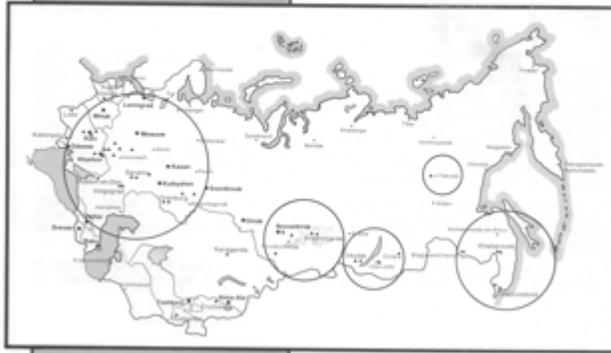
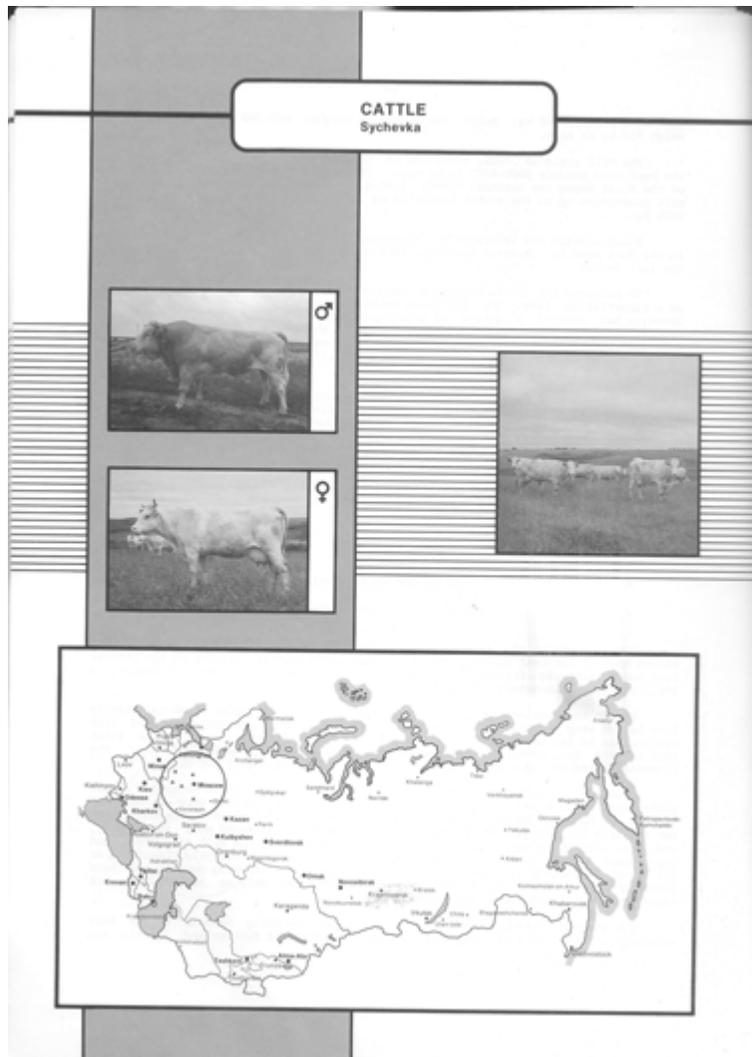


CATTLE
Simmental





Straw-and-White Breeds
SIMMENTAL (Simmentalskaya)

The importation of Simmental cattle from Switzerland and Germany began in the second half of the last century. The cattle populated several regions of the Central Zone and Ukraine. To freshen the blood, in the last decades of the 19th century a small number of Simmentals were imported from Austria.

Due to their all-round productivity and good acclimatization Simmental cattle have become very popular in many parts of the USSR. They are currently bred from Byelorussia in the west to Primorski territory in the far east, and from the Yakut ASSR to the Tuva ASSR. In accordance with the breed regionalization plan, the Simmental breed has been approved as an improver in 45 regions of the USSR.

Breeding activities to improve and distribute Simmental cattle began on a wide scale after 1917. Breeding state farms and state breeding stations were set up; and in 1925 the National Herdbook was established. In the period after the Second World War the work to increase the productivity of

Simmentals continued more intensively, and it is now being reorganized. The problem of increasing the milk production and improvement of beef qualities of the Simmental cattle has been recently considered at 211 breeding stations and pedigree state farms. This work is being done at the best breeding farms of the collective and state farms, as well as at the farms of experimental and educational institutions.

The special breeding conditions of most of the dairy animals in the USSR resulted in a lighter type compared with the Simmentals of Switzerland, Austria and Germany. The formation of the Simmental breed in the USSR was influenced by the local natural and economic conditions; as a result 7 regional Simmental types are recognized. They are as follows:

1. Sychevka breed (western type). This dual-purpose breed populates Smolensk, Kalinin, Bryansk, Kaluga and Ryazan regions. In this area the Sychevka breed was formed by Crossing Simmental bulls onto the west Russian cattle followed by long-term breeding of the high-grade crosses.

In 1950, the "Simmentalized" cattle in Smolensk and Kalinin regions were distinguished as the Sychevka breed. The animals of this breed have the conformation and constitution typical for milk-beef cattle. Nevertheless, among the Sychevka cattle the dairy animals are observed in greater number than among the Simmentalized cattle of other areas. The animals of this breed differ little from typical Simmental cattle in their colour, which is straw and white.

The conformation of mature Sychevka cows is characterized by the following measurements (in cm): withers height 135, chest depth 70, oblique body length 162, cannon bone girth 20.

Sychevka animals are noted for a high live weight: mature bulls weigh 900-1200 kg; first-calf heifers weigh 520 kg, after the second calving 590 kg, after the third calving and older 630 kg. Live weight of heifer calves at birth is 32 kg; bull calves weigh 34 kg. Steers at the age of 1.5 years weigh 575 kg; daily gain is 1184 g and dressing percentage is 60.

The milk yield of the cows recorded in the National Herdbook is 3500-4300 kg, depending on their age, and the butterfat content is 3.7-3.95%. In breeding herds, the cows produce an average of 900-1000 kg of milk per 100 kg live weight; the record holders produce 1200-1500 kg. The milk yield of mature cows in selection herds varies from 5015 to 5342 kg with 3.76-3.85% fat, and 3.40-3.47% protein. The best cows of Sychevka breeding farm in Smolensk region produce 8-10 000 kg of milk: Pereleska 3982 in the 4th lactation produced 10 801 kg of milk with 3.85% fat; Depesha 2948: 5th, 8302 kg, 3.82%; Nasedka 4088: 4th, 8382 kg, 3.81%; Severnaya 4479: 4th, 8224 kg, 3.84%.

The breed comprises 6 lines and 2 related groups.

From Smolensk region Sychevka cattle have been exported to various parts of the country: the total number of young pedigree stock exported is 186 000 head. According to the census, the total population of Sychevka animals was 739 000 on 1 January 1980.

2. Steppe Simmental type was formed by crossing the central Russian cattle with Simmental bulls, with subsequent breeding of the crosses of the desired type. These animals populate Voronezh, Tambov, Kursk, Orel, Lipetsk and Belgorod regions.
3. Ukrainian Simmental cattle were formed by crossing the Grey Steppe cattle with Simmental sires, followed by selection. The animals of this type have considerable live weight and good beef and dairy qualities. They populate Kharkov, Kiev, Chernigov, Poltava, Cherkassy and other regions of Ukraine.
4. Volga (Privolzhski) Simmental cattle were bred by crossing the central Russian, Kalmyk and Kazakh cattle with Simmental bulls followed by selection. These cattle populate the semi-arid farming lands in Penza, Saratov and Volgograd regions.
5. Ural (Priuralski) Simmental cattle were formed by crossing the Siberian and Kazakh cattle at low absorption by Simmentals under the conditions of grain farming and well-developed industry. They are bred in Orenburg and Chelyabinsk regions and in the Bashkir ASSR.
6. Siberian Simmental cattle appeared as the result of crossing the Siberian and Buryat cattle with Simmentals followed by inter se breeding of the 1st and 2nd backcross generations. They populate Altai and Krasnoyarsk territories, Novosibirsk, Irkutsk and Kemerovo regions, and the Buryat ASSR.
7. Far Eastern Simmentals were formed under the severe conditions of the harsh continental climate by crossing the local Transbaikal and Yakut cattle with Simmental bulls followed by inter se breeding of the first crossbred generations. They are kept on the farms of Khabarovsk and Primorski territories, in Amur and Chita regions and in the Yakut ASSR.

In numbers Simmental (straw-and-white) cattle head the list of the USSR cattle breeds - they account for 25.6% of all cattle. According to the census, the total population of the Simmental cattle at 1 January 1980 was 17 708 000 (excluding the Sychevka).

The breeding of Simmental cattle is under way at state breeding stations (15 500 cows), at breeding stations of collective farms (8500 cows) and at the breeding state farms (41 800 cows). The breeding farms in various areas have, as a rule, high grade animals.

The colour is usually straw or straw-and-white. Simmental cows are usually large (withers height 130-135 cm); they are proportionally built (oblique body length 158-162 cm), with a strong skeleton (cannon bone girth 18-20 cm) and the chest is deep (67-70 cm).

The weight of calves at birth is 36-45 kg; at the age of 6 months they weigh 190-220 kg. Mature cows weigh 550-620 kg; bulls weigh 850-1000 kg. Simmental cattle fatten well: when grazing and fattening, the daily weight gain of steers is 800-1100 g; the dressing percentage for the fat young stock is 56-58 and that of fattened animals is up to 64%.

The milk yield of cows varies between breeding zones. The average milk yield of the cows recorded in the National Herdbooks is 3500-4000 kg per lactation. In the leading breeding stations the milk yields exceed 4000 kg. At 10 Let Oktyabrya breeding centre in Chernigov region the milk yield averaged 5562 kg with 3.8% fat; at Chervony Veleten farm in Kharkov region it was 4889 kg with 3.79% butterfat; at Ukrainka farm in the same region it was 4851 kg with 3.87% butterfat; at Yelanski farm in Voronezh region it was 4631 kg with 3.87% butterfat; at Terezino in Kiev region it was 4598 kg with 3.95% butterfat.

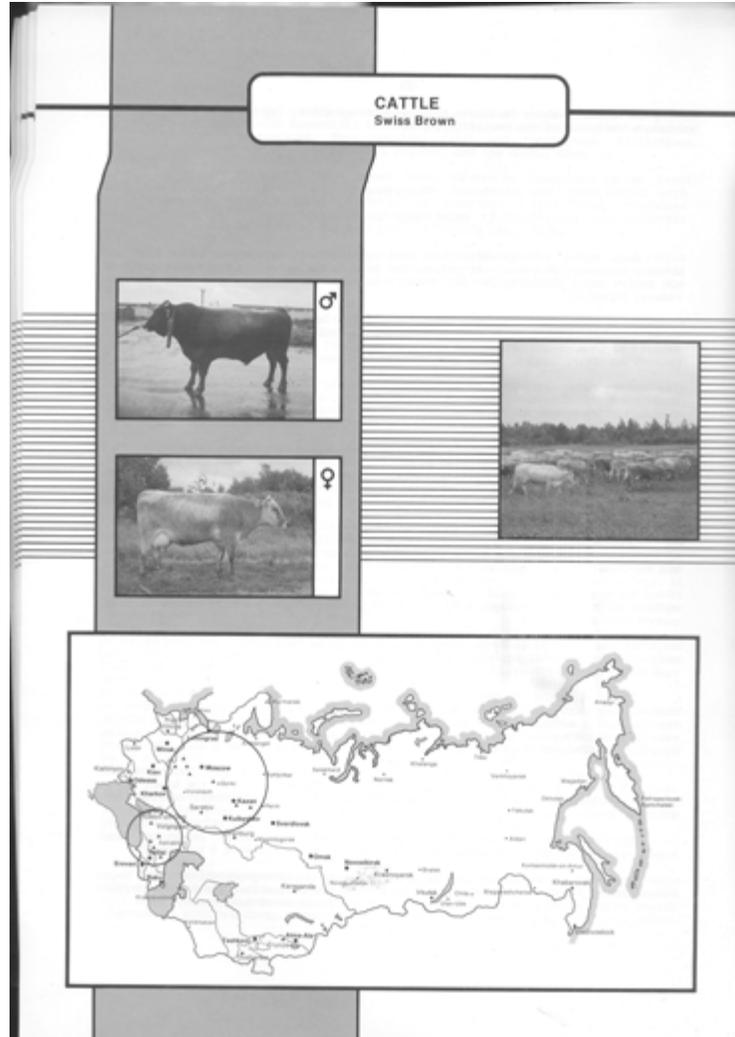
Simmental cattle are divided into three types, according to their conformation and milk production: 1. Dairy, 2. Dairy-beef, 3. Beef-dairy. At Yelanski breeding centre the milk yield of the cows of these types per lactation was as follows: 1 -5007 kg, 2 - 4645 kg, 3 - 3852 kg.

The farms of the Ukraine have two-thirds (over 2380 head) of all cows entered in the Book of Highly Productive Simmental and Sychevka Cattle (1976). All cows with milk yields of 9000 kg or more were raised in the Ukraine. The champions of the breed were also bred there, namely cow Ryabushka 1413 KS-1854 - 4th lactation, 14 584 kg of milk with 3.82% fat; cow Meduza 417-4SM-1934 (a champion for fat content): 4th lactation, 5039 kg of milk, 6.08% fat.

At the sugar-beet state farm of the Matusov sugar factory in Cherkassy region, cow Mavra 5212 produced in 14 lactations over 85 000 kg of milk with 3.83% fat. The yield of butterfat was 3261 kg.

There are 6 promising lines in the Simmental and Sychevka breeds.

The breeding programme envisages improvement of the animals in order to combine high milk production with good beef qualities. To create highly productive herds that will meet the requirements of the industrial technology of milk production, in addition to pure breeding, these cattle are being crossed with the best dairy breeds, namely the Red-and-White Holstein-Friesian and Ayrshire. It is also planned to introduce the blood of the Montbeliard breed.



Brown Breeds
SWISS BROWN (Shvitskaya)

Swiss Brown (Schwyz) cattle have been imported into Russia from Switzerland and Germany for over 100 years. At present the Swiss Brown breed populates many parts of the Soviet Union including Central Asia, Transcaucasia, Byelorussia and the Russian Federal Republic.

Swiss Brown cattle account for 5.5% of all of approved cattle breeds 2 999 000 in all. Swiss Brown cattle are concentrated in Tula, Smolensk, Gorki, Bryansk and Kaluga regions, in Stavropol and Krasnodar territories and the Tatar, Kabardino-Balkar, Udmurt, North Ossetian and Checheno-Ingush ASSRs.

Swiss Brown cattle are noted for their ability to acclimatize in various areas. Thus in the Karachaevo-Cherkess Autonomous Region, in the summer, they thrive on a transhumant system at altitudes of 1500-2000 m. Swiss Brown cattle are resistant to infectious diseases due to their strong constitution.

Eighty percent of the Swiss Brown cows have well-defined dairy features: they produce 800-1200 kg of milk per 100 kg of live weight. Swiss Brown animals are also noted for their good beef qualities. The young stock have a rapid growth rate. The daily gain of steers and fattening animals is 1000-1200 g. At mating age heifers have a live weight of 380-450 kg. The dressing percentage is 55-60. The carcass yield is 80%.

Coat colour is brown of various shades. The light hair cover around the muzzle of pink and grey colour is a characteristic feature of this breed. The hair along the top-line is also lighter.

The basic measurements of the mature cows in the pedigree herds are (in cm): withers height 131.4, oblique body length 157.7, chest depth 70.7, heart girth 189.5, cannon bone girth 21.1.

Calves weigh 33-40 kg at birth and 260-300 kg as yearlings. The live weight of mature cows is 480-550 kg, that of the bulls 800-950 kg; some cows weight 800 kg and some bulls up to 1100 kg.

The milk yield of the cows registered in the herdbook is in the region of 3100-4200 kg with 3.7-3.9% fat and 3.2-3.6% protein. The cows are well adapted to the industrial methods of milk production: the udder index is 43-45% and the milking rate is 1.6-2.0 kg per minute. The milk production of mature cows at the leading breeding stations reaches 4500-5000 kg with a butterfat content of 3.75-3.90%.

In the selection herds in Smolensk region 55 cows have averaged 7791 kg of milk with 3.76% fat; 14 cows averaged 8000 kg of milk.

The best cows of the breed are as follows: Azbuka 8692 (4th lactation, 9551 kg milk, 4.00% fat), Seryozhka 2000 (3rd, 9415 kg, 4.03%), Gavan 2917 (4th, 9220 kg, 3.79%).

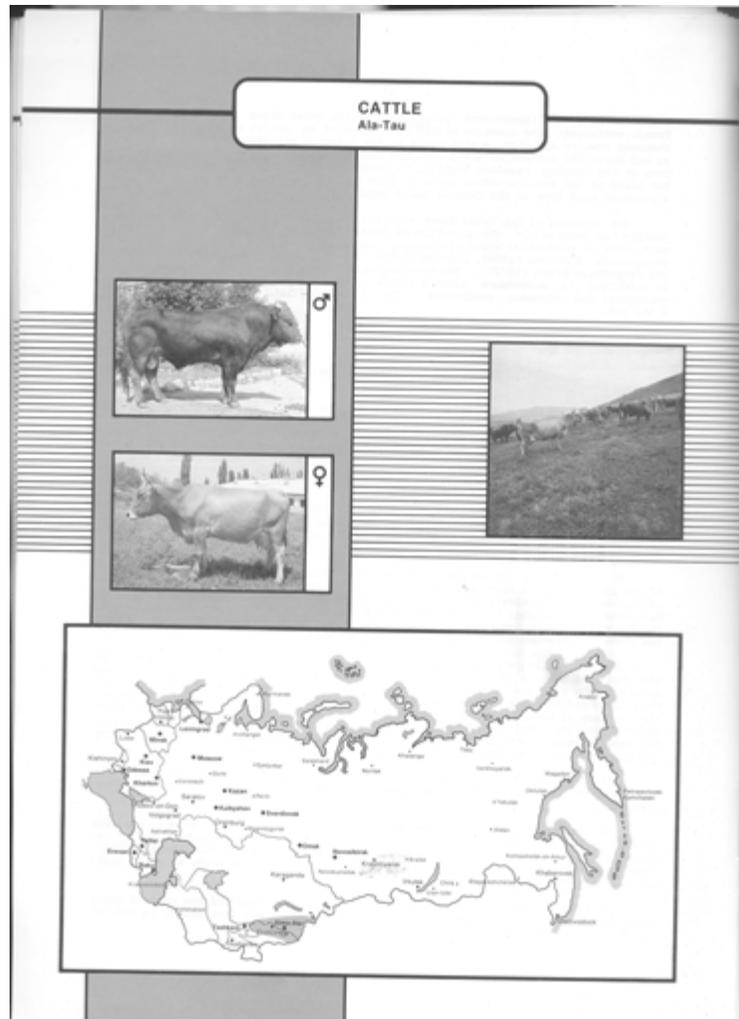
The Swiss Brown breed has a clearly defined genealogical structure, most breeding stock belong to 9 major lines.

At the breeding centres of Smolensk, Tula and Gorki regions which breed Swiss Brown cattle 267 families have been formed. The better families had a considerable effect on the breed as a whole: they produce the founders of new lines.

The long-term improvement programme for the Swiss Brown and the other Brown breeds envisages: the creation within each breed of an active nucleus totalling 130 thousand cows in all with a milk yield at the breeding stations of 4.5-6.0 thousand kg and butterfat content of 3.8-4.0%; the formation of selection herds of dairy type cows at the leading breeding stations to produce the young bulls; introduction of the blood of the American Brown Swiss to form new types. It is also planned to breed a purebred beef type in the Central Asian Republics.

The crossing of the Swiss Brown with the local cattle in different parts of the country has resulted in the formation of local Brown cattle types that differ from each other in production and conformation. Among those types, five breeds have been recognized: Kostroma (1944), Ala-Tau (1950), Lebedin (1950), Caucasian Brown (1960) and Carpathian Brown (1973). The breeding work with all the breeds of Brown cattle is conducted in accordance with a single plan, taking into account the local

ecological and economic conditions. The total head of Brown cattle breeds is 6 562 000.



ALA-TAU (Alatauskaya)

Ala-Tau cattle were created on farms of the Kirgiz and Kazakh Republics by crossing local Kirgiz (Kazakh) cattle with the Swiss Brown and selection of the crosses. The breed was formed in the piedmont areas of the Zaili Ala-Tau. Kirgiz (Kazakh) cattle are noted for their adaptation to the local environment and for their fast rate of fattening. At the same time Ala-Tau cattle are small, late maturing, and produce little milk: mature cows have a live weight of 280-380 kg and produce 500-600 kg of milk with a high fat content. The first crossbreeding was undertaken in 1904. Later, during 1929-40, over 4500 Swiss Brown animals were imported to the Kirgiz Republic and 4300 to the Kazakh Republic. Swiss Brown cattle acclimatized well in the hot climate and mountain conditions. Of great importance for the improvement of Kirgiz cattle was the use of animals of the Kostroma breed from the Karavaevo breeding centre in Kostroma region. Mating of the Swiss Brown Kirgiz crosses to the bulls of the Kostroma breed resulted in descendants with higher milk yields, fat content and live weight which accelerated the

formation of the new breed. This breed was recognized in 1950. By 1 January 1980 the number of Ala-Tau cattle had reached 930 000 head.

Ala-Tau cattle are characterized by a strong constitution, solid and fine skeleton. The body is rounded. The head is large, with long face. The chest is deep and wide; the ribs are widely spread; the dewlap is well developed. The withers are wide, long and straight. The hindquarters are wide and level. The belly is roundish; the legs are of medium length. The musculature is well developed. The skin is thick and elastic. The udder is of medium size and cup-shaped; the teats are cylindrical and mammary veins are well developed. Among defects are sloping and wedge-shaped rump and splayed front legs. The colour is mainly (60%) brown of various shades.

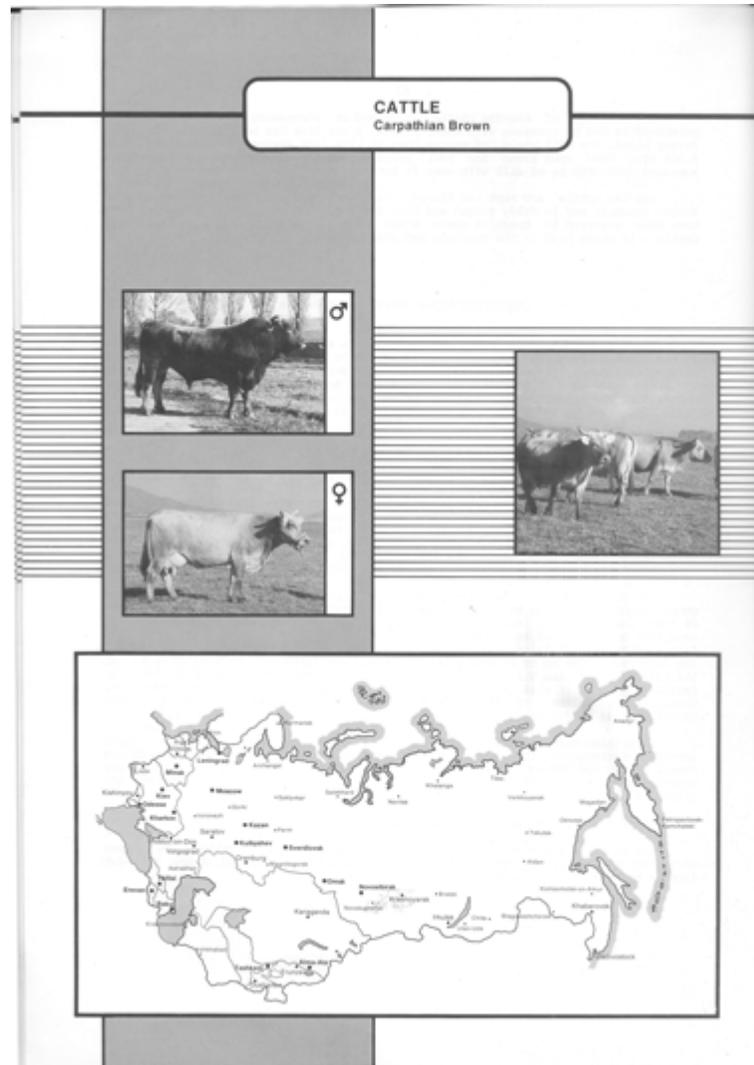
Ala-Tau cattle are noted for their good beef qualities. During fattening the daily gain of steers is 800-900 g; dressing percentage is 53-55 and up to 60 for prepared bulls.

The milk yield of Ala-Tau cattle on the breeding farms of the Kirgiz Republic is 4013 kg; at the breeding stations it is 4575 kg and the fat content is 3.89%; at the Sokuluk breeding station 968 Ala-Tau cows averaged 5001 kg of milk (Kvitko 1982). Some cows produce 8200-10 300 kg. The average fat content in the herds with the highest milk fat percentage is 3.9-4.06%.

The Ala-Tau breed comprises 9 major lines. The milk yield of the cows of these lines ranges from 4500 to 5488 kg, with 3.80-3.92% fat; their live weight is 580-600 kg.

The breeding of Ala-Tau cattle is aimed at increasing milk production by purebreeding and by crossing with other breeds. A new line has been formed containing Jersey blood. The milk yield of mature cows in this line averages over 5000 kg with 4.10% fat. Some cows lived for 15-17 years, produced 13-14 healthy calves and averaged 7000-9000 kg of milk with over 4% fat.

Ala-Tau cattle are kept in Frunze, Tien Shan and Issyk Kul regions of the Kirgiz Republic and in Taldy Kurgan and Alma Ata regions of the Kazakh Republic. They have been exported to Mongolia where a new type - the Mongol-Ala-Tau beef-dairy cattle - is being bred in the mountain and steppe areas.



CARPATHIAN BROWN (Buraya karpatskaya)

The breed was established in Trans-Carpathia region of the Ukrainian SSR late in the last century by crossing the local cattle with the Swiss Brown and its derivatives, namely, Brown Hornoin (a strain of Swiss Brown), Montafon and Allgau. The breed was formed in the highland area on high mountain grazing lands with alpine vegetation. The crosses were bred with the aim of obtaining a dairy-beef animal. The Carpathian Brown breed was recognized in 1973. In 1980 the total population was 203 000.

The cattle have a strong constitution and they are well adapted to the Trans-Carpathian region. In colour this breed resembles the other Russian Brown breeds but it differs in conformation - it is less tall and more compact, with narrower body and deeper chest. These cattle are not homogeneous in size and conformation. In mountain areas they are smaller than on the plains; this is a result of environmental conditions and of the different impact of the various breeds that participated in the formation of the breed in different

districts. The basic measurements of mature cows are (in cm): withers height 128, chest depth 67.2, oblique body length 155.3, heart girth 181.0, cannon bone girth 19.4 (Herdbook, vol. 5). The average live weight of cows is 489 kg and that of bulls 816 kg (maximum 1000 kg).

The milk production of the cows at the breeding farms points to the high genetic potential of the breed. The cows of the leading groups at the breeding farm of the Trans-Carpathian experiment station averaged 3955 kg of milk, including 30 cows that averaged 4808 kg. On the breeding station of the 22 Partsyezd collective farm in Mukachevo district cows noted for their milk production include Kvitka 6382 -7th lactation, 8246 kg of milk and Malvina 7026 - 5th lactation, 8126 kg of milk. At the dairy farm of the V.I. Lenin collective farm Sinitza 6954 produced in the 6th lactation 8247 kg of milk with 3.96% fat. The fat content in the milk of the cows registered in Volume 5 of the Herdbook was 3.72%. Proportionality index of udder development is sufficiently high (45.7%).

Carpathian Brown cattle are noted for their good beef production. Under intensive fattening in the lowland area of Trans-Carpathia region the 12-month-old steers reach 323-355 kg live weight and their dressing percentage is 58.2%. The ability to put on weight is exploited in the mountain area, rich with meadows and grazing lands.

There are 7 major lines in the breed.

The major breeding aim is a cow that can be used in dairy complexes. To achieve this, the descendants of American Brown Swiss bulls are being used. A new high-fat line is being formed by using bulls carrying Jersey blood.