

ready sale. Perhaps his means and conditions do not warrant him to enter into the production of pure-breds. If he is breeding sheep merely for mutton purposes, high-class grades will suffice, yet even in buying grades he should take care to select only those possessing a good mutton conformation. Many farmers think that, since they own simply grades, 'any old sheep' at all will produce good enough results in the flock, and, therefore, the more cheaply they can buy the better. This is false economy, for very frequently they obtain in their flock animals that do not pay for the expense of their keep.

Uniformity of type in the flock should be the direct aim of every breeder. This applies to grades as well as pure-breds, and refers to the selection of a type of sheep, possessing similar mutton and wool characteristics. With pure-breds this feature is especially important. In a flock of sheep where several types obtain, choice of a suitable ram is most difficult. Besides, disparity in this respect detracts from the general appearance of the flock, and gives the buyer or casual observer an unfavorable opinion. Every breeder should aspire to produce a distinctive type. He should endeavor to breed a class of sheep possessing characteristics that, wherever the animals are, they will be recognized as his breeding. But to attain this he should never uphold some fancy character in preference to utility features. No feature should be given undue prominence beyond another, especially one that is purely ornamental. The establishment of an ultra form of some fashionable characteristic has at times become an obsession with many breeders of pure-bred sheep, and this sin (for it cannot be called anything else) must be avoided. The ultimate destination of most pure-bred rams is at the head of grade flocks, and their utility features should only be taken into consideration.

The beginner should study well and become familiar with the type or breed he has selected. He must be able to recognize undesirable features and disqualifications. These he should endeavor to preclude from his flock, and to this end he should practice a rigorous culling every year. Individuals which do not possess the merits that his ideal calls for should be banished from the flock. Sheep having grave defects of character or type should not be used for breeding purposes. The absolutely perfect sheep, however, is still unknown, but every breeder should essay to approach as well as possible to what he considers perfection of type. Therefore, he should practice judicious care in the initial selection of his foundation stock and in his subsequent breeding operations.

After getting the foundation of the flock laid the following leaves from the note-book of a successful shepherd may be found helpful:

Regulate the time of lambing to suit the requirements of the market, or in other words, have lambs of requisite size and weight ready for the shambles or for sale as flockreaders in the case of pure-breds, when the demand is keenest and the price highest.

The shepherd should estimate and fix his breeding season, by reckoning backwards 21 weeks, which is the approximate period of gestation, from the time he wishes his lambs dropped.

If you wish to assure the birth of strong, vigorous lambs, keep the pregnant ewes in a thriving and healthy condition.

Do not neglect to provide some succulent feed for the ewes, as turnips, cabbage or mangels, for the winter ration. Maintenance upon a very dry feed may result in constipation and serious ill-health.

A word of warning in respect to mangels. They should be fed in very limited quantities to rams, since they are prone to produce calculi or stones in the kidneys or bladder. These may become large enough to close completely the urethral opening, which, unless relief can be quickly provided, will result in the death of the ram. The ewes, having a larger urinal canal, are not so subject to this danger. Turnips and cabbages can be fed to both sexes with impunity.

Separate the ram from the ewes after the breeding season. The ram will thrive better apart, and, besides, danger of his butting the ewes is averted.

Every well-regulated sheep barn should have a warm lambing pen. This should be located in the south end. There is no better means of insuring warmth than by constructing the walls of boards tightly fitted on both sides of the studing, so as to form a still air space. It is much more effective, in conserving heat and preventing the entrance of cold air, than where one layer of boards is placed directly upon another with building paper between.

If pasture is not ready, commence feeding the lambs, when about two weeks old, a little grain, mostly oats, and a good quantity of clover or alfalfa hay.

Lambs should be fed in a separate pen from their dams, otherwise the ewes would take what is intended for them, and they would get little or nothing to eat.

In raising pet lambs, watch that the ewe's milk does not cause constipation. To correct

this condition give a little castor oil with the milk.

All lambs must be docked. This operation can be done most satisfactorily when they are from ten to fourteen days old.

Ram lambs not intended for breeding purposes must be castrated. Pure-bred animals only should be preserved entire, and many of these, possessing marked defects of type, had best be unsexed.

Sore teats and udder should be carefully treated. Since caked udder is most frequently caused by exposure to draughts or lying in cold, damp pens, every means should be taken to keep the ewes in comfortable surroundings. After weaning, ewes, showing distress with their udders, should be milked for several days.



A Karakule Lamb.

To prevent wool balls in the stomach, clip all tags and locks of wool around the udder.

Remove the manure from the pens frequently and keep them well bedded with clean straw.

Do not permit the sheep to drink from stagnant pools. These are prolific breeding places for internal parasites.

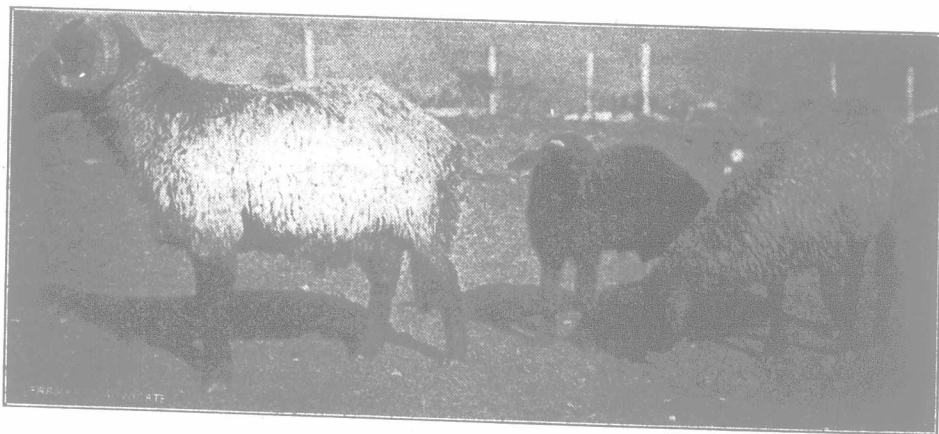
Dip both lambs and ewes, after shearing the latter and before placing them permanently upon pasture.

Remember that one ounce of preventive is worth pounds of cure. This is especially true of many parasitic diseases of sheep, for which there are no certain remedies.

Developing the Karakule Fur Industry.

Editor "The Farmer's Advocate":

If a new kind of fur farming introduced by a Kansas rancher, aided by breeding experts, is widely practiced in the United States and Canada, America will not have to go to Russia for the millions of dollars worth of Persian lamb,



Karakule Ram, Ewe and a One-month-old Lamb.

astrakhan, and krimmer furs it buys every year, \$14,000,000 worth for the United States alone. For this Kansan, on his 1,900-acre ranch near Cottonwood Falls, that State, has learned to grow these furs profitably by crossing Karakule sheep from Asia on native longwool breeds. The success of this rancher's venture, vouched for by experts at the Kansas Agricultural College, which has been co-operating in the experiment, is a threatening blow to Asia's exclusive Karakule fur industry.

L. M. Crawford is the Kansas fur farmer. His peculiar type of farming was begun nearly three years ago on an investment of nearly \$100,000.

Crawford had faith in the theory of scientists who declared that cross-breeding the black Karakule breed on native white longwool types would give the much desired Asiatic furs. That was all he had to go on. No other American farmer ever had attempted the production of these furs on a large scale. But when 300 black, curly lambs arrived on his ranch last season, and 600 more this last spring, and when New York furriers priced the pelts from lambs only a few days old and from those born dead at \$3.00 to \$10.00 apiece, breeders throughout the country became aroused to the fact that this Kansas shepherd had made a highly important discovery. Letters of congratulation and inquiry filled his mail box daily.

Seeing at once the promise in the venture, the Kansas Agricultural College asked and was granted permission to co-operate more earnestly with Crawford in carrying on the undertaking. As a result Dr. R. K. Nabours, an experimental breeder for the college, who has been in charge of the breeding work, was sent to Bokhara, Central Asia, the home of the Karakule fur industry, this summer, to study fur farming. Dr. H. J. Waters, president of the College, and his co-workers believed that such a trip would enable Dr. Nabours better to carry on, with Crawford, the work of perfecting an American fur industry. The Kansas expert went as a representative of the Kansas Agricultural College, and also carried a commission from David F. Houston, Secretary of Agriculture.

It was proved conclusively last year that Crawford's venture was a success so far as producing Persian lamb, astrakhan, and krimmer furs from crossing pure-bred Karakule rams on native ewes was concerned. At that time, as stated above, 300 lambs bearing these furs were born. One hundred of the pelts were marketed for fur, while the rest of the lambs were kept for breeding. An average price between \$5.00 and \$6.00 apiece was received for these pelts.

But it remained to be proved that half-blood Karakule rams, crossed on the native ewes, would give valuable furs. Scientists believed this was possible, though it was undemonstrated as yet. So Crawford separated 150 native Lincoln ewes last fall and crossed them with half-blood Karakule Lincoln rams. The result this spring, thought to be one of the most important facts yet learned in the experiment, was this: only eight of the 153 lambs that came—several ewes bore twins—were not wholly black. Five of the eight were white, and the other three spotted. But the skins of these eight also were curly and apparently valuable. As for the black skins, though priced somewhat lower than the half-Karakule pelts, they were hardly distinguishable from them.

The importance of such a predominance of black pelts from such a cross as this is easily seen. It means that half-Karakule rams, which sell for \$150 to \$300 apiece, can be depended upon to breed lambs which bear furs almost as valuable as pure-bred Karakule rams which are worth \$1,000 to \$3,000.

Crawford's venture in fur farming began three years ago when he bought thirty-four pure-bred Karakules—the larger part of the first herd ever brought to the United States. Then he shipped in 1,100 Lincoln ewes from Idaho, and made over his 1,900-acre ranch into a farm for fur growing. It wasn't to be a sideline with Crawford; the entire ranch was converted for the new purpose. At the suggestion of the Agricultural College Dr. Nabours was accepted as advisor in the breeding.

The Karakule is a very hardy sheep and will thrive in the warmest and coldest parts of America. Since importation to this continent these sheep have withstood with equal fortitude the winters of Canada and the summers of Texas. In fact the variations in temperature in their native country are greater than in this country.

As a mutton sheep the black breed from Asia can hardly be excelled, experts say. Crossed on American sheep the offspring show a great increase in weight, and the mutton is without the woolly or "sheepy taste" common to native sheep meat. H. E. Finney, general manager for Armour & Company, Fort Worth, Texas, where some of this mutton was marketed, testifies to this fact. Mr. Finney said:

"I take great pleasure in testifying to the superior mutton qualities of the Asiatic Karakule sheep, because I am very much interested in seeing the development of this strain in this country. Our experience has been that on crosses between Asiatic Karakule sheep on one or two of

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