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THE ANGORA GOAT

A GENERAL DISCUSSION OF

Methods of Management, Feeding, Breeding and Mohair Production

BY

T. REG. ARKELL, B.S.A., B.Sc., and HORACE V. BENT, B.S.



Augora yearling Buck.

DOMINION DEPARTMENT OF AGRICULTURE LIVE STOCK BRANCH PAMPHLET No. 12 SHEEP AND GOAT DIVISION

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DOMINION DEPARTMENT OF AGRICULTURE.

LIVE STOCK BRANCH.

SHEEP AND GOAT DIVISION.

JOHN BRIGHT, Commissioner,

H. S. ARKELL, Asst. Commissioner,

PAMPHLET No. 12.

May, 1915.

THE ANGORA GOAT

BY

T. REG. ARKELL, B.S.A., B. SC., and HORACE V. BENT. B.S.

Angora goats are said to have been raised by the Turks, for over 2,000 years, in the Vilayet of Angora in Asia Minor. Turkey, together with South Africa where they have been introduced in large numbers, contributes the greater part of the world's supply of mohair.

The Angora industry in Canada is as yet in its infancy. There seems to be no record of any direct importations from Turkey. This is probably due to the fact that for many years the Turks ve . ". guarded against the exportation of animals from the country for breed . 3. By so doing they attempted to gain a monopoly of the mohair inc "v severe restrictions have also been placed in America upon the importatie at iss of live stock from Asiatic countries, as a safeguard against contagiou. es. A few early importations to the United States furnished the foundation for the Angora industry upon this continent. It is now no longer possible to secure the Angora from its native heath. The American type is different to that of Turkey. Breeders in this country found the original imports small and delicate and, therefore, they resorted to crossing with the common goat for the purpose of obtaining a larger and more hardy animal. Although crossing has sacrificed, to some extent, the length and quality of the mohair, yet it has produced a class of goat better suited to withstand local elimatic conditions than the Turkish Angora.

CHARACTERISTICS.

Modern Angoras should be bred for size and strength of constitution, but at the same time a tendency to coarseness must be avoided, since such animals are not productive of the finest fleeces. In size it ranks smaller than the ordinary goat, averaging from 60 pounds to 100 pounds for the buck. The chest should be broad and deep, indicating a strong constitution; the body round; and the legs short and strong. The head should be upright and clean cut, with a bright eye and a broad muzzle. The horns of the male turn upward and outward with a backward twist, and have an average length of 18 to 20 inches, while those of the female are about one-half the length, turning upward and backward, and have but a slight inclination to twist. The back should be straight and hips and shoulders of equal height. A sloping runp must be avoided.

In colour the fleece should be a shining, silky white. Dark coloured fibres are objectionable. The entire body should be densely covered. The fleece should extend to the ears and jaws and should be of a fino and silky quality. The staple should be about 10 inches in length, closely curled, lustrous and as free from kemp as possible. The Angora goat bears a closer resemblance to the sheep in its nature, form and habits than other classes of goats.

ADAPTABILITY.

Most parts of Canada where live stock production prevails are suitable to the raising of Angoras, especially if the land is high and dry the greater part of the year. They will withstand the rigor of even the coldest winter and do not require any greater



Angora yearling Doe.

shelter than a shed to protect them from wind and storm, providing a sufficient quantity of nutritions food and pure water are supplied. The Angera goat performs a two-fold service in the Canadian scheme of farming. It produces a high grade of mohair and at the same time may be used for the destruction of underbrush on lands to be broken for subsequent cultivation.

BROWSING.

It is the common opinion *!.at goats will not only live but thrive upon "any old brush," shoes, tin cans or other rubbish that may happen to be within their reach. This may be true to some extent of the common "billy goat," but not of the Angora. four s So mu definit per ac cattle, foliage

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M derived meanin 78 They will, however, thrive upon green leaves and tender foliage. After the first culling of trees has been removed, a second crop appears as tender shoots, which if left to themselves for a few seasons, convert these chenred or logged-off lands hack again into a wilderness. This type of land furnishes an excellent feeding ground for Angoras. In fact, a prominent use of these animals at the present time is for the purpose of converting brush areas into grass pastures, suitable for other classes of live stock to feed upon. Given the freedom of brush lands, they will continually roum about, nipping a few leaves here and a few there, until they have covered the entire area, stipping every green thing within their reach. The yoag twigs and shrubs, continually robbed of their folinge, are entirely destroyed. In their efforts to reach the tender folinge, the goats will stand upon their hind legs and strip the leaves to a height of five or six feet. Some varieties of brush are more difficult to exterminate than others, and it may be necessary to keep the goats at their task for three, or perhaps



A valuable Angora sire.

four seasons. The number of goats required per aere is very difficult to ealculate. So much depends upon the nature, character and den ty of the undergrowth, that a definite statement cannot be given. It is generally estimated that from 4 to 6 goats per acre will in 2 to 3 seasons convert a brush area into a grass pastule, suitable for cattle, horses or sheep. The goats themselves will eat but little grass, if tender, juicy foliage is available.

MOHAIR.

Mohair is the technical name given the hair of the Angora goat. The word is derived from the French "mohere," and primarily from the Arabic "mukhayyar" meaning mohair cloth.

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Well bred Angoras produce hair which is silky white, exceedingly lustrous and hangs over the entire body in wavy eurls of about 10 inches in length. The average annual clip is about 5 pounds per head. The weight and length of the fleece depend largely upon the grade and condition of the animal. Angora crosses upon inferior goats may produce but 2 or 3 pounds, while pure bred individua... may yield as high as 10 or 12 pounds. In Angora where the freet fleeces are found the goats are attended with great care. Each farmer in Turkey possesses 20 or 30 head to which he devotes his entire time, In many lustances living under the same roof with them. Under these conditions they receive the most careful attention, which is necessary if a superior grade of mohair is produced. "Schreiner," an eminent authority, says: "If goats are to produce the best fleece of which they are capable, they must be maintained in uninterrupted good condition. They must have a variety of foods, principally shrubs and plants, and lead an active life; they must, if possible, have running water to drink, and be free from dust; they must not be kralled (shedded) except when absolutely necessary; they must have clean sleeping quarters and must not be crowded together."

Young Angoras provide the best quality of mohalr, kids, yearlings and does being preferred in the order named. As an animal grows older the hair becomes coarser, thinner and straighter. It is, therefore, necessary, in order to produce the finest grade of hair, to maintain a young and active herd.

LUSTRE.

Lustre is a very important feature of the mohair fleece and often very largely determines the price. Other things being equal, the greater the lustre the higher is the price. A fleece lacking lustre comprises an inferior fibre and is frequently the result of an unhealthy condition of the animal producing it. A weak and tender fibre cannot be manufactured into a desirable fabric.

KEMP.

Kemp is the title applied to the under coating of short, thick, hair-like fibres, which oftentimes permeate the fleece. It is said to be a relie of the common goat blood. This theory seems well founded, since the smallest amount of kemp is to be found in the fleece of the highest bred animals. As it is an indication of inferior blood, it can only be climinated by careful breeding. Kemp is objectionable because it is short and coarse. It also refuses to take and hold dyes, thus appearing in the finished product as a defect.

PREPARATION FOR MARKET.

It is important that the clip should reach the market in as presentable a condition as possible, since the more time and labour necessary to prepare the raw material for the manufacturing process, the correspondingly less - ... be the price received by the grower.

Shearing should be done on a clean table or platform and the hair kept as clean as possible. Roll the fleece compactly with the cut side out. Never the fleeces. The presence of tying material greatly impedes the grading process and increases the cost of preparation. Mereover, if sisal or other fibrous material of this nature is used for tying, it may unravel and, when once incorporated in the hair, is most difficult to remove. If allowed to remain it will appear in the finished product as a serious defect. The presence of binder twine (sisal) will often reduce the price of mohair twenty five per cent, since a few fibres may become scattered through a large quantity of unaterial.

The fleeces should be packed in large sacks. This minimizes the cost of handling at the warehouse and at the grading table. As far as possible, keep the different grades in sacks by themselves. Put the hair from the kids, wethers, does and bucks in Or special like wo it for t almost coverin braids, medium tassels, plu hes and dra even th used fo mands : 785

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separate packs, as these represent different grades, and the material in each sack should be uniform. Stained locks and tags should be kept apart from the clean mohair. If there is not sufficient of one kind to fill a sack, keep the various classes separated in the sack by heavy paper or burlap. Never pack mohair and wool in the same package. The fibres will surely mix and complete separation is difficult.

GRADING.

Grading is largely earried on at the place of manufacture. From 10 to 20 sorts may be made, according to the kind of yarn required and each mill has its o n standard and nomenclature.



A desirable type of breeding female.

USES.

Owing to its brilliancy and elasticity, mohair is peculiarly adapted for certain special uses. It has the appearance of silk without its suppleness. It does not felt like wool but takes dyes with greater facility. Its lustre and durability eminently fit it for the manufacture of plushes, velvets and lap robes. The best mohair plushes are almost indestructible and are used by railway companies as the most durable of seat coverings. Mohair is also extensively used in the manufacture of dress goods, serges, braids, shawls, rugs, coverlets and imitation furs. Ordinary grades mix well with soft medium wools and are thus used in the manufacture of hosicry, velvets, delaines, braid, tassels, trimmings, coat limings, cloakings, bindings and fringes. For staple goods, like plu hes, upholsteries and limings, there is a regular demand for mohair, but the ' aid and dress goods trade are uncertain and variable, causing an unsteady demand for even the higher grades of mohair. A very long staple of 12 inches or over in length is used for making artificial hair and wigs and on account of its scarcity always commands a high price.

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PRODUCTION.

Turkish and South African mohair constitutes the world's largest and best supply. The Turkish is the purest and finest. It is generally allowed a full year's growth. It is usually free from kemp and very lustrous, spins finer yarns and dyes to brighter shades, than that from any other part of the world. The South African resembles very closely the Turkish product, but is often sheared twice a year. A comparatively small amount is now grown in the southern and western portion of the United States. The domestic product is somewhat inferior to that raised in either Turkcy or South Africa. It is shorter, less lustrous and contains more kemp. This condition is probably due to the presence of common goat blood introduced by early importers to increase the size and stamina, as the goats were found to be too delicate to thrive well under American conditions.

Mohair manufacturers in this country regard the domestic product as rather inferior and in some cases undesirable for the manufacture of high grade materials, due to its shorter, coarser staple and greater portion of kemp, but all declare that in recent years a decided improvement is noticeable. It may be well here to add a word of advice to the prospective Angora breeder. Although the goats may primarily be intended for use as brush exterminators, yet the production of mohair is worthy of attention. The initial cost of establishing a herd of superior hair producers will necessarily be greater, but the net returns should be large enough to justify the investment. Common goats are just as efficient as brush cleaners, but if Angoras are preferred, only those producing high grado hair should be considered. Great improvement is necessary before our product can compare favourably with that procured from Turkey and South Africa, and the higher prices offered for the better grades should discourage the growing of the cheaper classes and stimulate interest in the superior product.

Estimate of world's supply:-

Turkey	10,000,000 pounds.
South Africa	15,000,0 00 "
Rest of World	6,000,000 "

SHEARING.

In northern countries the flecce of the Angora is removed but once a year. They are often sheared twice in warm climates, on account of the tendency of the hair to come out. The time of shearing will depend upon the weather and the condition of the fleece. Care should be taken to remove the hair before shedding begins, for when this occurs, the mohair loses its life and lustre. On the other hand, if the shearing is done too early, the goats may suffer from the cold. Both hand and machine shears may be used. The machine method is gaining in favour in the north, where the services of professional hand shearers are often difficult to obtain. Goats do not take so kindly to the shearing process as do sheep, and varions methods have been devised to facilitate the operation. A very effective arrangement has been contrived by the late Mr. Ludlow of Lake Valley, N. M., which has proven of great service.

"It consists of a simple table about 22 inches high, 2 feet 10 inches long, and 12 inches wide. The top is composed of two 9-inch sides, which are hinged to the 3-inch centerpiece. On the lower side of these movable flaps is a narrow piece 8 inches long, which catches on the framework of the table when the sides are lifted and hold- them stationary. When the sides are elevated the top of the table forms a trough 3 inches wide at the bottom and possibly a foot wide at the top. Into this trough the goat to be shorn is thrown, feet up. A small strap, which hangs from the end of one of the sides, is run over the goat's neck and fastened to the other side. The goat's head is hanging over the end of the table and the strap prevents it getting free. The be by and

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legs are then shorn. The legs of the goat are then tied together, the strap removed from the neck, and the sides of the table dropped, so that one has a plane surface on which to shear the rest of the animal. An untrained man can shear 100 gonts a day with a shearing machine and such a table."

SKINS.

An extensive trade has developed in the skins of the Angora. Large numbers are annually imported from Turkey and South Africa. They are graded according to length of hair, fullness of fleece and weight of skin. They take all shades of dyo with equal facility. The hair retains its natural lustre to a remarkable degree, which adapts them for attractive rugs and robes. From the kids' skins may be made searfs and nuffs for children and robes for baby earringes.



Angora Buck, showing two years' growth of fleece. Length, 23 inches; weight, 22 lbs.; 14 lbs. of which sold for \$31.50.

MANAGEMENT.

It is a common opinion that the Angora will readily adapt itself to the most trying elimate, feed entirely upon brush, is immune from all diseases and predaceous animals, and will yield a large profit without any care or attention on the part of the owner. The truth of the matter is that, although the most beautiful, they are at the same timo the most delieate of all goats. They are subject to most of the diseases common to sheep inhabiting the same vicinity. The kids are born small and delieate, and are sometimes difficult to rear, especially in cold or wet elimates. If great earo and attention are not afforded them, a large mortality often results. They eannot defend themselves well against the ravages of dogs, and dog-proof fences are frequently necessary in order to save the youngsters. The general management of the herd is in most respects similar to that for a flock of sheep.

BREEDING.

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Goats should not be bred until 15 to 18 months of age. Early breeding stunts the growth of the doe. Kids will be born in a weakened condition, which increases the mortality at kidding time.

PROLIFICACY.

Pure bred Angoras drop a single kid, but twins and triplets often appear. The tendency to produce more than one kid is said to be a relie of the blood of the common goat, and Schreiner states that it is not inherent with the original Angora.

CARE OF BUCK.

Bucks, unlike rams, will usually mate for only a portion of the year. Their heat period or breeding season, which signifies the time they are most rabidly inclined toward the other sex, begins about the middle of July and continues for a term of approximately 6 months. The timo of mating will entirely depend upon the most favourable season for kidding. The period of gestation is 147 to 150 days, or, roughly speaking, 5 months. The buck should not serve over fifty does and should be in the best possible condition when put to service. He should be fed a liberal grain ration for some time before being placed with the does, and be well cared for during the entire mating period.

CARE OF DOES.

Does born in the spring seldom reach the period of oestrum or heat until the latter part of August or first of September. No bucks should be allowed with the does until the desired breeding season arrives.

During the period of pregnancy the doe should be provided with an abundance of nourishing food until within a few weeks of kidding time, when great eare must be taken not to overfeed, as this may prove a source of serious trouble at parturition. The kids are apt to be born in a goitred or weakened condition, and large losses from these eauses will inevitably result. To avoid this, the rations should be redue \exists and only foods of a laxative nature allowed. Roots may be fed with modera \exists . Frozen roots, however, should never be supplied to pregnant does as they may cause abortion.

WINTER FEEDING.

Goats will not subsist and produce the best results, particularly in northern elimates, upon browse alone. In localities where the winters are severe it will be necessary to feed them in stormy weather. If rough fodder is fed, it may be necessary to supplement it with a little grain. Oats are the most preferable. Cow peas, clover and alfalfa are excellent feeds and no grain is necessary when these are used.

Angoras are very fastidious and will not eat food unless it is clean and wholesome. Solled food of any kind is objectionable to them. Feeding racks should be used, that will prevent the feed being pulled out upon the ground. If it becomes once trampled upon, they are unlikely to touch it and it is thereafter unfit for their use.

WATER.

Pure water is essential. A running stream that affords an abundant supply is a valuable asset to the goat ranch.

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SALT.

As with sheep, an abundance of salt is necessary and the herd should be salted at regular intervals. Rock salt may be provided, and placed in boxes, raised slightly from the floor, where the goats may have access to it at any time.

KIDDING SEASON.

By far the most important period upon the goat ranch is the kidding scason. The kids are born small and delicate, but with care and attention at the proper time, losses will be comparatively small.



Mohair staples of different lengths in grease and carded.

Pregnant does should be kept in good condition, and just previous to the kidding senson, should be allowed an abundance of sueculent and milk producing food. A short time before the kid is dropped the doe should be separated from the herd and placed in a small pen, preferably by herself, since under this condition she will own the kid more readily. If the kid is born upon the range or pasture, it should be carried to shelter. The mother will usually follow without difficulty. There are two general methods of earing for the kids, staking and corralling. The first method consists of tying or "toggling" the youngsters in a convenient place to a stake with a swivel cord. The mother is allowed to come and go at will. Coralling comprises the confinement of the kids in corrals or pens until they are able to follow the herd and care for themselves. These two methods modified to suit conditions are pursued very largely by Angora breeders.

Following are extracts of letters from some of the most successful breeders in Canada and the United States, describing their methods of caring for the herd during the kidding season:--

1. "Our Angoras are handled in much the same manner as we do our sheep. The same feed is given them during the winter, which consists of good clover or alfalfa hay. This m., y be supplemented by a few roots or cabbage with a light feed of mixed oats and bran, with a small quantity of oil meal. About a month before the kids are expected to come, the grain mixture is gradually increased to one pound per day for each doe. This method of feeding will insure a good flow of milk, as well as strong kids at birth.

"We aim to have most of our kids dropped the latter part of March, and the first two weeks of April. The Angora kid differs from the lamb of the sheep in that the kid will not follow its mother for the first three or four weeks. For this reason, we aim to have the kids "ome so that they will be old enough to follow their mothers by the time the grass and other vegetation gets nicely started.

"As soon as we expect the kids to come we put the does in a warm shed or barn where there is no danger of losing any kids by hiding or chilling. Each day the flock is looked over for any does that show signs of kidding. These are separted and put in small pen by themselves. Each doe and her kid are kept in these pens for a few days, when several does and their kids can be put together in larger pens.

"After the kids are one or two days oid, it is a good plan to place some boxes or material in the pens which the does and their kids are to occupy, for the kids to romp and play on. The writer does not know of a more interesting sight than to see twenty or more kids from one to three weeks old in their playful antics, romping and chasing each other. For this purpose a couple of boxes one foot high and open at one end are placed some distance apart. These provide good places for them to play 'hide and go seek' and various other games they seem to play. After an hour or more of this playful sport, they will take a long sleep of several hours in some cases, until their mother wakes them up to nurse, when they usually start playing again. After the kids are four to six weeks old they will then follow their mothers in the pasture, where they will require very little care, as Angoras will come to the barn of their own accord every evening, or when a rain is coming up."

2. "When the kids are born before the winter is passed, they should be provided with a warm shelter, and the does should receive plenty of nourishing and milk producing food. Any kind of hay in small quantities at a time will be relished. It should be put in a manger where they can only put their heads through to it and then a heavy rack with slats 6 inches apart should be dropped on the hay to keep them from wasting it. The Angora is the most wasteful of the domestic animals, but a heavy rack on the hay will keep them from wasting it. Oats are the best grain feed, but should not be fed in large quantities. A handful twice a day is sufficient in winter with hay and roots. The better the physical condition of the does the stronger will be the kids. Keep the does separated from the wethers at least during the last two months of gestation, for they beat them and often cause abortion.

"The Angora is very regular in its hahits. They will take about the same round every day, go to the farther side of pasture the first thing, then feed back and will be back home at night. The fence should be at least 3 feet high and nothing near that they can get on to walk over, as they do not jump, but climb over if they can. The pasture should have brush, weeds and grass as when the does are suckling their kids they eat grass. The wethers do not eat much grass, but subsist mainly on browse.

but subsist mainly on browse. "Give the Angora a chance in your brush pastures and in a short time, say 2 or 3 years, there will be a heavy crop of grass replacing the brush, and the goats will be ready for another patch."

3. "The last year or so I have had good luck in early kidding. The does are bred so as to have the kids come about March 15th or April 1st. The does are given extra feed about three weel's before the kids are due. I have to feed hay, but find it profitable. I begin by giving or leed of wild hay a day. This is supplemented in a few days by a feed composed of oats, hay or alfalfa. Then by the time they begin to kid I increase to three feeds per day. Feed plenty of alfalfa or green cut hay and water twice a day. Keep them in a large corral or pasture near the shed, so they will have a little exercise. As fast as the kids are dropped they are taken to the shed out of the cold. From 15 to 25 head are placed in each pen where they remain until the kids are from three to six days old. The mother is kept with her kid the greater part of the time. The mother bund is enlarged to about 40 head. These are turned out on the range and fed twice a day till green grass gets plentiful. With plenty of hay of good quality this early method is superior to later kidding. The kids go into the winter older and larger and with an inch or two longer fleece than those born later in the season."

4. "At the beginning of the kidding season we cut out all those does that are to kid soon, and made a separate herd adding to it as the season advances. This herd is sent out on the range to feed very early in the morning. After about two hours' exercise, feeding and warming up in the sun the kids will begin to fail. They are then hurried back to the corral where they are held until about three o'clock in the afternoon when the kidding will be practically over for that day. As the kids fail they are immediately picked up and with their mothers are taken to what we call a bummer pen, where the kids are given a number and the same number painted on the mother. For the kids we use a simple pig ringer and piece of tin with consecutive numbers stamped thereon placing it in the ear, right for one sex and left for the mother.

"We make our bummer pens in batteries using twelve foot lumher and making each battery six by twelve feet, divided into either eight, ten or twelve pens, so as to provide for all size does and twins. The pens are made to sit on the ground so that when the season is over they can be picked up by two men and stored away for another season. Enough bummer pens should be provided to accommodate all the does that will possibly kid in one day.

"After the kid is thoroughly dry and it is seen to have sucked and the mother is well satisfied with it, they are both taken out of the bummer pen and put into a larger pen with all the kids and mothers for the day. Here the kid is left until it becomes strong enough to follow the mother on the range. When the mother comes in at night it is easy to put her into the pen with her kid. She will generally be found waiting at the gate, but if not her number serves to identify her readily. We do all our kidding under perfectly dry but open sheds. Our range is very rough and we do not allow the kids to follow the herd until they are four weeks old, and then only a little way the first few days. spri not it is such care

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out as ti ident "When it comes time to mark the kids and make up our permanent records we remove the pig rings and replace them with permanent tags or ear marks. "We place the ear tags in the front part of the ear as near the head as possible, taking

care not to pierce a vcin. We tag males on one side and females on the other, or car mark in same order. We do not cut the ears of our animals, but prefer to use an ordinary harness punch with which any number of marks can be made without mutilating the animal, "The best corral fence that we have ever used is made of thirty-inch split pickets, woven

Into four No. 8 smooth wires, two at the top and two at the bottom. By crossing the wires back and forth, a very strong fence is obtained. Care should be taken to piece the pickets near enough together to prevent the kids from getting their heads caught L ween them. Weil stretched barbed wire may be placed above the pickets to the desired height.

"If woven wire fencing is to be used care must be taken that the first twenty-four inches has a mesh small enough to prevent the smallest kids from poking their heads through. If not, "Un making the state of the smallest kids from the state of the stat

"In making bummer pens we use two { x 4 rails under the gates and one over. This strengthens the whole structure so that it may be handled with ease. "Where available { x 4-inch lumber is amply strong for this purpose. Two x 2-inch

"Where available 3×4 -inch lumber is amply strong for this purpose. Two x 2-inch corner stays make the neatest job, but of course scraps of any kind can be used in emergency. "It is well to have a large corral in which the kids can play and get exercise after the first tw. weeks or some time before they are to attempt to follow the herd. Here they will dsvelop muscle and strength that will be of benefit to them later."



Does in the fold.

5. "Angora goats should be bred five months before the advent of warm weather in the spring months. Care should be taken to have the does in good condition and if the pasture does not furnish a supply of green feed sufficient to induce a good flow of milk when the kids are born, it is well to supplement the usual feed with oats, cotton seed take or other feed rich in protein, such as clover, vetch, or alfalfa hay. If the does are in good condition they will take better the of their kids.

"If the kids are dropped in the pasture and the day is warm it is advisable to leave them where dropped until they gain enough strength to take the milk. As soon as they are ary it is best to take them with their dams to the shed. The Angora doe will usually follow the nttendant. Carry the kid close to the ground and allow the doe plenty of time to follow. Take out all does that show indications of dropping kids before the herd are turned to pusture in the morning. These does should be kept at the shed and it is well to have separate stalls for them where they may be kept undisturbed with their kids for several hours.

may be kept undisturbed with their kids for several nours. "Provide a number of small pens into which the young kids with their dams may be placed the day the kids are born. Each morning the day old kids are transferred to a larger pen with other does and kids. These are again transferred in a few days to a larger pen where the kids are kept until large enough to turn to pasture. This plan is used where there are a laber number of kids to care for. Where the number is not more than 40 or 50 a very few pens are required. The kids are kept in the pen. Each morning and afternoon the mothers are turned to pasture. When the kids are one month of age they can very well go with the oder goats. All male kids which are not wanted for breeding purposes should be castrated at one to two weeks old.

"Let the goats have a shed where they can go at will and keep other kinds of live stock out of it. Do not let a large number of kids get wet and place them in a box or other place as this destroys the individual scent peculiar to each one and is the means by which the dam identifies her own kid." 6. "In different localities different conditions exist. These must be studied intelligently in order to make a success of the goat busness as well as with any other business. It is advisable to own good goats as it costs no more to feed a non-shedder that shears \$30 or \$40 per year than an ordinary goat that shears but \$1 or \$2."

7. "Kidding time is the most important in the life of the goat. For the first few days after the kids are born they sre very delicate. Warm sheds must be provided, and the does will require extra fc...ding in order that they may supply milk for the kids. The does should remain with the kids until they leave of their own accord to go out to feed. The kids may then be allowed to run loose in the shed or corral, until they are 1.-rge enough to go out to feed with their mothers, which is when they are from 4 to 6 weeks old, or when they are able to jump a board 20 inches high placed across the door to the shed or corral. At this time they are very strong and will withstand considerable exposure. Provide fine sait for the goats to lick at any time they want it. There are more diseases caused from the lack of sait than all other causes put to crether. Provide a few small pens in your shed, that will hold one doe and her kid for at times a young doe may not know just what to do with her kid and she may be driven away from ii by some of the older does. At kidding time and for 3 months before do not allow any bucks or wethers to be with your does."

8. "In clipping my goats when the weather is cold I leave a strip of mohair about 2 inches wide on each side of the back bone. This seems to keep them warm and they do not huddle up and tramp the kids to death. Let a goat's back bone get chilled and they will die unless thawed out in a warm room. I lost 80 head one year by early clipping but have never lost one since."

9. "We take a plank, 1 by 12, and saw it up into pieces about 14 to 16 inches long and make a box for the kid, which will be 10 inches wide, by 14 to 16 inches long and set it facing the stake so that the kid can get under the box for protection against hot suns and cold rains. The mother will retire under the shed and the kid will go back into its box during the cold night, or during rains. These boxes are only used where kids are staked."

MILK.

The Angora is not by any means a mileh goat, and should not be mistaken for such. The average Angora gives only sufficient milk for tre rearing of one kid. These goats have been bred so long for hair production that they bear the same relation to the mileh goat as the Hereford eow to the Jersey or Holstein.

WEANING.

Kids should be weaned at the age of four to five months. They will then be eating heartily and be eapable of a separate existence. Besides, at this time they become sexually active and the bucks should be separated from the does.

CASTRATION.

Young Angoras are very precoeious and have been known to breed at the age of 4 or 5 months, bringing forth live though inferior kids. For this reason all bucks, not intended for breeding purposes, should be astrated when about three weeks old. If this is done, they will not disturb the does but will devote their entire time to peaceful feeding and body building, producing a superior careass and a more lustrous fleece. The operation is a very simple one and is performed by eutting off the lower third of the scrotum with a sharp knife. The testicles, including the spermatic eord by which they are attached, are then pulled out one at a time. A good disinfectant should be used to prevent infection.

GOATS UPON THE RANGE.

If given their preference, Angoras will choose brush areas for their feeding grounds, yet they will thrive upon the range where their food consists of grass, weeds and an oceasional patch of sage brush. However, at the present time there is a great divergence of opinion as to the most profitable feeding ground. It seems to be the general consensus of opinion among goat breeders that an effort should be made to cater to the browsing habit of goats and above all things to afford them a variaty of food. do no heavi most futur

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remove exterm special If it is goats s on the Mature bucks are oftentimes herded upon the range with sheep, with which they do not mate, to protect the latter from invasions of coyotes (prairie wolves), which prey heavily upon the young lambs. It is said that the Angera buck will battle with the most persistent coyote with the result that the invader gives him a wide berth in the future.

GOATS UNDER FARM CONDITIONS.

Upon the small farm in Cauada the Angora goat has been given but little attantion. This is probably due to the use of sheep upon the poorer and rougher areas and the lack of available information concerning goats. There are vast areas of brash lands in British Columbia, Northern Ontario, Quebec and the Maritimo Provis ces where Angoras should fourish. For clearing brush land for agricultural or other purposes from 2 to 5 goats per acre for 2 to 4 years will usually do the work in a satisfactory



Foundation stock.

manner, while their presence is in no way objectionable to other live stock. It is not considered a good practice, however, to allow them to run in the same pasture with horses, as the young kids especially are apt to be kicked or trampled upon.

They may also be raised satisfactorily under many conditions of mixed farming. Since very similar methods of munagement are employed as in sheep raising, goats can be handled readily on the average sheep farm and oftentimes afford a praeticable and advantageous combination. Fencing, of course, is an important feature, but the enclosure of a well regulated sheep farm should be sufficient.

On many farms there are brush areas the would be useless, if the brush were removed. This may be reserved for goat raising. It is not de-itable in this case to exterminate the brush completely. For this purpose the goat raiser should have specially arranged fences to allow the animals to feed on certain sections at a time. If it is desired to preserve the foliage and maintain a permanent feeding ground, tho goats should be removed before it is entirely destroyed and should not be allowed back on the same area vitil it has recovered from the first trinuming.

HERDING.

Methods of herding may vary with the locality. It is not considered necessary or advisable to keep a herder continually with the goats. They seem to thrive better when left entirely to their own resources and allowed to roam and feed at will. The herder at the same time may keep himself informed as to their whereabouts by frequent visits. In localities where invasions of wild animals are likely to occur, it may become necessary to herd at night.

FENCING.

In feneing for goats, it should be borne in mind that they must not only be feneed in bot their animal enemies must be feneed out. Goats are adept climbers, but do not jump to any great extent. The old single log fence or stone walls will not confine them, as these only excite their climbing instincts and furnish excellent material for practice. Straight rail or wire fences, commonly used for other classes of live stock, are equally effective for goats. The fence must also be fairly tight to provent their



Angora Buck and Doe.

crawling through. It is well to remember in this connection that, if there are young orehard trees or ornamental shrubs in the vicinity, these would constitute a delightful relish for the Angoras, and if once located, a very effective fence will be necessary to prevent a second visit.

SHELTER.

Shelter is absolutely necessary especially in stormy or wet weather. The goats will withstand considerable cold, provided they are kept dry. The open character of the fleece does not shed the rain or sleet to any appreciable extent and, when once soaked with cold water, it becomes an unwelcome and dangerous covering. Angoras are first class barometers and will invariably repair to shelter before a storm, provided a suitable place is available.

Sheds should be spacious and dry. Always allow an abundance of room. Under no circumstances should the goats be huddled together. The roof should be waterproof, but the sides are better left partly open, in order to insure a sufficient amount of air. The sheds should be built upon high and dry ground. If possible choose a location that drains naturally. Otherwise artificial drainage will be necessary, as dry, clean sleeping quarters are essential. togeth howev a mile

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FLESH.

The flesh of the young Angora is used as food, and by some is declared equal, if r, superior, to lamb. There is, however, a prejudice against goat ment, and, when sold as such, 't is by no means popular. When it is remembered that Angoras are very dainty in the ir habits and will not eat food unless it is serupulously clean, the prejudice against the meat, especially that of the kid, should disappear. Few people are actually able to detect the difference between kids' flesh and lamb.

PRINCIPAL DISEASES.

DIPPING.

Breeders of goats advise dipping at least once each year. This guards against any serious infestation of parasites. If badly infected, dipping twice a year is strongly recommended. A good dipping outfit is described in pamphlet No. 6 of this Branch,



Kids in Corral.

together with instructions for performing the operation. It should be borne in mind, however, that the skin of the Angora is more tender than that of sheep, and consequently a milder solution should be used.

CARE OF THE FEET.

Overgre n toes are frequently a source of trouble in the Angora herd. If the goats have the run of a rocky or mountainous region where they have an opportunity for elimbing, the feet will be worn down and they are less liable to become broken. When necessary, the feet should be trimmed. This is a simple operation, consisting of placing the animal on its rump as in shearing and outting the hooves with a sharp knife, so that they are level and the toes short. If this is neglected, lameness often results.

SCAB.

Scab apparently does not attack goats so readily as sheep, but when once infected they are oftentimes more difficult to cure. Owing to greater length of fleece, the disease is not so easily discovered in the initial stages. Symptoms are similar to sheep seab and drastic measures of dipping as with sheep, must be taken for its eradication.

It should be born in mind that seab is a contagious disease governed by the Animal Contagious Diseases Act and that the owner of a herd in which an outbreak has been discovered is bound to report the fact to the Federa' Department of Agriculture. Failure to make such report involves the penalty of a fine of not more than \$200.

TICKS.

Tieks are also a source of annoyance and where plentiful may even eause death. The ravages of these pests, however, may be controlled by regular and effective dipping. Repeat the operation in 10 days to destroy the nits which are not injured by the dip and may hatch afterward.

LICE.

These parasites frequently eause more irritation to goats than do ticks, and are more troublesome to kids than older goats. They are eradicated by dipping.

STOMACH WORMS.

Stomach worms are small and threud-like, about an inch in length, and are found in the fourth stomach, where they often accumulate in large numbers. Kids will suffer more from their ravages than older animals. The chief symptoms are failing appetite followed by loss of weight, languor, thirst and occasional colie accompanied by diarrhoea, dry skin and wool and a generally run down condition. The worms in the stomach produce minuto egg masses, which pass out of the animal in the droppings. These require water to complete their life cycle, and clinging to a blade of grass are subsequently imbibed by the goats. In the stomach they quickly attain a state of maturity. Keep tho goats, as far as poss. De, in a perfectly healthy condition, and do not allow the kids to feed over infected areas. A good dressing of lime and salt is often recommended for an infected pasture. Some place more or less confidence in the feeding of tobacco; others in gasoline or turpentine. Prevention, however, is the most effective remedy.

TAPE WORMS.

Tape worm is an elongated parasite with a segmented body varying in length from 3 to 6 yards. The chief symptoms are purging and a watery appearance about the eyes and nostrils. The hair becomes dry and brittle. There is a general loss of vitality, although the appetite may continue good or even ravenous. Digestive disturbances often follow. The faeces are yellowish in colour and often contain the segments of the parasite.

The mature animal should be drenched with 1 drachm of oil of male shield form in 2 or 3 ounces of easter oil, after fasting it from 12 to 24 hours. For small kills one quarter of this dose is sufficient. It is sometimes advisable to dose the entire herd where a number are infected. After the treatment, the goat should be shut up for about 24 hours, in order to prevent the ejected segments being scattered about promiseuously. Droppings should be burned if possible.

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SCOURS IN KIDS.

When kids are first placed upon grass they are apt to overeat, and scouring occurs. Remove the youngsters from the grass and place in a clean stall. The following treatment will be found beneficial: baking sodu, $\frac{1}{2}$ ounce; magnesium sulphate, $\frac{1}{2}$ ounce; ginger, 1 ounce. This should be administered in a little linseed gruel. Four hours afterwards give 2 ounces of custor or linseed oil, to remove the contents of the stomach. Supply the kid with 1 pint of uilk per day, which should be sufficient until recovery. Do not pasture again until the droppings are perfectly normal, and then they should only be allowed to feed for a short period each day, gradually increasing the time as the stomach becomes accustomed to the green feed.

FOOT ROT.

Foot rot is especially prevalent among goats grazing on low, wet pastures or maintained in filthy yards or sheds. There are two forms, infectious and accidental. The



Angora Buck,

former spreads very quickly through a herd and flourishes under conditions of excessive dampness; the latter is usually confined to only a few animals and is created merely by an injury to the foot or a broken toe, which subsequently becomes contaminated with foreign material giving rise to suppuration. Fortunately, the infectious type does not exist to any great degree with either sheep or goats in this country. Lameness is the chief indication of the presence of this ailment and an ill-smelling discharge may appear between the claws.

This disease may be avoided by keeping the goats' toes well trimmed and maintaining them upon high and dry pastures and clean, well bedded yards and pens. The affected animals should be segregated from the healthy and confined in a sr d where special care can be ministered to them. All diseased matter and biof horn should be well pared away and the hoof trimmed to resemble the not $\frac{1}{2}$ -pe.

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The foot should then be washed with a solution of copper sulphate, 1 ounce to 2½ parts of water, and subsequently treated with a mixture of equal parts of chloride of antimony and tincture of myrrh. After this treatment it is advisable to cover the wound with a coating of pitch tar, or better carbolized tar, which not only cleanses the wound but acts as a means of preventing re-infection. It may be advisable to drive the entire herd, to prevent distribution of the disease, through a water-tight trough or chuto about 2 feet wide and 1½ feet deep covered to a depth of about 4 inches with a solution of copper sulphate, 2 pounds to 1 gallon of water.

ABORTION.

When found in goats, abortion should always be looked upon with suspicion, lest it should appear in the contagious form. When possible the foctus should be found and buried. All aborting females should be isolated at once and the quarters thoroughly disinfected with a 5 per cen⁺ solution of earbolic acid. Heavy losses are often experienced in very dry seasons, especially among young does. The greater portion of abortion cases are probably due to accidental causes.

TUBERCULOSIS.

Very rarely have _____ats been discovered suffering from tuberculosis. In fact, this animal appears to be so highly resistant that the effect upon it is slight. Therefore, it is generally asserted that the goat is immune from this dread disease which causes such ravages especially upon the bovine species.

TAKOSIS.

Takosis is a contagious disease peculiar to goats. The vietim becomes drowsy and listless, the ears droop and a general weakened condition prevails. This wasting process continues, and the animal becomes weaker and weaker, finally passing into a state of coma and subsequently death. In some cases death occurs in a few days, while other a may last from 6 to 8 weeks.

Proper eare and management will reduce the ravages of this disease. Sudden change of climate should be avoided, as taken of the follows in the wake of importations. The goats should have high and dry sheds for protection from storms. Colds may be contracted after a severe wetting which will lower the vitality of the animals and place them in a physical condition favourable for the disease. When the herd is kept upon high and dry feeding grounds and receives proper earo and attention especially in northern elimates, very little trouble may be expected from taken is.

NAVEL ILL.

Navel ill is eaused by manure and filth coming into contact with the umbilical cord before it has completely dried and withered up. It can be prevented by the maintenance of sanitary measures in the kidding pen. Should infection occur the navel will become discoloured and greatly swollen. If the swelling extends along the belly, the animal will most probably succumb. The diseased part should be carefully opened and cleansed with a 5 per cent solution of earbolic acid or some equally good disinfectant, and subsequently covered with powdered bluestone which will tend to dry the wound.

POISONOUS PLANTS.

LAUREL-

Laurel is the most common of the poisonous plants affecting Angoras. It is commonly known as sheep laurel or lamb kill. In small quantities no serious damage may result, but when very hungry the goat should not be allowed to come in contact with it. Wood

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All classes of domestic animals are affected by plants belonging to the loco family. Two varieties of this plant, purple loco and white loco, produce what is known as loco disease. Purple loco is a low, decumbent plant with a purple flower, while the white variety grows upright and bears a conspicuous white flower. Loco victims may recover under careful feeding. The cure can be hastened by the use of an emetic and a purgative to relieve the stomach irritant.

WATER HEMLOCK-

Cicuta or water hemlock may cause serious damage to the herd. The poisonous principle is confined to the rootstock. The tops under ordinary circumstances are not poisonous, and neither the tops nor seeds when found in hay are a source of danger. Very little cau be done for poisoned animals, Lut an emetie may afford tempo-ary rehef.



Augora Doe.

WOODY ASTER-

Woody aster is fatal to goats as well as sincep. It is found only en alkalied gumboclay soils. Nincty to one hundred per cent of affected animals die. No treatment has been found successful. The shepherd should avoid aster patches particularly when the goats are hungry.

BRIERS-

Another enemy, especially to the young or weaker goats, is the ordinary climbing brier, which is covered with strong, prickly thorus. The animal becomes entangled in them, the thorns imbedded in the fleece and the goats are held fast. If not discovered and released, they may die in a few days.

ANIMAL ENEMIES.

Dogs-

Severe losses have frequently been incurred through depredations by dogs. These animals rarely attack a herd singly, but more often in groups of two, three or four, and sometimes they do serious damage. Strict precautionary methods are necessary to protect the herd from their ravages. Effective fencing is the best means of guarding against losses of this sort.

WOLVES-

Coyotes or prairie wolves are not ordinarily serious enemies to the Angora. These wary animals seidom run in bands, and the destruction eaused by the lone coyote is not usually very great. Then, too, the coyote is not a persistent fighter and after an encounter with a sturdy Angora buck will seldom appear among the herd a second time.

In wooded sections the timber wolf may do some damage and is a much more serious enemy to the herd than the prairie wolf.

WILD CATS-

Wild eats are sometimes a menace to the herd, particularly with the young kids, and if forced by hunger may attack and kill the adults. It is impossible to fence against these animals, and about the only effective means of destroying them is by trapping and hunting with dogs.

PREVENTIVE MEASURES.

1. Provide a continual supply of pure water. Never permit the goats to drink from stagnant pools which may be contaminated and act as the means of infecting them with parasitic diseases. Goats must be maintained on high and dry land.

2. Dipping should be performed regularly once or twice a year. Ticks and lice by this method can be controlled.

3. Remove all damp manure from pens or yards. Clean bedding should be supplied them whenever required.

4. Effective ventilation and the entrance of sunlight must not be neglected in the construction of the sheds.

5. Goats should never be maintained in the same buildings or enclosure with other elasses of animals. A hog or eow may easily cause serious injury to a kid. Besides, feeding eannot be adapted to suit the respective appetites of each class, and goats are most fastidious with regard to their surroundings. Goats are similar to sheep in character and, if necessary, may be maintained with them fairly satisfactorily.

6. Keep constant guard over the condition of the feet. Lameness may be prevented by trimming in time an overgrown toe.

7. Be assured that all recent importations are not only themselves healthy, but come from herds where infectious disease is absent.

8. Isolate all infectiously diseased animals from the healthy until assuredly eured and there is no chance of re-infection.

9. Provide nutritious feed of good quality. Give at each meal only what they will eat up cleanly.

10. Select the breeding stock with earc. Do not breed any animal showing an organic weakness which may impair the strength or fecundity of the offspring.

