep up with science in Poland you can receive *Zycie Nauki* (Life of Science), a monthly publication, which appears in Polish with a summary section in English. To the editors of this journal, books from abroad are more to be desired than cash for subscriptions. A recent issue (July-Aug., 1947) carries the message:

"We beg foreign subscribers not to send us cash but only their addresses, as it would be more convenient for us to receive foreign books in exchange. Their titles would be agreed to by later correspondence."

Science News Letter, January 17, 1948

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