

KUSTANAI (Kustanaiskaya)

The Kustanai was developed in the steppes of western Kazakhstan at the collective-farm and state-farm studs. The breeding nucleus is concentrated at Kustanai and Maikulski studs. Its development dates from 1887 to 1951. The first date is the year of establishment of the state-owned stud, the Turgai; it was followed by the Kustanai in 1888 and the Orenburg in 1890. The last is the date of official recognition of the Kustanai breed. The new breed was developed by crossing native Kazakh steppe horses with Don, Strelets, Astrakhan (improved Kalmyk) and halfbred Thoroughbred stallions. Nevertheless, at the onset the crossbreeding was unsuccessful. Only after the nucleus of local brood mares, improved by pure breeding and regular creep-feeding, was formed at Kustanai stud did crossbreeding with Thoroughbreds yield a positive result. In the 1920s they began to develop a new breed at Kustanai stud. The work was continued in the 1930s with two systems of management. The first involved keeping in stables and on pastures, winter grazing in good weather, abundant hay and concentrate

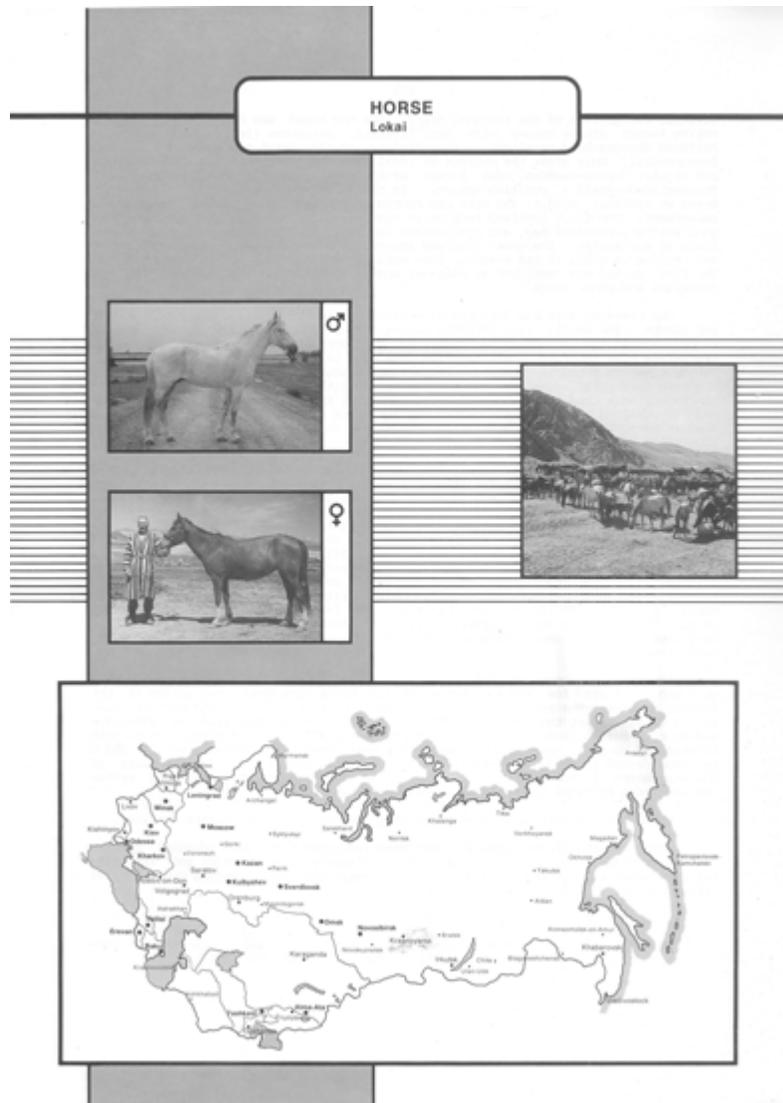
feeding, hand mating and weaning of the foals at 6-8 months. The other involved improved taboo keeping, year-round grazing and keeping in sheds in bad weather, free mating, hay and concentrate creep-feeding. The first method was employed at Kustanai and Troitski studs and the second at the Maikulski and other studs.

The breeding work was directed at developing simultaneously two types - saddle and steppe. The saddle type included horses with a high proportion of Thoroughbred blood, while the steppe type consisted of Thoroughbred-Don-Kazakh and other crossbreds bred inter se. All saddlers were put to speed tests at the hippodrome. The Kustanai is found in Kustanai region, in the south of Chelyabinsk region and in southern Kazakhstan. The breeding nucleus varied little. In 1930 the breeding herd at the Kustanai stud numbered 1000 mares. In 1981 the Kustanai and Krasnodon studs had 726 purebred mares. Seven-hundred and forty-six Kustanai pedigree stallions were used in pure breeding and general improvement. In 1980 the total Kustanai horse population numbered 40 200.

The modern Kustanai is a massive horse combining the best characters of a saddler and the pronounced basic steppe lineage. Its features include a straight medium-sized head, wide jaws, medium-long and occasionally short poll; medium-long, straight and low-set neck; wide and well-muscled medium-high withers; straight, wide and short back; flat, solid and well-muscled loin; medium-long, occasionally short, nicely-rounded croup; long and high-set shoulders; wide and deep chest; correctly-set legs, well-developed joints, hard hoofs; strong tendons and ligaments; clean and hardy build. The Kustanai shows remarkable fitness in a continental climate. The measurements (in cm) of stallions at studs in 1980 were: height at withers 163, oblique body length 161, chest girth 188, cannon bone girth 20.3; mares: 160, 159, 189 and 19.9 respectively. The largest horses are at the Kustanai stud. The measurements of animals kept in taboos were much lower. At the Saryturgai stud the mares measured 152, 156, 185, 19.2. Colour: bay, chestnut, reddish-grey, brown.

The Kustanai shows remarkable speed. Its records are 1 min 40.7 sec for 1600 m, 2 min 34.7 sec for 2400 m. Horses of the basic type show good action in the Russian harness. The record of maximum draught power is 456 kg; the average time with a 22-kg load at the trot for 2000 m is 6 min. The Kustanai also has admirable endurance. For instance, the stallion-Storm covered 178 km in 15 hours; Chervonets covered 100 km in 4 hours 1 min 5 sec. The best result of a 24-hour ride is 286.1 km. The record of a 6-day 420-km ride is 22 hours 32 min 31 sec. The fertility of Kustanai mares at some studs reaches 90%. Irrespective of the management system employed, the Kustanai longevity often exceeds 20 years.

The breed consists of 3 intra-breed types, 5 sire lines and 6 mare families. Three volumes of the studbook have been published. The main breeding centres are the Kustanai regional experiment station (formerly a horse stud) and Krasnodon and Saryturgai studs. The breed has good prospects for pure breeding with limited corrective crossbreeding by the Thoroughbred.



LOKAI (Lokaiskaya)

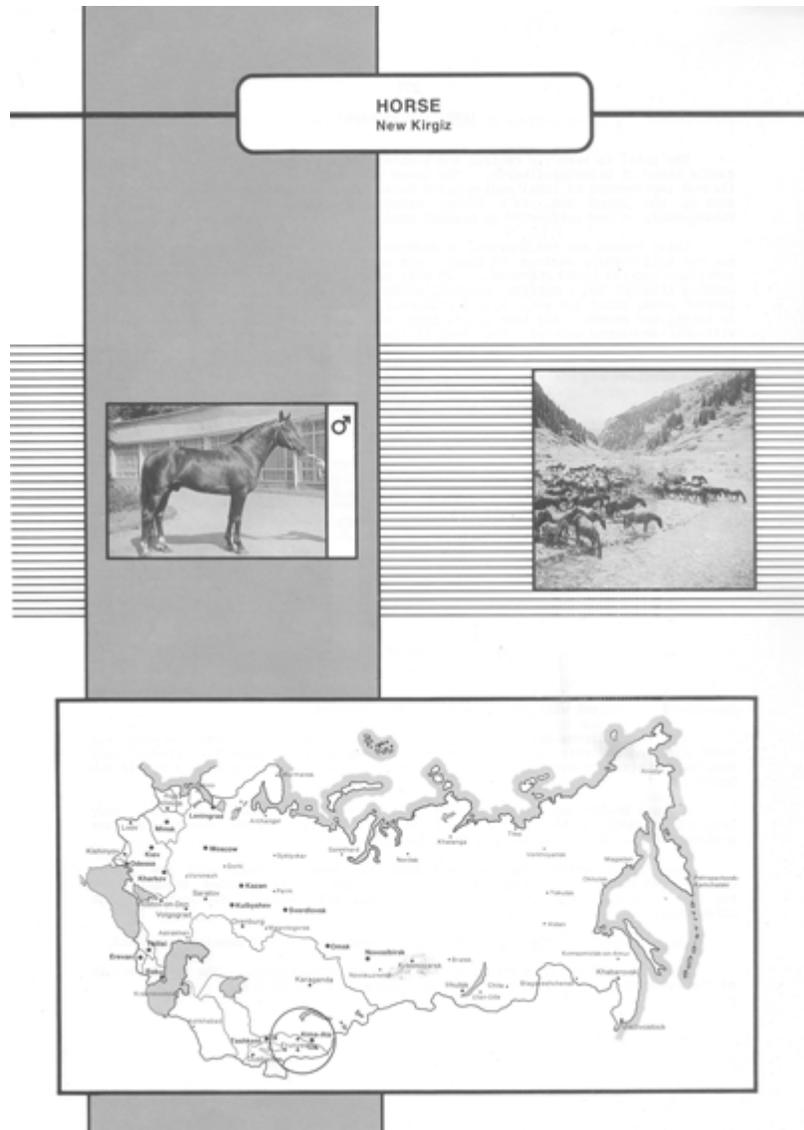
The Lokai is bred in central and southern Tajikistan; it is classified as a saddle breed of Oriental lineage. The breed was developed by the Uzbek Lokai tribe through improvement of local medium-sized horses using various Central Asian breeds, such as the lomud and, to a lesser extent, the Akhal-Teke and the Karabair. Subsequently it was influenced by Arabian stallions brought from Bukhara.

Lokai horses are the shortest in stature among the Central Asian breeds. They are not sufficiently uniform in type; the head is sometimes coarse and bulky and sometimes lacking breed character. In most cases the head is short, the profile is usually straight but sometimes slightly arched, the poll short, the neck medium in length, lean, often low set, with a prominent throat-latch. The withers are medium in height and broad; the back is straight, wide and short; the loin is prominent with well-developed muscles. The croup is long, often sloping and well muscled. The chest is deep and

broad, the ribs rounded, the groin short. The legs are solid with hard hoofs. The legs are not always properly set; the forelegs are often splayed and the hindlegs are often cow-hocked or bowed. Coarse joints and general flabbiness are found in horses of large size. Bay, grey and chestnut are the most widespread colours. The surface hairs are characteristically S-shaped. The average measurements (in cm) of Lokais are: stallions - height at withers 145, oblique body length 145, chest girth 162, cannon bone girth 19; mares: 142, 144, 162 and 18 respectively.

Lokai horses are characterized by good action and extreme hardiness. They have great endurance under saddle and pack and in national games, particularly in kok-par. They reach maturity late, but respond well to improved feeding and management. When purebred Lokais were reared in good stable conditions, by the age of 2 1/2 years they surpassed their contemporaries reared in taboos by 6 cm in height at withers.

A new breed of saddlers is now being bred in Tajikistan by mating Lokai mares to Arabian and Thoroughbred stallions.



NEW KIRGIZ (Novokirgizskaya)

This breed was developed in the state and collective farms of Kirgizia by crossing local horses with the Don and the Thoroughbred.

New Kirgiz horses are well adapted to highland conditions. They are used for stock work and for meat and milk production. They are short-legged and massive and they have a strong constitution. In type and conformation they closely resemble Don horses.

Average measurements of stallions (in cm) are: height at withers 156, body length 158, chest girth 188, the cannon bone girth 20.5. Mares' measurements are somewhat lower: 151, 155, 180 and 19 respectively.

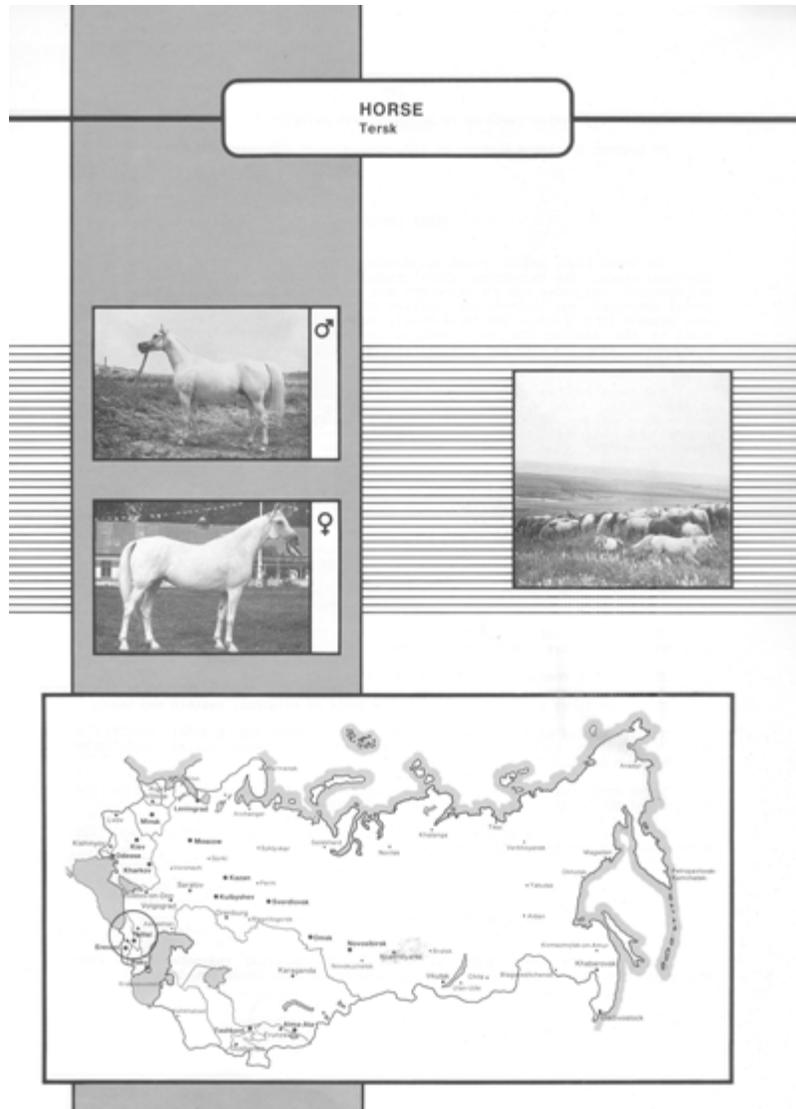
New Kirgiz horses have a medium-sized clean-cut head with low neck, well-defined withers, straight and level back and heavily muscled croup. The top-line is level. Legs are clean-cut with tendons well defined. Sickie-hocked legs often occur.

Three intra-breed types are recognized: saddle, thick and massive, standard.

New Kirgiz horses have performed well on hippodrome trials. The speed records of the breed are: 1600 m in 1 min 48 sec, 2400 m in 2 min 44.2 sec.

Massive type mares yield up to 20 kg of milk daily.

At present the breed numbers 56 650, including 10 700 purebreds.



TERSK (Terskaya)

The Tersk light saddle breed was developed during the 1920-40's at Tersk and Stavropol studs. The foundation stock consisted of the Strelets stallions Tsilindr and Tsenitel and mares of the Arab-Don and Strelets-Kabarda complex. Since the initial gene pool was limited, the Arabian stallions Koheilan IV, Marosh and Nasim were brought in to produce the Tersk breed. Selection was directed toward a breed as smart as the Arabian but more massive and better adapted to improved taboon management. Crossing with the Strelets stallions followed by inbreeding produced the new breed.

The Tersk type is quite close to the Arabian. Typical are the light head with straight face, wide forehead and jaw, long poll, medium-long high-set neck, medium-high withers, medium-long, flat and wide back, short and wide loin, nicely rounded and well-muscled croup, deep and wide chest, long and

sloping shoulders, correctly-stanced clean legs, thin hair cover, mane and tail. Colour: grey, bay, golden chestnut.

The measurements (in cm) of breeding animals at Stavropol stud are as follows: stallions - height at withers 160, chest girth 187, cannon bone girth 19.9; mares: 157, 182 and 19.3 respectively. Tersk horses perform well both in flat racing, classic events and, particularly, in the dressage. They are widely used in circuses. The breed has scored the following records for various standard distances 1600 m - 1 min 48 sec, 2400 m - 2 min 46 sec and 3200 m - 3 min 47 sec.

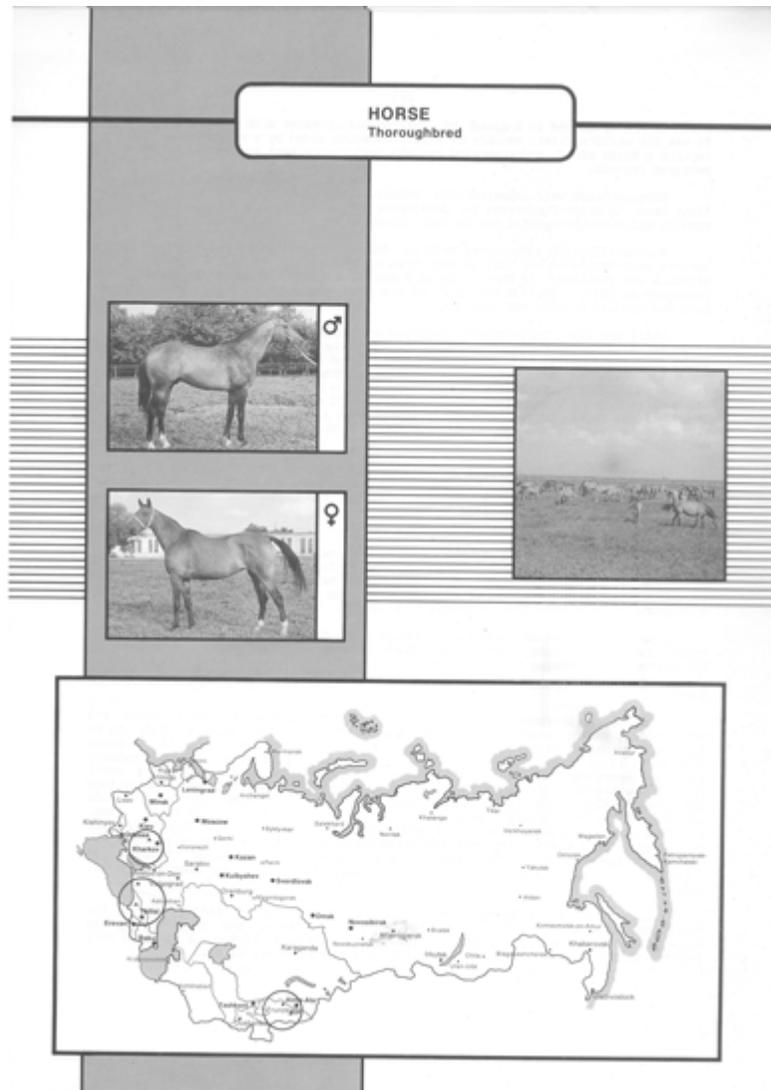
Tersk horses are known for their remarkable endurance. All the horses which participated in a 310-km distance race easily reached the finish. The Tersk has solid build and sound health. It is a long-lived horse. Average fertility: 70-75 live births per 100 mares.

The breed is composed of 5 sire lines and 5 mare families.

There are three intra-breed types: the basic or original, eastern and heavy. The frequencies of the transferrin types in the breed are D 0.52; F 0.24; H 0.67; O 0.15; R 0.01; M 0.03. Among the 13 saddle breeds raised in the USSR transferrin M occurs only in the Tersk breed.

Tersk stallions are widely used to improve native mountain breeds such as the Deliboz and the Lokai. The Tersk is also in demand for export.

Concentrated at one stud - Stavropol - the pedigree nucleus is very small (250 mares) and requires protective management.



THOROUGHBRED (Chistokrovnaya verkhovaya)

Owing to its outstanding performance and breeding characteristics the Thoroughbred occupies the leading position in international horse breeding. It was developed in England by crossing native mares with Oriental stallions. It was the world's first example of animal breeding aided by a government effort to improve a horse breed and supported by the performance test system and centralized pedigree records.

Thoroughbreds were imported into Russia in the late 18th century. They were first used by Orlov-Chesmenski in developing the Orlov Riding horse. After that Mosolov and Muraviev-Apostol set up their purebred Thoroughbred studs.

During 1772-1808 races were held in Moscow. The first Russian horse racing society was instituted in 1825 in the town of Lebedyan. Volume II of the English studbook was published in Russia in 1826 and the Moscow horse racing society was organized in 1834. In 1836 Volume I of the

studbook, which recorded Thoroughbreds born and used in Russia, was published.

Until the 1880s Thoroughbred breeding was quite limited; however it quickly began to develop following the introduction of the totalizator. The All-Russian Derby race for 2 versts 133 sazhen was established in Moscow in 1886; in 1900 the range was extended to 2 versts 144 sazhen. Other traditional races were also introduced. This resulted in an increase in the stock of breeding mares. The studbook recorded 432 mares in 1882; 1688 in 1900 and 2800 in 1914. Breeding of Thoroughbreds spread to remote parts of Russia such as Central Asia and the Far East. During World War One and the Civil War, Russian Thoroughbred breeding was almost destroyed.

Restoration of Thoroughbred populations began after the 1917 revolution. The state studs, including the Kuban-Chernomorski (later renamed "Voskhod"), were established in 1921. By 1925 the studs managed to gather 206 mares which were entered into the studbook in 1926. In 1940 the mare population at studs numbered 800.

In 1924 the races and competitions for the main traditional prizes including the M.I. Kalinin prize - the most prestigious prize for two-year-olds over a distance of 1600 m - were resumed. Competitions were also held for the All-Union Grand Prize for three-year-olds over 2400 m (equivalent to the English Derby) and for four-year-olds and older over a distance of 3200 m. The Thoroughbred was used in developing other breeds such as the Russian Saddle horse, Budyonny, Kustanai, New Kirgiz, Anglo-Kabarda and Ukrainian. It is used in corrective crossbreeding to improve the performance of various breeds. In the USSR there are 1400 mares and 110 stallions bred at 12 studs and at 10 horse breeding farms.

The modern Thoroughbred in the USSR is a proportionally built large and strong-boned riding horse. The average measurements (in cm) of mares at studs are as follows: height at withers 161; oblique body length 160; chest girth 185; cannon bone girth 19.5; stallions: 163, 163, 188 and 20.25 respectively. The Thoroughbred has a well-proportioned, clean-cut head, medium-long poll, wide jaw and long neck; prominent withers, short sloping shoulders, long forearm, short cannon; medium-long and normally sloping pasterns, hard, coloured hoofs; long thigh and cannon; wide and deep chest, well-sprung ribs; well-muscled, medium-long back and loin; long, wide and normally sloping croup. All joints are well developed. The Thoroughbred is generally a clean horse with well-defined musculature. However, there is a marked variation within the breed from the standard type both to the "noble" Thoroughbred type and to a simple horse. Common colours: bay, bay-brown, light chestnut, brown, black; grey is rare.

Thanks to its endurance which is the highest among saddle breeds the Thoroughbred scores speed records at various distances and wins top class competitions. Its absolute record for 1000 m is 58.9 sec; 1200 m - 1 min 10.8 sec; 1600 m - 1 min 36 sec; 2400 m - 2 min 27.2 sec; 3200 m 3 min 22 sec.

Genetic parameters of speed are: the average speed of two-year-olds was 12.75 sec for 200 m; standard deviation 0.4 sec; coefficient of variation 3%; heritability 0.25-0.35; age repeatability 0.65 for the two and three year olds, 0.50 for the two and four year olds, 0.7-0.8 for the three and four year olds; environmental repeatability coefficient - 0.7-0.9. The potential maximum

speed in the modern breeder population (calculated from the record speed corrected by the heritability and repeatability) is 56 sec for 1000 m. Although the Thoroughbred speed records made in the USSR are lower than the European records many USSR-born horses have won important international prizes. Since 1953 USSR Thoroughbreds have won the main prize of the International Congress of Socialist Countries 19 times, the European prize in the FRG 4 times and the great Pardubice steeplechase 8 times.

The Thoroughbred is particularly sensitive to proper management and breeding conditions. It can be kept only in stables and on improved pastures. Because of their extremely high growth rate Thoroughbreds suffer from insufficient feeding more than other breeds and may quickly develop irreversible retardation of growth and bone formation. Even minor faults in the management of mares may cause decline of fertility. It is considered by many that normally the Thoroughbred has low fertility. This may not be quite true because a number of studs manage to achieve 88-90% of live births. The high requirements of the Thoroughbred in management and feeding imply low disease resistance. It is susceptible to infectious rhinopneumonia which provokes abortions, to bronchial pneumonia in foals which may be fatal, to various stresses, and, particularly, to "transportation stress" which may cause colds during transport to a competition site.

Thoroughbreds are very sensitive to inbreeding. Even low inbreeding coefficients (3.12% or more) may result in a reduction in endurance and fertility.

At the same time Thoroughbreds are long lived. Up to 10% of mares at studs retain their reproductive capacities for 20 years or more. The stallion Budynok lived 34 years; the mare Sosna III lived 31 years and founded a most valuable family by producing 17 foals.

The Thoroughbred shows remarkable adaptability. It is bred in Lithuania, Ukraine, North Caucasus, Central Asia and Kazakhstan. It has acclimatized admirably in mid-mountain areas and spread to mountain ranges.

The physiological adaptability of Thoroughbreds is vividly demonstrated by high and versatile working qualities. The breed shows the highest gas-energy exchange ratio. The Thoroughbred has 20% more blood than the Don and its blood contains 25% more haemoglobin. As its blood flow rate and the heart's systolic volume are higher, the oxygen supply to the organism is double.

During intensive training and race testing Thoroughbreds display excellent adaptability to oxygen deficiency represented by a high rate of the venous blood oxidation - 86%, and an admirable ability to sustain the impact of low oxygen (5%) gas mixtures during artificial hypoxia.

The allele pool of blood groups by loci is as follows:-, A with the Aa antigen 0.91; A 0.Q8; C with the Ca antigen - 0.64; C 0.35; D- D^{r3-5} 0.29; D^{Br3-5} 0.21; D^e 0.07; D^d 0.06; D^{de} 0.11; D^{dr} 0.27; D^{dh} 0.01; K - K^a 0.05; K 0.94. In the D system the D^{ad} is absent. There is a high polymorphism in the serum protein system. The transferrin system has practically equal concentrations of alleles F, D and 0. Transferrins H and P are rare and M is absent.

The breed is made up of home-bred lines, international lines and mare families. The home-bred Granit II, Duglas and Brimston lines are distinguished by remarkable endurance and high adaptability. Among the mare families the most important are three at Voskhod stud in Krasnodar

territory, one at Onufriev stud in Kirovograd region of the Ukraine and one at Kabardin stud in the Kabardino-Balkar Autonomous Republic. These are the three best studs.

The breeding system used combines line breeding with selection and pair matings. The international exchange of breeding material is used to increase heterozygosity. Breeding animals are continually being exported and imported.