
1. CATTLE (excluding zebus)

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The USSR has more cattle than any other country in the world except India. The total is 115 million. Of these 80% belong to the socialized sectors and the rest are on farmers' individual holdings. The 92 million cattle on state and collective farms include 633 000 zebus and zeboids, buffaloes and yaks as well as 22.29 million young fattening cattle. The remainder are the breeding cattle listed in Table 1.1 and described in this chapter.

The decades since the Second World War (1945-85) have seen profound changes in the breed composition of cattle. Some breeds with small numbers have disappeared -the local Kirgiz (Kazakh), Siberian, polled Pechora, northern polled Karelian, Buryat. Some populations of valuable local breeds have formed the basis of new breeds and varieties, for example the Kazakh Whiteheaded breed and the Pechora type of the Kholmogory breed. They introduced to the gene pool of the new breeds such characteristics as sound constitution, longevity, good adaptation to local husbandry conditions, resistance to tuberculosis and brucellosis.

At present 36 dairy and dairy-beef and 12 beef breeds are bred on the state and collective farms, 12 breeds having been developed in the last 40 years. Eleven foreign breeds are not described here. Of the large diversity of cattle breeds the most numerous are the Simmental (26.7%), Black Pied (25.2%), Red Steppe (19.2%), and Brown breeds (9.5%).

The long-term selection programme for improving the existing breeds and lines and developing new ones is being accomplished through the network of large breeding centres and farms and the state breeding and artificial insemination stations.

The present state and collective farms have large herds - from 1500 to 2000 head and more. On such large farms the conditions are available for production specialization and the introduction of industrial technology, the latest scientific advances and improved working methods.

In the USSR livestock farms are divided into two categories - breeding and commercial. Such a division is somewhat arbitrary since in any commercial farm one-half of the herd is represented by a breeding group. Many farms raise purebred animals (i.e. 15/16 blood or more). The principal difference between breeding and commercial farms is in their specialization.

Breeding stations and their branch farms improve the breeding efficiency and performance of the breed, rear bulls for A.I. stations and young breeding stock for commercial herds. Breeding farms carry out progeny testing of sires. Taking into account that, on the average, one improver bull can be found among 4 bulls on test, it is reasonable to have at least 8-10% of the total cow population in the breeding farms.

The main purpose of the commercial farms is to produce milk and meat. The work of these farms is evaluated by the quantities produced and the cost of production.

Every year a comprehensive evaluation of cattle is carried out. Sires, cows, replacement heifers and young breeding bulls are subject to evaluation in both breeding and commercial farms. The evaluation includes the proportion of blood of the basic breed, origin, performance, live weight, conformation, progeny test and reproductive capacity.

The evaluation covers 75% of cows and bulls of dairy and dual-purpose breeds. Each is classed as Super Elite, Elite, 1st class or 2nd class. According to the results of the evaluation animals are selected for registration in the State Herdbooks. These herdbooks register animals which meet the breed standards and belong to breeding stations, breeding state farms, breeding centres and breeding herds of commercial farms.

Table 1.1 CATTLE NUMBERS ON 1 JANUARY 1980
(in thousands)(excluding cattle for fattening)

Breed	Total	Purebreds
Simmental	17 708	4 198
Black Pied +	16 449	4 632
Red Steppe	13 282	7 579
Swiss Brown	2 999	753
Kholmogory	2 407	1 001
Bestuzhev	1 890	582
Kazakh Whiteheaded +	1 570	257
Latvian Brown	1 417	889
Caucasian Brown +	993	174
Ala-Tau +	930	343
Yaroslavl °	927	553
Kostroma +	838	285
Lithuanian Black Pied	740	585
Sychevka +	739	138
Lebedin +	599	236
Tagil °	599	179
Lithuanian Red	567	427
Estonian Red	492	341
Byelorussian Red °	429	65
Kalmyk °	381	217
Kurgan +	322	43
Gorbatov Red °	294	74
Aulie-Ata +	265	133
Ukrainian Whiteheaded °	230	29
Estonian Black Pied	208	173
Carpathian Brown +	203	127
Polish Red °	183	58
Istoben °	106	40
Georgian Mountain *	80	71
Tambov Red +*	45	5
Bushuev +°	21	6
Suksun *	20	6
Mingrelian Red *	11	7
Yurino *	6	1
Estonian Native *	2	1
Ukrainian Grey *	1	0.5
Yakut *	0.6	0.6
Other breeds 1/	1 124	0.6
Total	69 078	

- ° declining breed
- * vanishing breed
- + new breed

^{1/} This includes breeds of foreign origin more recently imported, new breed groups resulting from their crosses with local breeds, and minor local breeds.

Purebred and crossbred (at least 7/8 blood) animals to be used for breeding, are entered in the State Herdbook for Cattle. Bulls must be at least of the elite class and their pedigrees must include data on their dam's parents and grandparents and sire's parents, grandparents and great-grandparents. To be registered in the herdbook, cows must be judged at least 1st class on the basis of the 1st lactation records, and their pedigrees must include dam's and sire's parents and grandparents. There are herdbooks for every breed described in the monograph except the local breeds.

The breeding farms have a financial interest in the registration of a large number of animals in the herdbooks because in this way the price of young stock for sale is increased.

There are 820 breeding farms in the dairy sector and 77 in the beef sector. On average, 32% of the total cow population are inseminated with semen from improver bulls and in the Baltic Republics up to 80%.

NOTE: On most farms cows are milked three times a day. Therefore, unless otherwise specified, milk yields quoted here refer to thrice-daily milking.

In this monograph the breeds are described in the following order:

DAIRY BREEDS

PIED DAIRY BREEDS

Black Pied
 Estonian Black Pied
 Lithuanian Black Pied
 Aulie-Ata
 Istoben
 Kholmogory
 Tagil
 Ukrainian Whiteheaded
 Yaroslavl

RED DAIRY BREEDS

Byelorussian Red
 Estonian Red
 Latvian Brown
 Lithuanian Red
 Polish Red
 Red Steppe
 Suksun

OTHER DAIRY BREEDS

Bushuev
 Estonian Native

DUAL-PURPOSE BREEDS

RED DUAL-PURPOSE BREEDS

Bestuzhev
 Gorbатов Red

Tambov Red

Yurino

STRAW-AND-WHITE BREEDS

Simmental

BROWN BREEDS

Swiss Brown

Ala-Tau

Carpathian Brown

Caucasian Brown

Kostroma

Lebedin

OTHER DUAL-PURPOSE BREEDS

Kurgan

BEEF BREEDS

Kalmyk

Kazakh Whiteheaded

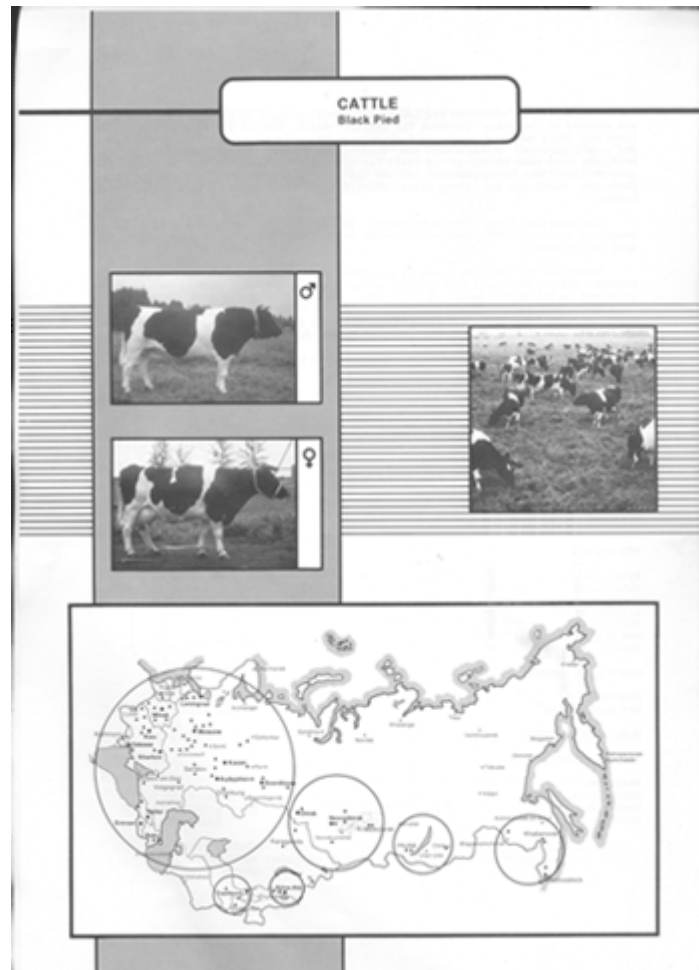
LOCAL BREEDS

Georgian Mountain

Mingrelian Red

Ukrainian Grey

Yakut



DAIRY BREEDS

Pied Dairy Breeds

BLACK PIED (Cherno-pestraya)

The Black Pied breed developed from crossing the local cattle in various areas with the Dutch Black Pied and East Friesian breeds. Pure breeding of Dutch cattle in Russia was conducted on only a small scale. The Central, Ukrainian, Siberian and other strains of Black Pied cattle were formed by absorptive and reproductive crossing.

The various strains of Black Pied cattle were approved as a planned breed in 1925. Therefore, some animals were imported from Germany, the Netherlands, Estonia and Lithuania during 1930-40 and distributed in various parts of the country. The imported sires improved milk production, feed conversion efficiency, and beef qualities. Five thousand head of the Dutch breed were imported during 1957-65. The production of the female ancestors of 107 bulls was 6-7000 kg of milk with butterfat content of 4.4-4.6%.

The Black Pied breed is noted for high milk production (the highest among the dairy breeds), good conformation and good beef qualities. Due to the high productivity, adjustment to machine milking, well-defined beef features

and the ability to acclimatize, the population of this breed is increasing year by year. By the beginning of 1980 the number of Black Pied cattle in the USSR was 16 449 000 excluding the Baltic population. In numbers they are second (25.2%) among 50 cattle breeds in the country.

The Black Pied breed includes varied groups of animals, originating from different maternal stocks under different climatic and feeding conditions.

The crossing of the local low-grade cattle - Great Russian, Siberian, Trans-Ural, Central Asian, Grey Ukrainian - with Dutch bulls started at different times. The basic aim was to form a breed adapted to many different regions but originating from a single foundation breed. This unified breed was recognized in 1959.

The Black Pied breed comprises five large populations: Central (Mid-Russian), Baltic, Ural, Siberian, and other zones, namely Ukraine, Byelorussia, Central Asia, and parts of Transcaucasia.

The animals of the Central group are the largest (live weight 550-650 kg), with a more compact conformation, relatively shortlegged and a good exterior appearance. This group is noted for the highest milk production (5500-6500 kg) with low butterfat content (3.6-3.7%).

On the other hand, the Ural strain is of a lighter, fine-boned solid type (500-600 kg live weight) with longer legs, less pronounced beef features, and high milk yield (5000-6000 kg) and butterfat content (3.8-3.9%).

The Siberian strain is an even lighter type (450-550 kg), with good milk yield (4500-5000 kg) and medium butterfat content (3.7-3.8%).

The remaining groups are intermediate between the three leading strains.

The Baltic population is described separately under the headings Lithuanian Black Pied and Estonian Black Pied.

A network of selection centres was set up in the USSR in 1975. The Ail-Union Research Institute for Livestock Breeding and Genetics has become the centre for work with the Black Pied breed. It unites the breeding activities of the leading breeding stations and zonal institutions that deal with this breed. The main goal of this selection centre is to breed highly productive strains, types, herds, and lines of the Black Pied breed, by raising valuable sires for the A.I. stations, progeny testing them, storing semen of the improved sires, and using it for improving the great mass of the Black Pied cattle.

The comprehensive measures undertaken have made it possible to improve the productivity and the pedigree value of the Black Pied cattle in the working zones of the selection centres. The principal indicators of the activity of the breeding farms are the number and quality of the pedigree young stock produced and primarily of the sires. Realization in the last 15 years of this large-scale selection programme has allowed a new approach to line breeding of the Black Pied cattle. In the breeding herds, bulls are produced by intra-line assortative mating with the use of moderate inbreeding. In the commercial farms the breeding activities are confined to the rotational crossing of lines within the breed. This increases the productivity, viability and fertility of the offspring.

The successful use of selection to breed, assess and use the better genotypes assisted in the formation of highly productive herds of the national Black Pied cattle. The average milk yield of 11 100 cows of the leading herds surveyed in various regions of the RSFSR in 1984 was 5559 kg, with a butterfat content of 3.82%. The best breeding stations are as

follows: Petrovski in Leningrad region (1080 cows, 6671 kg milk, 3.91% butterfat); Lesnoye (750 cows, 6604 milk, 3.89% butterfat); Petrovskoye in Moscow region (750 cows, 5630 kg, 3.94%); Zarya Kommunizma in the same region (3150 cows, 5450 kg, 3.78%); Imeni Lenina collective farm in Tula region (1000 cows, 5480 kg, 3.90%).

The milk production of the champion Black Pied cows with a milk yield per lactation of over 10 000 kg and with a lifetime production of 90-100 000 kg points to the high potential of this breed. At the six base farms of the All-Union Institute of Animal Breeding and Genetics alone over 100 cows with a milk production of 10 000 kg or more have been bred.

In Sverdlovsk region the milk yield of over 22 000 cows was 4800-5000 kg with 3.86-3.90% fat. At the leading breeding stations over 240 cows have a yield of 6500-7500 kg of including 206 cows with a yield of over 7000 kg.

The milk production of the best cows on the farms of the Ural area is as follows: Aida 220 (the record holder for lifetime production) produced in 13 lactations 117 720 kg of milk with a butterfat content of 3.75%, or 4415 kg of milk fat; she belongs to the stud farm No. 9 of Perm region. Cow Volga 3790, in her 3rd lactation produced 17 517 kg of milk with 4.20% butterfat; she was kept at Rossiya breeding centre in Chelyabinsk region. Gornaya 6329 at the same farm - 5th, 13 849 kg, 4.10%; Yagoda 6010 - 3rd, 13 146 kg, 3.93%.

The Black Pied breed accounts for the greatest numbers of champions with milk yields over 10 000 kg - 79 out of 212.

The breeding programme of the Black Pied breed aims to produce a type with a milk yield of 6.0-7.5 thousand kg, butterfat content 3.8-3.9%, live weight of cows not less than 600 kg, udder index of 43-45% and milk flow speed of 2.0-2.5 kg per minute by using Holstein-Friesian sires from the U.S.A. and Canada. By the beginning of 1985 the basic numbers of highly productive halfbreeds were bred at the leading breeding centres namely: Lesnoe and Petrovski in Leningrad region, Zarya Kommunizma in Moscow region and at Imeni Lenina collective farm in Tula region. Valuable sires have been bred in these herds as well.

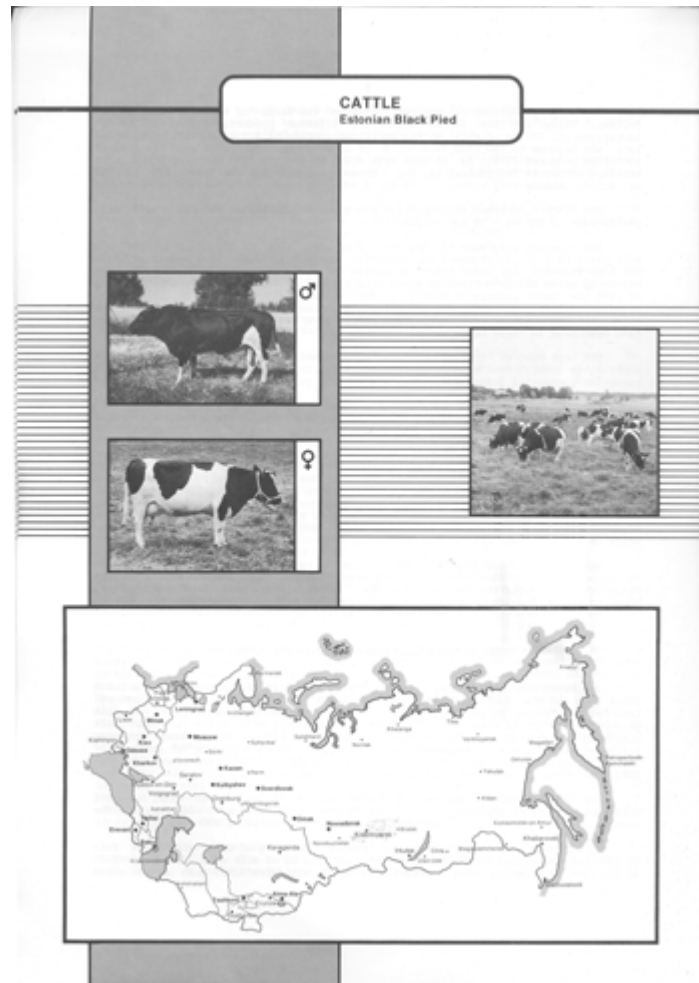
The best cows at the leading farms of the selection centre are united in the super-elite group. The milk production of these animals is 6.2-7.7 000 kg with a butterfat content of 3.99-4.27%. They are used to produce replacement bull calves.

The breeding establishments of this country have valuable sires. The milk production of their dams and of the female ancestors of their sires ranges from 6250 to 8300 kg with butterfat content 3.99-4.48%. The major suppliers of the replacement bulls for the breeding centres are the farms of Moscow, Leningrad, Perm, Chelyabinsk, and Sverdlovsk regions.

Bulls of more than 70 related groups and lines are currently in use; 45 of them are represented by small numbers of descendants and have only local importance. The sires of the lines Rikus 25415 (16.5%), Poseidon 239, and Oreshok 1 are widely used among the national lines. The descendants of the well-known Dutch bull Annas Adema 30587 through the related groups of Keimpe 48326/43454 (21.7%) and Frizo Vouter 44116 (8.4%) have been widely distributed (30.1%).

Studies at the breeding station Lesnoye and at the breeding farm Torosovo in the Leningrad region have shown that selection has had only a minor

effect on the frequency of specific erythrocyte antigens. This relative stability suggests that these polymorphisms are of adaptive significance.



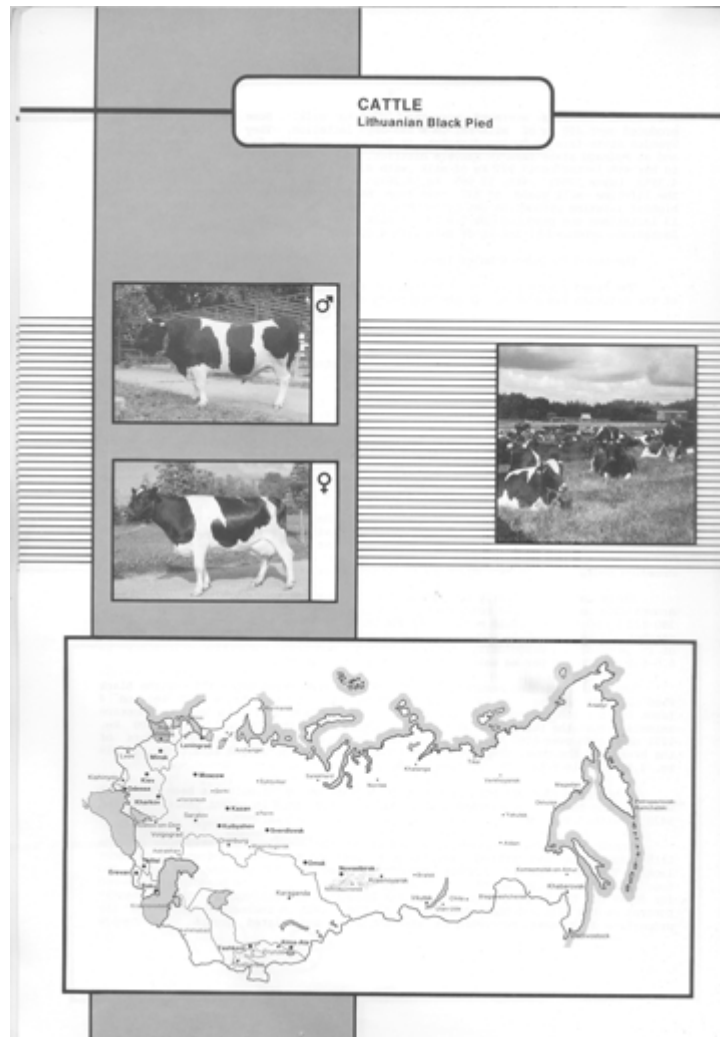
ESTONIAN BLACK PIED (Cherno-pestraya estonskaya)

The breed was developed by crossing the local cattle of Estonia with the Dutch Black Pied and the East Friesian beginning in the second half of the last century. Long-term inter se breeding of the crosses combined with selection for milk production led to the creation of a large group of Black Pied cattle with high milk yield but relatively low fat content. Since 1885 these cattle, named Estonian Dutch-Friesian, have been registered in a herdbook. To increase the fat content of the milk, bulls of high fat lines from the Netherlands have been used since 1930. In 1951 this group of cattle was renamed the Estonian Black Pied.

The characteristic features of these animals are: large size, compact conformation, strong skeleton, light, rather long head, deep and wide chest. The average live weight of cows is 500-600 kg; that of the bulls is 900-1000 kg.

In recent years 93 206 cows have averaged 3674 kg of milk with 3.84% fat; 10 604 cows registered in the herdbook averaged 4402 kg of milk with 3.96% butterfat; 48 000 cows at breeding farms averaged 4059 kg of milk with 3.83% fat; at the three best farms the cows averaged more than 5000 kg milk. Some cows of this breed produced over 400 kg of milk fat in a 305-

day lactation. They have been raised at Vyandra state farm in Pyarnu district, at Estonia collective farm of Paides district and at Pydragu state farm in Rakvere district. Cow Kolli 1265 from Vyandra produced in her 4th lactation 13 927 kg of milk with 4.47% fat; Atsi 1802: 3rd, 13 580 kg, 4.39%; Luyva 1294: 4th, 12 965 kg, 4.26%; Stella 1302: 4th, 11 838 kg, 4.65%. The lifetime milk yield of 847 cows from 69 farms exceeds 50 thousand kg. The highest lifetime production was by cow Mirvik 1462 from Estonia collective farm: in 13 lactations she produced 106 016 kg of milk with 3.91% fat. Cow Layki 1144 in 15 lactations produced 91 565 kg of milk with 4.02% fat. The breed includes 4 major lines. The breed zoning plan for the republic envisages the extension of the habitat of the Estonian Black Pied. At the beginning of 1980 the total number was 208 000.



LITHUANIAN BLACK PIED (Cherno-pestraya litovskaya)

The breed developed from crossing the local Lithuanian cattle with the Dutch Black Pied breed. The East Friesian and Swedish Friesian also participated in its formation.

In 1951 the Lithuanian Black Pied breed was approved as a planned one for this republic. It is bred at present in 25 regions of Lithuania. In 1980 the population of this breed was 740 000; it accounts for 57% of all cattle of recognized breeds in this republic.

The modern Lithuanian Black Pied cattle are characterized by a wide barrel and a strong constitution. There are animals with clearly pronounced dairy, intermediate, and dairy-beef conformation. The live weight of pedigree heifers is 513 kg and that of mature cows is 553 kg. The optimum live weight of cows on breeding pedigree farms is considered to be 600 kg or more.

These cattle are early maturing; the young stock are noted for their rapid growth rate and good feed conversion. Intensively raised calves reach a weight of 380-420 kg by the age 17-18 months. At the best farms the live weight of young stock reaches 433 kg. On performance test steers reach

the weight of 450-480 kg by the age of 15 months; average daily gain is 1050 g, and feed conversion efficiency is 6.6-6.8 feed units per kg gain; dressing percentage is 58-59.

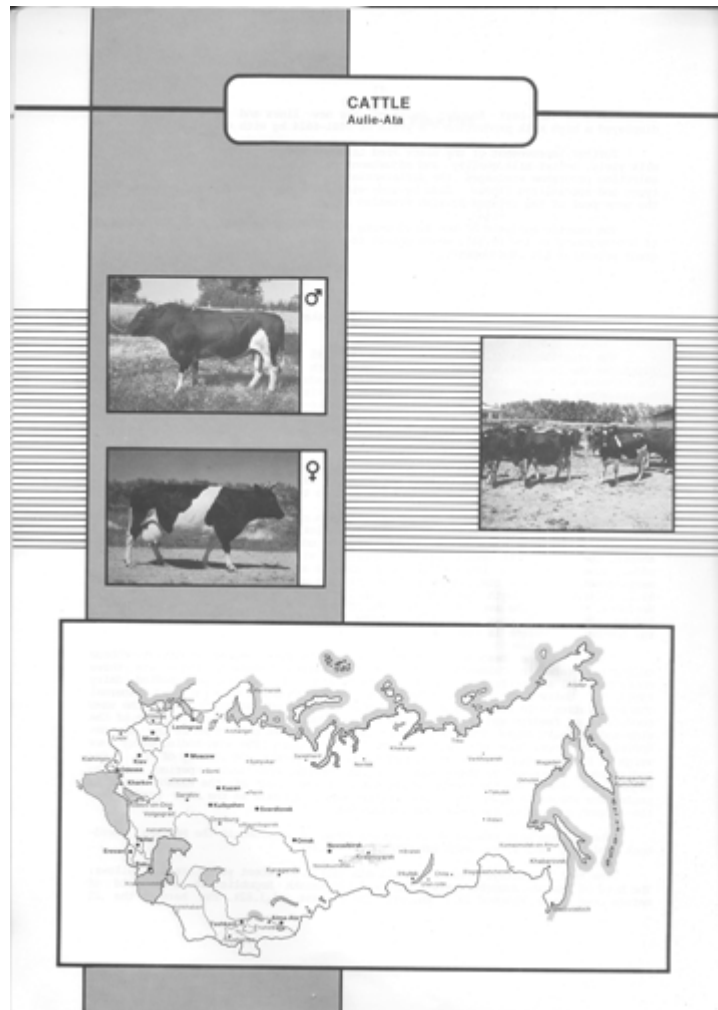
The milk recording results' point to the high productive potential of the Black Pied Lithuanian cows: on 64 farms the annual milk yield averages 4000 kg; on 4 farms it is 4500 kg and in 2 farms it is 5000 kg per cow. The most productive animals within the breed are as follows: 9246 cows with milk yields over 5000 kg, 1251 cows with over 6000 kg, 179 cows with 7000 kg and more. The record holders of the breed are the cows Yava 6297 (3rd, 11 201 kg, 4.08%), Tserke 6163 (4th, 10 229 kg, 4.01%), Lele 6269 (4th, 9167 kg, 4.78%).

A highly productive herd with high butterfat content of milk has been formed at Vilnius stud farm. The average milk yield for this herd in recent years has been 5428 kg with 4.19% fat.

Dutch cattle have considerably influenced the genealogical structure of the Lithuanian Black Pied cattle: initially the best Dutch sires were founders of most lines. Then the creation of their own lines began. In 1979 six new stud lines and four related groups accounted for 42.4% of the cows kept at the breeding farms and for 65.4% of the bulls that belong to the breeding establishments. The butterfat content of the milk of the Lithuanian Black Pied cows is increasing along with the proportion of animals belonging to the new lines and related groups. The female descendants of the best founder bulls of the new lines and related groups have displayed a high milk production - a yield of 5881-6624 kg with 4.19-4.42% fat.

Further improvement of the Black Pied Lithuanian cattle aims at the increase of milk yield, better milk quality and adjustment to twice-daily machine milking. The selection programme envisages the differentiation of the breed into conformational types and specialized lines. Side by side with pure breeding it is planned to use the gene pool of the related British Friesian breed.

The genetic analysis of the breed using blood groups has shown that the degree of homozygosity is low (6.3%), which points to a high heterogeneity of the breed and great potential for improvement.



AULIE-ATA (Aulieatinskaya)

The creation of this breed started in 1885 in the Aulie-Ata district of Kirgizia. The local Kazakh cattle were crossed with the Dutch Black Pied breed and the crosses were bred inter se. The crossbreds gradually spread to other regions of Kirgizia and Kazakhstan and to some areas of Uzbekistan. They were recognized as an official breed in 1950. Planned breeding of Aulie-Ata cattle began in 1935 when collective breeding farms and state breeding stations were set up; local cows were initially crossed with East Friesian bulls and the crosses were raised under improved conditions of feeding and management.

Modern Aulie-Ata cattle are well adapted to the local natural and climatic conditions; they can easily withstand hot weather, can be kept on mountain pastures, and they are more resistant than imported breeds to theileriosis and piroplasmiasis.

In conformation the Aulie-Ata resembles Dutch cattle: the body is long, with a light head, small horns, and thin neck with few wrinkles. The top line (withers, back and loin) is level with slightly raised rump. The udder is medium in size and cup-shaped. Coat colour is mainly black, frequently with

white spots on the abdomen, udder, lower chest and legs; light grey animals are also observed. The average measurements of mature cows are as follows (in cm): withers height 128.8, chest depth 69.2, oblique body length 153.0, heart girth 186.2, cannon bone girth 18.7 (National Herdbook, vol. 4). The average live weight of mature cows at breeding farms is 480-510 kg; the heaviest cows weigh 575 kg. The live weight of mature bulls is 810-960 kg; the maximum weight is 1160 kg.

In one of the best herds, that belonging to the breeding centre at Pobeda collective farm in Chimkent region of the Kazakh Republic, there are three conformational and performance types: narrow-bodied dairy (31.4%), wide-bodied dairy (38%), and dairy-beef (30.6%). The types differ in both external and internal characteristics - in both live weight and milk and beef productivity. Under the same conditions of feeding and management the most productive mature cows are those of the wide-bodied dairy type; their milk yield is 20.5% higher than that of the narrow-bodied dairy cows. They also have more regular lactations. The wide-bodied dairy cows weigh 33 kg more than the narrow-bodied type. The reproductive ability of the wide-bodied cows, measured by the average calving interval and service period, is also higher. For farms of the "whole milk zone" in the south of the Kazakh Republic preference should be given to wide-barrelled dairy animals as the most productive, the largest and having the best food conversion.

The average milk production of mature cows, as recorded in the National Herd-book (vol. 4), is 3735 kg, with fat content of 4.01%.

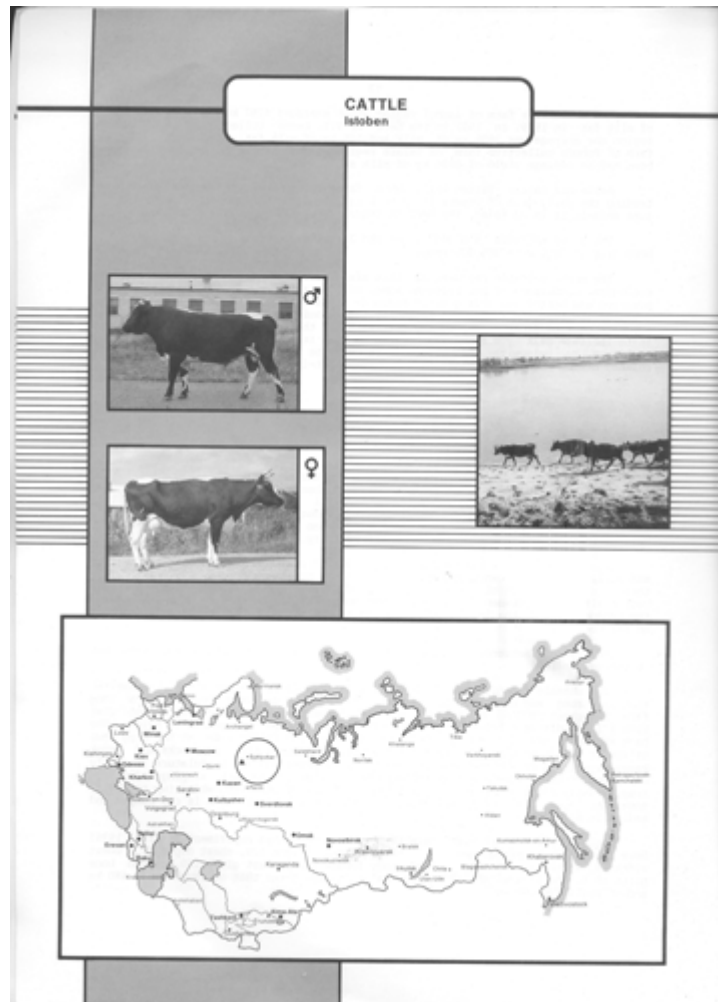
The most productive herds of Aulie-Ata cattle in recent years are as follows:

The herd of Jambul sugarbeet state farm of the Kazakh Republic: the milk yield of mature cows there reached 4971 kg, with fat content of 3.82%. The herd at the 22 Partsyezd collective farm of Jambul region which averaged 4157 kg of milk and 158 kg of milk fat in 1979. In 1982 in the herd of V.I. Lenin collective farm of Jambul region the average was 3806 kg of milk and 146 kg of milk fat. In 1983 the breeding farm of Pobeda collective farm of Talass region of the Kirgiz SSR with 705 head of cows had an average yield of 3636 kg of milk and 136 kg of fat.

Aulie-Ata cattle fatten well. When fattening on pasture without additional feeding the daily gain of steers is up to 1 kg. The dressing percentage is 52-56; for some animals it is up to 60. The beef is tender, very tasty, highly nutritious.

The breed includes 6 blood lines and 2 related groups. Its numbers at the beginning of 1980 were 265 000 head.

The most valuable features of this breed are as follows: adaptation to the ecological conditions of the breeding zone, high vitality and strong constitution. To preserve and better use this genetic resource it is necessary to improve the economic basis of the breeding farms, to intensify the techniques of selection, to set up an adequate bank of frozen semen of the best sires of the breed. The major breeding aim is to increase milk yield and fat content and to improve the conformation and beef qualities. To help with this programme it will be expedient to use the blood of related breeds - the Dutch Black Pied and the Holstein.



ISTOBEN (Istobenskaya)

The breed was established in the former Vyatka province (now Kirov region) by crossing the local Great Russian cattle with the Kholmogory, Swiss Brown, Dutch and East Friesian breeds. The development of dairy husbandry in this region was aided by a good feed base (from flood lands in the alluvial plains of the Vyatka and Moloma rivers), the near-by markets for selling dairy products and organized butter-making. The breed was named after the settlement of Istoben where a large creamery was set up; the best herds were concentrated in its vicinity.

The importation of the Kholmogory and Swiss Brown breeds began late in the 19th and early in the 20th century; later the Yaroslavl breed was imported. During 1936-37 there was an infusion of East Friesian blood. Nevertheless, crossing of the local cattle with the above-mentioned breeds was quite limited and had no major effect on the productivity of the local herds. During selection the major emphasis was placed on fat content. In 1935 the National Herdbook of the Istoben cattle was opened. The breed was recognized in 1943.

The animals of this breed have clearly-defined dairy features; their constitution is strong and conformation compact. The head is somewhat

coarse with a long face. The chest is deep and long but not wide enough; the ribs are well sprung, flat with a large distance between them. The withers are narrow and medium in height. The back and loin are long enough; the rump is long and fairly wide at the hips but narrow at the pinbones. The legs are frequently wrongly set; cow hocks and knock knees as well as bowed hind legs are occasionally observed. The musculature is poorly developed. Common defects are as follows: narrow chest, sway back, sloping and narrow rump, wrongly set legs. Coat colour is mostly black or black-and-white (up to 70%), sometimes (about 25%) red or red-and-white. The udder of most cows is cup-shaped and medium in size.

Istoben cows on the best farm (Kirovsk Lugobolotnaya experiment station 1976) have the following measurements (in cm): withers height 129, chest depth 70, chest width 49, width at hips 51, oblique body length 162, heart girth 190, cannon bone girth 18.5. The live weight of newborn calves is 26-30 kg; that of cows is 430-480 kg and of bulls 720-790 kg.

According to the results of the 1981 evaluation the average annual milk production of pedigree animals (mature cows) was 3107 kg, and the fat content was 3.83%. The best breeding herd of the Kirovsk Lugobolotnaya experiment station produced earlier (in 1976) 4238 kg of milk with 3.96% fat. The best cows in this herd produced during their best 305-day lactation 5990-6286 kg of milk with 4.05-4.15% fat. The 1200 cows at the 50-letiyе SSSR breeding state farm in Orichevsk district of Kirov region averaged, in 1983, 4023 kg of milk and 156 kg of butterfat.

Some Istoben cows have reached a record milk yield. The cow Beluga KIO-64 during her 6th lactation produced 8127 kg of milk with 4.07% fat; over 12 lactations she produced 53 278 kg of milk with 3.90% fat. Fara K10-1315 produced 8366 kg of milk with 4.98% fat.

Istoben cattle have satisfactory beef qualities.

The structure of the breed comprises 6 major lines.

The valuable features of this breed are its good adaptation to the local ecological conditions and resistance to infectious diseases. Cases of leucosis among Istoben animals are 20 times less than among the Black Pied breed.

The number of Istoben cattle on 1 January 1980 was 106 000 head.

Numbers have decreased because these cattle are not competitive compared with the leading dairy breeds.

In accordance with the long-term plan of Istoben cattle breeding in Kirov region a conservation herd was established in Istobenski breeding state farm in Orichev district. The main purpose of this farm is to produce valuable bulls of the tested lines. The major technique is outbreeding; moderate inbreeding may be used within lines followed by line crossing. To proceed with the breeding of the approved lines of this breed, a bank of deep-frozen semen of the 24 best sires representing the leading lines is being set up.

With complete diet feeding the Istoben breed can be rapidly improved by crossing with the related Dutch breed.