

RANGE SHEEP MANAGEMENT IN ARIZONA

By J. W. HANKIN, '25

It Has Always Been Recognized That Our Desert and Mountain Ranges Are Unexcelled as Sheep Areas, But the Maintenance of These Ranges Seems Quite a Problem.

All of us know what a decided slump the livestock industry took after the war, and sheep hit the bottom along with the rest of the industry. About 1921, lambs suffered a decline of about 57%, while wool was unsalable, and when a market was finally found, it was at prices 50% and 70% below war levels.

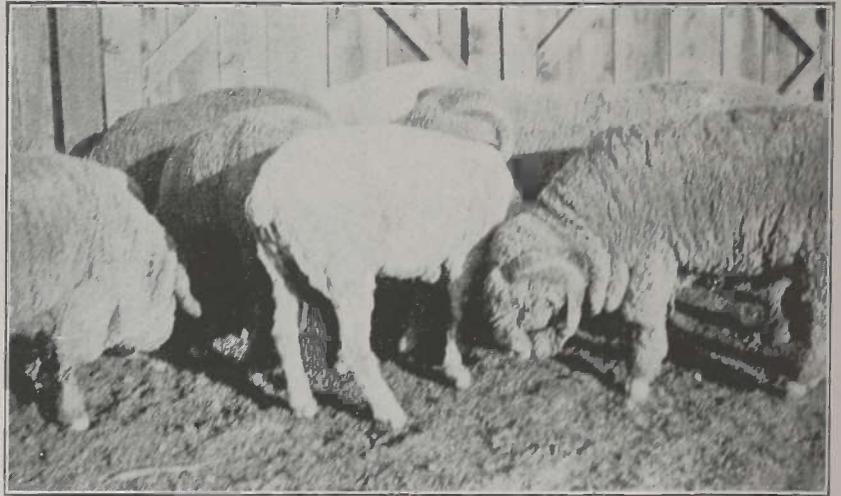
However, the sheep industry did not come so close to going on the rocks as did the cattle industry, and now it is coming back to somewhat the same level as its old basis. By the summer of 1924, lamb prices had advanced 50% over those of 1921, and wool advanced 104%. This means that the sheepmen are getting back on their feet once more, and that the question of raising range sheep is again one well worthy of consideration.

Arizona is without question a good sheep state, probably even more so than a cattle state. There are parts of Arizona which are unexcelled any where in the west as sheep raising areas, and it has always been recognized that Northern Arizona, especially the desert ranges, will bring more profit when utilized by sheep, than by any other branch of livestock.

Many cattlemen throughout the state are beginning to realize that there may be parts of their range which would support sheep much more profitably than cattle, and some of them are either turning to sheep or putting them on with the cattle.

The ideal range should be mixed browse, grass, and weeds, yet with a predominance of browse, as that is the type of feed essentially suited to sheep. It should be well drained, as free as possible from long continued, heavy rains, and adequately supplied with watering places and suitable bed-grounds. Grass and weeds are necessary for ewes and lambs during the summer and spring, but not in the winter, and are not essential for wethers at any time.

The value of the different types of forage will vary with the stage of maturity of the various plants, the



RAMBOUILLET BUCKS COSTING \$250 EACH—ASH FORK, ARIZONA.

region, and individual tastes of the sheep; but it is generally considered that the relative value is browse, grass, and weeds in the order named.

Climate and physical characteristics also affect the suitability of a range through heavy rains and snows, and the periodic summer droughts characteristic of the southwest. Dry, rugged areas are better suited for sheep than wet marshy lands. Sheep will seek timber or sheds in heavy rains, and when unduly cold rains are long continued, it will keep them too long confined, or cause trouble after weaning where sheds are not available.

Sheep when handled right will not injure a range for cattle, but they must be kept moving, and not allowed to stay in one bedding ground long enough to injure the range. In fact a range which has become unsuited to cattle may be improved by periodic grazing of sheep. Also, sheep may graze on larkspur range without bad effects, while it is extremely deadly to cattle at certain periods of the year.

Abundant water should be available on the ranges during the spring and summer, but it is not as important in winter if snow is available. Under ordinary conditions sheep may go three or four days without water except during the summer. If the for-

age is green and succulent, as during the growing season, or in the late summer and fall, they may even go longer periods without water and without ill effects. On some of the high mountain ranges of the Forest Service, sheep have been grazed successfully the entire summer without water.

Where variations in the range permit, it may be divided into units so as to be used most efficiently. During the period of lambing and immediately afterwards, the ewes and lambs need plenty of tender green feed and water, more so than at any other period of the year, so a range which supplies this demand as well as enough browse to fall back on in case of drought and a shortage of grass, will make a very good lambing range. It is necessary to keep the ewes and lambs on this range continually for several weeks, so it must have strong and vigorous plants. The ewes and lambs should be moved to the summer and fall range as soon as possible to give it a change to recuperate by the following spring.

The lambs depend largely on their mother's milk for nourishment during the summer, so the range must also contain plenty of grass and weeds. The forage may be injured by grazing when immature, for this rea-

son it should be as far advanced as conditions permit. Then again, as some of the grazing must be done when the plants are flowering it must not be too heavily stocked, so as not to interfere too much with reproduction. The range cannot be allowed to rest when fully stocked. It can be interchanged with the winter range and each of these can receive protection in different years. This is not always possible, however, as snow may prevent the use of summer and fall ranges intended for winter use.

It is not necessary, though, to give the entire summer and fall range a rest during the growing season. If it is stocked so as to prevent overgrazing, and grazing is deferred on successive parts of the range until after the seed matures and the surplus forage then utilized, the forage may be fully grazed and still maintained in a state of maximum production. This is the "deferred and rotation" system of grazing.

The winter range should be low enough to be out of range of severe storms, and enough forage must be protected at other times of the year that the sheep may obtain plenty of feed without excessive traveling. The lower browse areas are usually the best winter range. If, however, the stock do not receive enough feed they should be fed a little supplementary feed such as alfalfa hay, or hay and some cottonseed meal, to maintain them. Care must be taken throughout the year to not overgraze the ranges, as this will kill out the better forage, thin the vegetation, allow erosion to start, and deplete the range generally.

The carrying capacity of a range will, of course, vary with the type of vegetation and condition of range, and no really definite figures can be given. However, Jardine and Anderson in U. S. D. A. Farmers' Bulletin No. 790 on Range Management in National Forests, say that from 56 observations made by them, an average of 2.5 acres was required to support one mature sheep or two lambs, for 72 days, or about 3 acres for 100 days. This would indicate that under ordinary conditions, about 70 acres per head will be required for year-long grazing.

However, this will vary from 3 to 10 acres, decreasing in acres per head with the number of sheep, size of range, altitude and rainfall.



A WELL BRED FLOCK ON NAVAJO COUNTY RANGE.

About 1200 to 2000 breeding ewes is generally considered the most economical size of unit for handling or management. When men have more than this number they usually increase in multiples of this unit depending on the amount of range available.

The breeding ewes should be grazed separately from the ewes, wethers, yearlings, and weaned lambs, as they will graze more quietly with their lambs. The lambs should be weaned at about five months of age.

A herder may not be needed for small flocks, but is absolutely necessary for the larger bands, to secure proper use of the range, prevent straying, and attacks from predatory animals.

The flock should not be kept in a compact bunch and pushed along from behind, but should be allowed to graze quietly, and the leading sheep should be held down to the pace of those in the rear. In the morning on leaving the bed ground, the sheep may be turned in the desired direction and allowed to drift slowly that way. It is usually best to leave the bedground early in the morning and to return about sunset to insure plenty of time for grazing.

Some herders will use only a single bedground throughout the year, but this causes a decidedly serious overgrazing in that vicinity, resulting in a weakened range and poor use of forage. Obviously, more bedgrounds are better, for overgrazing is then eliminated, deferred and rotation grazing may be practiced, and even and efficient use of the forage may be made.

The bedding out system which is

simply bedding the sheep where night overtakes them is a good system, and may be practiced successfully except during lambing time, shearing time, or severe winter storms.

Lambing time is a very important and critical period. When the lambs are first dropped they are very delicate and can not stand much rain or cold, so when a range is found that has plenty of feed, water, and shelter, as already mentioned, and that is also easily accessible, it is well suited for a lambing range. Lambing may start from February to May, and will last from 30 to 45 days. When possible it is best to sandwich it in between the winter storms and summer heat, to give the best possible conditions.

There are several methods commonly used, such as permanent sheds, small open corrals, tents and open corrals, open enclosures with lambing cells that may be covered, and open range with no enclosures at all. A combination of these methods to suit conditions is probably better than any one method.

Then there is still another method which has not been mentioned, and which might come properly under management. In Arizona there are some sheepmen who do not have adequate winter ranges, and who bring their flocks down into the valleys and winter them on pasture. About 300,000 or 400,000 sheep winter annually in and around the Salt River Valley. They lamb, are sheared there, and late in spring or early summer, those not marketed are taken back to the higher elevations over the summer and fall.

The lambs are usually docked, because buyers prefer them that way, and discriminate against undocked

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before planting. Plant some crop between the rows that will not grow large, for a tall growing crop will shade and sap the trees. Peas, potatoes, peanuts and all kinds of truck or small plants will be suitable. Corn or cotton may be planted if plenty of room is given on each side.

Unless you are sure you have a very careful hand to work your trees, it is recommended driving two good stakes about eighteen or twenty-four inches from the trees on each side to prevent these trees from being skinned by horse, singletree or plow. Use a 16 inch single tree. The stakes should be four feet high at least.

Experience with pecan trees indicates that in almost every case it is better to cut back from one-third to one-half of the bud growth when setting trees out, in fact, if planting in a very dry section of country, it will pay to cut the trees back within 12 inches of the bud. Some will think that they are ruining their trees, but in most every case the tree will be stronger and more even of growth within two or three years. Make the trees branch where desired. If they are too low, prune to one limb and when they reach the desired height, top them, and make them branch according to a desirable plan. When trees are dug from the nursery row the root system is crippled, so it should not be expected to support as much top in a crippled condition as it did in the nursery row.

WHAT TO PLANT THIS MONTH IN THE GARDEN

Kind	Variety
Brussels Sprouts (Seed bed)	Perfection
Cabbage (Seed bed)	Hollander, Wakefield
Cauliflower (Seed bed)	Snow Ball, Dry Climate
Tomatoes (Seed bed)	June Pink, First Early, Earliana
Peppers (Seed bed)	Pimiento, Bell, Mex Chili
Kale	Sersey, Siberian
Lettuce	Los Angeles, Mkt.
Mustard	Chinese Green
Onion Sets	Bermuda, Crystal Wax
Parsley	Moss Curled
Parsnip	Hollow Crown, Perenshire
Radish	White Icicle, Scarlet Turnip
Turnip	Purple Top, White Globe

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lambs. Docked lambs are neater, cleaner, and bring a higher price. Neither do they have the drain of supporting a heavy tail.

Shearing is sometimes done twice a year, but generally only once, which will be in the spring. It may take place just before or along with lambing, the weather controlling the time, as with lambing. It will be necessary to shear later at the high altitudes, so shearing may take place anywhere from February to even as late as May in some sections, depending on the temperature.

The largest run of sheep is in the fall after they come off the summer range. At this time the lambs are cut out, the old ewes and non breeders culled and delivered. Ewes are culled largely according to the condition of their teeth, and are discarded when these begin to spread which will usually be between 5 and 6 years of age. The reason for culling them is that the ewes can no longer eat the thin bladed grass, and must go to the poorer quality, broader leaved species, which are often the poisonous plants.

The usual number culled will average about 9% old ewes, and 7% which are dry or non-breeders. These shortages with the mortality and other losses, make about a 20% to 30% shortage to make up from the ewe lambs in order to maintain the size of the flock.

Needless to say, good rams should be used to breed up the flocks. Every sheepman wishes to grade up his flocks, and this is only possible by the use of good rams, and the wise selection and culling of breeding ewes.

Usually in open country one buck will be used to around fifty ewes, and

in rougher, more heavily timbered country, one buck to thirty or forty ewes or less.

The bucks should be over 18 months old, and should be in good thrifty condition at breeding time. If the range is not extra good, they should be given some sort of supplementary feed to keep them up. This will pay for itself in the increased vigor, and decreased mortality of the lambs. The percentage of lambs dropped will vary from year to year, and with different flocks, running from 50 to 100 per cent. An 80% lamb crop is very satisfactory to most sheepmen, but in Arizona it has averaged about 60% for the state.

HOW INSECTS MULTIPLY

The importance of insect control is growing every year, as the injurious kinds are many and increase with great rapidity. A single insect may lay from 3000 to 4000 eggs a day, which in a short time hatch other insects that soon lay eggs.

The Japanese beetle is a good example to show the rapid increase and the shortness of generation. It took five New Jersey entomologists five days to find six of these beetles in 1916, while the state was paying 80 cents a quart of 3000, six years later.

Salt is quite a factor in the hog ration and hogs in the field should have access to block salt. One is surprised at first to find how much of this they will lick, especially if they are not used to having it. Salt and water are essential to good feeding, yet it is surprising to find such cheap factors as these frequently omitted or cut down.

IT PAYS TO PLANT EARLY

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