4. SHEEP

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Domesticated sheep are raised in all agricultural areas of the USSR, the major sheep raising regions being the Ukraine and south European Russia, Central Asia, and southern Siberia. On a smaller scale sheep are raised in central and northwest European Russia; they are practically nonexistent in northern Siberia and the Far East.

The wide geographical distribution of sheep and the variety of the environmental conditions where they were kept in the past have resulted in the emergence of a multitude of sheep breeds adapted to these conditions. There are more than 60 breeds and breed groups in the USSR today, which differ in morphological and productive characteristics. All of them (except the Oparino, the Tsigai and the coarsewooled breeds) were developed during the Soviet era.

The work of developing new breeds was carried out on the basis of local coarsewooled sheep by crossing them with or grading them to improved finewooled and semifinewooled breeds. As a result such breeds as the Voloshian, Mikhnov, Bozakh, Karabakh, Shirvan and Darvaz have almost disappeared. The Mikhnov and Shirvan merit conservation. The following breeds are also reduced to small numbers and need to be preserved in conservation flocks: Georgian Fat-tailed Finewool,. Georgian Semifinewool Fat-tailed and Kuchugury.

The number of sheep in recent years has varied from 142 to 146 million. On 1 January 1980 it was 141.6 m including 116 m publicly owned and 25.6 m privately owned. The public establishments had 85.9 m purebreds and 30.1 m grades. The monograph describes the 52 chief breeds totalling 76.2 m. It does not include native breeds present in small numbers and breeds under formation (8 breeds totalling 4.5 m sheep) and 7 imported breeds (5.2 m).

The most popular classification of breeds in the USSR is the one suggested by M.F. Ivanov, which takes into account the major production characteristics, i.e. the quality of wool and the relation of meat production to that of wool (see Table 4.1). In terms of numbers and productivity the finewooled sheep rank first, followed by semifinewooled, coarsewooled, and semicoarsewooled breeds.

Table 4.1 CLASSIFICATION AND NUMBERS OF BREEDS

	Numbers at 1 January 1980 (in thousands) Total	Purebreds
I. FINEWOOLED BREEDS		
1. Wool breeds:		
Grozny	2343	2323
Salsk	109	109
Stavropol	3735	3341
2. Wool-mutton type:		
Altai	4500	3328
Askanian	1783	1614
Caucasian	5058	3703
Kirgiz Finewool	5441	5383

Krasnoyarsk Finewool	2170	1729
North Kazakh Merino	1006	568
South Kazakh Merino	2563	2508
Soviet Merino	7875	5435
Trans-Baikal Finewool	4361	3498
3. Mutton-wool type:		
Georgian Fat-tailed Finewool	2	2
Kazakh Arkhar-Merino	618	522
Kazakh Finewool	3476	3181
Volgograd	614	429
II. SEMIFINEWOOLED BREEDS		
1. Wool-mutton type:		
Tsigai	4150	2959
Georgian Semifinewool Fat-tailed	2	2
2. Mutton-wool type:		
a. Longwool type:		
Kuibyshev	255	132
Russian Longwool	216	178
b. Shortwool type:		
Degeres Mutton-wool	124	-
Estonian Whiteheaded	1.5	1.5
Gorki	60	53
Latvian Darkheaded	386	250
Oparino	8	8
c. Corriedale type:		
North Caucasus Mutton-wool	1783	382
Soviet Mutton-Wool	610	-
Tyan Shan	447	129
III. SEMICOARSEWOOLED BREEDS		
Alai	48	48
Armenian Semicoarsewool	43	43
Kargalin Fat-rumped	110	110
Sary-Ja	808	550
Tajik	126	93
IV. CQARSEWOOLED BREEDS		
1. Pelt type:		
Romanov	523	462
2. Fur type:		

Karakul	12 432	11 968
Sokolki	190	168
3. Mutton-fat type:		
Edilbaev	5256	2419
Hissar	478	444
Jaidara	876	846
4. Mutton-wool type:		
Kuchugury	8	8
Mikhnov *	-	-
Voloshian	-	-
5. Mutton-wool-milk type:		
Andi	17	16
Balbas	355	337
Bozakh *	-	-
Darvaz *	-	-
Imeretian	0.8	-
Karabakh *	-	-
Karachai	55	52
Lezgian	238	76
Shirvan *	-	-
Tushin	928	704

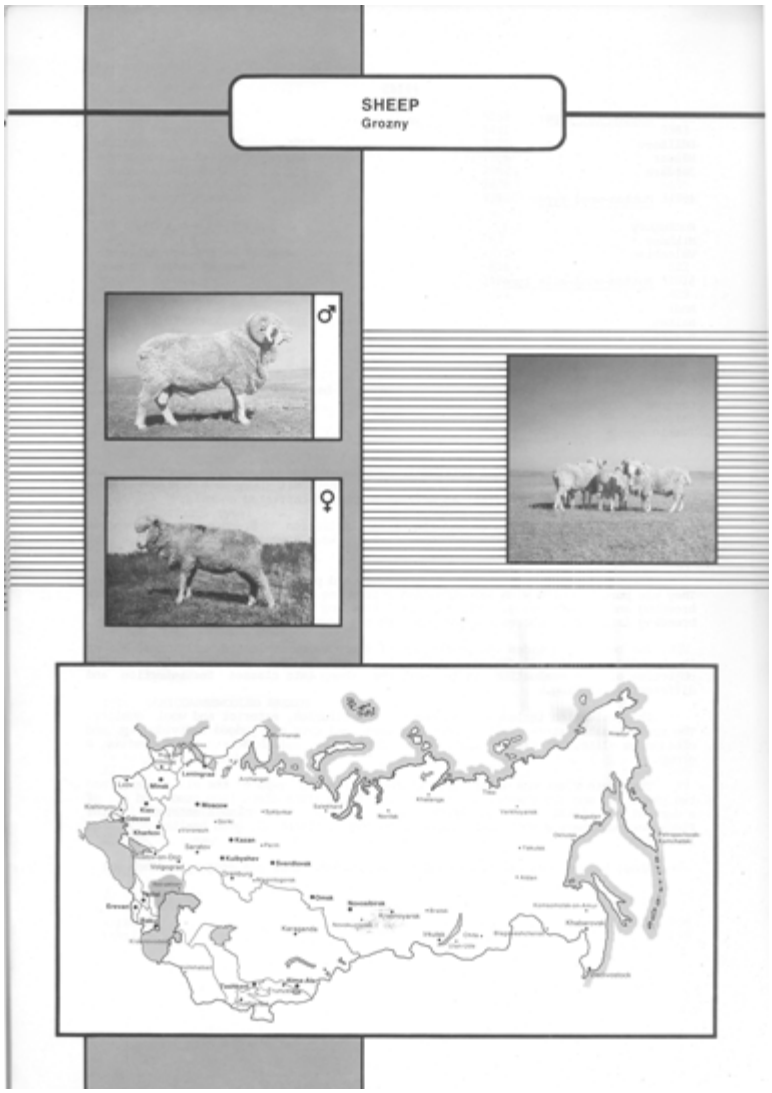
The figures in Table 4.1 refer only to purebred and grade animals on state and collective farms and other state institutions; they omit sheep on private holdings (breeds marked with an asterisk) as well as scrub and castrated animals.

Breeding work depends on a farm's specialization. Breeding farms produce replacement stock for pedigree and commercial flocks. Commercial farms produce wool and mutton.

Breeding centres outline breeding targets and policies for a particular breed. They use pure breeding with selection and inbreeding. Commercial farms use both pure breeding and crossbreeding. There are 1500 breeding stations, breeding sovkhozes and breeding farms of kolkhozes and sovkhozes in the country.

The category decides the percentage of sheep to be evaluated. It is 45-50% at the breeding centres, 35-40% on breeding farms and 25-30% on commercial farms. The objective of the evaluation is to sort the sheep into classes for selection and differential feeding.

The evaluation includes development, constitution, exterior and wool quality. The most valuable stock such as breeding rams and ewes are judged individually and classed as elite, 1st class, 2nd class, 3rd class or cull. Others are judged as a group.
The State Flockbook lists only purebred rams and ewes of the elite class and two years old and older which are by a sire of the elite class (top stud) and out of a dam of the first class or above (single stud). The animals entered in the Flockbook must have a good conformation, strong constitution, good health, and high fertility.
About 80% of ewes are artificially inseminated. Rams are progeny tested.



I. FINEWOOLED BREEDS

1. Wool Type

GROZNY (Groznenskaya)

The Grozny is a most valuable breed developed during 1929-50 at Chervlennye Buruny breeding centre in the Dagestan ASSR which is located in an extremely arid part of the Nogai steppe.
According to the breed regionalization plan, the Grozny is raised in steppe areas of the Dagestan, Kalmyk and Checheno-Ingush ASSRs and in Stavropol territory and Astrakhan region of the Russian Federation.
The breed is based on purebred Australian Merinos imported in 1929. In addition, ewes of the Novocaucasian and Mazaev Merino breeds were repeatedly crossed with Australian rams until crosses were obtained which met the desired standards and these were used in the same way as the Australian Merino.
The breed was developed in order to obtain animals of the wool type but stronger, with a greater live weight and wool clip, and well adapted to semi-

desert conditions. The animals which did not meet the desired standards were mated with the Australian Merino or with Australian Merino high grades.

Breed numbers have remained steady since 1964. In 1980 the breed totalled 2 343 055 (99% purebred) including 8572 breeding rams, 43 634 other rams, and 1 686 058 ewes and yearling ewes.

In appearance Grozny sheep are similar to the Australian Merino but somewhat larger in size. They are medium-sized, have a compact body and satisfactory conformation (but hindlegs are often cow-hocked); the constitution is lean and strong and the frame is light and firm. Rams are usually horned; ewes are hornless. Most sheep (80-90%) are moderately wrinkled; rams have three large neck folds and ewes usually have one or two and also a well-developed skin fold and numerous small wrinkles over the body.

Withers height of ewes is 59-62 cm, oblique body length 63-65 cm and chest girth 90-100 cm. The average live weight of ewes ranges from 45 to 52 kg and reaches 55 kg with high feeding; the live weight of rams is 80-95 kg. The growth of ewes stops at the age of 3-3.5 years. Meat productivity is low. Carcasses of adult ewes barely reach 20 kg; the ratio of meat to bone is 2-3:1.

The wool is white, of very good quality, soft and silky. The fleece has a closed blocky staple. The outer part of the fleece is dense and staples are oblong or square in cross-section. The basal part is cylindrical in cross-section. The crimp is semicircular, even and pronounced with 6 or 7 crimps per centimetre. The wool is of 64s (70-80%) and 70s (20-25%) quality in ewes, and chiefly 60s-64s in rams, or 58s in some animals. The predominant staple length is 8.0-8.5 cm, with a range from 7.5 to 13 cm. The distribution of fibres within the staple is very even. The yolk is white, sometimes light cream of good quality. It is moderately soluble in cold water, so the outer section of the fleece is only slightly contaminated. Wool covers the head as far as the eyes and the limbs down to the hocks and knees. The covering of the belly is good; the wool there is sufficiently long and dense.

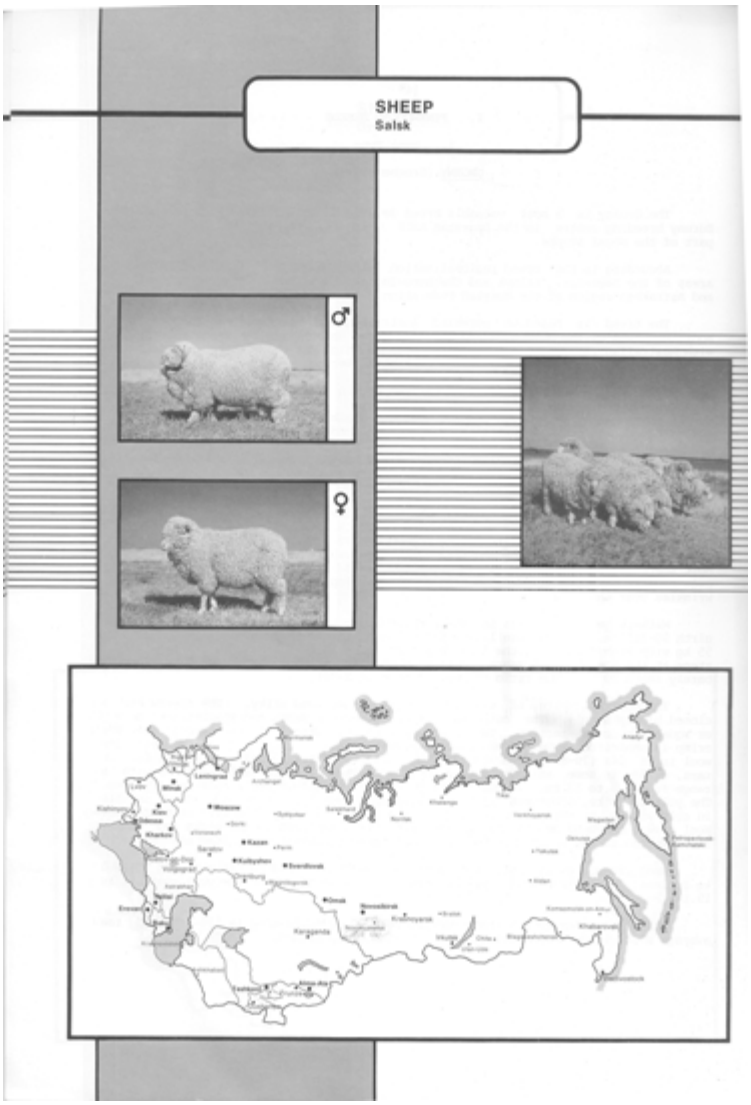
Wool production is high. Fleece weight reaches 6.5-8.0 kg in ewes and 16-18.0 kg in rams. The clean wool yield is some 45% (range 40-50%). The yolk content is 19.1%.

The average number of lambs dropped per 100 ewes lambing is 120-140, and the average milk yield is some 100 kg in 4.5 months of lactation.

The most productive and typical Grozny flocks are raised in large numbers on Chervlenny Buruny breeding farm in the Dagestan Autonomous Republic, Shelkovski breeding farm in the Checheno-Ingush Autonomous Republic and the breeding farm named for the 60th Anniversary of the Soviet Union in the Kalmyk Autonomous Republic. The flocks include major commercial types of the breed, and the breeders work with 5 or 6 strains each with its own typical characteristics.

Due to their high breeding merits and ability to increase wool production, Grozny sheep are widely used in nearly all areas where finewooled breeds are raised. Breeding and selection are currently under way, aimed at further enhancing the ability of sheep to transmit specific traits of the wool covering and at differentiating more clearly the intra-breed commercial types.

The State Flockbook lists 3408 ewes and 133 rams.

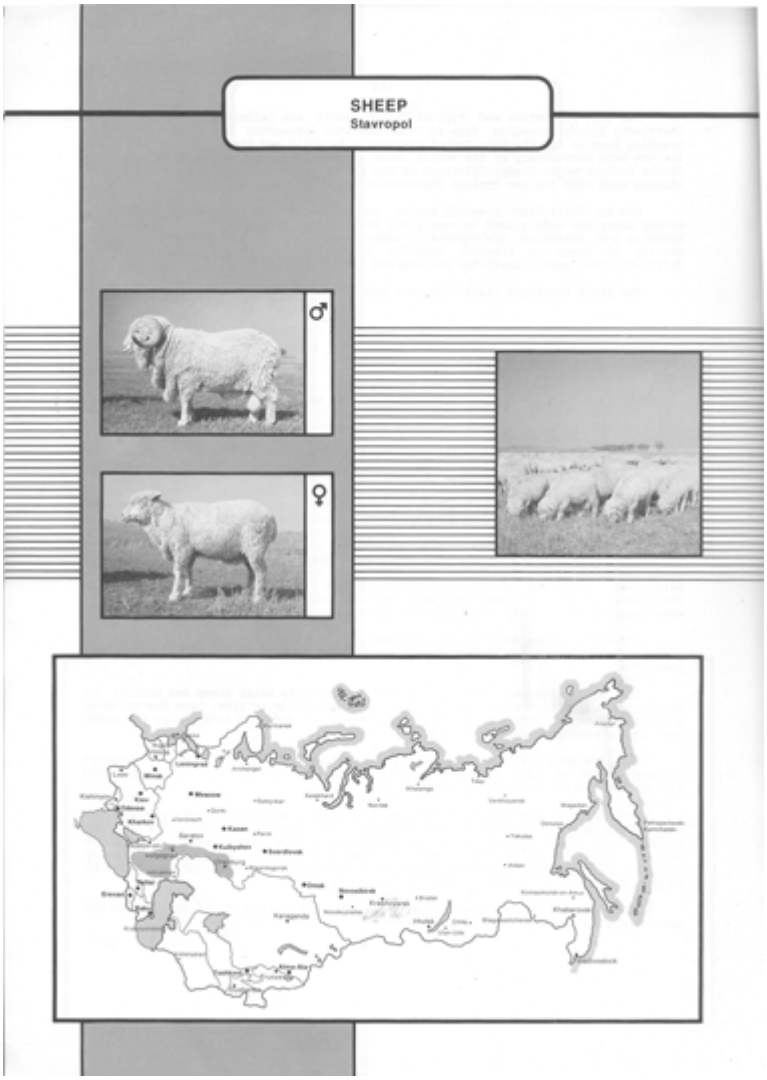


SALSK (Salskaya)

The Salsk breed was developed between 1922 and 1950 at Budenny stud farm in Rostov region which lies in the extremely arid Salsk steppe. Sheep there subsisted mainly on the pasture of the virgin lands and harvested hay. Pastures were utilized both in summer and in winter; when there was a little snow the sheep ate fescue (Festuca sulcata) and wormwood (Artemisia). At the same time sheep were given hay and small quantities of concentrates. Lately, supplements have increased in popularity at the expense of range forage.

The breed was created by crossing American Rambouillet rams onto the local Novocaucasian and Mazaev Merino ewes for three successive years. The sheep used for crossing were typical specimens of their respective breeds, with all their shortcomings. The aim of crossing was to improve constitution and conformation and to obtain larger animals of the wool type, well adapted to the local conditions and producing large clips of fine and long wool. From the stock of local animals ewes were chosen which were

close to the preferred type. Crossbreds which did not meet the established criteria were rejected. The best halfbred rams were widely mated to ewes regardless of breed. Management and feeding were improved.
Its numbers have declined from 357 548 (46% purebreds) in 1964 to 108 694 (all purebreds) in 1980 including 1123 breeding rams, 1672 other rams and 78 569 ewes and yearlings.
In constitution (wiry and strong) and productivity Salsk sheep are similar to the Soviet Merino of the wool-mutton type; they are large in size, have few wrinkles and a satisfactory conformation. Spare skin takes the form of an apron on the lower part of the neck and, rarely, of annular wrinkles.
The live weight of ewes is 50-56 kg and that of rams is 95-110 kg. The average carcass weight of adult finished wethers is 33.5 kg and of ewes 27.2 kg. The 6.5-month-old wethers weigh 14.3 kg.
Wool is white and uniform. The fleece is closed and has a blocky staple. The staple is mainly cylindrical in cross-section. The crimp is distinct. The wool is predominantly of 64s quality but partly 70s in ewes and 60s-64s in rams. The wool is strong. Staple length is 8.0-8.7 cm in ewes and 8.5-9.0 cm in rams. Yolk is usually white or light-coloured, and easily washed out by water. Fleece weight is 7.5-8.5 kg in ewes and 16-17 kg in rams. Clean wool yield is 40-42%.
The average number of lambs dropped per 100 ewes lambing is 115-130, and in the best flocks up to 140.
The best flock of the Salsk breed is kept at Budenny stud in Rostov region. According to the breed regionalization plan, the breed is raised on farms of Rostov region. Breeding is aimed at further improvement in breed type, fleece structure and wool quality, and increasing meat production.
The State Flockbook lists 347 ewes and 8 rams.



STAVROPOL (Stavropolskaya)

The Stavropol breed was developed between 1923 and 1950 at Sovetskoe Runo breeding centre in Stavropol territory.
According to the breed regionalization plan this breed is raised in the North Caucasus, the Middle and Lower Volga and in Orenburg region of the Russian Federation.
The breed is based on the Novocaucasian and Mazaev Merinos. They had long, strong, and uniform wool with a high yolk content. At the same time their live weight was low, the conformation was poor, and wool was not dense enough. Therefore, it was decided that along with inter se breeding the local Merino should be crossed with the American Rambouillet. The crosses obtained had a larger size and better conformation but wool quality declined - it became shorter and less even. To improve wool quality the aforementioned crossbreds were mated to Australian Merino rams which were brought from the Chervlennye Buruny breeding centre. Such crossing, together with strict culling, improved the quality of wool and maintained good size and conformation. Selection of long-wooled animals and

assortative mating with improved feeding made long wool a permanent feature. Lambs were given creep feed from the second week and by the age of 3 or 4 months they were receiving 0.3-0.4 kg of concentrates daily. Ewes were mated for the first time at the age of 2.5 years.

In 1950 the breed was recognized and given the name Stavropol. The total number of Stavropol sheep increased from 2 613 812 (37% of them purebreds) in 1964 to 3 734 825 (89% of them purebreds) in 1980 including 27 843 breeding rams, 46 778 other rams and 2 683 946 ewes and yearling ewes.

Stavropol sheep are medium-sized and have a strong constitution and a harmonious conformation. Rams are horned and ewes are usually hornless. The chest is deep and sufficiently wide. The back is level, of medium length; the rump is wide, and somewhat sloping. The legs are wiry and strong, correctly set. The skin is tight and thin. Both ewes and rams have 1 or 2 well-developed skin wrinkles on the neck.

The live weight of ewes is 50-56 kg, the maximum being 102 kg; the live weight of rams is 100-110 kg (maximum 146 kg).

Sheep of this breed have a high wool production. Wool is white, uniform in fleece and staple. The fleece has a blocky staple; the density (both by feel and by measurement) is medium to good. The upper layer is oblong or square in cross-section; the inner layer is chiefly cylindrical in cross-section. The crimp is distinct. The wool is predominantly 64s-70s quality but up to 40% of animals have wool of 70s or higher quality. The wool is strong, elastic, soft and gentle to the touch; it has good spinning qualities. The average staple length is 8.9 cm in ewes and 11.6 cm in rams; maximum figures are 13 and 16 cm respectively. The yolk is white or light cream. Fleece weight is 6.5-7.0 (maximum 13.0) kg in ewes and 14.0-19.0 (maximum 25.0) kg in rams.

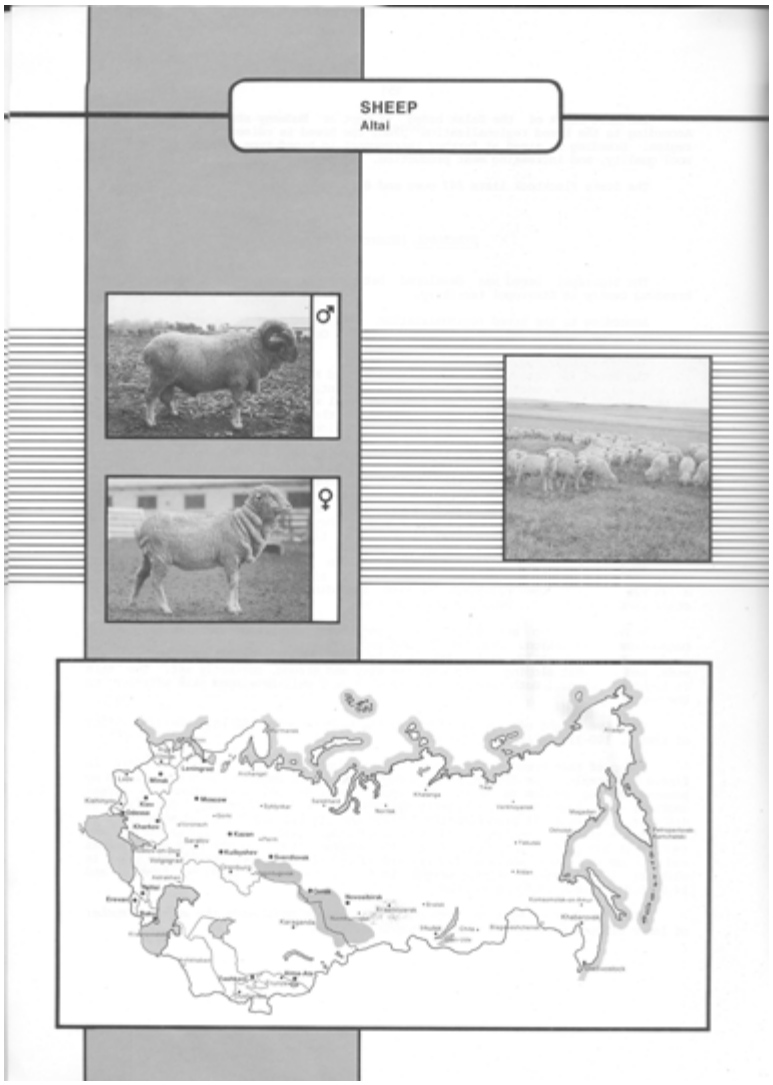
The fertility of ewes is high and in favourable conditions the average number of lambs dropped per hundred ewes lambing is 130-135.

The best Stavropol flocks are raised at Sovetskoe Runo and Rossiya breeding centres and on Lenin collective farm in Stavropol territory and on Kotovski collective farm in Volgograd region.

Stavropol sheep are widely used for improving sheep breeds on collective and state farms in the Bashkir, Dagestan, Kabardino-Balkar and North Ossetian ASSRs, Krasnodar territory and Voronezh and Kuibyshev regions of the Russian Federation, and on farms in the Kazakh, Kirgiz, Uzbek, Ukrainian, and Tajik Republics. They have been exported to and are successfully raised in Czechoslovakia, Bulgaria, Romania and other countries.

Breeding plans envisage further improvement of the wool quality and conformation.

Ths State Flockbook lists 17 762 ewes and 781 rams.



2. Wool-Mutton Type
ALTAI (Altaiskaya)

The Altai breed was produced between 1934 and 1949 at Ovtsevod breeding centre (formerly Rubtsovsk state farm) and on Strana Sovetov collective farm in Rubtsovsk district of Altai territory.

The breed is well adapted to the severe climate of Siberia. According to the breed regionalization plan it is raised in Altai territory, the Bashkir and Buryat ASSRs, Novosibirsk, Tyumen and Kurgan regions of the Russian Federation, and in the Kazakh SSR. Sheep of this breed are also raised in the Mongolian People's Republic.

The breed is based on local Merino sheep which were brought to Siberia from the North Caucasus during 1901-05. From 1928 to 1936 they were mated to American Rambouillet rams. This considerably improved conformation and increased live weight but significantly shortened wool length. The animals obtained did not meet the desired standards; therefore

it was decided to develop a new type of highly productive Merino sheep adapted to the severe climatic conditions of Siberia.
In 1936 Caucasian rams were brought from Bolshevik state farm; Chervlennye Buruny breeding centre provided Australian Merino rams. These rams were mated to large, though shortwooled grade Rambouillet ewes and to finewool x coarsewooled ewes. The offspring obtained were used in the following way: small sheep with good wool characteristics were mated within the same flock to large rams with worsted wool. Sheep of the desired type were bred inter se, while larger individuals with short wool were mated to Caucasian rams. Small sheep with short wool were culled. In 1940 the sheep obtained were approved as a breed group designated by the name Siberian Ramouillet. During the next eight years the breed group was improved and in 1948 the breed was approved and recognized in 1949 under the name Altai Finewool.
The total numbers of Altai sheep have declined slightly since 1964 but purebreds have increased over 6 times. The total in 1980 was 4 499 819 (74% purebreds) including 68 591 breeding rams, 51 998 other rams and 3 285 544 ewes and yearlings.
In appearance the Altai sheep are similar to the Rambouillet. They are large in size; the constitution is strong; the frame is well developed and wool production is high. Rams are horned and ewes are hornless. Most rams have 2 or 3 neck folds, and ewes have 1 or 2 circular skin folds and smaller body wrinkles. The body is long, the back straight, the rump wide and somewhat sloping. The legs are strong, correctly set, but sometimes cow-hocked.
The live weight of ewes is 53-65 kg (max. 108 kg) and that of rams is 105-130 kg (max. 155 kg). Maturity is sufficiently early - by the age of 4.5 months ewe lambs weight 28-30 kg. Growth stops at the age of 2.5-3 years when sheep reach their maximum live weight.
The wool is white; the fleece and staple are uniform. The fleece has a blocky staple, close and dense; the staple is oblong or square in cross-section. The crimp is fine and distinct. The wool from ewes is chiefly of 64s quality: some 3-7% have wool of 70s quality and 8-10% of 60s. Ram's wool is of 64s-60s quality, partly 58s. The staple length of ewes is 8-8.8 cm and that of rams is 8.7-9.8 cm. The average fleece weight from ewes is 6-7 and from rams 14-18 kg. Clean wool yield is 40-42%.
Lambing rate of Altai sheep is high; the number of lambs dropped per hundred ewes lambing is 150-165. At Kuriinski breeding farm of Altai territory ewes had an average lambing rate of 152%; the lamb crop at weaning was 149.3%, and in the best flock, 168.4%. The average milk yield is 102 kg. The carcass weight varies from 42 to 45% of the live weight, with the meat/bone ratio of 3.6:1.
Within the breed, there are 4 ram lines.
The best flocks of Altai sheep are raised at Ovtsevod and 50th Anniversary of the USSR breeding centres, and on Strana Sovetov collective farm in Altai territory.
Altai rams were used to develop the Trans-Baikal Finewool breed.
The yolk is unstable, easily washed out, and this is one of the weak points of the breed. In addition, in some animals the fleece cover of the body, particularly of the belly, is unsatisfactory. There are also sheep with uneven

or thin fleece of insufficient density. Further breeding is aimed at correcting these weak points.
The State Flockbook lists 12 583 ewes and 426 rams.