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**THE HISTORY OF FORMATION AND TRANSFORMATION OF  
MOUNTAIN HORSE BREEDS OF NORTHERN CAUCASUS OF RUSSIA  
(CONCERNING KABARDIAN BREED OF HORSES)**

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## CHAPTER V

### STRUCTURE OF THE KABARDIAN BREED OF HORSES

The Kabardian breed of horses, including cross-breeds, represented by more than 40 000 heads at the moment and distributed over a vast area of various industrial and ecological conditions of foothills and mountains of Northern Caucasus can be characterized by the diversity of intra-breed groups and the complexity of structure.

Highlander of Northern Caucasus for ages distinct numerous types within their horses, singling breeds "HUARA", "SHAGDI" and others out of horses "ALASHE".

In the preface to his book "Materials for the description of places and tribes of Caucasus (Volume 25, Tiflis, 1898) L.G. Lopatinsky mentioned that "Success or misfortune of the raid depends on the quality of horse – its breed – sometimes hero dies riding simple horse alashe. That is why Circassian so thoroughly distinguishes horse breeds: whites, chestnuts, Kudashev's, huara, Tramov's, Dandurov's, Loov's, Kuraleev's, Osanov's, sholohs, Bekanov's .

The most known horses before the October Revolution were from the studs of:

- ✓ Tramov, Loov – in Cherkessia;
- ✓ Sholoh, Atazhukin, Abezyvanov, Nauruzov, Dzherashtiev, Abukov – in Kabarda.

The horses from Tramov's (brand ⚡) and Loov's (brand ○) herds were very famous even in XVIII century (*Guldenshtedt /1787/, Pallas /1793/, Benningsen /1794/, Dubenskii /1896/*)

The Loov's horses, witnessed by contemporaries, were not beautiful but of great endurance and courageous\*. (\* newspaper "Kavkaz", №43, 1853)

The horses from the stud Sholoh (village Kogolino, brand ⚡), originated by legend from Kabardian mares and Arab stallion, were of average height, strong with quite thick, broad cast, had short neck and light dry head of strict profile (*Pallas /1793/*). **Fig. 111.**

**Fig. 111. Kabardian mare Sholoh, dark bay, born 1928, with Sholoh brand /144-155-192-19/ from collective farm at village Nizhny Kurkuzhin. 1938.**



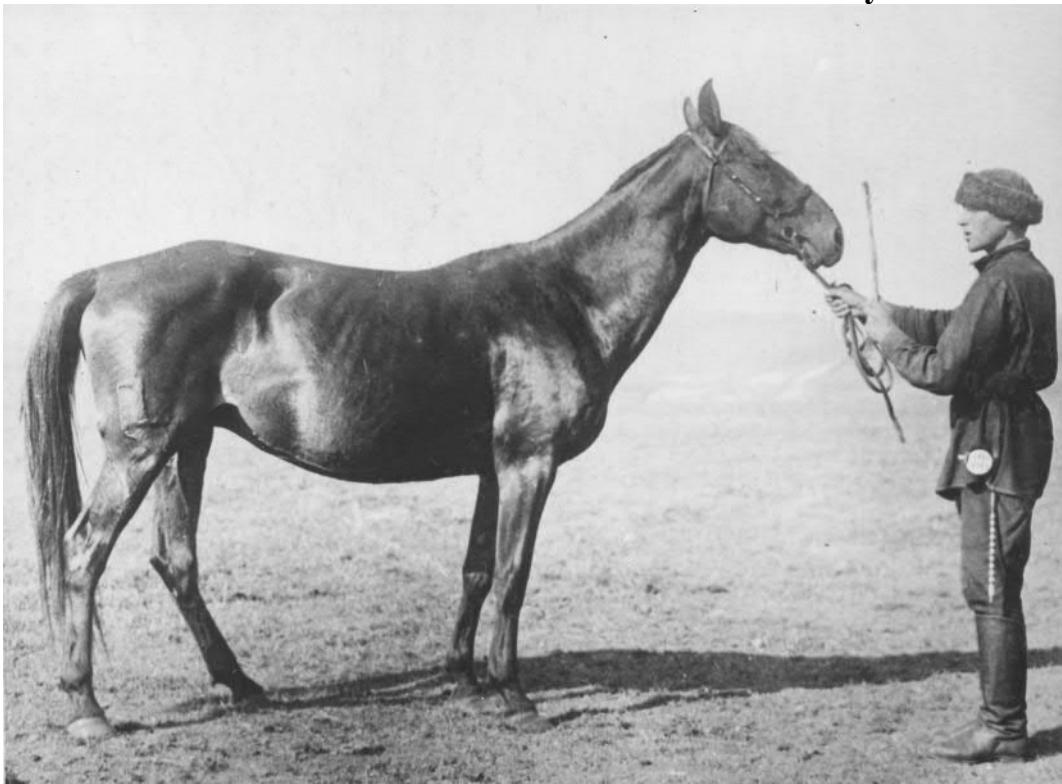
The Atazhukon's horses /village Zayukovo, brand , usually were of grey color and had clear spine, were fixed well and possessed strong limbs.

The Abezyvanov's horses /village Verhny Kurkuzhin, brand / were obviously graded up. Abezyvanov owned Thoroughbred stallions and provided stable education. /Christianovich, 1926/.

The Nauruzov's horses /village Kyzburun II, brand , mainly of dark bay or black brown color, had long hook-nosed head, not very big but mobile ears, thick neck, massive body, wide and broad chest of rounded ribs and wide non-flabby croup. The withers were averagely developed, the shoulders askew, legs dry and thin.

The Dzherashtiev horses /village Khasaut, brand , contrary to Sholoh and Nuruzov's horses were of light dry rider cast of some awkward shapes. They had quite large long (especially in the facing part) narrow wide and hook-nosed head with characteristic linear addition to the neck. The eyes were live, ears big and mobile, neck thin, sometimes corvine, withers high, spine straight but little extended, iliac short, croup flabby, rather narrow wide chest of quite flattened rib, limbs long and dry with good tendons. The mane and tail were quite dense but hair was thin. The color was light bay, rarely dark bay, without marks. Dzherashtiev's horses until recently constituted the best type of the Kabardian horse, highlighted, as some horse breeders say, by the infuse of English or Arab blood. **Fig. 112.**

**Fig. 112. Kabardian mare 636 Zhansurat 139, dark bay, born 1928, with Dzherashtiev brand /151-178-18/ from Malkinsky stud farm. 1931.**



The Abukov's horses /village Zalukokoazhe, brand Ⓛ/ were known as the fastest horses in Kabarda. “

The herds and stud farms of royalties and landlords were destroyed during Civil War. The above mountain “breeds” also disappeared. However, part of horses differing on Caucasus brands survived and was used in small private herds at first and at collective and stud farms later.

### **OFFSPRINGS OR ECOLOGICAL TYPES**

The large aboriginal breeds are worth dividing to offsprings, breed groups and intrabreeding types when practicing with them. There are other breed groups originated in different conditions at different places of Northern Caucasus besides the Kabardian and Karachay intrabreeding types within the Kabardian breed of horses. However, the production necessity and the state of livestock do not require their separation.

At the moment, the *Kabardian and Karachay intrabreeding types* of the KABARDIAN BREED of horses became very close as a result of their crossing at collective and stud farms.

## **EXTERIOR-CONSTITUTIONAL TYPES**

The following exterior-constitutional types can be differed when rearing Kabardian horses on selection purposes:

- ✓ Kabardian eastern /KBD-E/
- ✓ Kabardian characteristic /KBD-C/
- ✓ Kabardian dense /KBD-D/

**The Kabardian eastern type** originated at foothills of Kabarda as a result of introductory crossing to stallions of eastern origin and can be characterized by dry body of pronounced oriental race. The head is light, but little bit extended and hook-nosed. The eyes are open, expressive. The ears are long, sharply meeting on the top, with lyre-shaped cut. The neck is of average length, well shaped, sometimes with little apple. The withers are of average length and height. The croup is long but lowered. The body is of average wide and ribbing. The limbs are dry with well expressed tendons. The pasterns are quite long and inclined. The hoof is small of regular shape and solid. The leather and hair are thin, the amount of hair in mane and tail is normal. The color is predominantly bay. The temperament is live, energetic. The moves are easy and elastic. **Fig. 113.**

**The Kabardian characteristic type** is the most distributed “mean type of horses in Kabarda. The lines of steppe origin appear in this type. The horses of this type are not so dry as those of eastern type. The head is big and more hook-nosed. The eyes are less open. The ears are shorter and not so lyre-shaped. The neck is shorter, fleshier and launches earlier. The spine is straight, solid, little bit extended. The croup is lowered. The body is wide. The limbs are somewhat shortened and less dry and strong. The hair is more rough, the amount of hair in mane and tail is bigger. The temperament is calm, well-behaved. The moves are free. **Fig. 114.**

## TYPES OF KABARDIAN MARES

**Fig. 113. Adayka 91, bay, born 1948 from 79 Arsenal and Gordyachka 193.  
KBD-E.**



**Fig. 114. Zamashka 167, bay, born 1948 from 352 Zador and Musyka 37.  
KBD-C.**



**The Kabardian dense type** represents big massive horses of riding-draught kind with powerful elongated frame and increased bony, with rather rude head and quite weak muscular system. **Fig. 115.**

**Fig. 115. 3223 Chaika 151, bay, born 1947 from 167 Zaluko and 2078 Galka 139. KBD-D.**



Next types can be differed at half-breeding and rearing of Anglo-Kabardian horses:

- ✓ Kabardian-English /KBD-Engl/;
- ✓ Anglo-Kabardian /A-KBD/.

**The Kabardian-English type** is characterized by marked lines of mountain horse with simultaneous presence of Thoroughbred signs. This is expressed in some lightness, shorter body, longer levers of neck and limbs. Such type prevails over the horses possessing one quarter of English blood. **Fig. 119.**

**Fig. 119. Tokbay 178, bay, born 1933. English  $\frac{1}{4}$  from 097 Talisman and Asturia. KBD-Engl.**



**The Anglo-Kabardian type** represents specialized ride with expressed lines of pure ride breed. The horse is dry with long, askew levers and extensive muscular system. The most characteristic horses are half-blooded in respect to pure ride breed. **Fig. 120.**

**Fig. 120. 027 Zulfigar 362, bay, born 1930. English ½ from 493 Volfram III /Thoroughbred/ and 686 Zuleika. A-KBD.**



The horses remarkably shifted to Thoroughbred become of Anglized subtype of Anglo-Kabardian type (AA-KBD), which can be met at blood ¾ and more in respect to pure ride breed. **Fig. 121.**

**Fig. 121. 040 Pancyr 344, bay, born 1930. English ¾ from 383 Pajlyas and 058 Kubinka. AA-KBD.**



### **GENEALOGICAL STRUCTURE OF THE BREED**

The following male lines resulted from the pedigree rearing of the Kabardian horses at collective and stud-farms:

- ✓ In Kabarda: Atlas, Zurab, Erokko, Marem, Uchinari and others;
- ✓ In Karachay: Borei, Dausuz, Tugan, Shaman, Argamak and others;
- ✓ In Cherkessia: Kopchik, Orlik, Kariol and others.

At the moment the lines of Lok-Sen and Istorik are being created at rearing of Anglo-Kabardian horses at stud and collective farms.

The lines of Kabardian horses are characterized in my Candidate's thesis from 1942, in State Studbook, in the plans of pedigree breeding at stud-farms and State seed plots. In this research we just give brief description of five most distributed pure blood lines of Atlas, Zurab, Borei, Dausuz, Argamak and two originating half-blood lines of Lok-Sen and Istorik.

**Table № 85**

**ATLAS's line**

7 ATLAS, bay, born 1922	AMERBI 7, bay, born 1938	61 AVANGARD 97, bay, born 1940 278 ALTAY 35, bay, born 1944	269 AKKORD, bay, born 1944 265 AVRAL 169, bay, born 1948	
	ARARAT 9, bay, born 1933	79 ARSENAL 102, bay, born 1940	280 ASTROGAN 189, bay, born 1948 450 ADELBOY 1, bay, born 1949 460 APORT 76, dark bay, born 1949 458 ALDAN 12, dark bay, born 1950	466 ABRIKOTIN, bay, born 1957 453 ADONIS, black, born 1957 262 ARBICH 2, dark bay, born 1958 502 ZARYAD 50, black, born 1958
			463 ASBEST 8, bay, born 1950 457 ALDAN 1, dark bay, born 1952 449 ADAT, bay, born 1954 452 ADMIRAL 22, dark bay, born 1957 451 ADLER 11, dark bay, born 1958	454 AZIMUT 30, bay, born 1957
	ARDAGAN 16, bay, born 1933	277 ASKER 18, dark bay, born 1943	ANZOR, bay, born 1949	
	374 KAZBEK 143, bay, born 1933	379 KARUS, bay, born 1947 476 BISER 28, dark bay, born 1952 515 KRASAVETS 69, black-brown, born 1952		
	83 ATLASNY 102, bay, born 1939	055 AKKORD 12, black- brown, born 1944 267 AZHUR 85, dark bay, born 1947		
	66 ALDAN 180, dark bay, born 1940	274 ALBATROS 39, dark bay, born 1948. Fig. 126.		

7 ATLAS, bay stallion, born 1922 at Lafishev: parameters 151-156-178-19, weight 435 kilograms. Until 1942 it was produced at Malkinsky stud-farm №34 and №110. Atlas was squat with short thick neck, extended body, rounded ribs, lowered croup and sword-like dry bony legs. **Fig. 122.**

**Fig. 122. 7 Atlas, bay, born 1922 at Lafishev /151-156-178-19/**



The offspring of Atlas was very pedigree, homotypic but inherited short and thick neck, wide chest and tendency for extended body and lowered croup from father.

Some descendants from Atlas suffered emphysema of lungs: Ararat, **Fig. 123**, Ardagan, Amerbi, Avgur and others. With ages Atlas itself acquired emphysema which was extensively distributed over the mountain stallions and, probably, appeared as a result of motions and coupling in mountains. It is interesting to note that Atlas never sustained stable treatment in winter. It was losing its body at the stables and getting short breath. That is why in winter Atlas was always kept on pasture at stud-farm №34.

Two best sons of Atlas participated the All-Union agricultural exhibition at 1939:

AMERBI 7, born 1933 from Dabrava /parameters 154-160-188-19.5, weight 479 kilograms/, awarded the First degree Certificate and ARDAGAN 16, born 1933 from Nacia /parameters 152-152-175-19.5, weight 422 кг/, awarded the Second degree Certificate. **Fig. 124, 125.**

Over 30 sons of Atlas worked breeders at stud-farms and collective farms of State seed plots.

**Fig. 123. Ararat 9, bay, born 1933 from 7 Atlas and 636 Magometanka.**



**Fig. 124. Amerbi 7, bay, born 1933 from 7 Atlas and Dbrava 855. First degree Certificate of the All-Union agricultural exhibition.**



**Fig. 125. Ardagán 16, bay, born 1933 from 7 Atlas and Nacia. Second degree Certificate of the All-Union agricultural exhibition.**



Atlas and stallions of its line were giving very typical bony but not big enough progeny of pedigree a little bit hook-nosed head, characteristic ears and big lively eyes. They passed their offspring muscular neck, long withers, long rounded ribs, straight but little bit extended spine. **Fig. 126.**

**Fig. 126. 274 Albatros 39, bay, born 1948 from 66 Aldan and 2900 Nezabudka.**



The best breeder from of the Atlas's line at the moment is 79 ARSENAL, bay, born 1940 from Ararat 9, used at Malkinsky and Malo-Karachaevsky stud-farms. Its daughters had wide body on low leg and good shape of the top. The exterior deficiencies were short thick early launched neck and some general ease /Cf. Volume 1, page 11, Fig. 7/.

The son of Arsenal, 458 ALDAN 12, dark bay, born 1950 from 1480 Dacha rode at Pyatigorsk hippodrome and was twice exposed at All-Union agricultural exhibition being awarded First and Second degree Certificates. As a breeder Aldan was not used very intensively at Malo-Karachaevsky stud-farm due to the emphysema of lungs. The breeders of Atlas's line at Malo-Karachaevsky stud-farm at the moment are interesting in type stallions 458 ADMIRAL 22, dark bay, born 1957 from 0593 Dinastia and 462 ARBICH 2, dark bay, born 1958 from 1365 Bodraia. **Fig. 127, 231.**

**Fig. 127. Admiral 22, dark bay, born 1959 from 79 Arsenal and 0593 Dinastia.**



The often used stallions of Atlas's line are sons of 79 Arsenal:  
450 Adelboy 1 at collective farm «Svetly Put» of Zolsky region of the Kabardino-Balkarian Autonomic Soviet Socialistic Republic;  
457 Aldan 1 at collective farm named after Shogentsukov of Baksansky region of the Kabardino-Balkarian Autonomic Soviet Socialistic Republic;  
463 Asbest 8 at collective farm «Krasnovostochny» of Malo-Karachaevsky region of Karachay-Cherkess Autonomic District.

**Table № 86****ZURAB's line**

28 ZURAB 75, bay, born 1923	167 ZALUKO 76, bay, born 1934	365 ZENIT 25, bay, born 1940 169 ZATEINIK 30, bay, born 1943 366 ZORKY 25/4, bay, born 1944 351 ZAVET 11, bay, born 1945 364 ZEVS 57, bay, born 1946 427 TUGAN 146, bay, born 1946 367 ZUNG 3, bay, born 1947 ZIGFRID 4, bay, born 1947  504 ZMEI 101, bay, born 1951	ZAPEV 20, bay, born 1952  501 ZARYAD, bay, born 1958
	177 ZOV 165, bay, born 1935		
	168 ZAPAD 139, bay, born 1937	170 ZURAB 17, bay, born 1945 365 ZAMOK, bay, born 1947	
	166 ZALOG 116, bay, born 1939	355 ZALP 179, bay, born 1945 360 ZAREMBO 88, bay, born 1946 350 ZABOY 2, bay, born 1947 0184 ZUYD 28, bay, born 1947 505 ZURAB 172, bay, born 1952  500 ZAKLAD 46, bay, born 1959	503 ZATON 74, bay, born 1960 0238 ZULUS 61, dark bay, born 1960
	164 ZAVETNY 64, bay, born 1940	271 ALISEN 13, dark bay, born 1945	
	242 FARIS 98, bay, born 1940	339 DOBRY 28, light bay, born 1945 403 OGONIOK, bay, born 1945 411 PARON, bay, born 1947 435 FLOT 27, dark bay 1947 436 FORT 25, bay, born 1947 FRAT, dark bay, born 1951	OTLAR 19, bay, born 1950

28 ZURAB, bay stallion, born 1923 at Malkinsky stud-farm from bought at Nukonov Kabardian mare in foal Zurna 30. Its parameters 155-158-180-20.5, weight 440 kilograms. Until 1939 it was used at Malkinsky stud-farm and then sold to collective farm named after Roza Luxemburg of Zolsky region of the Kabardino-Balkarian Autonomic Soviet Socialistic Republic.

Zurab was typical, little bit extended but very powerful stallion with wide chest and mighty shoulder, possessed rough head, long neck, high withers, extended spine with badly filled waist, roof-like croup, bony legs with softy fetlocks. **Fig. 128.**

**Fig. 128. 28 Zurab, bay, born 1923 at Nukonov /parameters 155-158-180-20.5/.**



The offspring of Zurab inherited the height, bony, mighty exterior and was bigger than that of Atlas. However Zurab's progeny sometimes had rough head, extended spine and waist, x-shaped rear legs and insufficient pedigree

The best sons of Zurab:

167 Zaluko 76 and 166 Zalog 116 gave multiple offspring.

167 ZALUKO 76, bay, born 1934 /parameters 158-160-180-19-E1/ from 28 Zurab and Kabardian mare 311, was awarded the First degree Diploma in Nalchik at 1948. It was of pedigree, possessed developed muscular system, strong limbs but some linear pasterns and expanded ends of cannon bones. **Fig. 129.** Within 7 years of use at Zaluko stud-farm gave 167 heads of progeny

166 ZALOG 116, bay, born 1939 from 28 Zurab and Aladina 59 appeared at Kabardian stud-farm № 110 by crossing of two leading lines of 28 Zurab and 7 Atlas. It saved best typical lines of Zurab (mighty body and good levers), but at the same time was of pedigree and did not have roughness specific to 28 Zurab – obvious influence of 7 Atlas. **Fig. 130.**

**Fig. 129. 167 Zaluko 76, bay, born 1934 from 28 Zurab и Kabardian mare.**



**Fig. 130. 166 Zalog 116, bay, born 1939 from 28 Zurab and Aladina 59.**



166 Zalog stayed at Kabardian stud-farm №110 until 1949. Then it was given to Malo-Karachaevsky stud-farm where was used especially intensively. In 1951 it copulated with 84 mares in herd which all became in foal. From 1949 to 1959 it copulated there with 441 mares, 425 out of which happened to be in foal. The offspring of 166 Zalog is quite homotypical but usually rough with softy sword-like legs.

At the moment from 166 Zalog there are 21 mares and stallion-breeder Zurab172, bay, born 1952 from 1367 Boevaia 37 at Malo-Karachaevsky stud-farm.  
**Fig. 131.**

The mares from 166 Zalog are massive, homotypical and of pedigree.

The line of 28 Zurab does not have worth distribution at stud and collective farms of Kabardino-Balkaria and Karachaev-Cherkessia.

**Fig. 131. Zurab 172, bay, born 1952 from 166 Zalog and 1367 Boevaia.**



**LOK-SEN-LUVR's line**

**Table № 90**

983 LOK-SEN, black-brown, born 1923	LADNY 11, black, born 1937	0106 LANDSHAFT 26, black, born 1942	391 LINKOR 222, black-brown, born 1948 522 LINKOR 3, bay, born 1950	526 ORLIK, bay, born 1958 521 LIZOR, dark bay, born 1960
	0111 LUVR 51, black, born 1937	0110 LUBOK 124, dark bay, born 1944 0112 LUCH 125, light bay, born 1944 0195 LEPESTOK 128, black, born 1944 0194 LEGION 144, black, born 1945 0197 LUBOK 148, bay, born 1945 0196 LISSABON 147, black-brown, born 1947 0198 LUG 229, dark bay, born 1948 0251 LES III 237, dark bay, born 1949 0253 LOKON 252, bay, born 1950 0248 LADAN 155, black, born 1957	0250 LEOPARD, bay, born 1958	

The progeny of 0111 Luvr 55 and Ladny 11 – two semi-brothers, sons of pure blood riding stallion 983 Lok-Sen – also belongs to this line.

The leading breeder of the Lok-Sen's line occurred to be half-blooded 0111 Luvr 55, black, born 1937 from 983 Lok-Sen and 1974 Molodka 436. Luvr was used at Malo-Karachaevsky stud-farm from 1943 to 1960 and holds first place among half-blood stallions of this farm on both quantity and quality of the progeny. It copulated with 554 mares, 533 of which became in foal (96.3%) including 64 mares in 1964, 62 out of which were in foal (97.0%). **Fig. 142.**

**Fig. 142. 0111 Luvr 51, black, born 1937. English ½ from 983 Lok-Sen and 1799 Molodka.**



The Luvr's offspring is usually homotypical and of pedigree, differs by massive body and good racing abilities. Unfortunately, leaving multitude of perfect stud mares, Luvr gave only 4 stud stallions: 0194 Legion, 0197 Lubok, 0251 Les and 0248 Ladan. **Fig. 143.**

In respect to exterior, the mares of Sen-Lok-Luvs's line differ in great mass, possess thick neck of average length, insufficiently expressed withers, frequently soft spine, bulging waist and wide muscle croup, wide body of rounded ribs on short legs.

The All-Union record-keeper 391 LINKOR, black-brown, born 1948 from 0106 Landshaft and 2909 Nov' and its own brother 522 LINKOR II (which left abundant group of mares) from the Lok-Sen's line were used for a long time at collective farm named after Lenin of Baksansky region of Kabardino-Balkarian Autonomic Soviet Socialist Republic and at collective farm "Krasnovostochny of Malo-Karachaevsky region of Karachay-Cherkess Autonomic District respectively.

**Fig. 143. 0106 Legion 149, black, born 1945. English ½ from 0111 Luvr and 0132 Gyrlanda.**



**ISTORIK's line**

**Table № 91**

1658 ISTORIK, bay, born 1939	0185 IZMAIL 182, bay, born 1946 0188 INDEKS 205, dark bay, born 1947 0186 IKAR 208, light bay, born 1948 0189 IPRIT 214, dark bay, born 1948 0245 ISPOLIN 222, bay, born 1949 0239 IGROK 86, bay, born 1954 0241 IZBACH I, dark bay, born 1955 0244 ISPOLIN, bay, born 1955 0240 IDEALIST 97, dark bay, born 1956 0242 IZBACH II, dark bay, born 1957 0243 ILOT 58, dark bay, born 1959	0244 ISKATEL 84, dark bay, born 1958
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1658 Istorik of pure blood riding breed, bay, born 1939 from 522 Inferno and 728 Svirel has been used at Malo-Karachaevsky stud-farm since 1946. It overcame all preceding pure blood stallions worked at this farm on both quantity and quality. **Fig. 144.**

**Fig. 144. 1658 Istorik of pure blood riding breed, bay, born 1939. Prominent breeder.**



The mares of Istorik's line differ in huge height, have long neck, straight spine, sometimes sunken waist and long linear croup, are bay.

The best Anglo-Karachay stallion at Malo-Karachaevsky stud-farm is the son of Istorik, perfectly raced 0240 IDEALIST which inherited many exterior lines of Lok-Sen through the mother /daughter of Luvr/. **Fig. 145.**

The son of Istorik, 0188 Indeks is still being used at Malo-Karachaevsky stud farm, which left much good progeny also at Malkinsky stud-farm.

Young well raced stallions of Istorik's line started working at collective farms of Kabardino-Balkaria and Karachaev-Cherkessia:

0244 ISPOLIN, 0241 IZBACH I, 0242 IZBACH II and 0244 ISKATEL.

Besides the male lines within the Kabardian breed of horses the mare families begin to show as well. The rearing of these families at stud-farms is just starting in fact now. The most promising among them are families of:

✓ At Malkinsky stud-farm:

1274 ARABKA, 1444 GEORGINA, 2493 DURANDA, 0137 BERESTA, 01029 LULKA;

✓ At Malo-Karachaevsky stud-farm:

1329 BASNIA /**Fig. 146/** 1332 BEDA, 1390 BULDU /**Fig. 147/**, 1532 DOHA, 2468 DOBRAIA, 0381 SIRENA and 0383 SISTOLA.

The pedigree work with male lines of Kabardian horses will be considered in CHAPTER VIII.

**Fig. 145. Idealist 97, dark bay, born 1956. English 11/16 from 1658 Istorik and Lenta 141. Recordshorse on 3000 meters – 3 minutes and 26.5 seconds.**



The following comes from the materials on the structure of Kabardian breed of horses:

1. The intrabreeding, ecological types or offsprings of Kabardian and Karachay horses can be differed within pure blood horses of Kabardian breed of horses, which can be subdivided into eastern, characteristic and dense exterior-constitutional types at pedigree work.
2. The Kabardian-English and Anglo-Kabardian types, obtained by crossing to the Thoroughbred, can be distinguished among the half-blood Kabardian horses. These types correspond to the blood content of  $\frac{1}{4}$  for the former and  $\frac{1}{2}$  for the latter in respect to Thoroughbred. The horses of increased blood content of  $\frac{3}{4}$  and more, grown up at stable-pasture conditions, come close to high-blood horse and are of Anglized types.
3. The genealogical structure of pure blood and half-blood Kabardian horses at the moment consists of 8-10 pure blood and 2-3 half-blood lines. The most distributed lines, created at Malo-Karachaevsky and Malkinsky stud-farms, are pure blood lines of ATLAS and ZURAB and half-blood lines of LOK-SEN and ISTORIK

## **CHAPTER VI**

### **BIOLOGICAL FEATURES OF MOUNTAIN HORSE BREEDS OF NORTHERN CAUCASUS OF RUSSIA**

Breeding power, duration of a pregnancy and milk production of mares, intensity and seasonal features in foal's growth, adaptation of horses to feeding and housing conditions, ability for fattening, keeping and fat-restoring, ability to accrete in dense hair in winter, ability in more or less shedding of hair in spring and autumn, liveliness and resistance to the diseases, duration of pedigree and working use, meat merits of horses are all the indicators of biological properties of horses. Besides, these indicators characterize types and breeding groups of horses and reflect the conditions of their feeding, housing, care, growing and use which are the grounds for the adequate reaction of animals and their adaptive changes and adaptability.

The analysis of materials on the biological reactions on the natural and economical conditions of Mountain horses of Northern Caucasus of Russia is of practical and theoretical importance.

## BREEDING POWER

There were 75-80% of single mares in Kabarda in 1922 /*Christianovich, 1926/.*

The percentage of successful drop at collective farms after the collectivization of agriculture in Kabardino-Balkarian Autonomic Soviet Socialist Republic was 65-70% in respect to the number of mares able to become in foal and reached 90-100% at best farms. The Kabardian horses demonstrated high breeding power according to the data of State Stud Books. Only until 1935, on the initial stage of organization of pedigree units at collective and breeding farms, this power was low. The breeding power considerably increased with the bettering of housing conditions.

**Table 92**  
**Average breeding power of mares in breed groups,  
recorded in the State Stud Book of riding horses**

Breed group	State Stud Book		Percentage of			Number of years of pedigree use	
	Volume	Year	Becoming in-foal	Non-pregnant	Abortion, misbirth, weak foals		
Kabardian	I	1935	57,6	42,4	3,4	54,2	3539
	II	1949	88,9	11,1	3,3	85,6	2586
	III	1953	83,6	16,4	2,5	81,1	3654
	IV	1964	85,1	14,9	2,5	82,6	4665
Anglo-Kabardian	I	1935	75,7	24,3	9,5	66,2	222
	II	1949	89,0	11,0	6,2	82,8	1672
	III	1953	86,0	14,0	7,9	78,1	1014
	IV	1964	89,3	10,7	3,6	85,7	1135
Karabairskaya	I	1941	77,9	22,1	2,2	75,6	2097
	II	1950	79,2	20,8	1,2	78,0	4367
	III	1960	85,4	14,6	1,5	83,9	2138
Lokaiskaia	I	1955	88,0	12,0	1,9	86,1	4358
New-Kirghiz	I	1956	76,2	23,8	4,7	71,5	5883
Don	I	1949	72,2	27,8	8,2	64,0	3473
	II	1953	85,6	14,4	10,6	75,0	1886
	III	1954	80,8	19,2	8,5	72,3	1563
Budennovskaya	I	1951	88,5	11,5	6,4	82,1	5186
	II	1955	88,7	11,3	12,5	76,2	1191
Kustanaiskaia	I	1956	80,3	19,7	6,0	77,3	2865
Thoroughbred	I	1937	74,7	25,3	15,2	59,5	3465
	II	1954	74,5	25,5	13,0	61,5	3225
	III	1960	88,0	12,0	8,3	81,7	1290

According to the data on breeding power recorded in State Stud Book, the Kabardian horses overcome all other ones except those of Karabairskaya and Lokaiskaia breeds.

The becoming in foal of Anglo-Kabardian horses is more than that of Kabardian horses, but the number of abortions is higher.

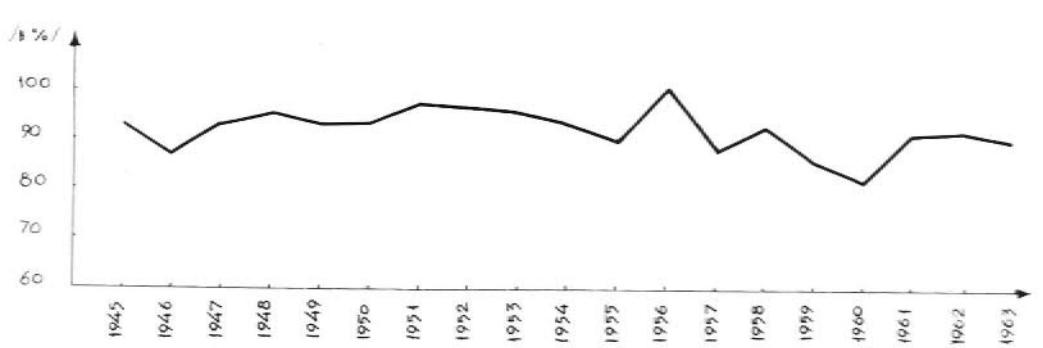
The measures of reproducibility at leading studs of Northern Caucasus of Russia rearing the Kabardian horses are collected in the next table.

**Table 93****Breeding activity of Kabardian mares at studs №№ 34 and 168**

Data from	Percentage of mares			Number of years of pedigree use
	Foaled	Non-pregnant	Aborted	
Malkinsky stud № 34				
RESHB NC <sup>*1</sup> 1933-1935	70,0	21,2	1,9	1607
State Stud Book, 1949	81,6	16,3	2,0	146
Stud Records 1960	87,7	8,2	3,2	439
Malo-Karachaevsky stud № 168				
State Stud Book, 1935	83,5	14,3	1,8	224
State Stud Book, 1949	89,1	6,3	4,6	1301
Stud Records 1960	91,4	4,2	4,1	1179

\*1 - Regional experimental station on horse breeding of Northern Caucasus of Russia

The percentage of becoming in-foal at Malo-Karachaevsky stud was not less than 81,6 between 1945 and 1963 /1960/. **Plot 9.**

**Plot 9****The percentage of becoming in-foal at Malo-Karachaevsky stud between 1945 and 1963 [percent versus age]**

The Kabardian horses exposed more breeding power at mountains of Northern Caucasus in comparison to the piedmont and steppe regions before the World War II.

**Table 94****Breeding power of mares according data of United State Stud Book of Ordzhonikidzevsky region for 1929-37 years**

Breed group	Percentage of mares			Number of years of pedigree use
	Foaled	Non-pregnant	Aborted	
Kabardian	80,3	16,2	2,6	3169

The breeding power of Anglo-Kabardian crosses during the first years after the studs and State seed plots had been organized was somewhat lower than that of pure Kabardian horses.

**Table 95**

**Breeding power of mares from stud № 34 during 1933 - 1935  
/S.I. Pokrovsky, 1935/**

Breed group	Percentage of mares			Number of years of pedigree use
	Foaled	Non-pregnant	Aborted	
Kabardian	70,3	21,2	1,9	1607
Anglo-Kabardian	63,1	27,4	5,8	157

**Table 96**

**Breeding power of mares from various farms during 1935 - 1937  
/G.P. Balabalov, 1938/**

Breed group	Percentage of mares			Number of years of pedigree use
	Foaled	Non-pregnant	Aborted	
Kabardian	86,2	11,3	2,5	217
Anglo-Kabardian	75,4	19,3	5,3	62

**Table 97**

**Breeding power of mares from Kabardinsky State seed plots according data of typification of 1938**

Breed group	Percentage of mares with foal	Number of mares
<b>Kabardinsky State seed plot</b>		
Kabardian	86,0	1434
Anglo-Kabardian with ¼ of english blood	78,0	50

**Table 98**

**Breeding power of pure Kabardian and half-bred mares of different blood content according to the Volume IV of the State stud book (1964)**

Breed group	Successfully dropped		Non-Pregnant		Aborted, misborn, weak foals		Total years of breeding
	%	Number	%	Number	%	Number	
Pure	82,6		14,9		2,5		4665
Cross-breeds including:	85,7		10,7		3,6		1135
¼ of english blood	88,1	450	9,8	50	2,1	11	511
½ of english blood	84,7	460	10,3	56	5,0	27	543
¾ of english blood	77,7	63	18,6	15	3,7	3	81

The breeding power of crosses is higher than that of pure horses at the moment but decreases with increasing amount of Thoroughbred blood. The breeding power of mares is the highest for those obtained via the back crossing of half-bred mares and pure breed stallions. Such mares born 200 foal (93,9% of successful drop) according to the State stud book within 213 years of pedigree use.

The prominent breeding power of Kabardian horses is especially demonstrated by the data from Malo-Karachaevsky stud.

**Table 99**

**Percentage of becoming in-foal from pure and crossed stallions used at Malo-Karachaevsky stud within 1941 - 1944**

Breed group of stallions	Percentage of mares became in-foal	Number of coverings	Including year 1944	
			Percentage of mares became in-foal	Number of coverings
Pure	93,6	2502	93,6	298
Crossed	92,2	738	90,7	86

**Table 100**

**Breeding activity of mares from the spawning school of Malo-Karachaevsky stud until the January 1 of 1946**

Breed group of mares	Percentage of mares				Number of years of pedigree use
	Became in-foal	Non-pregnant	Aborted, misborn or with weak foals	Successfully dropped	
Pure	94,6	5,4	4,4	90,2	1017
Cross-breeds including $\frac{1}{2}$ of pure blood	94,9	5,1	7,3	87,6	1113
	88,3	11,7	7,3	81,0	189

Cross-breed mares from Malo-Karachaevsky stud exhibited some higher ability to become in-foal but also higher percentage of abortions and misbirth and lesser quality of successful drop in comparison to pure mares during the restoring period after the World War II. The mares of  $\frac{1}{2}$  english blood showed the least percentage of becoming in-foal and the least quality of successful drop.

As conditions for the recovering of breeding power at Malo-Karachaevsky stud improved the corresponding difference between pure and half-blooded horses vanished. The cross-breed mares demonstrated even more breeding power in comparison to that of pure ones if the housing was good.

**Table 101**

**Breeding power of mares of contemporary spawning school of Malo-Karachaevsky stud according the data of bonitation cards during 1943-1958**

Breed group	Percent from the number of coverings of					Number of covering years	Number of mares
	In-foal	Non-pregnant	Abortions	Weak foals	Successful drop		
Pure	95,6	4,4	4,4	0,4	90,8	1203	140
Half-blooded	97,3	2,7	4,4	0,7	92,2	886	111
Total	96,4	3,6	4,2	0,5	91,7	2089	251

The percents of in-foal, weak foals and successful drop of half-blooded mares from the plant were higher those of pure horses during 1943-1958. The breeding power of contemporary spawning school of Malo-Karachaevsky stud is presented in **Table 102** and **Plot 10** in respect to age groups.

**Table 102**

**Breeding power of mares from Malo-Karachaevsky stud in respect to breed and age groups according to the data of bonitation cards during 1943-1958**

Age of pregnancy (years)	Number of covering years	Percent from the number of covering years of				
		Foaled	Non-pregnant	Abortions	Weak foals	Successful drop
Pure breed mares /n = 140/						
4 - 5	250	94,4	5,6	6,8	0,3	87,3
6 - 7	259	95,0	5,0	6,6	-	88,4
8 - 9	250	97,3	2,7	4,4	1,6	91,3
10 - 11	189	94,7	5,3	2,1	-	92,6
12 - 13	140	95,0	5,0	0,7	-	94,3
14 - 15	77	97,4	2,6	-	-	97,4
16 - 17	26	100	-	3,8	-	96,2
18 - 19	10	100	-	-	-	100
20 - 21	2	100	-	-	-	100
Half-blooded mares /n = 111/						
4 - 5	201	95,4	4,6	9,0	1,8	84,6
6 - 7	202	98,0	2,0	6,4	-	91,6
8 - 9	187	97,3	2,7	2,7	-	94,6
10 - 11	141	97,2	2,8	2,1	0,8	94,3
12 - 13	88	97,7	2,3	2,2	-	95,5
14 - 15	52	100	-	-	-	100
16 - 17	20	100	-	-	-	100
18 - 19	5	100	-	-	-	100
20 - 21	-	-	-	-	-	-

**Plot 10**

**Becoming in-foal and successful drop of pure and half-blooded mares at Malo-Karachaevsky stud during 1943-1958 [percent versus age]**

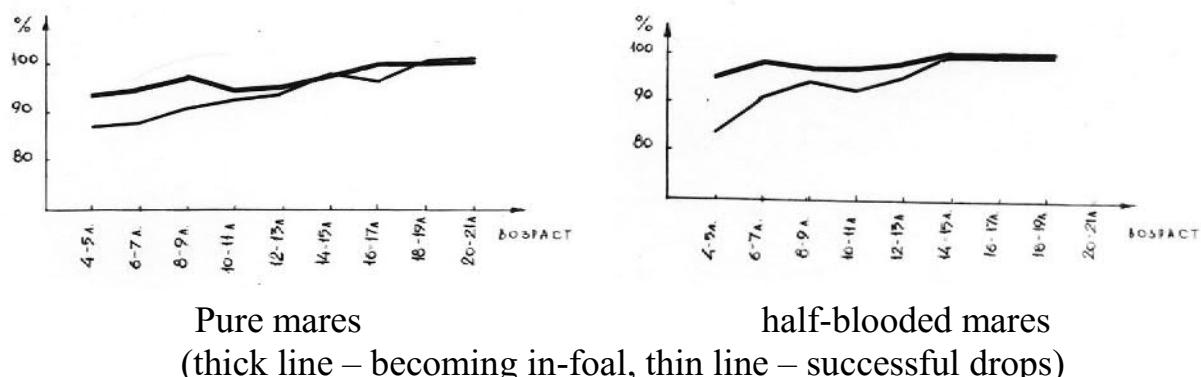
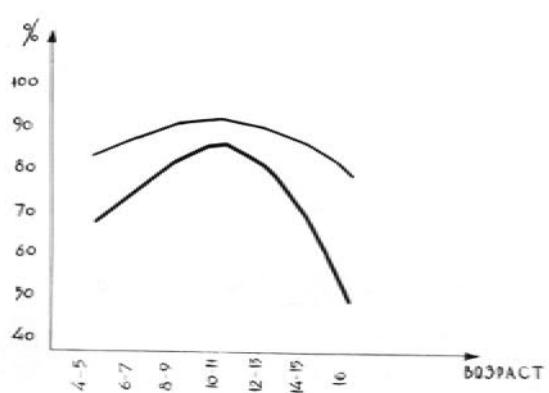


Table 102 and Figure 10 reveal that the becoming in-foal and successful drop of pure and half-blooded mares at Malo-Karachaevsky stud increased with age, what can be explained by the fact that only mature mares annually foaled were allowed to be kept at the stud. If possibilities of such selection are limited as for Trakehner, Streletskaia and other breeds then the age curves of mare's breeding power are of another shape and exhibit lesser degree of becoming in-foal at older ages, see **Plots 11 and 12**.

### Plot 11

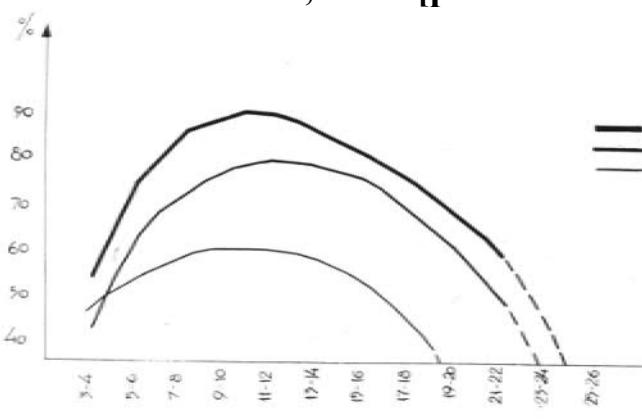
**Becoming in-foal and successful drop of Trakehner mares at stud after S.M.Kirov /A.V.Shilova, 1953/ [percent versus age]**



(thin line – becoming in-foal, thick line – successful drop, in percents to coverings)

### Plot 12

**Theoretical curves of age-related changes of becoming in-foal of mares of different breeds /V.O.Vitt, 1953/ [percent versus age]**



(Upper line - Streletskaia riding breed, middle line – Orlov trotter breed, bottom line – Brabant draught heavy breed)

M.M. Zubairov traced the breeding power of crosses of different generations from the stallions of Kabardian and other horse breeds at collective farms of Autonomic Soviet Socialist Republic of Dagestan in 1959, see **Table 103**.

### Table 103

**Breeding power of crossed mares at collective farms of Autonomic Soviet Socialist Republic of Dagestan during 1951-1953**

Crosses from stallions of breed	Mares covered		Foals born		Foals born per 100 crossed	
	I and II coverings	III and IV coverings	I and II coverings	III and IV coverings	I and II coverings	III and IV coverings
Kabardian	22	18	20	17	91,0	94,0
Terskaia	28	18	21	10	75,0	55,5
Arab	36	32	22	17	61,0	55,0
Thoroughbred	163	142	100	52	61,3	36,6

The highest breeding power of 94% was shown by mares – crosses of III-IV generations from Kabardian stallions. There was no, in contrary to other riding breeds, observed decrease in breeding power of Kabardian-Dagestan crosses with increasing content of Kabardian blood. The latter confirms the high breeding power of Kabardian horses and their suitability to the conditions of Dagestan and other mountain regions of Northern Caucasus of Russia.

## DURATION OF A PREGNANCY

The duration of a pregnancy of mares depends on housing conditions, gender of growing embryo, breed group, type, age and individuality of the mare and some other factors / *Tessier 1817, Egorov 1875, Lendorf 1889, Push 1906, Sabatini 1908, Ettingen 1909, Bitt 1929, Lipping 1930, Uppenborn 1933, Kellner 1934, Riazanov 1935, Gonnerman 1935, Ignatieva 1936, Maukh 1937, Orlovsky 1940, Svechin 1941, Troitsky 1949, Puhova 1949, Poso-Lora 1954-1956, Parfenova 1958 etc./*

The duration of a pregnancy as biological criterion can help zootechnician to estimate the constitution of the animal and conditions for the breeding /*Britton, Howell and Rollings 1943, 1951, Vitt 1961/*.

The duration of a pregnancy of mountain horses is some longer in comparison to that of horses from farms which is normally 335-336 days.

**Table 104**  
**The duration of a pregnancy of horses of mountain breeds of Central and Eastern Europe**

Breed	Average duration of a pregnancy			Data
	Male embryos	Female embryos	Genderless	
Bosnian	341,2	337,1	339,1	Hrasnica 1944
Guculskaya	340,5	340,9	340,7	Zhadan 1952

The horses of Kabardian breed at Malo-Karachaevsky stud possess shorter duration of embryonic development than above mountain breeds of horses usually kept at severe conditions without concentrate feeding.

**Table 105**  
**Duration of a pregnancy of mares at Malo-Karachaevsky stud during 1944-1959**

Breed group of mares	Average duration of a pregnancy						Number of heads	
	Male embryos		Female embryos		Genderless			
	Mean	Number of years of pregnancy	Mean	Number of years of pregnancy	Mean	Number of years of pregnancy		
Pure	338,38	339	336,85	361	337,54	693	140	
Half-blooded	337,63	372	335,77	269	336,54	544	111	

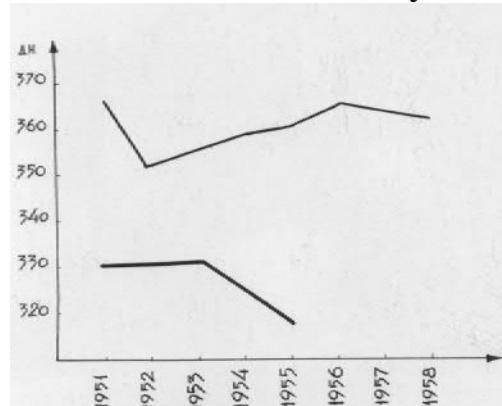
The half-blooded mares in average had shorter pregnancy in comparison to pure breed ones at Malo-Karachaevsky stud during mentioned period of time. This can be explained by their sufficient acclimatization and, probably, quicker earliness at improved conditions of housing at the farm.

The records of dates of couplings and drops can not be unerring at herd stud. Individual variations of the duration of a pregnancy of mares at Malo-Karachaevsky stud are quite scattered. They exclude the possibility to characterize separate mares according this criterion.

Only two mares from all the spawning school of mares born at Malo-Karachaevsky stud can be distinguished by the huge difference of the duration of a pregnancy during number of years: Britva 15 and Doza 151, **Plot 13**.

### Plot 13

#### Duration of the pregnancy (days) per years of mares Britva 15 and Doza 151 from Malo-Karachaevsky stud



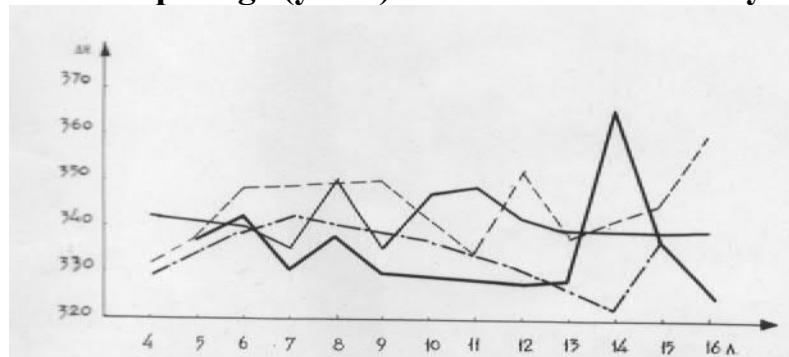
(thin line – Doza 151, born 1948, thick line – Britva 15, born 1947)

BRITVA 15 had duration of a pregnancy less than 333 days three years in a row. DOZA 151, O-III, III, had duration of a pregnancy more than 350 days sequentially 5 years.

The variations of the duration of a pregnancy of prominent in breeding power and quality of dropped peer mares born 1940 are shown in **Plot 14**.

### Plot 14

#### Duration of a pregnancy (days) of mares Basnia 249, Basnia 318, Beda 22 and Brunetka 9 per age (years) at Malo-Karachaevsky stud



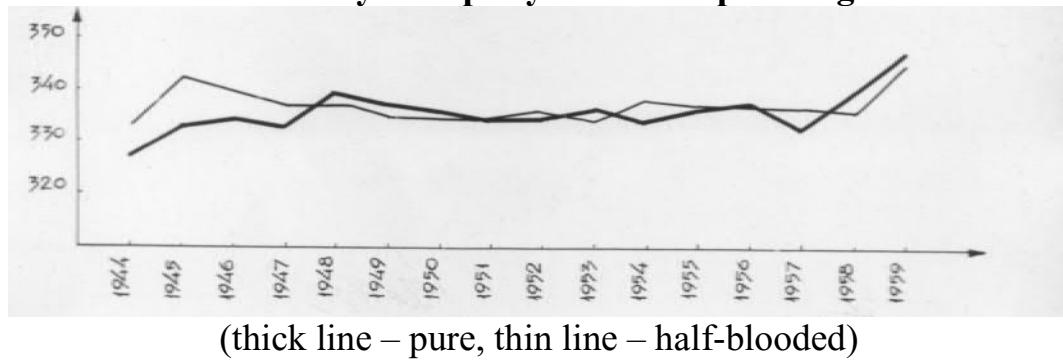
(thin solid line – Basnia 249, dash-dot line – Basnia 318,  
thick sold line – Beda 22, dashed line – Brunetka 9)

Half-blooded mares Basnia 249 and Brunetka 9 have some longer duration of the pregnancy in comparison to that of Basnia 318 and Beda 22. All mares described in figure exhibit slight increase in duration of a pregnancy at the ages of 6-9 years and sharp variations of the duration of a pregnancy at older ages.

The average duration of a pregnancy of mares from Malo-Karachaevsky stud is shown in **Plot 15** per years.

## Plot 15

### Average duration of a pregnancy (days) of pure and half-blooded mares at Malo-Karachaevsky stud per years of drop during 1944-1959



As is seen from the figure, the duration of a pregnancy increased at Malo-Karachaevsky stud during war years 1944-1945 and 1958-1959.

The half-blooded mares reacted on worse feeding conditions during the War by the extended duration of a pregnancy.

The mares at Malo-Karachaevsky stud were given only 2-3 metric centners of the concentrates and 12 metric centners of hail (in ratio 8 kilos of hail per day) for 150 days of winter 1958/1959. These amounts were even more cut before the spring. Both pure and half-blooded mares almost equally reacted on that by the prolongation of a pregnancy.

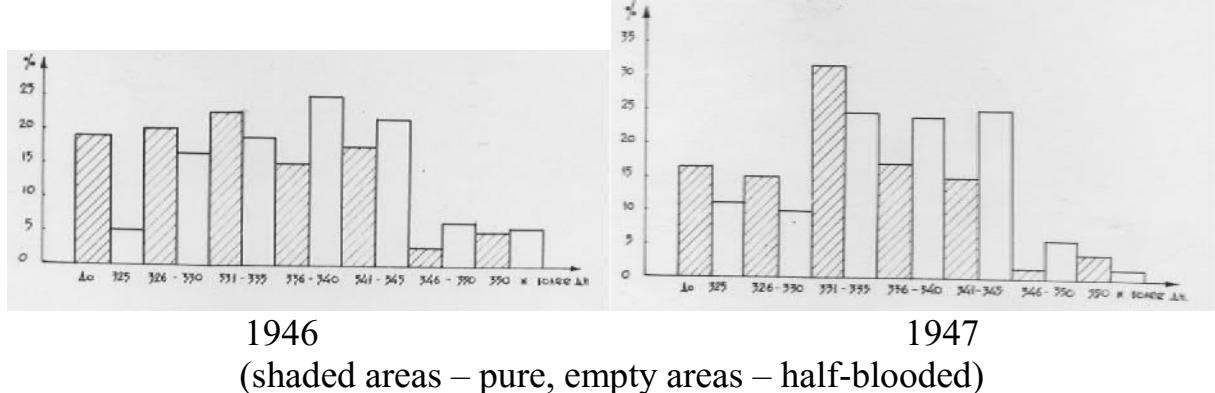
The half-blooded mares of the farm had almost the same duration of a pregnancy as pure ones at propitious conditions of years 1948-1953. The student G. Kerimov processed the results of the drop on the duration of a pregnancy at inauspicious housing conditions at Malo-Kabardinsky stud of years 1946-1947. His results (from year 1950) are given in **Table 106** and **Plot 16**.

**Table 106**  
**Distribution of number of foals born at Malo-Karachaevsky stud during 1946-1947 per durations of embryo development**

Breed group	Year of drop	Duration of embryo development														Total heads	
		до 325		326-330		331-335		336-340		341-345		346-350		351 and more			
		m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f
Pure	1946	7	7	5	8	16	9	12	6	3	7	5	1	-	2	48	40
Pure	1947	7	9	11	8	6	17	8	9	9	8	3	1	-	2	44	54
Half-blooded	1946	2	6	4	20	12	23	18	30	20	26	9	9	3	7	68	121
Half-blooded	1947	9	14	5	12	11	28	10	30	24	31	13	7	5	3	77	125

## Plot 16

### Distribution of embryo development of pure and half-blooded female foals born 1946 and 1947 at Malo-Karachaevsky stud [percent per days]



While considering the distribution of embryo development per durations of two sets of female foals born 1946 and 1947, one can see the obvious delay in pregnancy within more exacting half-blooded breed group. The empty columns in the figure, denoting half-blooded female foals, are apparently shifted to the right in comparison to the dashed columns for the pure ones.

This is especially seen on the plot for the year 1946 unfavorable on both climatic and feeding conditions.

The winter 1945/1946 at the stud was cold with strong winds and deep snow cover what excluded winter grazing.

The spring of year 1946 was also cold: the average temperature of March was 1,2°. The herds almost lost the hail until the spring. The provision with the concentrates was even worse.

The conditions for the embryo development of female foals born 1947 were better. The summer of 1946 at stud was hot (the average temperature of August was 19,4°) with big number insects and vast devastation of pastures by shrew rats. The dry weather in the period of august-september decelerated the development of herds on haymows (there were only 38,7 millimeters of precipitates). This caused low plumpness of mares on summer pastures and during the autumn of 1946. The absence of additional feeding of foals under the mares with concentrates delayed the taking of foals away from mothers and decreased more the plumpness of mares.

The winter of 1946 and the spring of 1947 were of favorable climatic conditions. Warm weather and small amount of precipitates in winter and during all the spring (there were only 1,0 millimeters of precipitates in December and the average temperature of march was 7°) allowed the horses to be pastured both in winter and in early spring. The warm spring favored to the drop which happened almost simultaneously.

So, the data of Kerimov (from 1950) definitely pointed on the prolongation of the pregnancy of half-blooded horses in spite of hostilities of mountain treatment. This agrees well with the observations of K.F. Loria (from 1953) for the Second Stavropol stud housing Anglo-Kabardian mares in steppe conditions.

**Table 107**

**Average duration of a pregnancy of mares of the Stavropol stud (days) for years 1946-1951**

Years	Kabardian				Anglo-Kabardian			
	Male foals		Female foals		Male foals		Female foals	
	mean	N	mean	N	mean	N	mean	N
1946-1947	340,2	11	339,9	23	343,0	41	341,0	52
1947-1948	339,7	18	335,4	10	340,0	42	340,0	35
1948-1949	337,1	24	336,8	25	340,0	35	340,0	36
1949-1950	336,7	22	337,0	15	342,4	53	340,1	42
1950-1951	338,5	24	335,9	23	340,7	64	340,2	69

One can see from the table that the durations of a pregnancy of the Anglo-Kabardian mares are longer in conditions of steppe contrary to Kabardian ones.

*«It is characteristic – says K.F. Loria /1953/, that the most extended pregnancies of both crossed and pure Kabardian mares were in 1946 and 1947. This is apparently after the strong drought of 1946 due to which pastures burnt and feeding became insufficient and often interrupted».*

## **MILK PRODUCTION**

Mountain horses of Northern Caucasus of Russia, located on subalpine and alpine pastures in summer, can be characterized by the high milk production. One can judge on the milk by the well-developed sucking foals and by the account of the milk production of mares.

According to the records of milk production of Kabardian horses made by L.P. Davydova in august of 1941 at Malkinsky stud № 34 on subalpine pastures, the mares given additional nutrition with oats (3 kilos) produced 11,25 kilograms of milk per day while those without oats – only 10,95 kilograms of milk.

The observations at Malo-Karachaevsky stud reveal that mares differ in their milk merit, which is very high, and have long lactation period. They can produce up to 25 liters of milk per day on the second-third month and up to 2500-3000 liters of milk during all the lactation period of 9 months.

O.I. Krasnova attempted to arrange the koumiss factory at Malo-Karachaevsky stud in 1962 using 5 horses from the herd. The mares were of good shape and large resource of udder with convenient nipples for milking. Those horses quickly got accustomed to milker, place of milking and day order and demonstrated friendliness during the milking. The conditions of the experiment were rather unfavorable and mares of the farm gave in average 3,5 liters of milk per day within 66 days when the average milk production was 8 liters per day per head. However O.I Krasnova affirms that Kabardian mares are of great milk merit and will not be inferior to the Russian draught at proper housing and correct milking.

The milk merits of local horses of Autonomic Soviet Socialistic Republic of Dagestan and their crosses were studied by M.M. Zubairov in 1959.

**Table 108**  
**Average yield of milk of mares of Autonomic Soviet Socialistic Republic of Dagestan per day**

Breed group	Number of mares	Average age of mares	Average yield in		Variations of yield in	
			spring	autumn	spring	autumn
Local of Dagestan	22	9	10,77	7,52	7,64-13,20	6,96-8,08
Kabardian-Dagestan	24	7	15,44	10,24	11,76-19,44	9,21 -10,88

So, the mares from the Kabardian stallions possessed higher milk productivity in Autonomic Soviet Socialistic Republic of Dagestan.

The highlanders of Northern Caucasus of Russia, contrary to people of steppe, seldom use horse milk in food. The influence of steppe nomads on Northern Caucasus was known in the past. For instance, Andemirkan, the hero of Kabardian epic cycle created in VII century, was fed up with the horse milk. /The anthology of kabardian poetry. Moscow, 1957, page 64 [in Russian]/.

## GROWTH AND DEVELOPMENT OF FOALS

The results of weighing of Kabardian horses are gathered in following tables.

**Table 109**  
**Average weight of mountain foals /genderless/ at Cherkessky stud № 38**  
**according data of S.I. Pokrovsky, 1935**

Groups	Number of heads	Live weight			
		3 months	6 months	9 months	12 months
Aboriginal pasture	19	166,5	185,3	207,7	254,4
Aboriginal basic	19	163,4	180,8	214,7	252,3
Mongrel /of first generation/ pasture	26	151,0	170,3	192,9	232,2
Mongrel /of first generation/ basic	26	154,4	177,1	213,7	243,3

In the experiment of nurture of mountain and Anglo-mountain saplings conducted by S.I. Pokrovsky, both groups of foals – pasture and basic – were given the same additional nutrition. They were given unlimited hail and 3 kilos of oats per day or 5,5 metric centners per winter. In such circumstances mountain foals overcame the Anglo-mountain crosses of first generation in both basic and especially in pasture groups.

So, the basic housing is insufficient for the realization of the ability to forced development of Anglo-Kabardian horses at Cherkessky stud № 38.

The weighing and measurements of colts and geldings grown in herds for the Red Army was being conducted by the order and under the supervision of N.P. Spier at Malo-Karachaevsky stud in years 1940-1941. Given his approval we present here the data of those weighing and measurements in coming tables.

**Table110**  
**Average weight of colts and geldings (born 1938 at Malo-Karachaevsky stud) at the age of 2 and 3 years**

Groups of young from	Colts of		Geldings in the age of 3 years, castrated in	
	2 years	3 years	Spring at the age of 2 years	Autumn at the age of 2½ years
General herd	275,2	352,1	349,5	353,3
Rocky plot Belaia Voda	-	342,0		352,4
Piedmont plot	-	353,9		368,5

The heaviest ones were colts and geldings at the age of 3 years grown at the piedmont plot. Castrated in spring were lighter those in autumn and from colts. The geldings of autumn castration were heavier than the colts at the age of 3 years.

**Table 111**

**Average weight of colts and geldings from different breed groups (born 1938 at Malo-Karachaevsky stud) at the age of 2 ½ and 3 years**

Breed groups	Colts of age						Colts of 2 years before castration		Geldings of age			
	2 years		2½ years		3 years				2½ years		3 years	
	Live weight	Number	Live weight	Number	Live weight	Number	Live weight	Number	Live weight	Number	Live weight	Number
Pure	270,0	22	368,4	33	340,9	14	285,0	55	361,4	37	359,1	44
Half-blooded	264,8	31	364,5	70	342,5	25	263,6	113	348,4	83	342,3	48

One can see from the table that pure breed colts and geldings had more live weight than half-blooded in all age groups excluding 3 year-ones. The colts and geldings were the heaviest at the age of 2 ½ years after their summer housing at mountain pastures. Leaving the winter 1940/1941 behind they all lost the live weight to the age of 3 years in a lesser degree for geldings and more for colts. This indicates the greater ability of geldings for fattening and to keep their fat.

The pedigree horses at Malo-Karachaevsky stud after the World war II, abundantly fed, exhibited much more intensive increment in weighing.

**Table 112**

**Average live weight of colts and fillies (born 1946-1950 at Malo-Karachaevsky stud) according to the data of P.I. Dragalev from 1951**

Groups	Age of			
	6-8 days	1 year	2 years	3 years
Colts	62,5	285,0	410	470
Fillies	58,3	269,3	379,2	-

The colts overcame fillies on live weight.

The growth of mass of colts and be characterized by the next parameters.

**Table 113**

**Average additional weight of colts (born 1946-1950 at Malo-Karachaevsky stud) according to the data of P.I. Dragalev from 1951**

Additional weight	Age periods		
	from 6-8 days up to 1 year	from 1 to 2 years	from 2 to 3 years
Absolute value, kg	222,5	125	60
Average add of mass per day, grams	618	343	164
Relative value, percent	355,9	43,9	14,6
Percents from 500 kilos of mature	57,0	82,0	94,0

These quantities of additional weights of Kabardian horses kept in favorable conditions contradict the common view about their lateness and point on the plasticity of the breed. Here we trace some of the numerical results on the linear growth of the mountain horses of Northern Caucasus of Russia.

The first stationary observation on the development of mountain and Anglo-mountain saplings was carried out by S.I. Pokrovsky in 1935.

**Table 114**

**Average measures of mountain and Anglo-mountain foals (born 1934 at Cherkessky stud № 38) according to the data of S.I. Pokrovsky, genderless**

Groups	Number of heads	Age (months)	Measures		
			Shoulder	Chest	Fore cannon
Aboriginal pasture	19	3 months	121,8	-	-
		6	123,5	121,4	15,6
		9	132,3	133,5	16,3
		12	136,3	141,7	16,9
		18	140,9	144,9	16,4 <sup>x</sup>
Aboriginal basic	19	3 months	122,1	-	-
		6	123,6	123,8	15,9
		9	127,8	129,4	16,3
		12	135,9	140,2	16,7
		18	141,5	145,5	16,5 <sup>x</sup>
Anglo-mountain /first generation crosses/ pasture	26	3 months	120,4	-	-
		6	122,3	121,4	15,5
		9	126,6	128,2	16,1
		12	134,5	137,5	16,3
		18	139,7	143,0	16,2 <sup>x</sup>
Anglo-mountain /first generation crosses/ basic	26	3 months	120,3	-	-
		6	123,1	121,9	15,5
		9	129,0	132,5	16,3
		12	135,6	140,6	16,7
		18	139,9	144,4	16,3 <sup>x</sup>

x – Measurements performed by other person

The aboriginal group of foals overcame the Anglo-mountain one (which needed more than just basic housing for better development) on both measures and weight (see **Table 109**) at the same additional nutrition but varying, basic and pasture, housing in winter.

**Table 115**

**Average measures of Kabardian and Anglo-Kabardian foals in conditions of herd housing at Malkinsky stud according to the data of S.I. Pokrovsky, 1935**

Breed	Blood	Gender	Born 1934, age of 1 year				Born 1933, age of 2 years			
			Number of heads	shoulder	Chest	Fore cannon	Number of heads	shoulder	Chest	Fore cannon
Kabardian	pure	m	31	136,1	142,8	16,8	38	143,1	157,3	18,4
	pure	f	30	134,1	142,4	16,4	43	142,1	157,3	17,6
Anglo-Kabardian	¼ english	m	33	134,5	139,5	16,4	13	143,3	154,5	18,5
	¼ english	f	31	134,0	139,8	16,1	21	145,0	157,0	17,8
Anglo-Kabardian	½ english	m	105	133,5	134,5	15,6 <sup>x</sup>	49	143,3	154,8	18,1
	½ english	f					49	144,4	157,8	17,6

X – born 1933

The Anglo-Kabardian foals at the age of 1 year (born 1933 and 1934) in herd conditions were behind Kabardians on measures. This lag was more for foals of higher blood content in respect to Thoroughbred. At the age of 2 years, Anglo-Kabardian foals born 1934 were almost the same developed as Kabardian ones.

Comparing measures of Kabardian and Anglo-Kabardian saplings born 1936 and grown in herds of Malkinsky and Cherkessky studs, G.P. Balabanov mentioned in 1939 the delay in development of Anglo-Kabardian colts but good progress of Anglo-Kabardian fillies, overcoming pure females /*Horse resources in USSR, 1939, p. 240/*.

The development of the saplings in herd conditions of collective farms in the area of Kabardinsky State seed plot can be characterized by the measures of typification of 1938.

**Table 116**  
**Average measures of saplings at Kabardinsky State seed plot in 1938**

Offspring of stallions of breed	Colts					Fillies				
	Number of heads	Shoulder	Length of body	Chest	Fore cannon	Number of heads	Shoulder	Length of body	Chest	Fore cannon
Age of 1½ years, born 1937										
Kabardian	70	127,9	121,3	140,2	15,9	77	127,5	123,3	140,9	15,9
Anglo- Kabardian	41	131,9	123,9	143,5	15,9	42	131,8	125,0	144,5	16,1
Age 2½ years, born 1936										
Kabardian	120	136,8	133,4	155,7	17,3	115	135,5	133,1	156,2	16,7
Anglo- Kabardian	53	141,1	134,1	155,6	17,3	65	139,1	133,1	155,6	17,3

The saplings developed worse at collective farms in comparison to the studs but in the age of 1½ and 2½ years, according above data, the offspring from Anglo-Kabardian stallions had better measures,

When the measurements of the offspring from the Anglo-Kabardian stallions were more numerous and only on the shoulder then the following results were obtained.

**Table 117**  
**Average shoulder of the offspring from the Anglo-Kabardian stallions at Kabardinsky State seed plot in 1938**

Offspring of stallions of breed	Shoulder of foals, genderless			
	1½ years, born 1937		2½ years, born 1936	
	mean	N	mean	N
Anglo-Kabardian, including blood content of	129,3	296	138,4	214
¼ from Thoroughbred	128,7	45	134,4	20
½ from Thoroughbred	129,6	128	140,0	129

According to the above data, the offspring from half-blooded Anglo-Kabardian stallions was also bigger.

The saplings at Kabardinsky State seed plot in 1940 became even bigger.

**Table 118**

**Average measures of saplings being controlled without distinction of breed group, genderless, at Kabardinsky State seed plot in 1940**

Number of heads of saplings being controlled		Measurements at the age of									
		1 year			2 years			3 years			
Colts	Fillies	Shoulder	Chest	Fore cannon	Shoulder	Chest	Fore cannon	Shoulder	Chest	Fore cannon	
120	110	130,4	136,4	15,6	135,8	157,8	16,9	148,7	174,8	18,3	

The improvement of saplings in 1938-1940 was also mentioned at Karachaevsky State seed plot.

**Table 119**

**Average measures of saplings being controlled at Malo-Karachaevsky and Uchkulansky regions of Karachaevsky State seed plot in 1938**

Region	Gender	Measurements at the age of											
		6 months				1½ years				2½ years			
		Number of heads	Shoulder	Chest	Fore cannon	Number of heads	Shoulder	Chest	Fore cannon	Number of heads	Shoulder	Chest	Fore cannon
Malo-Karachaevsky	m	91	225,9	126, 0	15,4	15	133,7	142, 0	16,3	16	142,5	155, 5	17,9
	f	85	123,6	122, 0	15,3	13	134,8	146, 0	16,6	24	140,6	157, 3	17,2
Uchkulansky	m	111	122,4	134, 6	15,3	91	133,7	148, 2	17,0	69	140,2	156, 5	17,5
	f	132	122,0	132, 6	15,0	92	133,2	148, 3	16,7	74	136,7	155, 0	17,3

The saplings at high-altitude Uchkulansky region were smaller in comparison to those of Malo-Karachaevsky, but the chest and fore cannon were slightly bigger.

**Table 120**

**Average measures of saplings being controlled at Karachaevsky State seed plot in 1940**

Age of	Colts				Fillies			
	Number of heads	Shoulder	Chest	Fore cannon	Number of heads	Shoulder	Chest	Fore cannon
6 months	115	128,1	130,4	15,0	103	128,0	131,1	15,0
1 year	158	130,1	136,5	15,6	175	129,9	136,5	15,6
1½ years	139	133,6	141,8	16,3	160	134,1	140,9	16,2
2 years	171	138,5	151,2	17,0	104	137,9	152,1	17,1
2½ years	154	142,4	151,6	17,8	92	141,0	151,2	17,5

The saplings of Anglo-Karachaevsky horses were weaker than those of usual collective farms, because the former appeared "starveling" after severe winter and was retarded. Recovering in summer fat lost in winter, these saplings were unable to compensate the missed growth /Kovtun, Mishin, 1940/

The offspring were regularly fed with grains at Malo-Karachaevsky stud and thus they developed faster than in neighboring farms.

**Table 121**

**Average measures of colts and geldings (born 1938 at Malo-Karachaevsky stud), calculated according to the data of Professor N.M. Spier**

Breed group	Colts				Geldings			
	Number of heads	Shoulder	Chest	Fore cannon	Number of heads	Shoulder	Chest	Fore cannon
<b>Age of 2 years</b>								
Pure	22	142,9	152,1	17,1	51	142,7	153,2	17,4
Half-blooded	30	141,8	150,2	16,8	97	142,3	151,3	17,1
Mean	52	142,5	151,0	17,0	148	142,4	152,1	17,2
<b>Age of 2½ years</b>								
Pure	31	146,9	161,7	18,8	38	145,7	162,2	18,7
Half-blooded	68	146,2	161,3	18,6	80	144,0	160,3	18,3
Mean	99	146,4	161,4	18,6	118	144,6	160,4	18,4
<b>Age of 3 years</b>								
Pure	13	148,4	163,2	18,6	43	149,5	165,2	18,9
Half-blooded	23	148,1	163,6	18,5	105	148,0	164,1	18,4
Mean	36	148,2	163,4	18,5	148	148,5	164,3	18,7

Half-blooded colts demonstrated slower growth compared to pure ones at stud as well as at collective farms. The measures of colts and geldings increased more during summer up to the age of 2½ years than during winter up to the age of 3 years, when animals lost in their live weight /See Table 111/. The geldings at the age of 3 years were somewhat bigger than colts.

In the years 1938-1940 Malo-Karachaevsky stud passed repair horses in the age of 3 years of following measures to the Red Army:

Breed	Shoulder	Chest	Fore cannon	Number of heads
Pure	147,0	165,6	18,6	171
¼ of english blood	146,3	164,9	18,4	286
Anglo-Arab-mountain	146,2	165,6	18,5	13
½ english blood	145,5	168,5	18,9	14
Don-mountain	144,3	162,7	18,1	10

So, the highest horses among the repair ones were the pure horses but those of ¼ of english blood were the most numerous.

The following table represents the data of R.E. Kalinina /Zenina/ and of A.M. Dzahoev who monitored the development of the saplings of Kabardian and Anglo-Kabardian horses of different blood from studs №№ 34, 35, 38 and 93 of Northern Caucasus of Russia at the Regional experimental station on horse breeding within a number of years.

**Table 122**

## Average measures of the actual development of colts from studs №№34, 35, 38 and 93 according to the data of the Regional experimental station on horse breeding, 1938 - 1939

**Table123**

**Average measures of the actual development of fillies from studs №№34, 35, 38 and 93 according to the data of the Regional experimental station on horse breeding, 1938 - 1939**

Breed group	Data of R.E. Kalinina for animals born 1935 - 1938					Data of A.M. Dzahoev for animals born 1937 - 1939				
	Number of heads	Shoulder	Length of body	Chest	Fore cannon	Number of heads	Shoulder	Length of body	Chest	Fore cannon
<b>Age of 6 months</b>										
Kabardian	82	126,5	117,8	130,3	14,9	33	124,2	114,0	134,4	15,4
¼ of english blood	50	126,8	118,4	129,0	15,0	53	126,1	116,3	134,4	15,5
½ english blood	91	128,1	116,2	130,8	15,0	59	126,6	115,6	133,6	15,6
¾ of english blood	34	131,2	121,8	133,3	15,4	5	130,6	117,2	134,2	15,9
<b>Age of 1 year</b>										
Kabardian	67	135,2	130,6	144,4	16,5	60	133,6	122,6	137,8	15,7
¼ of english blood	40	135,0	130,8	144,9	16,5	32	135,6	123,7	140,5	16,8
½ english blood	85	136,2	128,9	145,0	16,4	107	134,2	122,1	137,6	16,6
¾ of english blood	12	139,2	131,5	148,3	16,8	-	-	-	-	-
<b>Age of 1½ years</b>										
Kabardian	110	139,7	136,2	152,3	17,0	52	140,2	133,8	156,3	17,5
¼ of english blood	67	140,9	137,2	153,9	17,1	59	140,9	132,5	154,2	17,7
½ english blood	120	142,4	137,1	152,7	17,3	102	143,4	132,0	154,9	16,8
¾ of english blood	15	144,1	138,3	156,0	17,4	18	146,0	141,2	161,5	17,6
<b>Age of 2 years</b>										
Kabardian	50	142,3	141,6	159,5	17,4	68	145,0	136,6	156,6	17,2
¼ of english blood	41	142,9	142,7	159,5	17,6	35	144,7	135,5	155,6	17,3
½ english blood	90	146,1	142,9	161,3	17,8	108	144,5	135,1	156,6	17,3
¾ of english blood	-	-	-	-	-	3	151,0	139,3	162,6	17,8
<b>Age of 2½ years</b>										
Kabardian	68	145,1	143,8	163,7	17,9	52	147,6	143,2	163,7	17,8
¼ of english blood	69	144,8	142,2	163,8	18,0	26	147,4	141,0	166,4	17,9
½ english blood	91	149,3	142,2	166,2	18,3	67	147,7	141,2	165,5	17,7
¾ of english blood	-	-	-	-	-	8	152,5	145,5	160,5	18,2

The saplings from the studs № 34, 35, 38 and 93 were kept in herds in summer and on the base in winter with irregular additional feeding with oats up to 2-3 kilos and usually without any extra food on the second year of life. Only the small amount of half-blooded offspring was given stables-herd housing at Malkinsky stud.

The half-blooded saplings were decelerated in such circumstances and were almost the same as Kabardian offspring.

The foals of ¾ of english blood tolerated the herd housing especially worse. They usually were smaller, shorter, with smaller chest and fore cannon compared to those of other groups.

The foals of  $\frac{1}{4}$  of english blood from back crossing, in spite of being born from mothers of non-highest quality, developed almost the same as Kabardian ones and were of good shape.

The half-blooded saplings showed remarkable delay in shoulder progress during the first winter.

The development of half-blooded foals in the age of 1 and  $1\frac{1}{2}$  years in was faster in summer compared to that of other groups

The fore cannon of the foals in the age of 2 and  $2\frac{1}{2}$  years grew most extensive during the summer. The shoulder growth of the half-blooded offspring was prolonged at the herd housing.

The following average measures of the growth of the horse offspring were fixed by Cherkessky State seed plot after the World War II for the farms located on its area.

**Table 124**  
**Average measured of Kabardian and Anglo-Kabardian saplings of the  
Cherkessky State seed plot during 1947 - 1952**

Breed group	Age, years	Colts			Fillies		
		Shoulder	Chest	Fore cannon	Shoulder	Chest	Fore cannon
Kabardian	0,5	126,4	133,9	14,9	124,9	133,5	14,8
	1	129,4	139,0	15,8	129,7	138,1	15,8
	1½	132,6	148,5	17,0	132,6	142,3	16,2
	2	140,5	157,4	17,8	140,5	154,6	17,5
	2½	145,7	163,7	18,4	140,6	158,2	17,6
	3	147,4	167,4	18,7	143,1	158,5	17,7
	4	153,5	176,7	19,6	145,7	171,7	18,1
Anglo- Kabardian	0,5	128,2	133,2	14,5	126,7	134,0	14,3
	1	129,4	138,3	15,7	127,7	137,3	15,5
	1½	137,0	146,2	16,8	134,8	143,6	16,6
	2	140,2	150,5	17,6	140,3	152,8	17,5
	2½	147,5	162,7	18,4	142,7	156,0	17,7
	3	149,5	167,3	18,7	144,8	159,8	18,0
	4	154,3	177,8	19,5	149,8	171,3	18,3

The obvious from the table is the constant increase of measures with rather sharp step at 4 years. This can reasonably explained by the selection of animals.

The following was written in the text, accompanied this table, in the Plan of zootechnician work of the Cherkessky State seed plot of Kabardian horses /Cherkessk, 1952/: "The development of the foals, especially of crossed origin, happens unequally in winter and summer. The offspring grows well in summer due to the abundance of rich grass at the highland pastures. The food is scanty in winter and the progress suddenly stops, it is especially seen on the shoulder – the most sensitive to feeding parameter. The delay in height and in a lesser degree in chest of crossed foals transforms into the fact the crossed horses do not differ much from pure Kabardians but stay behind them on bony factors and in chest.

There was experiment conducted by the Cherkessky state seed plot at the collective farm named after Red Partizans aimed at growing Kabardian foals of differentiated additional feeding in first winter and further the same housing of two groups of saplings, each of which consisting of 14 heads (7 males and 7 females).

The experimental group №1 were given 2½ kilos of oats per day, while the experimental group №2 – only 1½ kilos of oats. The progress of the foals from these groups compared to that of control group (without additions) is shown in **Table 125** and **Plot 17**.

**Table 125**

**The progress of the foals in experimental and control groups at the collective farm named after Red Partizans**

Group	Age, years	Colts			Fillies		
		Shoulder	Chest	Fore cannon	Shoulder	Chest	Fore cannon
Exp. № 1	0,5	125,4	129,4	15,2	125,0	130,3	15,0
	1	133,0	135,0	16,1	132,0	133,4	15,2
	1,5.	142,4	154,0	18,0	140,8	154,3	17,5
	2	145,7	158,8	18,1	143,3	156,3	17,7
	2,5	148,7	163,1	18,8	146,8	161,3	18,4
Exp. № 2	0,5	125,0	127,3	15,2	125,7	129,1	14,9
	1	131,5	131,0	15,8	130,8	131,0	15,1
	1,5.	133,7	150,7	17,5	138,4	151,3	17,4
	2	142,9	155,1	17,7	141,0	155,3	17,5
	2,5	144,1	159,0	18,4	143,8	157,7	17,9
Control	0,5	125,2	132,3	14,8	125,2	132,5	14,3
	1	132,1	135,1	16,1	132,1	134,1	15,8
	1,5.	135,1	143,3	16,4	135,2	141,5	16,5
	2	140,6	148,7	17,4	140,0	149,3	17,3
	2,5	144,1	155,0	18,0	143,8	159,4	18,0

In spite of the fact that the additional feeding for experimental groups took place only during their first year of life, after the foals were taken away from mother, the nutrition occurred to be effective.

The experimental foals in the age of 1 year, which were given 2,5 kilos of oats per day, were almost the same in measures as those from the rest groups. But they looked more nourished, cheerful, powerful and their shedding of hair happened about one month earlier /Student E.N. Borodulin, 1952/.

In the age of 1,5 years experimental foals demonstrated forced growth on summer pastures, what is caused by the biological property of stepwise development of herd horses

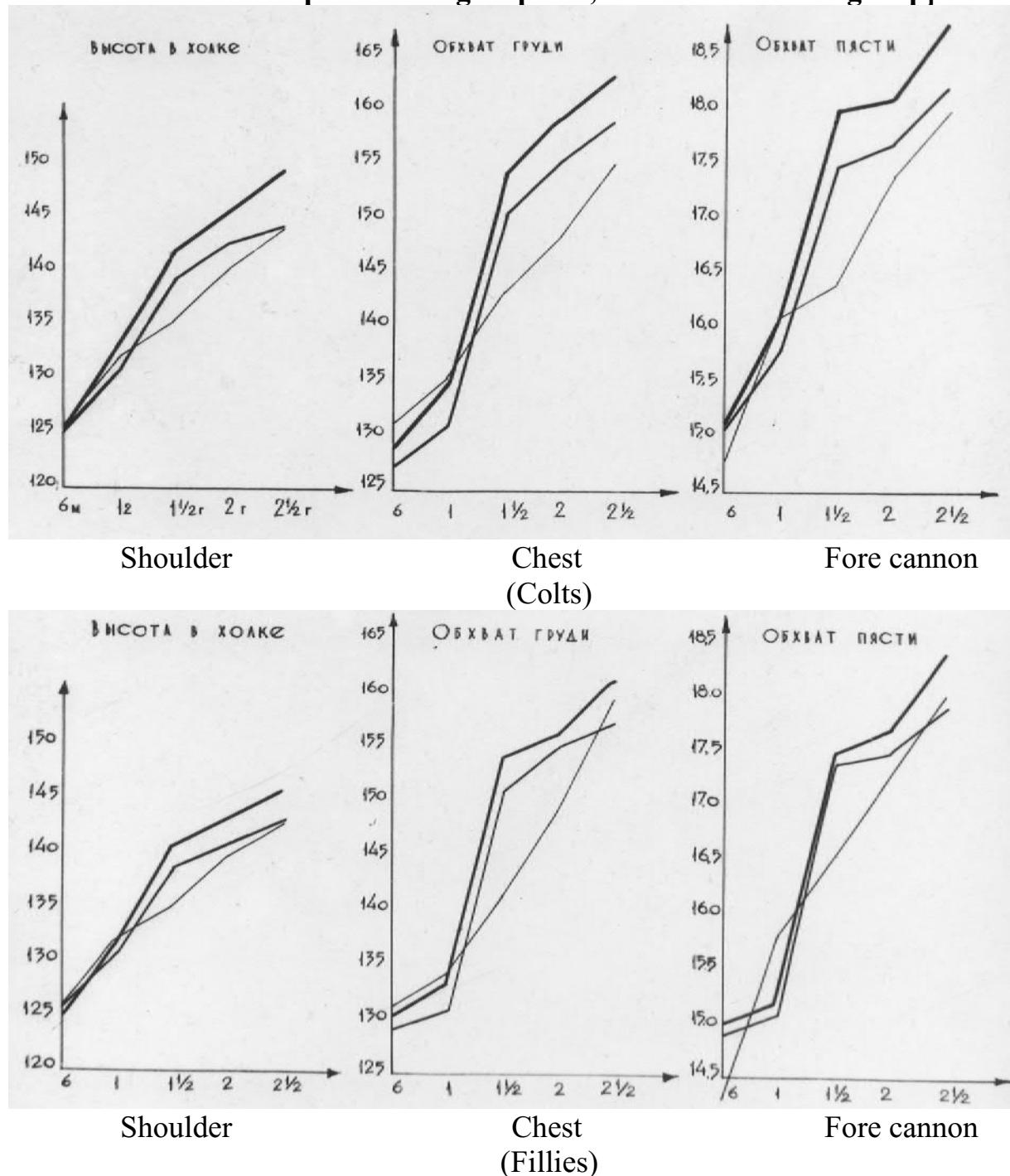
The foals from the experimental group № 1 in the age of 2,5 years possessed the best measured and some of saplings taken to the training exhibited the best sportiveness as well

K.F. Loria, generalizing (1953) the experiment of growing of Anglo-Kabardian offspring in conditions of the Second Stavropol stud № 172, present following data for the number of years

## Plot 17

The progress in the basic measures of foals at the collective farm named after Red Partizans of the Karachaev-Cherkesskaia Autonomic Region of Russia

[quantity per years] [Thick line – experimental group №1,  
medium line - experimental group №2, thin line – control group]



**Table 126**

**Average measure and indices of Anglo-Kabardian offspring from the Second Stavropol stud**

Age	Number of heads	Colts					Fillies					
		Measures			Indices of		Number of heads	Measures			Indices of	
		Shoulder	Chest	Fore cannon	Chest	Fore cannon		Shoulder	Chest	Fore cannon	Chest	Fore cannon
3 days	55	101,5	88,8	12,0	87,4	11,9	73	100,0	87,9	11,9	87,9	11,9
1 month	35	111,0	104, 4	13,6	94,0	12,1	36	108,8	102, 0	13,3	93,7	12,1
3 months	27	120,8	121, 8	15,7	100, 4	13,0	28	120,1	120, 1	14,7	100, 0	12,2
6 months	37	131,5	133, 9	15,8	101, 8	12,0	44	129,2	132, 9	15,8	102, 1	12,2
1 year	29	144,3	156, 5	18,0	108, 3	12,4	40	141,2	152, 6	17,6	108, 0	12,4
1,5 years	28	149,6	165, 1	18,9	110, 2	12,4	46	147,3	160, 3	18,1	108, 8	12,2
2 years	40	152,7	168, 8	19,3	110, 5	12,5	88	152,5	165, 1	18,1	108, 1	11,8
2,5 years	20	154,1	174, 2	20,0	113, 0	12,9	49	153,4	169, 9	18,7	100, 1	12,1
3 years	29	154,9	176, 6	20,1	113, 0	12,9	27	153,9	172, 2	18,8	111, 2	12,2

The measures of Anglo-Kabardian culture offspring grown in piedmont-steppe conditions overcome a lot corresponding measures of herd horses of common housing at collective and studs of mountain area of Northern Caucasus of Russia. The stepwise character of the development of Anglo-Kabardian culture saplings is not so obvious.

**Table 127**

**Relative increment (percents) of measures of Anglo-Kabardian offspring of various age from culture group of the Second Stavropol stud according to the data of K.F. Loria from 1953**

Measures	Colts						Fillies					
	Period	3 days - 6 months	6 months - 1 year	1 year - 1,5 years	1,5 year - 2 years	2 years - 2,5 years	2,5 years - 3 years	3 days - 6 months	6 months - 1 year	1 year - 1,5 years	1,5 year - 2 years	2 years - 2,5 years
Shoulder	29,4	9,8	3,6	2,0	0,9	0,5	29,1	9,2	4,3	3,5	0,6	0,3
Chest	51,8	16,8	5,4	2,3	3,1	1,3	51,0	14,9	5,4	2,9	2,8	1,8
Fore cannon	31,6	13,2	5,0	2,1	4,1	0,1	32,7	11,3	2,2	0,5	2,7	0,5

One can see from the table that the average increment evenly decreases with age. Some increase of the relative increment of the measures of chest and fore cannon can be noticed only for the foals in the age from 2 to 2,5 years, or during the summer period of their culture-herd housing.

The development of Kabardian and Anglo-Kabardian offspring at conditions of culture-herd housing at studs of mountain area of Northern Caucasus of Russia has been studied extensively after the World War II: P.I. Dragalev (1946, 1951, 1953), students A.P. Zotova (1948), T.A. Kuzhdanova (1949), G. Kerimov (1950), T.T. Gritsenko (1957), Kh.T. Chymba (1958), B.V. Kanzolov (1959) and V.A. Parfenov (1961, 1962). Forthcoming embraces their results.

**Table 128**  
**Relative measures and indices of culture groups of offspring, born 1946 - 1950**  
**at Malo-Karachaevsky stud according to the data of P.I. Dragalev /1953/**

Age	Colts					Fillies				
	Measures			Indices of		Measures			Indices of	
	Shoulder	Chest	Fore cannon	Chest	Fore cannon	Shoulder	Chest	Fore cannon	Chest	Fore cannon
3 days	103,1	96,2	13,1	93,2	12,7	101,1	92,8	12,7	91,8	12,6
6 months	127,4	128,2	14,6	100,5	11,5	126,6	127,6	14,7	100,7	11,6
1 year	140,0	151,2	17,1	108,0	12,2	138,9	151,4	17,4	108,3	12,4
1,5 years	146,2	164,7	18,3	112,7	12,5	147,7	167,4	18,1	113,3	12,3
2 years	151,8	173,4	18,9	114,4	12,5	149,3	171,2	18,4	114,2	12,3
3 years	154,6	179,7	19,7	116,2	12,7	153,0	177,4	18,7	115,8	12,2

These measures and indices of culture groups of horses from the Malo-Karachaevsky stud, grown in the mountains, overcome on chest measures corresponding values of Anglo-Kabardian horses grown at piedmont steppes of the Stavropol stud.

The absence of the step on the progress during winter and summer months, caused by the full feeding of the culture group of the offspring, can be noted also at the Malo-Karachaevsky stud

**Table 129**

**Relative increment (percents) of measured of the offspring of culture group of Malo-Karachaevsky stud**

Measures	Colts					Fillies				
	3 days - 6 months	6 months - 1 year	1 year - 1,5 years	1,5 years -2 years	from 2-3 years	3 days - 6 months	6 months - 1 year	1 year - 1,5 years	1,5 years -2 years	from 2-3 years
Shoulder	23,6	9,9	4,4	3,8	1,8	25,2	9,7	6,3	1,1	1,1
Chest	35,4	18,0	8,9	3,4	1,6	37,5	18,6	10,6	2,5	3,6
Fore cannon	11,5	17,1	0,8	0,4	0,5	15,7	18,4	4,1	1,7	1,6

The gradual slowing down of the intensity of foals' shoulder and chest growth can be noticed at both Malo-Karachaevsky and Stavropol studs

The relative increment of the parameters of the fore cannon of sucking foals from Malo-Karachaevsky stud which are on the summer mountain pastures with their mothers is much lower than from Steppe Stavropol stud. This indicator of progress of foals from Malo-Karachaevsky stud increases in the age from 6 months to 1 year what can possibly be explained by that roughening or grown fore cannon during severe winter conditions which was reported in this work earlier /Vol.1, p.240 [of Russian original]/.

The application of winter (in January) take away of foals instead of autumn one (in October) at Malo-Karachaevsky stud provided better progress of saplings. Foals being on winter pastures with extra-dairy mares became healthier and more resistant to illnesses accompanying early taking away, for example to bronchial pneumonia.

The application of earlier foaling-in of mares also determined the better progress of foals at Malo-Karachaevsky stud. The foals born in May or later are retarded in comparison to those born in April and earlier, which become bigger at the age of 2 years /Kerimov, 1950/. This happens because of the fact that the late foals of Malo-Karachaevsky stud are born on summer mountain pastures at strong variations of temperature and humidity. The cold nights and frosts, usual in May and June in mountains, undoubtedly negatively influence on spring pastures making the grass lower. The early foals are already stronger and suffer less from low temperatures and humidity of mountain pastures near the places of winter stay and by the time to go up. Bad conditions of mountain housing affect the weakest foals in the first turn. Because of better development of early foals by the end of the first year, their quality increases by the age of 3 years. This can be seen from the comparative estimation of two sets of foals from Malo-Karachaevsky stud:

Born	% of born in March-April	From all the set in %% of quality	
		Pedigree	Elite and 1 class
1945	43	77	52
1948	70	89	67

Bad and favorable conditions of mountain housing of horses effect stronger on more subtle but simultaneously more prepared to the forced development cross-breed youth.

The half-blooded sucking foals develop better under the mares at their novel year on summer mountain pastures. But in cold rainy and misty august days these foals huddle together and shiver while pure breed offspring feel themselves fine. After taking away in winter the progress of half-blooded foals slows down.

Pure breed foals of Malo-Karachaevsky stud develop slower than half-blooded ones on summer mountain pastures, but in the age of 1, 2 and 3 years they catch up and sometimes overtake mongrels.

The progress of foals at Malo-Karachaevsky stud within recent years can be demonstrated by the following data.

**Table 130**  
**Average measures and indices of young horses born 1957, 1958 and 1959 at Malo-Karachaevsky stud**

Sets	Colts						Fillies					
	Number of heads	Measures			Indices of		Number of heads	Measures			Indices of	
		Shoulder	Chest	Fore cannon	Chest	Fore cannon		Shoulder	Chest	Fore cannon	Chest	Fore cannon
<b>In the age of 1,5 years</b>												
<b>Born 1957,</b> including offspring of stallions	129	140,7	152,6	17,3	108,4	12,3	121	140,5	161,5	17,3	114,8	12,3
Pure	72	141,6	153,2	17,4	108,2	12,3	62	140,7	162,4	17,4	115,3	12,4
Half-blooded	30	140,1	152,3	17,3	108,7	12,3	36	140,4	162,0	17,4	115,2	12,4
Thoroughbred	27	139,3	150,6	17,3	108,1	12,4	23	140,1	158,5	17,1	113,0	12,2
<b>Born 1958,</b> including offspring of stallions	84	144,3	161,3	18,5	111,8	12,8	82	142,2	158,0	17,5	111,1	12,3
Pure	42	144,8	162,3	18,6	112,1	12,9	32	142,6	158,8	17,6	111,2	12,3
Half-blooded	27	143,2	159,8	18,4	111,5	12,9	31	141,3	157,0	17,3	110,1	12,2
Thoroughbred	15	145,0	161,0	18,1	110,0	12,5	19	143,1	160,2	17,6	111,8	12,3
Including values on the group of common housing – offspring of stallions:												
Pure	32	144,4	162,2	18,7	112,4	13,0	-	-	-	-	-	-
Half-blooded	23	142,8	159,9	18,4	111,9	12,9	-	-	-	-	-	-
Including values on the culture group – offspring of stallions:												
Pure	10	145,9	162,6	18,4	111,3	12,6	-	-	-	-	-	-
Half-blooded	4	145,5	159,2	18,3	109,4	12,6	-	-	-	-	-	-
Thoroughbred	15	145,0	161,0	18,1	110,0	12,5	-	-	-	-	-	-
<b>Born 1958,</b> including offspring of stallions	91	142,2	156,1	18,2	109,8	12,8	Not determined					
<b>In the age of 2,5 years</b>												
Born 1957	117	151,2	173,0	19,2	114,4	12,7	Not determined					
Born 1958	79	151,7	175,2	19,4	115,2	12,7	73	150,6	174,0	18,8	115,4	12,4
Born 1959	84	152,6	173,9	19,3	113,9	12,6	77	150,5	171,9	18,8	114,0	12,5

The sets of foals born 1957, 1958 and 1959 were grown at stud with interruptions in winter feeding and not on the best summer pastures. The most unfavorable year for the progress of the offspring was 1957. The saplings born 1958 were in better nutrition conditions that reflected on their measures.

The offspring of pure Kabardian stallions developed better than half-blooded saplings in common conditions of Malo-Karachaevsky stud. The worst developed foals compared to pure stallions were from the set born 1957 due to the bad diet. But even when feeding condition improved just little bit the fillies from pure

stallions born 1958 left behind all the other fillies in their development. This happened due to the lesser exactingness and response of fillies to the improved housing conditions.

The best progress was shown by the foals (from pure stallions) of culture group of colts selected in 1958. So, the improved housing conditions of the culture group occurred to be insufficient for the offspring of pure stallions in spite of the fact that they overcame the half-blooded saplings in both shoulder and chest measures.

The youth born 1957 and 1958 were rated at 5-point scale at the stud in the age of 1,5 years. Such estimation made in different years gave almost the same results:

Set	Average rating of the offspring of the stallions					
	Pure		Half-blooded		Thoroughbred	
	Number of heads	Points	Number of heads	Points	Number of heads	Points
born 1957	172	3,4	61	3,2	23	3,3
born 1958	50	3,2	54	3,0	19	3,1

The offspring of pure stallions were rated with the highest points two consecutive years while that of half-breed were estimated the worst. The Thoroughbred saplings were rated mean.

The bonitation of young horses in the age of 2,5 years by the complex of criteria with fuller determination of their class (compared to the simple point rating) can characterize the quality of the offspring. Corresponding data on the Malo-Karachaevsky stud for the number of years are given in next table.

**Table 131**  
**Class of the offspring of stallion-breeders at Malo-Karachaevsky stud according to the data of bonitation in the age of 2,5 years within 1959-1961**

Offspring of stallions	Number of heads	Class, percents			
		Elite	I class	II class	Rejects
Pure	175	14,8	55,4	24,1	5,7
Half-blooded	105	9,5	59,3	21,9	14,3
Thoroughbred	65	15,4	43,1	21,5	20,0
Total at the stud	345	13,3	51,7	29,9	11,1

The percent of pedigree production of I class and of elite is the highest for pure breed stallions – 70,2%. This number is 68,8% for half-blooded and 58,5% for Thoroughbred. The highest numbers of elite and at the same time of rejected horses are for the offspring of Thoroughbred stallions. The least value of the pedigree rejects is for the pure breed stallions.

The estimation of the quality of breeders on their offspring would be more correct at housing conditions corresponding to the natural and biological requirements of the offspring. However the above estimation of the offspring of the pure breed, half-breed and thoroughbred stallions in natural and farm conditions is of definite importance.

We observe rather different development of the youth at Malkinsky stud (rebuilt 1958) in comparison to the Malo-Karachaevsky stud.

**Table 132**  
**Average measure and indices of the offspring of herd housing at Malkinsky stud on foals born 1958, 1959 and 1961**

Sets	Colts				Fillies			
	Number of heads	Shoulder	Chest	Fore cannon	Number of heads	Shoulder	Chest	Fore cannon
<b>In the age of 1 year</b>								
<b>born 1959, including:</b>	<b>47</b>	<b>141,4</b>	<b>155,4</b>	<b>17,4</b>	<b>42</b>	<b>138,4</b>	<b>156,9</b>	<b>17,1</b>
Kabardian	40	141,4	155,6	17,4	29	138,5	157,3	17,1
Anglo-Kabardian	7	140,1	155,0	17,6	13	138,0	156,2	17,1
from them $\frac{1}{4}$ of english blood	3	142,3	158,3	17,8	7	138,4	156,3	17,1
from them $\frac{1}{2}$ english blood	4	138,5	152,5	17,5	6	137,5	156,8	17,0
<b>In the age of 1 year and 3 months (culture group, selected 20 August 1962)</b>								
<b>born 1961, including:</b>	<b>9</b>	<b>142,7</b>	<b>156,3</b>	<b>18,7</b>	<b>9</b>	<b>142,9</b>	<b>158,0</b>	<b>17,8</b>
Kabardian	2	143,0	157,0	18,8	2	144,5	156,0	17,9
Anglo-Kabardian	7	142,6	156,1	18,6	7	141,8	158,6	17,9
from them $\frac{1}{4}$ of english blood	1	143,0	157,0	19,0	1	138,0	158,0	17,5
from them $\frac{1}{2}$ english blood	6	142,7	156,0	18,6	6	142,4	158,0	17,8
<b>In the age of 1,5 years</b>								
<b>born 1958, including:</b>	<b>48</b>	<b>146,1</b>	<b>162,3</b>	<b>18,3</b>	<b>35</b>	<b>144,0</b>	<b>161,5</b>	<b>17,5</b>
Kabardian	32	145,4	161,7	18,2	25	143,4	160,9	17,5
Anglo-Kabardian	16	147,5	163,5	18,5	10	144,2	163,5	17,5
from them $\frac{1}{4}$ of english blood	10	148,6	164,6	18,6	4	146,3	164,8	17,8
from them $\frac{1}{2}$ english blood	6	145,8	162,5	18,3	6	142,6	162,7	17,6
<b>In the age of 3,5 years</b>								
<b>1959 года в т.ч.:</b>	<b>35</b>	<b>151,1</b>	<b>170,8</b>	<b>18,3</b>	<b>19</b>	<b>148,3</b>	<b>168,6</b>	<b>18,2</b>
Kabardian	32	151,2	170,8	18,4	13	148,3	168,4	18,2
Anglo-Kabardian	3	150,0	168,0	18,4	6	148,5	168,9	18,1
from them $\frac{1}{4}$ of english blood	1	153,0	169,0	18,5	5	147,9	168,7	18,1
from them $\frac{1}{2}$ and more english blood	2	148,5	167,5	18,3	1	151,0	170,0	18,0

The half-blooded offspring developed in majority cases worse than pure Kabardians in herd conditions of Malkinsky stud. Especially bad developed were the sapling of  $\frac{1}{2}$  and more of english blood. The Anglo-Kabardian offspring of  $\frac{1}{4}$  of english blood developed usually better than Kabardian youth. This pointed on the effectiveness of introductory back crossing to the thoroughbred in herd conditions of stud and, at the same time, on the necessity of improvement of those conditions for half-blooded horses.

The immaturity of half-blooded saplings in the herds was compensated in a certain degree if the training was in improved stables housing, thus the offspring with more blood after the training and trials occurred to be more developed than less-blooded, what can be seen from the following table.

**Table 133**

**Average measures of colts born 1956 and 1957 at Malkinsky stud being restored from the Malo-Karachaevsky stud**

Breed groups of saplings being trained	2-years old, born 1957				3-years old, born 1956				
	Number of heads	Shoulder	Chest	Fore cannon	Number of heads	Shoulder	Chest	Fore cannon	Number of heads
Half-blooded, including	10	152,2	169,5	19,6	6	157,8	158,8	179,9	19,3
½ english blood	5	151,4	169,0	19,4	2	156,5	157,0	173,0	19,3
¾ of english blood	5	153,0	170,0	19,7	4	157,5	159,2	177,0	19,3

The offspring born 1958, 1959 and 1961, grown in herd conditions and measures of which are given in Table 132, was rated on 10-points scale.

**Table 134**

**10-point rating of the offspring from the Malkinsky stud**

Breed group	In the age of 1,5 years			In the age of 3,5 years		
	born 1958		born 1961	born 1959		
	Number of heads	Points	Number of heads	Points	Number of heads	Points
Kabardian	57	6,6	4	6,7	45	4,8
Anglo-Kabardian, including	26	6,8	14	5,8	9	5,0
¼ of english blood	14	7,2	4	5,7	6	5,2
½ english blood	12	6,6	10	5,9	3	4,8

So, the best rated at Malkinsky stud in herd conditions were the saplings of ¼ of english blood. This offspring raised the total rating of Anglo-Kabardian offspring at rather low estimation of foals of half-english blood.

The best rated among the foals selected to the culture group in 1961 were the Kabardian foals.

All the materials on the growth and development of Kabardian horses considered by us do not give us the grounds for the deduction on the lateness of this breed. The measures of pure and half-breed horses, grown in conditions of culture-herd horse-breeding demonstrate their sufficient plasticity and earliness.

However it is quite distributed opinion that Kabardian horses as well as horses of another aboriginal breeds stop their growth only at 7 years. Many oriental tribes reflected it in the animal calendars with the horse denoting the seventh year of the cycle /Serdyuchenko, 1947/.

Massive measurements of horses at collective farms of the Kabardian State seed plot also support the development of Kabardian and Anglo-Kabardian horses in common herd condition within 7 years, see the next table.

**Table 135**

**Average measures of Kabardian and Anglo-Kabardian horses in the age of 3 years and older from the Kabardinsky State seed plot in 1938**

Breed groups	Age, years	Stallions					Mares					
		Number of heads	Shoulder	Length of body	Chest	Fore cannon	Weight	Number of heads	Shoulder	Length of body	Chest	Fore cannon
Kabardian	3	37	150,2	148,0	169,5	19,0	394,7	288	142,2	143,4	164,5	17,7
	4	45	149,8	148,7	172,3	19,4	414,5	309	143,5	145,1	168,1	17,8
	5	41	150,5	150,1	172,7	19,4	421,5	178	143,9	145,9	170,4	17,8
	6 and more	69	151,0	150,1	175,3	19,7	429,0	1207	144,0	146,9	172,9	17,9
Anglo-Kabardian	3	43	151,7	148,3	169,3	19,2	395,0	77	145,2	144,2	166,5	17,8
	4	24	152,3	149,5	171,7	19,5	415,4	74	146,5	146,7	169,3	18,0
	5	32	152,6	150,3	173,1	19,3	419,8	32	146,7	147,6	170,5	18,1
	6 and more	28	153,2	153,5	174,9	19,8	430,9	95	146,8	149,1	173,8	18,2

On the basis and generalization of all the material on the development of the Kabardian offspring and accounting for the necessity to improve their qualities we have developed following, accepted by studs, controlling scale for the pure and half-blooded horses of this breed.

**Table 136**

**Controlling scale of the growth of the Kabardian offspring**

Age, years	Colts			Fillies		
	Shoulder	Chest	Fore cannon	Shoulder	Chest	Fore cannon
0,5	130	132	15,0	130	132	15,0
1	140	150	17,0	140	150	17,0
1,5	146	162	18,0	145	162	18,0
2	150	170	18,5	148	170	18,0
2,5	152	172	19,0	150	172	18,5
3	153	174	19,5	151	174	19,0
4	154	178	20,0	152	178	19,0

*Note: The shoulder of half-blooded foals from the age of 1 year has to be 2 cm higher*

This scale can be recommended also for the breeding units of collective farms located in the main regions of breeding in Kabardino-Balkaria and Karachaevo-Cherkessia. In conditions of highland regions of Dagestan horses develop in other way.

**Table 137**

**Average measures of mountain Avar and Kabardino-Avar fillies (crosses of 1 and 2 generations) in Autonomic Soviet Socialist Republic of Dagestan according to the data of M.M. Zubairov, 1958**

Age groups	Mountain Avars /n=16/			Kabardino-Avars /n=17/		
	Shoulder	Chest	Fore cannon	Shoulder	Chest	Fore cannon
3 days	81,6	69,8	10,6	94,4	91,8	12,0
1 year	119,4	130,0	15,4	128,3	137,6	16,5
2 years	126,2	138,1	16,0	135,6	151,7	17,8
3 years	129,5	149,4	16,6	145,8	168,8	18,2

The mountain foals are born very small. Their measures at birth correspond to the Albanian mountain horse which must have at birth values of, according to the data of R.Fisht (1958), shoulder – 84,5 cm, chest – 68,8 cm, fore cannon – 10,1 cm and live weight of 31,7 kilograms.

The Avar horse possesses slightly better parameters of increment of measures at the period from taking away from mothers to one-year age at scanty feeding and only herd housing, but Kabardino-Avar crosses, born bigger, in the age of 3 years considerably overcome local Avars in all quantities. The latter one more time demonstrates the pedigree importance of Kabardian breed of horses in Autonomic Soviet Socialistic Republic of Dagestan.

## ADAPTIVE MERITS

The conditions of full-year hers housing in different vertical zones, usually without enough food, the rocky relief and the climate with lowered concentration of oxygen in the air and with increased humidity, often rains and mists, sudden daily variations of temperature (with frosts in summer) on the mountain pastures, - all this make serious demands to the organism of the horses in respect to the constitutional firmness, unpretentiousness and stamina.

The above resulted in a number of adaptive merits appeared in the Kabardian horses, first of all the good use of food, perfect fattening on summer pastures, lavish hair in winter (**Figures 148 and 149**), in-time shedding in spring and solid health resistant to illnesses promising long-term pedigree and working use.

The horses of Kabardian breed, reared in herds for many generations, are well prepared to the eating of huge amount of rough food and grass. Many of them, being all the life in hers, were never treated with concentrated forage. During the expedition of the All-Russian Research Institute for Horse-Breeding ("VNIIK") in 1931 I personally rode the Kabardian horse taken from the herd within one week and that horse never ate oats and only snorted on it all the way from the Cherkessky stud to the town of Maikop.

The ability to be satisfied with the graze and rough food is the worth adaptive merit of mountain horses.

**Fig. 148. Much-haired foals in winter at open base in Karachaev-Cherkessia**



**Fig. 149. Winter hair of pure riding stallion  
2097 Shamhora in Karachaev-Cherkessia**



The objective parameters of the ability to use the food well, to fattening and to keep the plumpness of Kabardian and Anglo-Kabardian horses are presented by the data of A.G. Korolkov and K.F. Loria (1952) on the material of the Second Stavropol stud.

**Table 138**  
**The state of plumpness of herd horses from Stavropol stud,  
1950 – 1951, percents**

Season	Good		Satisfactory		Inadequate	
	Kabardians	Anglo-Kabardians	Kabardians	Anglo-Kabardians	Kabardians	Anglo-Kabardians
Before wintering (November)	98	90	1	8	1	2
After wintering (April)	45	36	50	55	5	9
Before the burnout of resources (July)	83	80	16	17	1	3
After the burnout of resources (end of August)	62	54	35	40	3	6

The Kabardian horses better fatten and keep the plumpness in the conditions of steppe housing in culture-herd conditions. Half-blooded Anglo-Kabardian horses are slightly behind in this respect, but they exhibit enough strength as well. Anglo-Kabardian stallions, and Kabardians too, lead the herd well /Mishin and Dragalev, 1951; Dragalev, 1952/.

Studying the reactivity of the nervous system of the horses at the Education-Research Stable of agricultural Academy of K.A.Timirjazev K.S. Stogov /1956/

found that the mare Dolia (the cross of Kabardian breed and Russian trotter) possessed the most pronounced dietary reaction. This mare, calm in its behavior, differed in its special ability to orient quickly in the environment and in its fast and stable formation of positive reactions. We think that these qualities Dolia inherited from its mother Dobraia of Kabardian origin grown in the conditions of culture-herd housing ad Malo-Karachaevsky stud.

The unpretentiousness of Kabardian horses emerged naturally in severe condition of winter housing with almost annual lack of nutrition. Even in the area of the State seed plots of this breed there was a gross loss after the fodder shortage. For example, 771 horses died in 1940, including 295 foals of the same year of birth. These figures do not confirm the unpretentiousness of the Kabardian horses but demonstrate the hard, natural selection in the area of its rearing.

Good health and resistance to illnesses of Kabardian horses can be illustrated by the very small refuse to the full list of horses of Malo-Karachaevsky stud in a row of postwar years within the groups of illnesses:

Reasons for refuse	Percents
Infection illnesses	0,04 – 0,05
Invasion illnesses	0,15
Non-contagious illnesses	0,36 – 0,67
Of non-sicky origin	0,07 – 0,42
Total losses	0,5 – 1,13

According to the data of the report of the Piatigorsk Hippodrome from 1962, the morbidity of Anglo-Kabardian horses in training sections of Malo-Karachaevsky (9,1%) and Malkinsky (6,2%) studs was below the average for the hippodrome (10,6%) and much lower than in training sections of Thoroughbred studs № 33 (13,6%), № 93 (18,7%) and № 94 (23,8%).

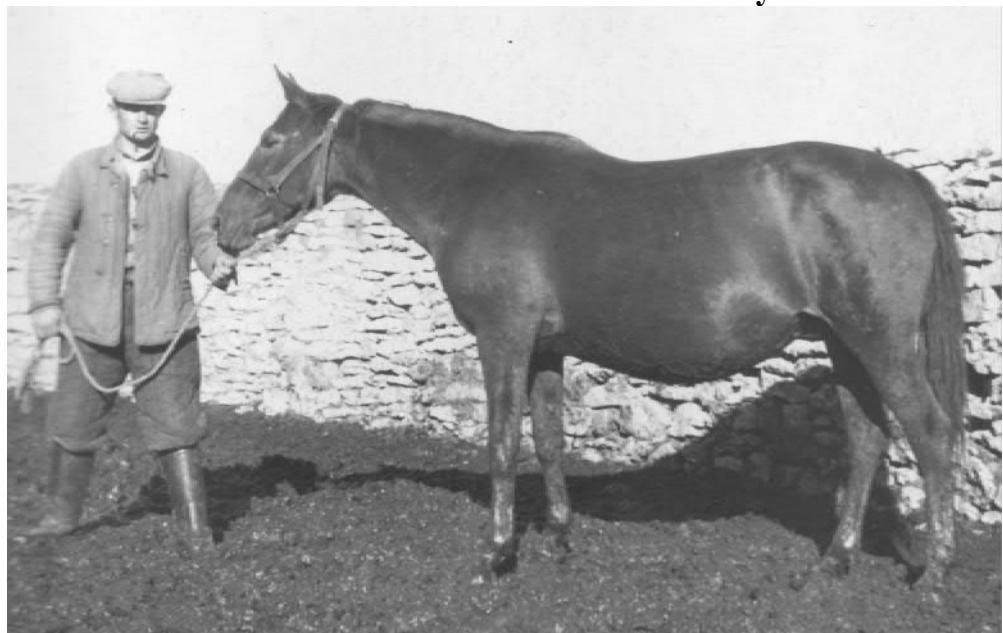
Due to the solid constitution and good health the Kabardian horses keep their reproducible function long at pedigree use. Many ancestors of the lines of this breed gave birth in the age of 20 years and more, some such horses are in herds and continue dropping. For instance, the half-blooded mare 0196 Grustnaia 18 (born 1936 from Gray-Terror and Taman 129) survived in the war and evacuation gave birth to its 21-st foal in 1962. This is the record of some kind. Ettingen noted in 1908 that only two cases within 100 years took place at Trakehner stud when the mare born 19 live foals, and all the history of Thoroughbred breed knows just one mare gave birth to 22 foals – Queen Ester, born 1864. (**Figures 150, 151**)

## FAMOUS (OF DROPPING) MARES OF MALO-KARACHAEVSKY STUD

**Fig. 150. Grustnaia 18, bay, born 1938, half-english from 61 Gray-Terror and Taman 129. Gave birth to 21 foals within 21 years**



**Fig. 151. Dadanka 155, dark bay, born 1938 from 136 Dalhat and Bedovaia 666. Gave birth to 19 foals within 20 years**



Binary pregnancy is seldom in Kabardian breed (0,3 – 0,4), but twin foals often survive. V. Korolkov reported in 1934 that 3 out of 4 binary foals brought up and normally developed. I have seen such cases at collective farms of Kabardinsky State seed plot as well. (**Figures 152, 153**)

**Fig. 152. Kabardian mare with 2 sucking twin foals**



## **MEAT MERITS**

The horses of Kabardian breed were not specially reared for production of meat until now. In the 1960 the meat plants killed at the main places of rearing of Kabardian horses:

1268 horses, including 232 foals younger than 1 year, in Nalchik;

982 horses in Cherkessks;

488 horses in Kislovodsk.

The average weight of live and killed horses (older than 1 year) was

Meat plant in	live weight in year				Outcome in respect to live weight, %			
	1958	1959	1960	1961	1958	1959	1960	1961
Nalchik	309	322	335	-	49,2	48,8	42,4	-
Cherkessk	326	335	329	353	45,7	45,3	47,3	47,2
Kislovodsk	-	336	325	334	-	45,9	48,7	46,7

The meat outcome at Cherkessky meat plant varied from 54% to 73% and was in the range of 72-82% at Kislovodsk.

The upper parameters would be bigger if horses were specially fattened before the slaughter

## **OSTEOLOGICAL DATA**

Sultanov investigates in 1963 the macro-micro morphological structure, the chemical composition and physical properties of 5 fore cannons of Dagestan mountain horses. His results revealed more powerful development of compact substance, abundant fit with osteons, dense distribution of haversian systems of small size, more concentration of mineral salts and larger compression strength of bones of mountain horses in comparison to valley ones. This points on the firmness of the main body of mountain horses and attracts attention to performing similar experiments on the horses of Kabardian breed.

## HEMATOLOGICAL NUMBERS

Hematological studies of the Kabardian horses had been conducted under the guidance of the Chairs of Horse-breeding of Moscow Veterinary Academy and of Agricultural Academy of K.A. Timirjazev and also under the supervision of the All-Russian Research Institute for Horse-Breeding (“VNIIK”). The results of those investigations of Kabardian horses at rest are given below.

On the order of Professor N.M. Spier, the veterinary V.P. Loginov and co-workers conducted investigations of the blood and blood serum of some groups of colts (control) and geldings (experimental) born 1938 at Malo-Karachaevsky stud. The experimental animals were castrated at different times: in June and October of 1940.

**Table 139**  
**Results of investigations of blood and blood serum in control groups of colts  
from Malo-Karachaevsky stud**

Date of investigation	Age at experiment	Number of heads in a group	Hemoglobin, in g %%	Red blood cells, millions per cubic mm	White blood cells, thousands per cubic mm	Erythrocyte sedimentation rate per 1 hour	General alkalinity	Calcium, %	Inorganic phosphorus, %
22 May – 02 June 1940	2	22	12,6	7,7	13,2	59,3	451	15,21	4,08
20-30 October 1940	2 1/2	19	13,3	7,47	13,1	58,9	474	14,93	5,83
01-10 June 1941	3	10	14,2	7,35	12,6	61,6	392	-	5,10

The colts in the age region from 2 to 3 years exhibit increased content of hemoglobin in blood at some decrease in the number of red and white cells on the dates of experiments.

**Table 140**  
**Data on the blood and blood serum of experimental groups of geldings from  
the Malo-Karachaevsky stud**

Age at investigation	Number of heads in a group	Hemoglobin, in g %%	Red blood cells, millions per cubic mm	White blood cells, thousands per cubic mm	Erythrocyte sedimentation rate per 1 hour	General alkalinity	Calcium, %	Inorganic phosphorus, %
2	10	13,3	8,02	11,7	51,5	478	16,12	4,22
2 1/2	10	13,3	7,52	11,7	59,4	508	15,44	5,63
3	10	15,7	7,54	12,2	58,2	433	-	6,13
3	7	16,4	7,77	13,1	46,6	433	-	6,20

The geldings at the same time demonstrate remarkable increase in percentage of hemoglobin at some increase of concentration of inorganic phosphorus and they have tend to decreasing of general alkalinity. Geldings of various date of castration do not demonstrate decreasing of the oxidation abilities within the organism.

The student A.D. Borodulina from Agricultural Academy of K.A. Timirjazev investigated the hematological properties of the Kabardian offspring of three types: Kabardian characteristic (main), eastern and dense at Cherkessky State seed plot. There were taken 30 horses from Cherkessky hippodrome, including 15 2-year-old and 15 3-year-old, 5 horses of each type within the age group. She obtained following data.

**Table 141**  
**Hematological data of the trained offspring of three types of Kabardian horses at Cherkessky hippodrome at the beginning of racing season of 1953 in the state of rest**

Types	Number of heads	Hemoglobin in the blood, %	Red blood cells, millions per cubic mm	White blood cells, thousands per cubic mm	Index of saturation	Cell coefficient	Erythrocyte sedimentation rate per 1 hour according Nevodov
<b>2-years old</b>							
Eastern	5	8,0	8,27	9,02	7,33	945	46,3
Characteristic	5	9,4	8,03	9,15	7,36	914	50,6
Dense	5	9,2	7,44	9,68	7,55	770	58,3
<b>3-years old</b>							
Eastern	5	11,2	9,22	9,55	7,36	967	41,8
Characteristic	5	10,7	9,00	8,72	6,90	1039	42,4
Dense	5	9,5	8,17	7,28	6,85	1154	49,1

The horses of dense and characteristic types of Kabardian horses possess the most concentration of hemoglobin and of red white cells. The horses of dense type have these values lowered. The differences are more obvious for 3-year-olds. This tells us about the increased oxidizing-reduction abilities of the blood of eastern and characteristic types of Kabardian horses in comparison to the dense type.

Besides the studies of the blood of the offspring at Cherkessky hippodrome A.D. Borodulina carried out hematological investigations of 2-year-old Kabardian horses on the summer pastures 1800 meters above the sea level.

**Table 142**  
**Hematological data of the offspring of three types of Kabardian horse breed in the age of 2 years in the rest on the summer mountain pastures**

Types	Number of heads	Hemoglobin in the blood, %	Red blood cells, millions per cubic mm	White blood cells, thousands per cubic mm	Index of saturation	Cell coefficient
Eastern	2	11,0	8,96	11,40	7,43	786
Characteristic	4	11,3	8,39	11,75	8,11	762
Dense	6	10,0	8,27	11,73	7,65	713

The mountain 2-year-old horses had better enrichment of blood with hemoglobin compared to those of hippodrome, but distinctions of hematological

parameters between the types remain. The quantities of hemoglobin, red blood cells and the cell coefficient appeared to be less for horses of dense type in comparison to those of eastern and characteristic types.

So, the hematological data have revealed that intra-breed types of the Kabardian horses differ also on the physiological data. One can suppose that horses of eastern and characteristic types possessing most amounts of hemoglobin and red blood cells in their blood at rest may be as well more capable of working in the mountain arras.

The interesting hematological investigation on 20 Kabardian mares from Malo-Karachaevsky stud had been done by aspirant from the All-Russian Research Institute for Horse-Breeding O.A. Balakshin in 1959-1961. He obtained following results.

Total amount of blood, liters	48,5
Total amount of red blood cells, thousands	392,5
Total amount of hemoglobin, kilograms	7,2
Blood per 100 kilos of live weight, liters	9,1
Red blood cells per 100 kilos of live weight, thousands	73,1
Hemoglobin per 100 kilos of live weight, kilograms	1,3
Red blood cells per 1 cubic millimeter, millions	8,1
Hemoglobin per 1 cubic millimeter (g.%)	14,7
Average live weight of mares	532,5
Investigations conducted	38

In the end of his researches of seasonal changes of hematological parameters O.A. Balakshin came to conclusion that these numbers change quite a little for the horses of Kabardian breed. He explained this by the fact that horses grown in conditions of severe, hardening the organism, culture-herd method of housing react little on the changes of climatic conditions.

On the basis of afore-mentioned studies and after comparing them to the data of N.I. Chashkin and I.P. Bogdanov (1962) and others one can come to the conclusion that the blood of Kabardian horses is enriched well in red blood results in the liveliness, adaptability to various environmental conditions, working conditions and resistance to the illnesses of Kabardian horses.

The big amount of blood in big horses of Malo-Karachaevsky stud makes the Kabardian horses especially worthy for using as donors at Stavropol Research Institute of vaccines and serums, where they are ranked with the highest points.

The following conclusions can be drawn from the materials of the present Chapter:

1. The data on the breeding power written in the State Stud Book reveal that the horses of Kabardian breed overcome all the riding horses excluding those of Karabairskaia and Lokaiskaia breeds.
2. In conditions of culture-herd housing the Anglo-Kabardian horses exhibit more breeding power compared to the pure Kabardian horses and overcome all the half-blooded breeds of the Union of Soviet Socialist Republics.
3. The best breeding power in Autonomic Soviet Socialist Republic of Dagestan is exhibited by the mares crossed from stallions of Kabardian breed.
4. The period of pregnancy of pure and half-blooded horses of Kabardian breed is shorter in comparison to the small mountain horses of Eastern and Western Europe. The period pregnancy of Anglo-Kabardian and Anglo-Karachai mares is shorter than that of pure horses in favorable conditions of housing and longer in unfavorable ones. The pregnancy becomes prolonged in unfavorable conditions of housing of mares in-foal.
5. The pure and half-blooded mares of Kabardian breed of horses are multi-dairy and feed well sucking foals. However, the milk productivity of this breed is studied insufficiently.
6. The Anglo-Kabardian sucking foals develop better than pure ones in favorable conditions of summer housing on mountain pastures. After the taking away, in conditions of base housing even with additional nutrition, the development of half-blooded foals becomes retarded, especially delayed is the shoulder.
7. The half-blooded offspring in the age of 1½, 2, 2½ and 3 years had worse measures than that of pure breed at Cherkessky and Malo-Karachaevsky studs before the World War II. According to the data of collective farms of Kabardinsky State seed plot and studs №№ 34, 35, 38 and 93 the half-blooded saplings, forcedly developed in summer, in the age of 1½ and 2½ years caught up and overcame in measures the pure offspring. However, the offspring of ¾ of English blood badly endured the herd conditions in mountains and stayed retarded.
8. After the war the stepwise character of the progress of foals, intrinsic to primitive-herd horse-breeding, was smothered by the introduction of culture-herd method of growth accompanied with the improved conditions of housing at collective farms of Cherkessky and Kabardinsky State seed plots and at Malo-Karachaevsky, Stavropol and Malkinsky studs. The offspring of culture-herd nutrition could be described by the even development with gradual decreasing in intensity of growth of shoulder and chest measures. Only values of absolute and relative increment of the measures of the fore cannon varied considerably in differing conditions of summer and winter housing. This requires special investigations to be carried out on the reasons of forced development of the fore cannon of foals at summer pasture housing and also at underfeeding in winter.

9. At the moment the pure offspring develop better than half-blooded one at Malo-Karachaevsky and Malkinsky studs due to the worsening of housing conditions. Thus the pure saplings are ranked higher at inspections and bonifications. Especially badly developed are the saplings of  $\frac{1}{2}$  English blood and higher. The offspring of  $\frac{1}{4}$  of english blood develop better than pure saplings. This points on the effectiveness of introductory back crossing to Thoroughbred in herd conditions of studs and on the necessity of improvement of housing conditions for the half-blooded horses.
10. While being housed in stables trained half-blooded offspring compensates their immaturity after the first year of herd growing, thus more blooded 3-year-old horses possess better measures than less blooded after the trainings and trials. This points on the plasticity of Kabardian breed of horses which compensates the delay in growth by the extension of the development until 7 years at pure-breeding in sever conditions of herd housing. The half-Kabardian horses can be rather early in conditions of stables-pasture nutrition.
11. The Kabardino-Avar foals of all generations develop better than pure Avars in Dagestan. This highlights the pedigree importance of Kabardian horse breed in mountain areas of Caucasus.
12. The Kabardian horses possess a number of worth adaptive qualities most important ones being the good use of food, especially of pasture forage, the unpretentiousness and stamina, the solid constitution and excellent health providing extended pedigree use.
13. The meat productivity of Kabardian horses is studied not enough.
14. The hematological studies and practical experience reveal that the horses of Kabardian breed supplied well with red blood possess fine donor qualities useful in bioindustry.
15. The horses of characteristic and eastern intra-breeding types of the Kabardian breed have in rest higher amounts of hemoglobin and erythrocytes in blood compared to the dense type.

## CHAPTER VII

### WORKING MERITS OF MOUNTAIN HORSE BREEDS OF NORTHERN CAUCASUS OF RUSSIA

Unknown author writes in his interesting book “On Crimea horses (published 1957 in St-Petersburg) ... “the mountain horse especially seems to me the worth of our land not only because of its working abilities, stamina, easiness and dexterity but also because of its rare moral qualities such as intelligence , abstinence (for food) and others . “It has the instinct for understanding and sense of touch . “Its friendly behavior, smarts and calmness are above all the compares. Besides, the horse is energetically mobile of temper sanguine mixed to choleric .

The mountain horses of Northern Caucasus of Russia possess lively temperament, well-behaved and quite able-bodied.

The fearless horses – Alps, “fast as wind and ardent as fire , - appear in the epos as all-understanding, clever well-behaved horse’s always devoted to the master.

“No horse is depraved , “Only bad stallion bites – such say the Adygean and Arabic proverbs.

The horses of highland regions of Northern Caucasus of Russia are the calmest. All show themselves sluggish during taking the picture and never rise their ears as photographer wants in spite of all his efforts. Everywhere these horses require order.

The mountain horses can be distinguished by their accurate hearing, sense of smell, vision, developed sense of touch by hoofs and by their attention to the environments due to which they are very sensitive, cautious and prudent in motions.

In 1895 Simonov and Murder wrote that the mountain horses “are very careful so that they can walk on such mountain paths which are totally inaccessible for other horses. At the same time they are so sensitive that never misroute in the darkest night if the rider gives them full freedom .

“The demand for good Kabardian horse is still high. Peasant riding, intelligence, tenacity and firmness of the legs, stamina and unpretentiousness in nutrition – all these can not distract the attention to this horse – said G.Ia. Politkovsky in 1895. A.F. Grushetsky mentioned in 1911 that “the Kabardian mare is of balances temper, it is brave and trusting. The prominent virtue – is the right self-confident pace. The horse is calm and does not tire by its allure .

The main allure of the mountain horse is the step short, low but quick and elastic. The speed is 6-7 kilometers per hour.

The academician A.F. Middendorf wrote (1855, 1857) that “uneven, rocky, without straight roads land makes the animal to move only by small repetitive steps and jumps . “The short, quick, agile motions result in more compressed and denser formation of members which make in turn the motions easy .

The travelling on horses in mountains via steep stony roads is possible only astride and only in steps. That is why highlanders prefer to make their riding horses go in special accelerated and quiet for riders allure at which the horses step diagonally one time and on the same side another time (the gait may be polyamble, pace, advancing, ride, overstep, trace "tliah leuzh", "dzhurush"). Moving this way horses can run up to 10 kilometers per hour.

M.M. Zubairov specially studied the steps of Dagestan horses in 1959. His data are given in the following table.

**Table 143**  
**Characteristics of usual and accelerated steps of Dagestan horses**

Horse type	Usual step				Accelerated step			
	Speed, meters per second	Length, cm	Width, cm	Number of steps per minute	Speed, meters per second	Length, cm	Width, cm	Number of steps per minute
Mountain	1,5	148	12,4	50	1,62	156	13,2	69
Piedmont	1,55	165	13,0	52	1,75	178	13,8	78
Valley	1,60	170	14,2	50	1,72	181	14,8	79

In comparison to the valley ones the mountain horses have shorter length and width of the step and thus lower speed the number of steps per minute being equal. The length or the width of the step become longer and the number of steps per minute increases thus making the horse faster when it moves with the accelerated steps, otherwise called "advancing";

The importance attributed to the horse steps found the case in epos. The legendary Kabardian horse Thozhei of Nart Sosruko was able to transform its pace to dog-walk and that to the catlike moves.

The able is of great value amongst the mountain horses of Northern Caucasus of Russia but can be met seldom.

Due to the negative influence of some paces on the allures of Caucasian horses, the amblers one time were not allowed to the exhibitions and trials /Talyzin, 1871/.

The trot of Kabardian horses is free and elastic, developed better than that of Don and many others breeds. According Zubairov (1959), however, the crosses of trotting breeds in Dagestan had retarded step at accelerated trot.

The gallop is seldom used in common life of Northern Caucasus of Russia and the gallop of mountain horse is unsatisfactory. The gallop of mountain horses of short wave is often badly-floored. However Kabardian horses are well used at galloping as center and outrunning horses [of the Russian "troika"].

The Kabardian horses were bought by the Hrenovskoy State stud to be used on purpose as center horse before the Revolution of 1917.

As many experts say, the motions of the Kabardian horses are beautiful.

The feature of the Kabardian horses is their easiness and agility. This virtue is especially helpful at horse hunting with greyhounds on hares, foxes and wolves. See Fig. 155.

**Fig. 155. The hunter Kabardian horse. Painter – Akininov**



The qualities required from the hunting horse are the power, energy and sportiveness. However even Thoroughbreds in England do not fit for the hunting. “The disadvantage of these horses as hunting ones is in my opinion that they are not quite responsible due to the position of the neck origin, because of what they are not quite agile, and often rough in the mouth – wrote F.A. Svechin in 1880. “This is seen during the hunting. For example, Thoroughbred can be turned only at obtuse angle if they missed the animal, and some horses just warp their mouth instead of turning in whole. My personal taste is that only Kabardian horse is the best hunting horse. The Kabardian horse does not leave any room for other horses in its dexterity, flexibility, agility, “firm-leg-ness , enough power and sportiveness, pace, smarts and ability to be taught hunting and participate intentionally in it .

“The Kabardian breed of horses is the most suitable for the hunting with hounds – wrote A.F. Korf in 1893.

“The Kabardian horse is the favorite among all the hunters – added G.Ia. Politkovsky in 1895.

Due to the easiness and agility the Kabardian horses were used as hunting horse in many other places even in Tulskaia province.

The Kabardian horse was numerously awarded on the All-Russian exhibitions of hunting horses. If there was only one Kabardian horse among 9 winners of the First Russian Exhibition of hunting horses in 1874 then there were three Kabardian and one Cherkesskaia horses among 6 winners of the Second Russian Exhibition of hunting horses in 1876.

The easiness, agility of the Kabardian horses originated from their use in piedmont and mountain area. The definite role played here folk horse games, competitions and races of highlanders as well.

The trick riding (“Dzhigitovka ) at impetuous descent from cliffs and steep river banks with sudden stop on the full move before the wall or rupture, the riding

with archering or shooting on mobile targets over the horse's ear, the riding with grabbing a definite thing (hat, tobaccō pouch, coin)"from the ground and the horse fighting are all favorite entertainments of highlanders.

The game "Pedestrian-Rider ("Shuratles ) was very popular within highlanders: one rider fought against many unmounted people armed with wooden rods in the middle of whom the rider had to enter. This game was the entertainment among the legendary Narts."

The other horse game played in ancient Kabardian society at the very day of wedding was "Let's kick ("Diora ). Young people gathered at the house of bridegroom, armed with long poles and took all the places inaccessible to riders. The riders pressed on footers and hit them with lashes. In their turn, dismounted people hit the riders with poles trying to knock them out of the saddle. The riders jumped over the fences and usually one of them successfully entered the house and was awarded specified prize.

One more wedding game rather distributed among Kabardian young people was "Hats . In this game, riders accompanying the bride into the bridegroom's house grabbed the hats of each other and tried to escape with them. If the thieves were successfully chased then the hat was restored to the owner, opposite in other case. The riders tossed the hats up and fired at them from the guns and pistols.

Besides the agility, the prominent qualities of Kabardian horses of great value are the unpretentiousness, leniency to food and stamina. The desirable qualities of Kabardian horses can be described"by folk proverbs "Be full of little food and have hoofs not-beaten ; "Horse never been deprived does not bear long way ; "Horse accustomed to the tire brings luck .

I have personally witnessed the ability of mountain horse to endure the long-distance on the pasture forage only many times. During the riding of several hundred kilometers for a very short period of time as much as 60-70 kilometers per day in a very hard rocky conditions of Balkaria and Karachai I never saw mountain horses terribly tired. After the night rest on pasture forage these horses looked cheerful in the morning and were ready for the next passage.

The highland horses possessing very strong hoofs are most prepared for the passages under the load in mountains. The horses, grown on piedmonts require smithery during the long-distance travels and become lame much earlier than mountain ones. The valley horses are less able for steep climbs, sweat a lot and suffocate. The mountain relief results in a massive muscular system, elaborates in horses the ability not to lose the balance on the mountain paths and develops the breath, that is why the horses are less tired.

There are many written records on the stamina of Kabardian horses in the literature. The newspaper "Kavkaz (№ 43, 1853) describes the trip of the veterinary Keretin'g of riding-master"school from Mozdok to Tiflis who "did not feel the road on the Kabardian horse. The other case is reported in the magazine "Konnozavodstvo ["Horse-breeding ] when breeder Kudenetov from the village Hodz rode the Kabardian horse and delivered the medicine to the patient from the Cherkessky village on the river Maly Zelenchuk making the distance as much as 200 hundred versts (1 versta = 1067 meters) in the very short period of time.

M. Kireev figuratively wrote in his story "Riders climb on the top in 1950: "The Kabardian horse is fallow deer on hills, hare on valley, powerful as bear and on power and robust as bull .

Today all these stories can be used as illustrations to the objective characterization of the working abilities of Kabardian horse which will be uncovered below.

The mountain horse demonstrated its working abilities only if it was totally broken in and prepared. The Kabardian and Circassian people prepared their horses to the passages and races extremely well. They gave few hay but twice more barley and millet to the horses at daily travels. In the end the horses became "lean, thin, sinewy and durable /K.F. Stal, 1900/.

The well prepared horse of Circassians was "extremely well broke in and perfectly obeyed the bridle. It does not fear neither fire nor water. Circassian riders never used spurs but drove the horse with the thin lash with the stripe of leather on the end of it not to hurt the horse but just speed it. No one Circassian left home without the tripod. The saddle was light and safe and did not hurt the horse even being on the back of the horse within several weeks /Dubrovin, 1871/.

The Kabardian or Circassian saddle and also the headband were brought to the high level of ease and perfection. The saddles were usually adorned in bone and silver.

The Terek and Kuban cossacks exchanging and buying horses and saddle equipment at highlanders glorified them in their songs /Bronevsky, 1823, Popko, 1880, Kumykov 1962/

**Fig. 156. Group of Kabardian mares with horse herd wrangler.  
Sculptor E.A. Lansere**



The highlanders arranged folk races in memory of died, dead people, in the day of branding cattle etc. No holiday was accompanied with the horse competition.

The people's races were not aimed at pedigree selection. From 2 to 30 horses participated in the races of 6-10 kilometers long. Usually riders rode horses of 4-6 years old and more which were not divided in breed or age groups. The time of riding or the weight of the rider were not accounted. The tracks were linear and horses were under the saddles without pillows. Sometimes the races were straight on the backs of horses. No definite rules, rides were accompanied with whooping and whistle, went through the hillocks and grooves, in forests and on valleys, up and down the hills. The horses were only forwarded without single idea to restrain them, the only target was to win and get the prize. It was not important how the horse finished. The preparation to the race was arbitrary, sometimes people rode horses without any training, taken from harness or herd. The main participants were the geldings which can not be used in a pedigree work. The stallions showed good sportiveness were usually castrated to be used as riding horses. They often participated in the races next year but this time as geldings. The grey stallion Abrek won the race in 1922 which became gelding the race next 1923 year /*Christianovich, 1923/*. 39 geldings, 1 stallion and 2 mares participated the regional competitions in Ingushetia in 1925 /*Davydovich, 1926/*.

**Fig. 157. Horse herd wrangler on the Kabardian horse. Sculptor E.A. Lansere**



So, the people's races in Northern Caucasus of Russia were not consolidated with the activities on the improvement of the horse-breeding and helped little to the systematic reveal and increase of working efficiency of mountain horses.

The half-blooded horses generally won in the smooth Caucasian races arranged by the Major Administration of State horse-breeding since 1884.

For example, 30 Kabardian horses started the traditional race on 21 May of 1903 in Nalchik but 2-3 half-blooded took all the prizes /*Fedotov, 1903/*.

The Kabardian horses only sometimes won the barrier races.

The special competitions for Kabardian horses were arranged in Ekaterinodar and for the “local breed horses in Vladikavkaz and Piatigorsk before the Revolution of 1917.”

The reports on Caucasian races published in the magazine “Konnozavodstvo [“Horse-breeding ] and in the race calendars for years 1884-1917 do not contain enough information on the breed of horses rode. This complicates the summation of the race results of mountain horses before the Revolution of 1917.

**Table 144**  
**Best sportiveness of Kabardian horses won in the competitions according to  
the published reports during 1884 - 1917**

Distance	Time	Place of run	Year	Competition
1067 meters	1,24	Ekaterinodar	1901	Horses younger than 4 years, excluding pure ones after the distance of 30 versts (1 versta=1067 meters) run within 49 minutes and 10 seconds
2347 meters	3,24	Kutais	1899	Barrier race for stallions and mares of 4-year-old
4268 meters	6,15	Nalchik	1886	Race for stallions and mares younger than 4 years
4602 meters	11,40	Piatigorsk	1886	For mares of 6 years old

These values of the sportiveness are much lower than those of Soviet time when the races of rich highlanders were replaced by the competitions of pedigree horses from studs and collective farms.

The system of the competitions was ordered in respect to age, breed and blood of horses after the Revolution of 1917. The training and trials of pedigree offspring started to be held the same as for Thoroughbred. That was the huge progress for that time.

The regular racing trials of horses in Northern Caucasus of Russia launched in 1925. Initially only the half-blooded and high-blooded offspring were being tested. The hippodrome tests of pure breed offspring of Kabardian horses started in 1934. However those examinations on the State hippodromes were not systematic. There were only 19 Kabardian horses at the Rostov hippodrome during all the time of its existence in 1934-1937. In this respect there is a record in the report of Piatigorsk hippodrome for the riding season of 1936: “The tests of pure Kabardian and Karachai horses are of special interest in Northern Caucasus of Russia but there should be”noted that the studs and horse farms rearing this horse breed in pure do not test them, just only bring the single horse to the hippodrome as museum exhibit . The question on the tests of Kabardian horses still does not have satisfactory solution. After the transformation of Piatigorsk hippodrome into that of All-Union importance there was no test of pure Kabardian offspring since 1955.

The quantities of Kabardian and Anglo-Kabardian offspring tried at Piatigorsky hippodrome within 27 years (from 1934 to 1963) over 7-years periods is given in the following table.

**Table 145**

**Number of Kabardian and Anglo-Kabardian horses tested at Piatigorsky hippodrome**

Periods	Number of years	<b>Kabardian</b>		<b>Anglo-Kabardian</b>		Heads in total
		Number of heads	%	Number of heads	%	
1934-1940	7	102	26,8	295	73,2	397
1944-1950	7	205	42,6	276	57,4	481
1951-1957	7	139	28,0	357	72,0	496
1958-1962	5	-	-	233	100,0	233

The half-blooded horses were always tested more at Piatigorsky hippodrome. Only in first years after the World War II, when the attention was paid to the local breeds of horses, the amount of Kabardian offspring tried in Piatigorsk was increased almost twice.

The republican hippodrome was rebuilt in Nalchik after the war and the regional hippodrome opened in Cherkessk. The offspring from the collective farms in the area of Kabardinsky and Cherkessky State seed plots was tested at these hippodromes.

There has been studied the following number of Kabardian horses and crosses at Nalchiksky and Cherkessky hippodromes for 12 years since 1949 till 1960.

**Table 146**

**Number of horses tried at Nalchiksky and Cherkessky hippodrome during 1949 – 1960**

Periods	Hippodromes in			
	Nalchik		Cherkessk (opened 1950 and liquidated 1957)	
	Racing seasons	Horses	Racing seasons	Horses
1949-1954	6	962	5	501
1955-1960	6	713	3	181

Pure breed horses, out of tested, composed about 80% at Nalchiksky and 70% at Cherkessky hippodromes, the half-blooded being 20% and 30% respectively.

The age distribution of horses tested at Piatigorsky, Nalchiksky and Cherkessky hippodromes for years 1945-1960 was the following:

**Table 147**

Hippodrome in	2-year-old		3-year-old		4-year and older		Total	
	Heads	%	Heads	%	Heads	%	Heads	%
Piatigorsk	636	73,2	228	26,3	4	0,5	868	100
Nalchik	730	63,3	269	23,2	156	13,5	1155 (for years 1949, 1951-56, 1958-60)	100
Cherkessk	527	72,3	155	27,7	-	-	682	100

So, the vast majority of all horses tested at hippodromes are 2-year-old ones. The most of 4-year-old and older horses were tried at Nalchiksky hippodrome.

The tests at all hippodromes of Northern Caucasus of Russia were predominantly on short distances. It is seen from the data of the student Maigi (1953) who processed the results of racing season of 1952. There were especially many Kabardian and half-breed horses on the competitions in Northern Caucasus that year.

**Table 148**  
**Number of tests of horses on distances at Piatigorsky, Nalchiksky and Cherkessky hippodromes in 1952**

Hippodrome in	Distance											Total
	1200	1400	1500	1600	1800	2000	2400	3000	3200	4000	4800	
<b>2-year-old</b>												
Piatigorsk	61	50	48	61	59	-	-	-	-	-	-	280
Nalchik	54	33	28	12	5	-	-	-	-	-	-	132
Cherkessk	28	29	27	46	14	-	-	-	-	-	-	144
<b>3-year-old</b>												
Piatigorsk	-	-	-	26	32	32	26	24	18	-	-	158
Nalchik	-	-	-	1	10	6	11	1	1	-	-	30
Cherkessk	-	-	-	1	5	4	5	3	2	-	-	20
<b>4-year-old</b>												
Nalchik	-	-	-	-	-	-	1	1	-	-	1	1
												4

From the very beginning of systematic tests of Kabardian horses at the hippodromes of the USSR (since 1934) the training of the horses was oriented on the improving their sportiveness. However there was no noticeable successes, what can be seen from the results of the processing of the reports from Rostovsky and Piatigorsky hippodromes for a number of years, see tables 149, 150, 151.

**Table 149**  
**Average sportiveness of 17 pure Kabardian horses in the age of 2 years at Rostovsky hippodrome for 4 years since 1934 till 1937**

Distance	Average	Number of heads
1000	1,22	6
1200	1,38	7
1400	1,55	2
1500	2,03	2

The sportiveness of the horses at Rostovsky hippodrome was about 4 seconds per 1 kilometer higher than at Piatigorsky hippodrome because the racing track is better and flatter in Rostov while there is a hill in the turn before the finish in Piatigorsk. The average sportiveness of horses at Piatigorsky hippodrome on 4-year periods is given in tables 150 and 151 according to the data of the Regional experimental station on horse breeding of Northern Caucasus of Russia for years 1936-1940 and according to our calculations for studs №№ 34, 38, 58, 73, 110, 168 and collective farms of Kabardino-Balkarian Autonomic Soviet Socialist Republic and Karachaevo-Cherkesskaia Autonomic Region for years 1945-1960.

**Table 150**

**Average sportiveness of pure Kabardian horses at Piatigorsky hippodrome for 25 years since 1936 till 1960**

Distance	1936-1940		1945-1948		1949-1952		1953-1956		1945-1960	
	mean	N	mean	N	mean	N	mean	N	mean	N
<b>2-year-old</b>										
1200	1.38,8	40	1.39,2	41	1.42,5	110	1.39	25	1.41,2	176
1400	-	-	1.50,9	12	1.56	96	1.57,2	12	1.55,8	120
1500	2.01	14	1.56,9	18	2.01,5	68	2.01,3	23	2.01,2	109
1600	2.06,2	23	2.09,5	26	2.06,8	117	2.09,7	15	2.07,7	158
1800	-	-	2.22,3	14	2.23,6	78	2.30,7	15	2.24,4	107
<b>3-year-old</b>										
1800	2.27	5	2.26	10	2.28,7	22	2.22,1	17	2.25,9	49
2000	2.36	9	2.29,1	9	2.32,8	28	2.32,8	23	2.32,2	60
2400	2.52,2	6	3.05,8	9	3.00,3	20	3.08	19	3.04,4	48
3000	-	-	3.57	5	3.59,9	21	3.59	15	3.59,9	41
3200	-	-	4.06,5	3	4.17,1	11	4.17,4	8	4.15,6	22

There is no observed increase in the average sportiveness of pure Kabardian horses. On contrary, there is slight decrease in the average sportiveness of horses after the World War II due to the increased number of horses tried.

**Table 151**

**Average sportiveness of half-blooded Kabardian horses at Piatigorsky hippodrome for 25 years since 1936 till 1960**

Distance	1936-1939		1945-1948		1949-1952		1953-1956		1957-1960		1945-1960	
	mean	N	mean	N	mean	N	mean	N	mean	N	mean	N
<b>2-year-old</b>												
1200	1.29,4	117	1.30,6	91	1.31,8	90	1.28,4	53	1.29,5	27	1.31,1	196
1400	-	-	1.41,6	51	1.47,2	96	1.42,6	41	1.46,9	41	1.44,9	189
1500	1.49,2	101	1.51,6	40	1.48,2	49	1.47,3	51	1.52,4	31	1.49	145
1600	1.54,4	113	1.55,6	91	1.56,7	106	1.56,1	54	1.56,9	23	1.56,8	210
1800	-	-	2.09	91	2.15,6	83	2.09,3	49	-	-	2.13,2	147
<b>3-year-old</b>												
1800	2.08	54	2.13,4	38	2.20,9	34	2.13,8	19	2.10,2	9	2.16,4	68
2000	2.24,4	60	2.24,4	34	2.20,6	39	2.26,3	24	2.24,9	18	2.22,4	86
2400	2.48,2	16	2.53,2	30	2.48,7	38	2.54	24	2.54,4	11	2.51,3	79
3000	-	-	3.39,0	26	3.37,5	20	3.36,2	11	3.42,5	11	3.38,7	66
3200	-	-	3.56,2	31	3.58,2	32	3.55,2	9	-	-	3.57	45

The average sportiveness of the half-blooded Kabardian horses is higher than that of pure ones, however there is no observed increment of it as well.

The data of Maigi (1953) on the average sportiveness of pure and half-blooded Kabardian horses tried at Nalchiksky and Cherkessky hippodromes in 1952 are given in **Table 152** and **Plot 18**.

**Table 152**

**Average sportiveness of the winners of races at hippodromes of Northern Caucasus of Russia in 1952**

Distance	Piatigorsk		Nalchik		Cherkessk	
	Pure	Half-blooded	Pure	Half-blooded	Pure	Half-blooded
<b>2-year-old</b>						
1200	1.58,8	1.40,8	1.37,7	1.37,6	1.40,7	1.36,1
1400	2.16,8	1.52,5	1.56,7	1.56,5	-	-
1500	1.58,0	1.50,4	2.50,5	2.03,1	-	-
1600	2.06,6	1.58,1	2.15,0	1.57,4	2.12,9	2.01,8
1800	2.30,5	2.10,1	2.25,0	2.29,3	2.26,8	2.24,7
<b>3-year-old</b>						
1200	-	1.23	-	-	-	-
1600	2.18,3	2.09,6	-	-	-	-
1800	2.31	2.18,4	1.57,0	2.10,1	-	-
2000	2.30	2.20,5	2.47,7	2.28,6	-	-
2400	2.53,3	2.46,4	3.12,0	3.09,9	-	-
3000	3.53	3.41,5	-	3.25,6	-	-
3200	-	3.54	-	-	-	-

The average sportiveness of the half-blooded horses is higher than that of pure ones for all distances at every hippodrome. The exclusion is the average sportiveness on the distance of 1800 meter in Nalchik where, probably, half-blooded horses run instead of pure Kabardian.

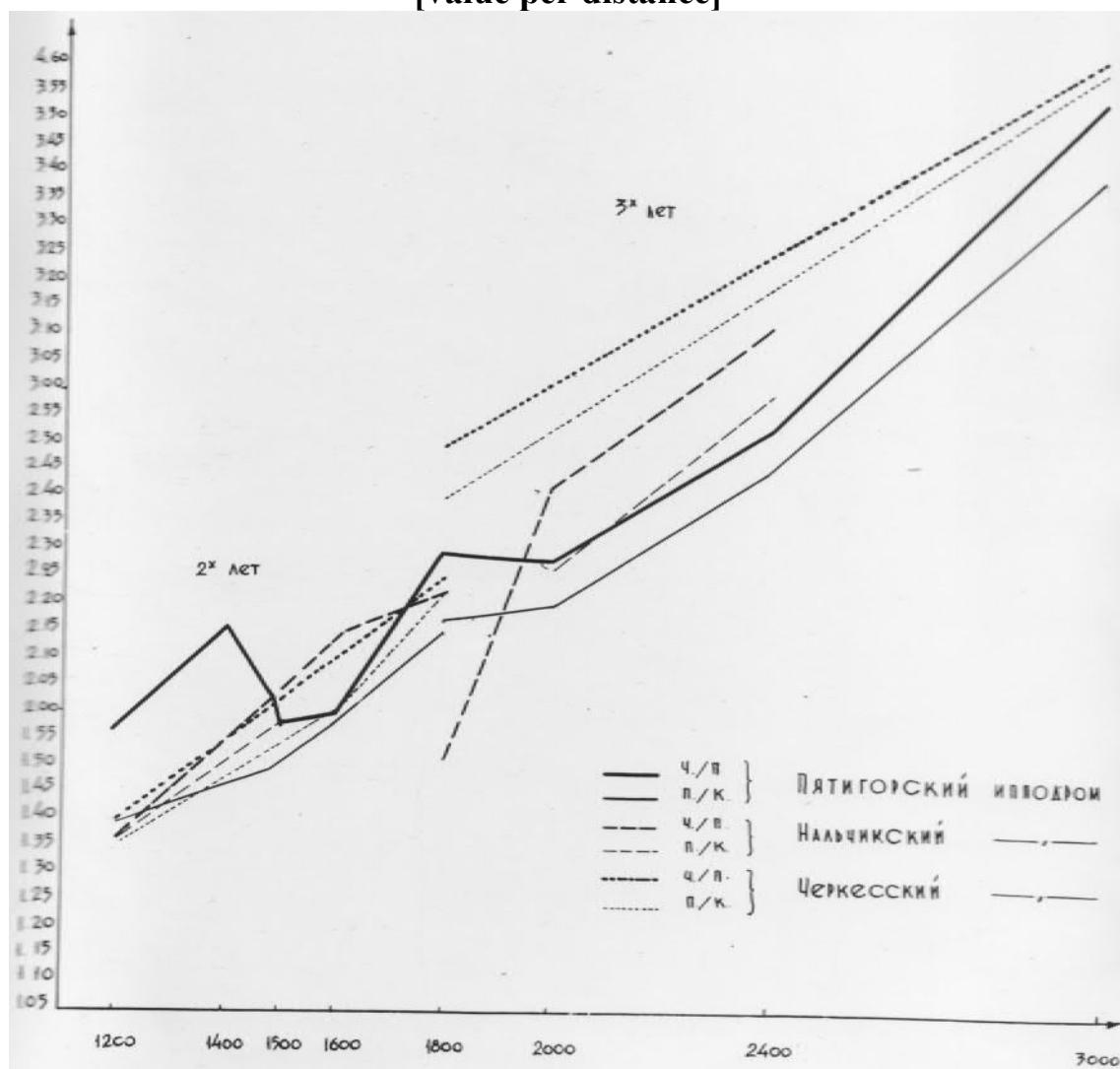
The crosses of the second generation in respect to Thoroughbred were usually being tested at Nalchiksky and Cherkessky hippodromes among the half-blooded horses. The crosses of the first generation were mainly tested in Piatigorsk.

The average sportiveness of pure horses on short distances at Piatigorsky hippodrome was remarkably lower than at Nalchiksky or Cherkessky hippodromes. This can be explained by the fact that many horses of large amount of english blood were allowed to race with pure ones at Nalchiksky hippodrome.

The offspring of the Piatigorsk hippodrome raced more swiftly than those of Cherkessk or Nalchik on longer distances. The horses from the Malo-Karachaevsky stud raced especially well in Piatigorsk on the dirty track.

The average sportiveness of pure and half-blooded Kabardian offspring on blood groups has been calculated at the Regional experimental station on horse breeding of Northern Caucasus of Russia on the basis of the reports from the Piatigorsk hippodrome for 8 years since 1932 till 1940.

**Plot 18. Average sportiveness of pure and half-blooded Kabardian horses raced at Piatigorsky, Nalchiksky and Cherkessky hippodromes in 1952 [value per distance]**



(2-year-olds on the left and 3-year-olds on the right)

Solid lines – Piatigorsk, dashed lines – Nalchik, dash-dotted lines – Cherkessk.

**Table 153**  
**Average sportiveness of Kabardian horses in the age of 2 years on the distance of 1200 meter at Piatigorsky hippodrome during 1932-1940**

Blood groups	Number of heads	Average sportiveness	Difference in comparison to the pure horses
Pure	40	1.38,8"	- "
1/4 of english blood	15	1.34,3"	+ 4,5 "
1/2 english blood	102	1.31,7	+ 7,1
3/4 of english blood	41	1.27,9	+ 10,9

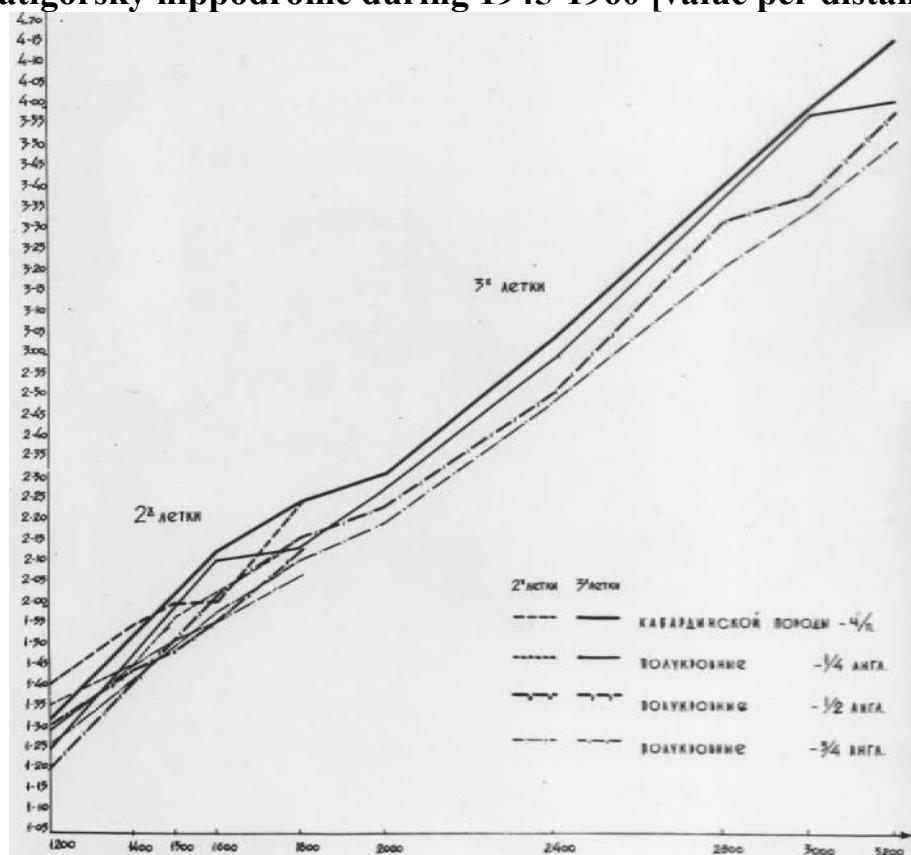
We have calculated the average sportiveness of pure and half-blooded Kabardian horses in the age of 2-3 years within the blood groups over different distances at Piatigorsky hippodrome for 16 postwar years (1945-1960). That results are presented in **Table 154** and **Plot 19**.

Table №154

**Average sportiveness of pure and half-blooded Kabardian horses at Piatigorsky hippodrome during 1945-1960**

Distance	Pure		Crosses of					
	mean	N	1/4 of english blood		1/2 english blood		3/4 of english blood	
			mean	N	mean	N	mean	N
<b>2-year-old</b>								
1000	-	-	-	-	1.15,7	40	1.17,3	28
1200	1.41,2	176	1.36,2	20	1.31,1	196	1.30,1	43
1400	1.55,8	120	1.46,1	16	1.44,9	189	1.45,4	44
1500	2.01,2	109	1.57,7	3	1.49	145	1.52,5	33
1600	2.07,7	158	2.03	18	1.56,8	210	1.56,2	44
1800	2.24,5	107	2.16,8	6	2.13,2	147	2.07,7	15
<b>3-year-old</b>								
1200	1.33	8	1.25		1.21,5	10	1.26	1
1600	2.13,8	43	2.11	6	2.02,6	63	1.58	23
1800	2.25	49	2.14	4	2.16,4	68	2.11	23
2000	2.32,2	60	2.28,8	6	2.22,4	86	2.20,3	26
2400	3.04,4	48	2.59,8	6	2.51,3	79	2.49,2	25
2800	-	-	-	-	3.32,6	23	3.21,5	20
3000	3.59,9	41	3.57	5	3.38,7	66	3.34,7	15
3200	4.15,6	22	4.00,5	2	3.57	45	3.50,6	5

**Plot 19. Average sportiveness of pure and half-blooded Kabardian horses at Piatigorsky hippodrome during 1945-1960 [value per distance]**



(2-year-olds on the left (thicker lines) and 3-year-olds on the right (thinner lines))  
Solid lines – pure, dashed lines –  $\frac{1}{4}$  of english blood, dash-dotted lines –  $\frac{1}{2}$  english blood, dash-dot-dotted lines –  $\frac{3}{4}$  of english blood.

As is seen from the table and the figure the average sportiveness of the half-blooded horses is always higher than that of pure. The sportiveness of half-blooded horses almost steadily increases with the content of english blood. Only the horses of  $\frac{3}{4}$  of english blood, due to the inappropriate education, sometimes show sportiveness lesser than horses of first generation. The 3-year-old half-english horses which rode 1800 meters on the most difficult track demonstrated worse sportiveness compared to their peers of  $\frac{1}{4}$  of english blood.

The pure Kabardian horses do not cover the short distance with their pace and reach sportiveness mainly due to the increasing frequency of motions thus quickly becoming tired. The pure horses in older age sometimes demonstrate better stamina. That is why the excess in sportiveness of half-blooded horses over pure ones sometimes vanishes.

The best sportiveness of pure and half-blooded Kabardian horses within blood groups is shown in Tables 155 and 156.

**Table 155**  
**The best sportiveness of pure and half-blooded Kabardian horses in the age of 2 years at Rostovsky hippodrome during 1926 - 1937**

Blood groups	Distance			
	1000	1200	1400	1500
Pure	1,16,5	1.34,5	1.53	2.00,5
half-english	1.07	1.22	1.33	1.41,5
$\frac{3}{4}$ of english blood	1.04	1.18,5	1.31,5	1.37

**Table 156**  
**The best sportiveness of pure and half-blooded Kabardian horses at Piatigorsky hippodrome on 1 January of 1964**

Blood groups	Distance, meters										
	1000	1200	1400	1500	1600	1800	2000	2400	2800	3000	3200
Pure	1.15	1.24	1.41	1.47	1.55	2.20	2.23	2.51	-	3.44	4.04
$\frac{1}{4}$ of english blood	1.16	2.25	1.41	1.43	1.51	4.04	2.20	2.52	-	3.39	3.58
$\frac{1}{2}$ english blood	1.08	1.20	1.34	1.42	1.45	1.59	2.12	2.38	3.18	3.28	3.37,4
$\frac{3}{4}$ of english blood.	-	1.18	-	1.40	1.45	1.58,3	2.12	2.38	3.13	3.26,5	3.38

The best sportiveness of 2-year-old horses grown at good conditions increased with increasing content of english blood at Rostovsky hippodrome where horses of military studs were usually tested during mentioned years.

This was not observed at Piatigorsky hippodrome where horses were from either studs or collective farms. The crosses of the first generation of cross-breeding demonstrated considerable increase in sportiveness in comparison to pure horses. The horses of back-crossing with  $\frac{1}{4}$  of english blood tested with pure ones were just a little bit swifter. On some distances of 1000, 1200 and 2400 meters they even showed worse sportiveness. The horses of  $\frac{3}{4}$  of english blood overcame half-english ones in sportiveness also negligibly.

The following values of the sportiveness of Kabardian stallions are registered as All-Union records for the riding breeds in smooth races.

**Table 157**

**All-Union records and winning Kabardian horses on 1 January of 1964**

Distance	Sportiveness	Name	Father	Mother	Stud or collective farm	Hippodrome	Year
<b>2-year-old</b>							
1200	1.24	Linkor	Landshaft	Nov'	Malo-Karachaevsky	Piatigorsk	1950
1400	1.44,5	Zalet	Budget	Zolushka	Zavet Ilicha of Primalkinsky region of Kabardino-Balkaria	Nalchik	1954
1500	1.47	Kiparis	Kashkatau	Pobeda	Red Partizans of Prikubansky region of Karachaevo-Cherkessia	Piatigorsk	1945
1600	1.54,5	Zakat	Zaur	Chernushka	Zelenchuksky region of Karachaevo-Cherkessia	Cherkessk	1953
1800	2.09	Linkor	Landshaft	Nov'	Malo-Karachaevsky	Piatigorsk	1950
<b>3-year-old</b>							
1600	1.53,4	Faron	Fiolet	Abidat	Kirov's of Zolsky region of Kabardino-Balkaria	Nalchik	1956
1800	2.09	Linkor	Landshaft	Nov'	Malo-Karachaevsky	Piatigorsk	1950
2000	2.23	Don	Kobchik	Dora	Red Partizans of Prikubansky region of Karachaevo-Cherkessia	Piatigorsk	1945
2400	2.51	Don	Kobchik	Dora	Red Partizans of Prikubansky region of Karachaevo-Cherkessia	Piatigorsk	1945
2800	3.26	Faron	Fiolet	Abidat	Kirov's of Zolsky region of Kabardino-Balkaria	Nalchik	1956
3000	3.44	Drednout	Dalhat	Dunetka	Malo-Karachaevsky	Piatigorsk	1947
3200	4.01,5	Korpus	Landysh	Kura	Kirov's of Zolsky region of Kabardino-Balkaria	Nalchik	1954
X – the bay stallion Ardagani, born 1949 from Ahtyr and Dobraia at Malo-Karacharovsky stud showed the sportiveness of 1,41 on the distance of 1400 meters at Piatigorsky hippodrome in 1951							

Distance	Sportiveness	Name	Father	Mother	Stud or collective farm	Hippodrome	Year
<b>Older age</b>							
1800	2.05,1	Faron	Fiolet	Abidat	Kirov's of Zolsky region of Kabardino-Balkaria	Moscow	1958
2000	2.22,5	Faron	Fiolet	Abidat	Kirov's of Zolsky region of Kabardino-Balkaria	Moscow	1958
3200	3.44,3	Faron	Fiolet	Abidat	Kirov's of Zolsky region of Kabardino-Balkaria	Moscow	1959
4000	4.55	Linkor	Landshaft	Nov'	Lenin's of Baksansky region of Kabardino-Balkraia	Moscow	1959
4800	6.10	Paris	Boris 168	Kabar	Oshhamakho II of Zolsky region of Kabardino-Balkaria	Nalchik	1954
5000	8.03 <sup>x</sup>	Linkor	Landshaft	Nov'	Lenin's of Baksansky region of Kabardino-Balkraia	Nalchik	1956
7000	9.05 <sup>xx</sup>	Dagir	Dobry	Gostraia	Malo-Karachaevsky	Frunze	1963
10000	15.14 <sup>x</sup>	Lazutchik	Lahran	Roza	Nartan of Urvansky region of Kabardino-Balkaria	Nalchik	1955
25000	46.30	Linkor	Landshaft	Nov'	Lenin's of Baksansky region of Kabardino-Balkraia	Nalchik	1955
x – The best data among all the breeds							
xx – The record of Dagir of ¼ of english blood was announced but not registered							

The six records were set up by Linkor and five by Faron (**Figures 158 and 159**). The considering of the photos of these champions reveals they are not typically Kabardian. This is explained by their origin. 391 Linkor was born from 2909 Nov' of uncertain origin from Stavropol stud № 172 (which reared Anglo-Kabardian horses). Faron was born from the mare Abidat not-registered in the State stud book from the Kirov's collective farm of Zolsky region of Kabardino-Balkaria (in where Thoroughbred stallions were used and Anglo-Kabardian in type stallions of lost origin bred: 54 Hazbulat from Malkinsky and 213 Posoh II from Malo-Karachaevsky studs)

**Fig. 158. 391 Linkor 222, black-brown,  
born 1948 from 016 Landshaft and 2909 Nov'**



**Fig. 159. Faron, black, born 1953 from 434 Fiolet and Abidat)**



**Fig. 160. Sputnik, bay, born 1957 from 421 Sultan and Lakuna**



The record-winning Kabardian horses of the past (Afa, Kundurango and some others) were also half-blooded in type.

The latent bloods in respect to English blood are extensively distributed in Northern Caucasus and especially in Kabarda. This happens due to the frivolously organized races in which half-blooded horses of darkened origin have more chances to win. The other intentional meshing of the origin of the horses is that until very recently there were no separate races of Anglo-Kabardian and Anglo-Karachai horses, the special prizes were not played at competitions and their best sportiveness was not registered as All-Union records. However, well-trained and grown up Anglo-Kabardian and Anglo-Karachai horses overcome many other riding breeds of horses in sportiveness in races.

**Table 158**  
**The best sportiveness of Anglo-Kabardian and Anglo-Karachai horses**  
**on 1 January of 1964**

Distance	Sportiveness	Age	Blood	Name	Father	Mother	Stud, №	Hippodrome in	Year
1000	1.04	2	¾	Tsinandali	Cih	Dolli	169	Rostov	1933
1200	1.18	3	¾	Matu	Moskan60	Tata	34	Piatigorsk	1940
1400	1.31	2	¾	Karta	Kardanah	Tata I	169	Rostov	1934
1500	1.37	2	¾	Posoh	Pel-End	Sirena	157	Rostov	1935
1600	1.44,4	2	¾	Port-Artur	Prens-Oli	Red Hat	34	Piatigorsk	1940
1800	1.58,3	3	¾	Ilot	Istorik	Letopis	168	Piatigorsk	1962
2000	2.12	3	5/8	Izobar	Istorik	Belena	168	Piatigorsk	1959
2200	2.20,4	3	¾	Taksi	Sagaidak	Tata	34	Piatigorsk	1938
2400	2.38	4	¾	Gaubert	Volfram	Gazalia	34	Piatigorsk	1937
2800	3.13	3	¾	Il	Istorik	Livia	168	Piatigorsk	1955
3000	3.26,5	3	11/16	Idealist	Istorik	Lenta	168	Piatigorsk	1959
3200	3.37	3	½	Landysh	Lukki	Shahta	168	Piatigorsk	1954
4000	9.05	3	¼	Dagir	Dobry	Gostraia	168	Frunze	1963

This sportiveness overcomes the record sportiveness of many riding horse breeds of the USSR. The sportiveness of 1,0 per 1000 meters, 1.44,4 per 1600 meters, 2,38 per 2400 meters is faster than the rest of All-Union records on the same distances for any other breed except Thoroughbred. The mentioned in the table values of sportiveness for the distances 1200, 1500, 2000 and 3200 cede those of only two breeds: Thoroughbred and Kustanaiskaia. All the best quantities of sportiveness of half-Kabardian horses are better than records of Akhal-Teke, Terskaia and New-Kirghiz breeds (see the Catalogue of the All-Union Records of horses on 1 January of 1963).

The training and trials of pure Kabardian horses only at races and mainly on short tracks result in predominantly racing type of body. If this type is acceptable for sportive half-blooded horses then it is not welcomed for Kabardians. High-leg shortened and narrow-bodied horses tolerate herd housing in mountains badly and their valuable specific qualities of allure, working ability and stamina of mountain horses disappear (**Figures 161, 162, 163**).

The disparity between the one-sided racing tests (only on sportiveness) at hippodromes and the other tasks of pedigree work with the Kabardian breed of horses can be confirmed by the different physiological reaction on such tests of different intra-breeding types of the breed.

The student L.D. Borodulina performed the study of the blood of three types of Kabardian horses in the age of 2 and 4 years during the training and trials in 1954. Her results are given here in **Tables 140 and 141**.

**Fig. 161. Sandusia, bay,  $\frac{3}{4}$  of english blood, born 1933 from 305 Dioskur and Sahara. The winner of 5 traditional prizes in Piatigorsk**



**Fig. 162. Port-Artur, bay,  $\frac{1}{4}$  of english blood, born 1938 from 1040 Prens-Oli and 057 Red Hat. The record-winner on 1600 meters: 1.44,4**



**Fig. 163. Ilot, dark bay, ¼ of english blood, born 1959 from 1668 Istorik and Letopis. Record-winner on 1800 meters: 1.58,3**



**Table 159**  
**Hematological and clinical parameter of the trained offspring of three types of the Kabardian breed of horses at Cherkessky hippodrome.**  
**At rest in the beginning and in the end of racing season**

Moment of study	Hemoglobin (percents) according Sali	Red blood cells, millions per cubic millimeter	Concentration of hemoglobin in 1 erythrocyte	White blood cells, thousands per cubic millimeter	Cell index	Erythrocyte sedimentation rate per 1 hour according Nevodov	Clinical numbers	
							Pulse	Breath
<b>2-year-old of eastern type</b>								
Beginning	58,2	8,27	7,33	9,02	945	46,3	43,0	21,7
End	70,2	9,15	7,93	9,08	1005	54,6	43,2	20,8
<b>2-year-old of characteristic type</b>								
Beginning	58,5	8,03	7,36	9,15	914	50,6	43,7	19,7
End	57,5	8,15	7,13	8,10	1056	57,0	43,0	20,5
<b>2-year-old of dense type</b>								
Beginning	55,8	7,44	7,55	9,68	770	58,3	42,8	19,7
End	51,8	6,63	7,57	9,04	804	63,3	43,0	20,5
<b>3-year-old of eastern type</b>								
Beginning	67,5	9,22	7,36	9,55	967	41,8	40,0	17,0
End	76,0	9,33	8,18	7,70	1074	42,9	43,9	19,7
<b>3-year-old of characteristic type</b>								
Beginning	62,4	9,00	6,90	8,72	1039	42,4	38,8	18,0
End	72,5	9,27	7,81	8,30	1025	39,0	41,5	19,5
<b>3-year-old of dense type</b>								
Beginning	57,0	8,17	6,85	7,28	1154	49,1	38,8	16,4
End	60,3	8,17	7,41	9,80	833	31,6	42,5	18,3

**Table 160**

**Hematological and clinical parameter of the trained offspring of three types of the Kabardian breed of horses at Cherkessky hippodrome.**

**Before and after the races**

Moment of study	Hemoglobin (percents) according Sali	Red blood cells, millions per cubic millimeter	Concentration of hemoglobin in 1 erythrocyte	White blood cells, thousands per cubic millimeter	Cell index	Erythrocyte sedimentation rate per 1 hour according Nevodov	Clinical numbers	
							Pulse	Pulse
<b>2-year-old of eastern type</b>								
Before 1200 m	58,2	8,27	7,33	8,27	945	46,3	43,0	21,7
After 1200 m	76,2	9,59	7,85	11,56	871	42,3	82,8	56,4
Before 1600 m	70,2	9,15	7,93	9,08	1005	46,2	43,2	20,8
After 1600 m	78,6	10,69	7,49	12,72	841	32,7	84,8	57,2
<b>2-year-old of characteristic type</b>								
Before 1200 m	58,5	8,03	7,36	9,15	914	61,2	43,7	19,7
After 1200 m	76,7	9,44	8,12	11,9	793	42,9	76,0	48,0
Before 1600 m	57,5	8,15	7,13	8,10	1056	50,8	43,0	20,5
After 1600 m	77,5	10,41	7,42	11,7	848	37,7	85,5	49,0
<b>2-year-old of dense type</b>								
Before 1200 m	55,8	7,44	7,55	7,44	770	58,3	42,8	20,0
After 1200 m	75,2	10,21	7,60	12,42	823	33,2	77,0	54,8
Before 1600 m	51,8	6,63	7,57	9,04	804	58,1	43,0	20,0
After 1600 m	69,4	10,17	6,85	11,0	882	35,5	84,4	55,8
<b>3-year-old of eastern type</b>								
Before 1800 m	57,5	9,22	7,36	9,50	967	54,0	40,0	17,0
After 1800 m	85,5	11,68	7,36	12,9	905	19,6	85,0	56,0
Before 3000 m	76,0	9,33	8,18	8,70	1074	42,9	43,0	19,7
After 3000 m	84,6	12,57	6,75	12,10	1067	16,7	81,0	61,0
<b>2-year-old of characteristic type</b>								
Before 1800 m	62,4	9,00	6,90	8,72	1039	50,6	38,8	18,0
After 1800 m	82,6	11,62	7,14	11,2	1005	25,3	87,2	61,6
Before 3000 m	72,5	9,27	7,81	8,30	1125	39,0	41,5	19,5
After 3000 m	85,5	11,72	7,28	11,60	864	23,5	95,0	65,0
<b>3-year-old of dense type</b>								
Before 1800 m	57,0	8,17	6,85	7,28	1154	56,8	38,8	16,4
After 1800 m	78,2	10,75	7,39	10,24	1052	29,5	92,4	72,4
Before 3000 m	60,30	8,17	7,41	9,80	830	31,6	42,5	14,1
After 3000 m	68,86	9,96	6,87	12,2	819	30,5	81,4	70,76

**Table 161**

**Shifts of hematological parameters of the trained offspring of three types of the Kabardian breed of horses after the races on various distances in percents to those data before the races. /L.D. Borodulin/**

Intra-breeding types	Short distances:			Longer distances		
	1200 meters for 2-year-olds, 1800 meters for 3-year-olds			1600 meters for 2-year-olds, 3000 meters for 3-year-olds		
	Hemoglobin	Red cells	White cells	Hemoglobin	Red cells	White cells
<b>2-year-old</b>						
Eastern	130,9	117,2	128,1	111,9	120,5	140,1
Characteristic	131,2	132,5	117,5	134,8	127,8	132,1
Dense	134,7	128,4	137,2	135,4	141,1	127,1
<b>3-year-old</b>						
Eastern	135,1	126,6	126,0	124,4	126,0	140,3
Characteristic	132,2	129,1	128,4	127,9	123,6	124,5
Dense	137,1	131,3	140,6	113,7	121,6	139,4

These values definitely point on differing reaction of the offspring of three types of Kabardian horses (eastern, characteristic and dense ones) on races. The horses of eastern and characteristic types are better in their sportiveness and possess better oxidizing-reduction properties of the blood than of dense one. Two-year-old horses of dense type have the number of erythrocytes and of hemoglobin lowered in the end of the period of intense training and trials. The 3-year-old horses have their numbers of white blood cells increased. The most shifts in hematological and clinical parameters after the short-distance races are again for horses of dense type. All this tells us about the negative influence of such tests on horses of dense type. However these horses are of definite importance within the breed and another system of test has to be developed for them.

The racing tests are not suitable for the pedigree work of horses of riding-gear or mountain-packed types. There has to be such tests, in which the main working merits of Kabardian horses could be developed. The horses of this breed have to be trained and tried in conditions close to that of their natural use in life of people and defense of the USSR.

The Kabardian horses are the swiftest mountain breed in the USSR.

**Table 162**

**All-Union records of riding horses in smooth races on 1 January of 1964**

Breeds	Distance, meters									
	1000	1200	1400	1600	1800	2000	2400	3200	4000	4800
Kabardian	1.15	1.24	1.44,5	1.53,4	2.05,1	2.22,5	2.51	3.44,3	4.55	6.10
Azerbaijan	-	1.33,6	1.53,6	2.08,6	2.25	2.24	3.07,6	4.10,6	5.49	6.50
Karabah	-	1.30,4	1.51,5	2.08,4	2.27	2.44	3.12	4.21,6	-	-
Lokaiskaia	1.16	1.22,9	1.42,9	1.53,8	2.08,5	2.25,1	2.51,6	3.58	5.10,8	6.12

All mountain breed of Caucasus are much slower than Kabardian.

**Table 163**

**The best and average sportiveness of Dagestan horses according to the data of M.M. Zubairov, 1959**

Distance	Avar breed			Lezgin piedmont breed			Kumyk valley breed		
	The best	Average	N	The best	Average	N	The best	Average	N
1200	2,56	3,13	16	2,49	2,56	8	2,41	2,52	18
1600	3,41	3,56	8	3,32	3,48	8	3,01	3,12	18
2400	4,20	4,40	16	4,10	4,20	8	3,46	2,53	18
3200	5,11	5,23	9	5,01	5,12	8	4,50	4,58	18
4800	6,59	7,56	9	6,28	7,29	5	6,15	7,14	18
6400	8,12	9,36	14	8,13	8,42	5	8,01	8,15	18
10500	28,13	29,38	16	26,12	28,27	5	25,10	26,24	18

The Avar mountain horses are less sportive in Dagestan. The sportiveness of the Dagestan horses increases on the valley, however it is not high everywhere. The crosses of Dagestan horses with horses of Kabardian or other riding breed are the slowest.

**Table 164**

**Average sportiveness of the crosses of Dagestan horses with other riding breeds according to the data of M.M. Zubairov, 1959**

Breed group	Distance, meters				Number of heads
	1600	2400	4800	10,500 <sup>x</sup>	
Kabardino-Avar	3,25	3,56	6,48	22,8	34
Arab-Avar	3,12	3,41	6,31	26,31	20
Arab-Lezgin	2,42	3,23	6,12	25,4	22
Anglo-Avar	2,38	3,14	5,58	24,8	86
Anglo-Kumyk	2,22	3,04	5,55	21,4	138

<sup>x</sup> – 28 horses were tested on the distance of 10.500

Arab-Kabardian crosses were almost never tested on Northern Caucasus of Russia. The sportiveness of 8 Arab-Kabardian horses of uncertain blood is known from the report of Nalchiksky hippodrome for year 1960.

**Table 165**

**Sportiveness of Arab-Kabardian crosses in the age of 2 years at Nalchiksky hippodrome in 1960**

Distance, meters	Sportiveness		Number of heads
	The best	Average	
1000	1.12,2	2.19,2	4
1400	1.40	1.41,1	3
1500	1.51	1.55,3	3
1600	1.57	1.59,2	2

The best sportiveness of Arab-Kabardian crosses on the distances of 1000 and 1400 meter is better than the records for the Kabardian breed.

The average sportiveness of Don-Kabardian horses tried at Piatigorsky hippodrome does not differ much from that of pure Kabardians.

**Table 166****Average sportiveness of Don-Kabardian and Kabardian horses in the age of 2 years at Piatigorsky hippodrome during 1935-1940**

Don-Kabardian, N=14	Kabardian, N=40
Average sportiveness 1.38,7	1.38,8

To estimate the working abilities of mountain horses of Northern Caucasus of Russia the Soviet organization arranged several speed and distance runs and also some special tests of horses moving in steps and at a trot under the rider and the load, as well as combined trials in 1962-1963.

## **THE SPEED RUNS**

There were numerous speed runs in Kabardino-Balkaria on the route to and from Malkinsky stud and Nalchik of distance 50 kilometers. Sometimes horses were prepared to those contests within two weeks. The winners of that run were:

The Anglo-Kabardian stallion 016 Genduko in 1929,  
The Anglo-Kabardian stallion 021 Gundelen in 1930,  
The improved Kabardian mare 29 Aza in 1931,  
The Anglo-Kabardian mare 030 Gera in 1932,  
The Anglo-Kabardian mare 045 Kaziban in 1933,  
No competition in 1934,  
The Anglo-Kabardian stallion 023 Darial in 1935.

The best time was shown by the improved Kabardian mare Aza: 4 hours and 25 minutes which left behind the Thoroughbred stallion 545 Pagubny. The Anglo-Kabardian mare Kaziban also showed good time: 4 hours 38 minutes. Both these mares galloped well, went in swift elastic trot and possessed wide, free, extended gait. Thoroughbred horses ceded in trotting and gait. Anglo-Kabardian crosses demonstrated increased ability for energetic swift flings.

The improved Kabardian Stallion 67 Ali-Kadym, bay, born 1941 at the collective farm of Verhniaia Kuba of Kabardino-Balkarian Autonomic Soviet Socialist Republic, won the distance of 250 kilometers at All-Union competitions of domestic riding breeds of horses in Moscow in 1946. He also took the second place in the relay contest on 10.500 meters with the sportiveness of 14.20,3 leaving behind the horses of Ahal-Teke, Don, Lokaiskaia and other breeds. Unfortunately this stallion smashed in mountains.

The 100-kilometers mountain run was arranged for unprepared horses on 1 June of 1951 at Malo-Karachaevsky stud aimed on the revealing of their working abilities. The route to and from the central plot of the stud (830 meter above the sea level) – place Bermamyt (2556 meters above the sea level). The track went through the heights, valleys and gullies with steep descents and climbs. The road was sometimes stony, sometimes with swamps and contained deep channels from the wheels.

The mode of allure changed according to the relief. The speed of motion at ascent to Bermamyt was 15 kilometers per hour, on the rest of the route the speed was 19,5 kilometers per hour. The average speed was 17,3 kilometers per hour.

In the end, the distance of 100 kilometers was covered by 5 hours 47 minutes. The riders raced to the finish went last 500 meters in a dense group within 42 seconds. The winner was Debosh 69, born 1944 from Dalhat and Blestka.

## ENDURANCES

The long-distance run around the Caucasus Ridge was arranged in winter of 1935. The route was Piatigorsk – Kluhorsky pass – Sukhumi – Kutaisi – Tbilisi – Baku – Makhachkala – Grozny – Ordzhonokidze – Nalchik – Piatigorsk of total length 3000 kilometers. The most difficult part of the run was the Kluhorsky pass, considered to be impassable in winter.

The endurance took 47 marches of average daily distance of 63,9 kilometers. The maximal passage per day was 130 kilometers in the rain on dirty road. 48 horses participated in the endurance: 15 Kabardians, 3 Dons, 4 Anglo-Dons, 9 other mountains, 8 Anglo-mountains, 9 other crosses. All horses reached the finish in full condition.

The Kabardian horses demonstrated the best working merits in the mountains in spite of being behind Thoroughbred and its derivatives in respect to the sportiveness in forced marches. This was especially evident during 19 hours needed for the covering of 30 kilometers of the Kluhorsky pass on the narrow path treated in the snow of 3-4 meters deep. The Don horses, maladjusted in respect to their cardiovascular and lights systems, had great complications with that passage.

The same horses participated in the speed run Piatigorsk-Rostov without any special training one month later. All the way of 660 kilometers was covered within 5 days on the dirty road with maximal march of 150 kilometers. All horses succeeded, the best ones were the Anglo-Kabardian and Kabardian horses.

The highland endurance runs of stallions-breeders have been conducted at Cherkessky State seed plot almost annually since 1947. The number of tested stallions in 1947 is 32, 29 in 1948, 29 in 1949 and 16 in 1950. The main purpose of these endurances was to check the stamina of stallions in conditions of everyday mountain passages within 7 days. The stallions in the age from 4 to 10 years were tested. The stallions taken out of herd after the pairing session by 45 days before the run were left in rest and for the recovering of fattening. Then they were brought to one stable of single collective farm of the area of State seed plot or to the Cherkessky hippodrome to make the observations for them easier.

The preparation for the run went in three stages 10 days each. The horses paced up to 5 hours per day on the first stage. The horses were allowed to go in pace or to trot on crossed country 6-7 hours per day on the second stage. The galloping for 10-15 minutes was introduced at the last hour. The weight of the rider with the saddle had to reach 100 kilograms. On the third stage horses worked on various allure with double repetitions of trot and accelerated pace with 2-hour rest in between.

The clinical data of stallions with account of sweating, feeding, stumbling etc were monitored during the training period. The distance by the end of the training was about 60-65 kilometers per day. The control run on 40 kilometers within 4 pace hours was held three days before the end of the training. The stallions were weighed the before the control run and the next day after it. The losses of weight allowed one to estimate the level of qualification to the endurance.

The main factor of success in the endurance was the stallion's ability to

cover definite distance in a given time with saving all the power.

The track of highland run of general length 450-500 kilometers lied in heights 1000-3000 meters and was the same within a number of years. The endurance provided for the average daily passages of 71 kilometer in a closed circle within 7 days with obligatory return to the place of overnight stay and monitoring of horses.

The roads of the route had slopes up to 70 degrees and were hard and stony. This helped to determine the firmness of hoofs of tested horses (**Figures 164, 165**).

The allurees were altered according to the relief of the track. The horses were allowed to switch to gallop for 2 kilometers after the end of the last daily passage. The winner was that stallion which successfully ended the endurance run and came first galloping. The states of heart and lungs of stallions were checked during the competition as well as state of their limbs and muscular system and general fatigability (including lying at night stays) monitored and the amount of given nutrition eaten verified. These observations allowed the removal of disordered horses from the endurance to be done in-time.

The working ability of horses was rated on 10-point system. The horse, succeeded the run and won the galloping scored 10 points, succeeded in the run but won second and third places scored 8 points, succeeded in the endurance but missed the win in the galloping scored 6 points. The horse succeeded the run but sweated much and tired and thus not admitted to the galloping scored 4 points. The horses did not finish the endurance were scored with 2 points.

The horses lost their live weight during the run were deducted points: 1 if the loss of weight was 10 kilograms and it did not restored within 3 days, 2 if the weight did not restored within 5 days and 0,5 points for each 3 extra days of non-recovering weight.

### **The mountain run of Cherkessky State seed plot**

**Fig. 164. The climb in the forest**



**Fig. 165. The crossing of a river**



**Table 167**

**Results of highland runs of stallions of Cherkessky State seed plot**

Breed group	1948							1949						
	Number of heads	Loss of weight, %	Pulse		Breath		Points	Number of heads	Loss of weight, %	Pulse		Breath		Points
			At rest in the beginning	During 10 minutes after the work	At rest in the beginning	During 10 minutes after the work				At rest in the beginning	During 10 minutes after the work	At rest in the beginning	During 10 minutes after the work	
Kabardian	18	0,3	40,3	41,1	17,3	18,5	7,0	21	1,2	39,1	46,8	16,9	18,5	8,8
Anglo-Kabardian	6	0,9	40,0	41,0	15,3	17,1	6,4	4	2,2	41,0	48,0	16,8	20,0	8,0
Arab-Kabardian	2	0,9	-	-	-	-	5,0	1	-	-	-	-	-	-
Other crosses	3	1,2	-	-	-	-	-	1	6,5	-	-	-	-	-

The Kabardian stallions had the least loss of weight and the best points for stamina. There was no considerable difference in the work of heart and lungs of Kabardian and Anglo-Kabardian stallions. Other crosses with Thoroughbred lost the live weight the most. The Arab-Kabardian stallions were less rated for stamina than Kabardian and Anglo-Kabardian horses.

The Kabardian horses of dense type showed well working ability and stamina during highland runs arranged by Cherkessky State seed plot. The horses haired a lot and of gear kind endured the run badly. They quickly got tired, sweated much and lost appetite.

The stallions Kariol from the collective farm named after the 18th Party Congress sustained the run extremely well in 1948 and Grab from collective farm named after Red Partizans in 1949.

V. Melnikov and M. Litvinov came to the right conclusion in their book "Highland endurance run as the method of try of Kabardian horses" in 1951: "The tests of Kabardian horses at highland endurance runs must play the basic role in the matter of improving the breed, because the conditions of run are the most approximated to the conditions of natural use of the Kabardian horses and to that which the State demands at the moment .

Similar to the above-mentioned run the other endurance race over the distance of 500 kilometers was arranged on the territory of Kabardino-Balkaria on 28 September – 5 October of 1952.

The run was aimed at the revealing of the stamina of Kabardian stallions-breeders under the saddle in conditions of rocky and piedmont areas.

There were selected 29 stallions-breeders in the age of 4 to 9 years for the run including 23 Kabardian and 6 Anglo-Kabardian horses.

The preparation of the stallions for the run began 30 days before the start. The training time was divided into three 10-day periods.

The first period included the motions under the saddle in the morning for 1,5 hours with alternating allure (pace, trot) and in the evening for 1 hour in steps.

In the second period the work lasted 3,5-3,5 hours on the crossed country 5-10 minutes of galloping followed by 20 minutes of pace switched to trotting again. The horses were allowed to gallop 2 kilometers within the last hour of work.

The work in the third period was on prolonged distances for 4,5 – 6,5 hours. The repetitions of the trot for the 5-10 minutes and of the pace for the 20 minutes were introduced after 2 hours of pace. The light gallop on the distance of 2 kilometers was introduced once per two days one hour until the end of the work. The riders walked and lead the horses by rein for 5 minutes after the first hour of work in all periods.

The training of the stallions and their run was under the saddle of Kabardian type with average horseman's weight of 95 kilos. The nutrition of the stallions during the preparation consisted of 6-7 kilos of oats and 10 kilos of polytypic hay, salt and water according the need. The amount of oats was increased to 10 kilos during the run.

The run was on half-rocky country on the route Ekiptsoko-Haimasha-Ketmes with the passage through the mountain cliff Dzhenal and on the territory of 20 regions of Kabardino-Balkarian Autonomic Soviet Socialistic Republic.

The horse run started at Nalchiksky hippodrome and every 7 days the start changed. The average daily travel was 70-75 kilometers. The participants forced two mountain rivers Chegem and Baksan in the very first day. The track went on the skidding roads and on the paths in mountain-forest zone of beechwoods in the end of the run and finished in Nalchik

The motion during the run was in alternating allure (pace, trot of average speed 6-7 kilometers per hour in mountains and 8-10 kilometers per hours in piedmont (pace – 25 minutes, trotting – 5 minutes)). After each hour horsemen walked and led the horses in rein for 5 minutes.

The stallions were given 2-hour-long rest (without feeding) after the finish at Nalchiksky hippodrome. The horses were divided into four groups after that and

they were led to gallop for 2000 meters. This distance was covered within 2 minutes and 30 seconds in average.

Only 2 Anglo-Kabardian stallions (out of 6) among 29 ones participated in the run were not admitted to the final race.

The best results of the run and the race belong to stallions

1. Anglo-Kabardian of third generation Bonapart, born 1945 (155-155-187-20,5) from Bipolar and Palubka which added 8 kilos of live weight and covered 2000 meters within 2 minutes and 30 seconds.

2. Pure Kabardian Feb, bay, born 1946 (153-154-175-19) from Tabishina and Sofa which lost 5 kilos of live weight after the run but covered 2000 meters within 2 minutes and 32 seconds.

The clinical parameters of stallions (temperature, pulse, breath) were measured all the way long every day in the morning before the start and in the evening within 10 minutes after the reaching the place of night stay.

The hematological studies (determination of the amount of the reserve alkalinity according to Nevedov and of the hemoglobin according Sali) were conducted on both start and finish of the endurance.

The results of clinical observations and hematological studies are gathered in the following tables.

**Table 168**  
**Change of clinical parameters of stallions during the 500-kilometers-long run in Kabardino-Balkaria**

Breed group of stallions	Before the run at rest			After the end of run within 10 minutes		
	Temperature	Pulse	Breath	Temperature	Pulse	Breath
Kabardian	37,8	18	38,7	38,5	44,5	20,9
Anglo-Kabardian	37,8	18,3	37,1	38,1	45,5	22,6

**Table 169**  
**Change of average hematological parameters of stallions during the 500-kilometers-long run in Kabardino-Balkaria**

Breed group of stallions	Hemoglobin in percents according Sali		Resource alkalinity according Nevodov		Change in percents	
	On the start	On the finish	On the start	On the finish	On the start	On the finish
Kabardian	60,1	68,9	584,3	605,6	+14,6	+3,6
Anglo-Kabardian	69,5	70,0	610	623,3	+0,7	+2,1

The Kabardian stallions had some better clinical and hematological results. The change of live weight of stallions during the run can be characterized by the following data.

**Table 170**

**Change of average live weight of stallions during the 500-kilometers-long run  
in Kabardino-Balkaria**

Breed group of stallions	weight in kilos		weight losses	
	Before	After	kilos	percents
Kabardian	434,6	427,4	7,2	1,67
Anglo-Kabardian	460,6	450,5	9,8	2,12

The Anglo-Kabardian stallions lost a little bit more weight in the run. The Anglo-Kabardian stallions got tired more than pure Kabardians on mountain passages of the run. One part of Anglo-Kabardian stallions were led in reins by dismounted riders when climbing the ridge Dzhenal.

Describing this run in Kabardino-Balkaria, N. Dron and V. Zotov came to the following correct conclusions in 1953:

1. The Kabardian stallions appeared to be of greater endurance and more capable of working compared to the Anglo-Kabardian ones in mountain passages. The Kabardian stallions had the hoof horn harder and ligamentous apparatus better. The other observed things were the better work of cardiovascular system and the fastest recovering.
2. The horse run arranged in conditions of Kabardino-Balkarian Autonomic Soviet Socialist Republic at minimal preparation period has revealed the reasonability of the given kind of tests for the Kabardian horses.

One should note that horse runs are also of sportive and educational importance for riders. The Kabardian proverb says: "The day for the horse is the day for the man in a ride

**SPECIAL TESTS OF HORSES BY PACE AND UNDER THE RIDER**

The tests of Kabardian horses on the speed of motion in pace and of trotting under the rider were arranged on 12 May of 1951 at Malo-Karachaevsky stud. The results of those tests are given in the next table.

**Table 171**

**Results of tests of horses in pace and galloping under the rider on the distance of 2000 meters at Malo-Karachaevsky stud**

Time in pace	Speed, m/s	Time at a trot	Speed, m/s	Name	Gender	Year of birth	Origin	
							Father	Mother
11,44	2,8	5.44	5,8	Bas	Gelding	1946	Barmen	Struna
12,25	2,7	5.10,5	6,5	Bim	Stallion	1938	Bek	Lihaiia
12,31	2,7	5.24	6,2	Dargkoh	Gelding	1945	Darzho	Hlestkaia
13,03	2,6	5.12	6,4	Dudar'	Stallion	1945	Dolhat	Dan'

One can see from the table that the best time in pace was shown by the gelding Bas which covered the distance of 2000 meter in 11 minutes and 44 seconds with the speed of 2,8 meters per second. The best time of trotting was shown by the stallion Bim which covered the same distance in 5 minutes and 10,5 second with the speed of 6,2 meters per second. **Figures 166, 167.**

## THE WINNERS OF THE TESTS AT MALO-KARACHAEVSKY STUD

Fig. 166. Bas from 95 Barmen



Fig. 167. Stallion Bim from Bek 8



One can see from these tests that Kabardian horses possess extremely fast pace considerably exceeding their usual speed of 1,5-2 meters per second or 4-7 kilometers per hour. All horses moved with the speed of 2,6-2,8 meters per second or 10 kilometers per hour on the run at Malo-Karacharovsky. However the trotting of tested horses appeared to be much slower than that of trotters.

A.S. Sultanov tested horses of Rutulsky region of the Autonomic Soviet Socialist Republic of Dagestan under the load and rider in 1963 on the heights of 2500 meters and more on the mountain stony paths with climbs and descents (of slopes of 20 to 45 degrees) and with forcing of fleeting mountain rivers. The distance of 80 kilometers was covered by horses under the rider and load of 60-70 kilos (28,5% of live weight) within 10 pace hours with average speed of 8 kilometers per hour. There was no observed overstrain of horses and their clinical parameters became normal after 15 minutes after the end of the run.

On summer pastures of 1952 V. Maigi prepared horses for jumping without breaking normal functioning of Malo-Karachaevsky stud.

The show jumping horses were at constant use by horse herd wranglers and it was not possible to establish the strict regime of the work, feeding and housing of horses. The jumping of individual horse was held twice a week under the rider on natural and artificial barriers at a spare time. The obstacles for regular classes on jumping were the often and plentiful rains on summer mountain pastures. In such circumstances only the great jumping abilities of Kabardian horses gave the opportunity to train their jumping within the short period of irregular work. The horses came to the day of the contest in an excellent shape: coming on the track they covered barriers of up to 1 meter high and 1,8 meters wide. The horses could jump single barriers of 1 meter 20 cm high. During the jumping competition of 28 September of 1952 at Malo-Karachaevsky stud all the barriers were taken without faults and only one horse got penalty of 3 points for the draught.

These tests revealed that the abilities of the Kabardian horse to jump were not that bad.

## **TRIALS UNDER THE LOAD**

The veterinary N.I. Meschersky noted the usefulness of the Kabardian horses as the pack horses in 1890. Pointing on the agility and very confident pace of these horses in mountains, he considered them the most durable at work under the load. His conclusion was based on the experiments of successful use of mountain horses in mountain artillery during the Crimea campaign of 1855-1856 and the war with Turkey in 1877-1878.

The lieutenant general, professor Spier also noticed the especially worthy pack qualities of Kabardiān horses in his report on the XXI Plenum of the Livestock Sector of the Lenin's All-Union Academy of Agriculture in 1940, in newspaper "Cattle-farming from 1941 and in the Proceedings of the Moscow Veterinary Academy in 1956. Recommending two types of riding-pack and pack-gear horses, Spier insisted on the necessity of establishing of the special system of pace, training and trials of pack qualities of horses in mountain conditions. However the number of such experiments realized is few.

The special tests of horses under the pack were carried out by M.M. Zubairov in 1959 in Dagestan. The results are following.

**Table 172**  
**Results of tests under the load of local and Kabardian-Avar horses**

Horse groups	Number of heads	Average live weight	Load, kilos	Distance, kilometers	Number of		Average speed, kilometers per hour
					Days of testing	Pace hours	
Lezgin (piedmont)	8	275	70	150	1,5	19	7,9
Avar (mountain)	8	286	68	180	1,5	20	9,0
Avar (mountain)	6	285	72	90	1	12	7,5
Avar (mountain)	4	290	75	400	3	42	9,5
Kabardian-Avar	8	412	102	150	1	15	10,0
Kabardian-Avar	6	396	107	130	0,5	12	10,8

Five horses of Rutulsky region of Dagestan passed 20 kilometers under the load of 60-70 kilograms (28,5% from the live weight) within 6 hours and 30 minutes in highland tests conducted by A.S. Sultanov without any tension.

## TESTS IN GEAR

The Regional experimental station on horse breeding of Northern Caucasus of Russia arranged several tests for the characterization of the gear qualities of the Kabardian horses.

10 couples of Kabardian geldings of average height 142,8 cm and average weight 350-380 kilograms took freely, without any preliminary training, 2 tons of load in common carriages on soil road each, thus demonstrating the maximal carrying capacity of 4,5 tons per couple. (The carriages did not stand the load of 6 tons as was assumed before and were not loaded in full /K.A. Shumov, 1936/).

The same horses passes 15 kilometers within 2 hours and 3 minutes loaded with the weight of 1,1 tons at the tests on the urgent delivery of goods in paired gears on the crossed country. After 2-hour rest they passed more 15 kilometers within 1 hour and 31 minutes on the dig stony road with the same load.

During the tests of horses from the collective farms of Kabardino-Balkaria and Stavropol Province on draught stamina in the sledge apparatus the covered distance at draught of 180 kilograms by the Kabardian horses was 122 meters while Don horses passed 205,8 meters.

The Kabardian horses of dense type were the best at tests arranged by Cherkessky State seed plot in Zelenchuksky region: 40 working horses were tested in the sledge apparatus at draught of 45% from the live weight.

The tests on draught stamina and on maximal power of draught of working horses were arranged at Malo-Karachaevsky stud in sledge apparatus on 8 December of 1950.

The conditions of tests on draught stamina were: flat soil track (with the coefficient of resistance 0,4 in sledge apparatus according to the data of dynamometer), the draught resistance constant – 196 kilograms, the weight of load with the sledge apparatus constant – 490 kilograms.

The results of tests are given in the following table.

**Table 173**  
**Results of tests of horses on draught stamina in the sledge apparatus**

Distance covered	Time (min, sec)	Name	Gender	Born	Breed and blood	Father	Mother	Live weight	Shoulder	Chest	Fore cannon
1720	12,00	Lenchik	Gelding	1943	¼ english	Ladny	Cholia	470	152	172	19
1600	10,05	Darfur	Gelding	1940	pure Kabardian	Divny	Fialka	495	155	184	19,5
1087	8,25	Bars	Gelding	1939	pure Kabardian	Borei	Vetrina	555	156	188	20
1020	8,00	Sultan	Gelding	1938	¼ english	Pago	mare 512	545	157	185	19,5
98	-	Babit	Gelding	1946	pure Kabardian	Barmen	Balla	450	151	170	19

Lenchik and Darfur covered the greatest distances. Both of them, as well as Sultan, were stopped by the judges. Bars and Babbit stopped themselves. **Fig. 168.**

The pure breed gelding Bramin born 1943 from Barmen and Molva, weighted 540 kilograms, was tested on the maximal draught at Malo-Karachaevsky

stud. The initial load on the sledge apparatus taken was 560 kilograms what determined the draught resistance of 224 kilograms. Every 1-7 meters load was increased at 9 positions as 84-81-65-64-70-68-65-67-85 kilograms. The final weight on the sledge apparatus appeared to be 1139 kilograms, the maximal draught was 455,6 kilograms, the distance covered was 70 meters and the time was 32 seconds.

The tests of urgent delivery of goods on two horses were arranged at Malo-Karachaevsky stud on 10 May of 1951. The track of total length 50 kilometers went on Podkumsky canyon from and back to the central plot of the stud (830 meters above the sea level) to the village Tereze (1080 meters above the sea level). The weight of load with the carriage was 2000 kilos. The draught on the flat part of road and at ascend up to 0,5 degrees, when the measurements were carried out, was 110 kilograms in average. The results were: pure breed geldings Bramin, born 1943 (159-187-209) of live weight 540 kilograms and Darfur, born 1940 (155-184-19,5) of live weight 495 kilograms drove the load of 2 tons over the distance of 50 kilometers within 6 hours and 4 minutes in two-horse carriage without any special training. No signs of overwork had been noticed neither during nor after the work on both general state and clinical parameters.

The tests on the speed of pace and of trotting of Kabardian horses in gear with load were conducted at Malo-Karachaevsky stud on 11 May of 1951. The tests were conducted in one-horse arcless gear to the cart.

**Table 174**  
**Results of tests of horses in gear, pace and trot, on the distance of 2000 meters**

Gait	Draught resistance, kilograms	Travel time	Speed, meters per second	Name	Gender	Born	Father	Mother
Pace	95	14 min 28 sec	2,5	Bars	Gelding	1939	Borei	Vitrina
Pace	95	14 min 49 sec	2,3	Darfur	Gelding	1940	Divny	Fialka
Trot	35	5 min 55 sec	5,5	Bramin	Gelding	1943	Barmen	Molva
Trot	47,5	6 min 23 sec	5,2	Bramin	Gelding	1943	Barmen	Molva

As is seen from the table, the best time of pace on the distance of 2000 meters was shown by Bars – 14 minutes 28 seconds at speed of 2,5 meters per second or 9 kilometers per hour. The best time of trotting was shown by Bramin, which covered distance of 2000 meters within 5 minutes 55 seconds at speed 5,5 meters per second or 18,8 kilometers per hour.

The comparison of the results of tests of Kabardian horses in gear from the Malo-Karachaevsky stud with those for Kustanaiskaia breed reveals that horses from Malo-Karachaevsky stud overcome Kustanaiskaia horses in all parameters of working efficiency.

**Table 175**

**The best parameters of working efficiency of Kabardian horses from Malo-Karachaevsky stud and Kustanaiskaia horses in gear**

Kind of test	Draught per one horse	Distance, kilometers	Time	Name	Year of test
KABARDIAN BREED					
<b>In a carriage</b>					
Alternating allure	55	50	6 hours 4 minutes	Bramin, Darfur	1951
Trot	35	2	55 minutes 55 seconds	Bramin	1951
Pace	70	2	14 minutes 28 seconds	Bars	1951
<b>In the sledge apparatus</b>					
On draught stamina	146	1,6	10 minute 05 seconds	Darfur	1950
On maximal draught	455,6	0,07	32 seconds	Bramin	1950
KUSTANAISKAIA BREED					
<b>In a carriage</b>					
Alternating allure	25	178	15 hors	Shtorm	1950
Trot	35	2	6 minutes 10 seconds	Zavet	1949
Pace	70	2	15 minutes 05 seconds	Dozorny	1949
<b>In the sledge apparatus</b>					
On draught stamina	180	0,63	-	Shtorm	1949
On maximal draught	456	-	-	Zevs	1949

M.M. Zubairov tested the agility of pace and of trot and draught of Anglo-Avar and Kabardino-Avar horses in the age of 5 years and older in 1959. His results are presented in the following table.

**Table 176**

**Results of tests on agility of Anglo-Avar and Kabardino-Avar horses in gear and on draught**

Groups of horses	Number of heads	Live weight, kilograms	Agility of pace		Agility of trot	
			Draught, kg	Time on 2000 m	Draught, kg	Time on 2000 m
Anglo-Avar crosses of the 1 <sup>st</sup> and 2 <sup>nd</sup> generations	4	382	56,9	14,46	22,5	5,95
Kabardino-Avar crosses of the 1 <sup>st</sup> and 2 <sup>nd</sup> generations	7	388	58,9	14,12	26,4	6,35

One can see from the table that Anglo-Avar horses are behind the Kabardino-Avar horses on agility of pace but overcome them in the agility of trot.

## **COMBINED TESTS**

On my behalf, Maigi performed combined experimental test of horses under the saddle, under the load and in gear during one single day at Malo-Karachaevsky stud in 1953.

After the relevant training, the same horse in this experiment covered 25 kilometers in run overcoming the hurdles (the cross), then 25 kilometers in gear and 25 kilometers under the pack – 75 kilometers in total. The test was aimed at revealing of the better or the worse ability of horse for various kinds of work in mountain conditions and was not oriented on the establishing any record.

Two working horses successfully passed the gear tests earlier were selected, namely Bramin and Darfur. The schedule of training of these horses to the combined test was composed on the basis of monthly gap before the run. Because the horses were draughts the vast majority of days in their training plan were devoted to the riding work which mainly was the prolonged motion under the saddle and the jumps. The distribution of works was: 20 days (66,7%) of riding, 6 days (20%) of draught and 4 days (13,3%) under the load.

The one-day combined test was conducted on the track of 25 kilometers long laid from the central plot of the stud (830 meter above the sea level) through the watershed of Soldatskaia and Andreevskaia gullies to the highest point (1004 meter above the sea level) then to “Kommunstroy” and Kamyshovaia gully back to the central plot. The part of the route from the central plot to the watershed was the steady ascent of 9 degree slope (9 meters high equal to 100 meters long). The other parts of the route contained both descents and climbs. The road was soil and stony.

All kinds of trials, namely the cross, in gear and under the load were on the same track. The total length of all the tests was 75 kilometers.

The start and the finish of the test was the vet gate of the stud where the clinical parameters were checked and blood samples taken.

The normal timing for each test was 2 hours. The hours of the day were chosen for each test: from 7 to 9 in the morning – riding, from 18 to 20 – under the pack and from 5 to 7 of next morning – draught.

The feeding of the horses before the tests and in the gaps between consecutive ones was 8 kilograms of oats per day per horse and unlimited hay. The watering and feeding with oats was 3 hours before the start in every test. One bucket of water and hay were given to horses one hour later the finish.

The test under the saddle in cross started on 29 September of 1952 at 7 in the morning and ended at 8 hours 56 minutes and 36 seconds. 25 kilometers of distance were covered within 1 hour 33 minutes and 14 seconds. The 10-minute stop was permitted at Kamyshovaia gulley after which followed: the long repetition of pace than short trotting and galloping on the crossed country off-road.

The 5 kilometers off-road were covered within 10 minutes and 12 seconds with overcoming of 10 hurdles. Due to the short training of jumping (one month) the length and the width of the barriers were relatively small. The horses overcame the following obstacles: the ditch filled with water (width 1m 30cm), pole fence with hurdle (height 90cm), soil shaft (height 80cm), bar (height 80 cm), open ditch

(width 1m 80cm), sheer lowering to be jumped down (height 85cm), ford through the mountain river (width 4,5 meters). All the hurdles were overtaken clearly without breaks. **Fig. 169.**

The draught test started after 9 hours of rest with the feeding at 18 hours and ended at 19 hours 54 minutes. The test was carried on in the two-horse gear of load 1000 kilos on the distance of 25 kilometers on preliminary prepared track (the motion only on the roads). **Fig. 170.**

After the second 9-hour rest also with feeding on 30 September of 1952 at 5 in the morning the test under the pack started which ended at 7 hours 5 minutes and 44 seconds. Because of absence of the pack saddle the horses were tested under the same riders with extra weight added (the sand in bags). The total weight of the rider with pack was 130 kilograms. **Fig. 171.**

There were no sings of overwork on general condition of horses and on parameters of change in temperature, pulse and breath observed both during the work and after it whatsoever. This can be supported by the clinical data and hematological results.

**Table 177**  
**Clinical parameters of horses participated in the combined 1-day test**

	Bramin			Darfur		
	Temperature	Pulse	Breath	Temperature	Pulse	Breath
At rest before the cross	38,2	36	16	38,3	40	14
After the cross	39	76	54	39,3	84	60
After 10 minutes	38,8	60	36	38,9	72	48
After 20 minutes	36,6	46	26	38,8	48	30
After 30 minutes	38,4	40	18	38,5	44	20
After 9 hours of rest before the draught	37,8	32	16	37,9	44	10
After draught	38,7	64	44	38,9	76	29
After 10 minutes	38,6	54	24	38,7	56	36
After 20 minutes	38,4	36	16	38,5	38	18
After 9 hours of rest before the work under the pack	37,6	38	12	37,8	40	18
After the work under the pack	38,9	72	52	39	78	58
After 10 minutes	38,6	58	48	38,7	66	52
After 20 minutes	38,4	38	20	38,6	40	22

## THE COMBINED TEST AT MALO-KARACHAEVSKY STUD

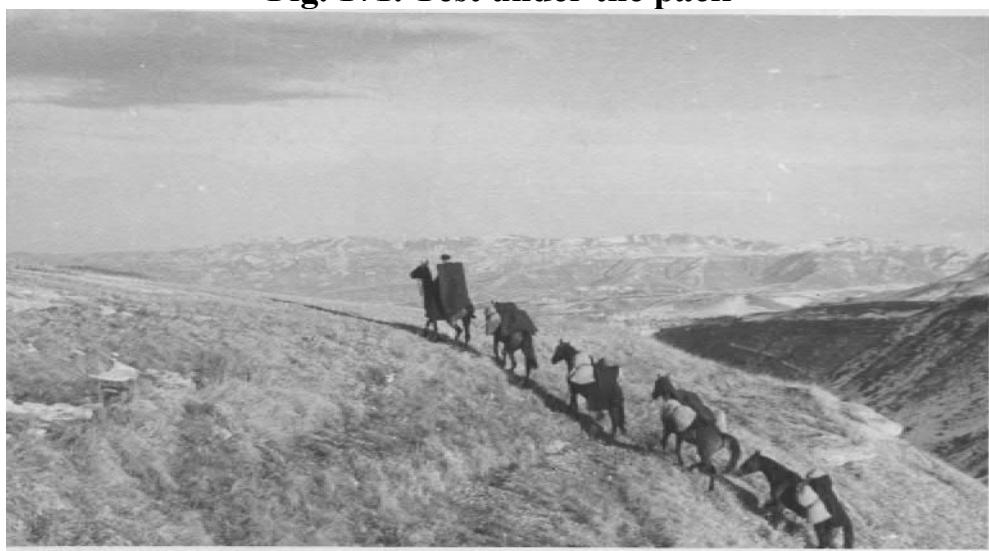
**Fig. 169. Overtaking a hurdle**



**Fig. 170. Draught test**



**Fig. 171. Test under the pack**



**Table 178****Hematological parameters of horses participated in the combined 1-day test**

	Bramin					Darfur				
	erythrocyte sedimentation rate after minutes				hemoglobin after	erythrocyte sedimentation rate after minutes				hemoglobin after
	15	30	45	60		15	30	45	60	
At rest before the cross	12	26	27	28	66	4	21	29	31	68
After cross	47	56	57	58	71	36	56	57	58	74
After 9 hours of rest before the draught	10	28	30	31	64	5	23	28	34	66
After draught	38	42	48	54	68	29	36	41	51	69
After 9 hours of rest before the work under the pack	9	24	27	30	65	6	26	30	33	67
After the work under the pack	44	49	51	57	69	33	38	49	55	70

Darfur had somewhat increased temperature and considerably higher pulse and breath after the work in comparison to Bramin. So, the work was harder for Darfur rather than for Bramin.

Judging on the shifts of clinical data, the hardest was the work in cross, then under the pack and the easiest was draught. This is in agreement to the remarkable increase in concentration of hemoglobin in blood after the cross. The difference in works did not reflect in erythrocyte sedimentation rate.

The method of 1-day combined tests can be recommended for the Kabardian horses because it reveals their ability to adapt to suddenly changing working conditions in mountains. The results also demonstrate the quick recovery of Kabardian horses.

The combined tests of horses must not aim the establishing the records in each kind of test. This would only result in overwork and injuries of horses. The specialized training is required for putting the records in any work. Even in smooth races there has to be certain training on a specific distance to make a record in it. The attempt to establish the record on the other distance without preliminary training only damages the horse. The system of combined tests required especially careful attention to every horse.

The combined tests correspond to multisided use of Kabardian horses in the USSR. The main use of it is the riding. However, these horses can be used as draughts in agricultural work and under the pack as well.

## **MILITARY USE OF MOUNTAIN HORSES**

The mountain horses of Northern Caucasus of Russia demonstrated their stamina and ability to work in hard conditions of service with troops in a number of wars.

The marshal of USSR S.M. Budenny wrote in newspaper ‘Pravda’ from 26 January of 1947 that the Kabardian horse appeared to be one of the best during the World War II. These horses were used at reconnaissance, at communication, as cavalry, pack and transport horses. They were extremely durable and covered all the difficult way from the battles of Grozny and Volgograd to Berlin.

Brought up in herds, accustomed to live in mass, the mountain horses exhibited supreme braveness in horse attacks. But sometimes they denied going out of the order.

Mentioning the irreplaceability of Kabardian horses at reconnaissance service where the needed are the lightness, stamina and carefulness, P.T. Kocev reported on the Second Convention of horse-breeders in Moscow in 1910: “This horse participated in every battle since Peter the Great and was not the least. As is known, Kabardians supply about 2500 horses to the army every year, about 300 heads to the repair of the border guard, about 100 horses to the mountain artillery and cavalry, about 150 heads to the horse-ordinary units, almost 150 to the Tsar’s escort. The rest of them go to the cossack’s regiments. Eleven Kuban, four Terek cossack’s first-turn regiments and seven batteries are served with our horses /Proceedings of the First Convention of horse-breeders. Moscow, 1910, Vol. I, P.157; Vol. II, P.189/

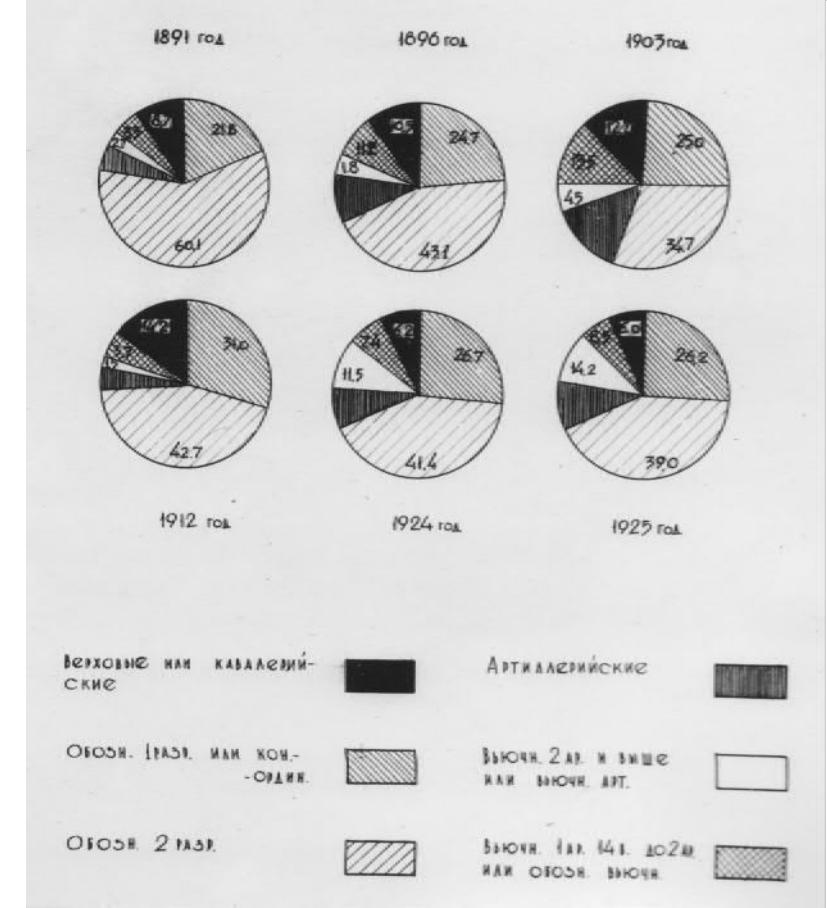
Insufficiently high Kabardian horses only seldom were admitted to be on service in cavalry. They were generally used as transport horses or at ordinary units. This can be seen from the military distribution of horses from the Nalchiksky District and Kabardino-Balkarskaia Autonomic Province according to the data of military censuses of horses and accounts for a number of years. **Plot 20.**

The Anglo-Kabardian and also the enlarged Kabardian horses suited the cavalry’s demands rather well. The repair commission of the Cavalry Staff of the Red Army recognized all the horses of the Malo-Karachaevsky stud valid for any service in Red Army especially in the mountain conditions. The Soviet Cavalry involved the special regiment shafted on 80% and was filled remaining with horses from Malo-Karachaevsky stud.

At the time, among all the horse breeds the Kabardian ones are the most wanted on the border services in troops protecting our frontiers on the huge extensions in mountains, deserts and forests, along the river banks and sea shores. Especially positive the Kabardian horses were estimated by border guards of Pamir. **Figures 172, 173.**

## Plot 20

## **Military distribution of horses of Kabardino-Balkaria (former Nalchiksky District) according to the data of military horse censuses, percents**



### 1 order or ordinary

## Transport of 1 order or ordinary

## Transport of 2 order

pack of 2 order or higher of artillery pack

pack of 1 order or transport pack

**Fig. 172. Soviet border guards on Kabardian horses**



**Fig. 173. Exemplary skirmish of Cossacks riding Kabardian horses**



Summing up the content of this chapter one can conclude the following:

1. Mountain horses are lively, well-behaved and are of great working ability on pace on the mountain paths
2. The prominent qualities of Kabardian horses are the easiness and agility of moves. The riding use of the horses in the mountains helped in originating of such qualities as well as people's races and horse games of highlanders. That is why Kabardian horses are still successfully used as riding, pack, hunter, center and outrunner ones.
3. The hippodrome trials on smooth races predominantly in the age of 2 years and on short distances, in spite of providing better stable's housing of trained Kabardian offspring and developing of narrower-bodied and high-leg racing constitution, were not accompanied with the increase in average sportiveness of these horses. The record-winners on the smooth races of pure Kabardian horses were actually half-blooded crosses of uncertain origin.
4. The average sportiveness of half-blooded Anglo-Kabardian horses was always higher than that of pure ones and increased with increasing amount of english blood. Only horses of  $\frac{3}{4}$  of english blood sometimes (due to the irrelevant education) showed worse average sportiveness compared to the half-blooded horses of the first generation. The increment in average sportiveness of half-blooded horses in respect to pure ones remarkably decreased on prolonged distances,
5. The best sportiveness of half-blooded Kabardian horses grown in the good conditions of stables-herd housing always increased with increasing content of the english blood.
6. The best sportiveness of the half-blooded Kabardian horses on some distances is above the record one among all the breeds of USSR except for the Thoroughbred. However this value of sportiveness is never registered as record in USSR and usually there are no separate races for the Anglo-Kabardian horses and there is no prize specially awarded.
7. According to the new regulation of the tests of pedigree horses of trotting and riding breeds on the hippodromes of USSR (1963) Anglo-Kabardian horses have to be tested within blood groups.
8. The pure Kabardian horses should not be tested on the smooth races. Only the small group of best colts of this breed projected to become stud breeders in purposes of providing them with better education must have the opportunity to be trained and tried at Piatigorsky hippodrome.
9. The mountain runs from the experience of the Cherkessky and Kabardinsky State seed plot must be restored for the pure Kabardian stallions-breeders.
10. The recommended tests for the Kabardian horses are the following: cross, mountain pace and trotting under the saddle and load and also in gear and combined especially for the dense type of Kabardian breed of horses.

## CHAPTER VIII

### TRANSFORMATION OF KABARDIAN BREED OF HORSES AT STUD FARMS OF NORTHERN CAUCASUS OF RUSSIA

The plasticity of the Kabardian horse and its transformation under the influence of the complex of zoo-engineering conditions and can be convincingly demonstrated by the experience of the Malkinsky stud № 34 in Kabardino-Balkarian Autonomic Soviet Socialist Republic and Malo-Karachaevsky stud № 168 in Karachaevo-Cherkesskaia Autonomic Province.

#### MALKINSKY STUD № 34

The Malkinsky stud was organized in 1922 on the basis of the Terek State Stables. At the moment it covers the area of 9000 hectares and is located on 4 plots: Central plot (near the village Malka), Psynshoko, Aursenth and Harbaz. The first section of the stud at the central plot is 600-800 meters above the sea level. The second section Psynshoko is located on the north-eastern slopes of cliff Dzhinal 700-1200 meters above the sea level. The mountain pastures used only in summer are on the places Aursenth 1700-2000 meters and Harbaz 2200-2400 meters above the sea level.

The main stable of the stallion-breeders and of the training offspring consisting of 44 stalls is on the central plot. There is the other part in which the herds are kept representing the stable of 42 one-sided stalls and bases for simultaneous housing of 200 heads of horses.

The Malkinsky (Ashabovsky) stud granted stallions to collective farms for coupling in 1922-1929 when it belonged to the Kabardino-Balkarian regional land administration. There was no zootechnician work on the Kabardian breed of horses at all at that time. The stallions of any breed were used as breeders and quite often they did not improve the Kabardian breed. Beside Thoroughbred and Anglo-Arab stallions the breeders used were the Hungarian, Trakehner crosses on the various basis, Don, Akhal-Teke and even Karabairskiaia and Anglo-Norman ones (as in 1926). These stallion did not bring positive results in Kabardino-Balkaria and their use made local horses loose some of its valuable properties.

The Malkinsky stud was included to the system of horse-breeding in 1930 and thus expanded a lot.

The territory of the Malkinsky stud № 34 increased to 13000 hectares including 6500 hectares of pastures and 3500 hectares of haymow. The number of heads reached 1600 and 900 horses were mares.

The Malkinsky stud № 34 was divided into two parts: pedigree stables with Anglo-Kabardian mares and pure Thoroughbred at the central plot and pedigree herds of Kabardian mares and stallions at Psynshoko.

The method of pedigree work used at the stables was the stripping crossing of Kabardian mares with Thoroughbred stallions at improved housing and education of the saplings which was trained and tried at Piatigorsky hippodrome.

The method of pedigree work used in herds was the pure rearing of Kabardian horses and by the increasing the amount of English blood with rearing of crosses within themselves in the purposes of keeping and fix of useful qualities of initial breeds.

The breeders used at Malkinsky stud were the stallions of breeds (for years):

Breed group	1924	1926	1931	1936	1938	1940
Kabardian	-	1	6	19	16	14
Thoroughbred	6	9	23	6	7	7
Anglo-Arab	2	3	3	-	-	-
Arab	-	-	2	2	-	-
Anglo-Kabardian	-	-	-	35	17	17
Hungarian	-	17	-	-	-	-
Trakehner	-	3	-	-	-	-
Anglo-Norman	-	10	-	-	-	-
Other half- and high-blooded ones	8	4	2	2	2	1
Don	1	5	-	-	-	-
Akhal-Teke	-	15	14	-	-	-
Karabairskia	-	1	-	-	-	-
trotting	-	3	-	-	-	-
<b>Total</b>	<b>17</b>	<b>71</b>	<b>50</b>	<b>64</b>	<b>42</b>	<b>39</b>

#### Average measures of stallions in 1940

Breed group	Shoulder	Chest	Fore cannon	Number of heads
Kabardian	152,9	179,9	20,0	14
Anglo-Kabardian	156,0	180,0	20,0	17
Thoroughbred	160,3	181,7	20,1	6

Kabardian stallions, in spite of being lower Anglo-Kabardian and Thoroughbred ones, were of almost the same chest and fore cannon.

The most prominent stallions in respect to the quality of the offspring:

- ✓ 7 ATLAS, bay, born 1922 (parameters: 151-156-178-19), bought from a farmer who drove the water on it and was going to castrate it. The Secretary of the Regional Communist Cell B.E. Kalmykov offered the Atlas to the stud (P. Zernov, 1936) **Fig. 122**
- ✓ 28 ZURAB, bay, born 1923 (parameters 155-158-180-20,5) **Fig. 131.**
- ✓ 59 EROKKO, bay, born 1922 (parameters 154-155-175-20,5).
- The best Anglo-Kabardian stallions at the stud were:
- ✓ 047 TALISMAN, half-blooded bay, born 1927 from Guido and Tauzhan (160-159-181-21). [made 1 minute and 54 seconds on the distance of 1600 meters in Rostov in the age of 3 years]
- ✓ 034 MONITOR, half-blooded bay, born 1928 from Milan and Marusia (157-152-184-20,5). [made 1 minute and 22 seconds on the distance of 1200 meters in Rostov in the age of 2 years]. **Fig. 110.**
- ✓ 027 ZULFIGAR, half-blooded bay, born 1930 from Volfram III and Zuleika (154-155-185-19,5). **Fig. 190, 120.**
- ✓ 040 PANCYR',  $\frac{3}{4}$  English -  $\frac{1}{4}$  Kabardian bay, born 1930 from Paylyas and Kubinka (161-162-183-21). [made 1 minute and 43 seconds on the distance of 1500 meters in Piatigorsk in the age of 2 years]. **Fig. 121.**

The mare's school of Malkinsky stud changed per years as follows:

	<b>1924</b>	<b>1931</b>	<b>1938</b>	<b>1940</b>
Total mares, including	25	902	602	553
Kabardian	23	858	374	326
% of Kabardian	92%	95%	62%	58%
% of Anglo-Kabardian	8%	5%	38%	42%

Average measures of the mares in 1939 were:

	<b>Shoulder</b>	<b>Length of body</b>	<b>Chest</b>	<b>Fore cannon</b>	<b>Number of heads</b>
<b>Kabardian</b>	146,6	150,8	178,9	18,5	326
<b>Anglo-Kabardian</b>					
$\frac{1}{4}$ of english blood	148,1	150,1	178,8	18,6	89
$\frac{1}{2}$ english blood	152,4	156,4	183,4	19,0	83

The mares of pedigree stables were distributed in breed in 1940 as:

Half-English – half-Kabardian	34 heads
Anglo-Kabardian of $\frac{3}{4}$ of english blood	9 heads
Anglo-Don-Kabardian	5
Anglo-Trakehner-Kabardian	3
Anglo-Arab-Kabardian	4
<b>Total:</b>	<b>55</b>

The mares of pedigree stables differed much in their exterior because at that time the foaling horses of the stud were any well-riding mares regardless of their type. The mares originated from 20 Thoroughbred stallions

The mares of pedigree stable were trained in the age of 2 and 3 years, fed plentifully and possessed measures considerably overcoming those of herd mares.

The mares of pedigree herds were distributed in breed in 1940 as:

- Kabardian pure – 58,4%
- Half-English – half-Kabardian – 20,0%
- Improved Kabardian of 1/8 – 1/4 of english blood Thoroughbred – 20,0%
- Others – 1,6%

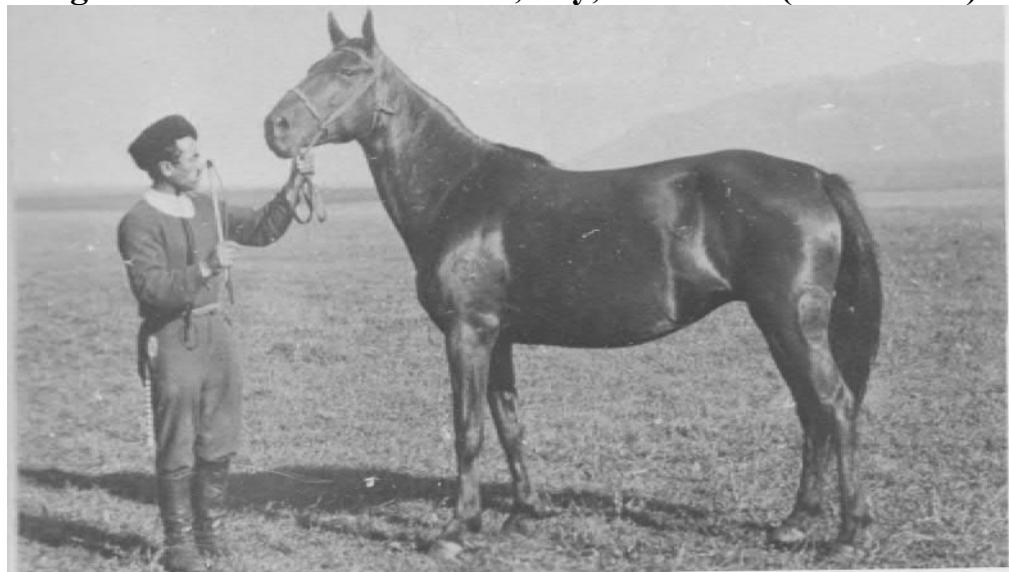
There were many dry and pedigree mares in herd section of the stud, which represented the best types of Kabardian horse. However, they all had prolonged body developed not because of the long aslant shoulder-blade but because of the extended spine and waist. **Figs 174, 175, 176.**

## KABARDIAN MARES OF MALKINSKY STUD

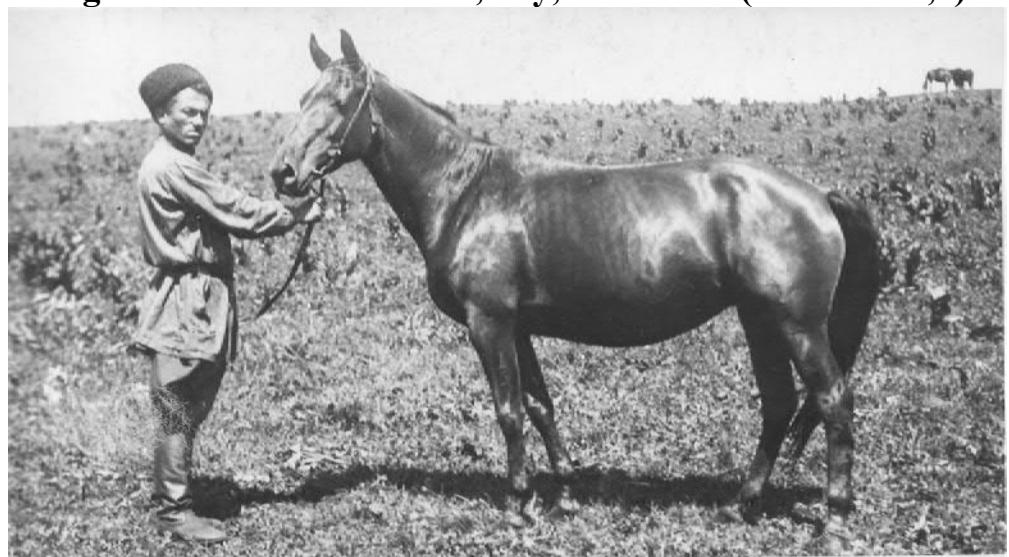
**Fig. 174. 680 Zolka 101, bay, born 1923 (151-179-18)**



**Fig. 175. 1153 Hadebzucuk 30, bay, born 1924 (149-187-19)**



**Fig. 176. 696 Industria 612, bay, born 1926 (142-178-17,5)**



The horses of the stables of the Malkinsky stud were allowed to be on pastures only in summer and they were fed with concentrated all the year.

All the horses of the place Psynshoko except stallions were pastured full year.

The breeding parameters of the Malkinsky stud at the beginning of its existence were following:

	1933	1934	1935	1936
Percent of successful drop	67,3	79,2	90	90,7
Foals grown per 100 mares	57	79	83	90

The Malkinsky stud was awarded the Passing Red Banner of the Northern Caucasus Land Administration for the progress in dropping and keeping of the offspring. The stud reached even better quantities in 1938.

	% of becoming in-foal	% of successful drop	% of offspring kept
Stables	96,5	94,2	100
Herds	99,1	97,8	97,9

The pedigree production of the Malkinsky stud was quite popular in the Kabardino-Balkarian Autonomic Soviet Socialist Republic and other regions of Caucasus before the World War II. Hundreds of stallions grown in the stud bred in at collective farms, State Stables and studs. Many horses were used as servicing ones in the Red Army. The horses grown at the stud won big prizes at Piatigorsky hippodrome each racing season.

In 1939, the Malkinsky stud and 17 of its workers participated in the All-Union agricultural exhibition and were awarded the 1-Degree diploma, automobile and 10 thousand rubles. The Kabardian stallions of the stud, sons of ATLAS were awarded 1- and 2-degree certificates on the natural show at All-Union agricultural exhibition: Amerbi and Ardagani respectively.

## KABARDIAN STUD № 110

The Malkinsky stud was rearranged after the war: its stables section was transformed to the stud for Thoroughbred horses and the herd section became independent stud № 110 for the rearing of the horses of Kabardian breed.

The pedigree stuff of the Kabardian stud № 110 at the launch was completed with the horses from:

	Stallions	Mares
Malkinsky stud № 34	11	67
Labinsky stud № 93	1	55
Bogaevsky stud № 35	-	58
Mozdoksky stud № 58	-	37
Cherkessky stud № 38	-	10
Kursavsky stud № 89	-	8
Kularsky stud № 73	1	-
Other studs	-	8
<b>Total:</b>	<b>13</b>	<b>243</b>

The stallions-breeders of the Kabardinsky stud № 110 were distributed in breeds in 1948 as

- ✓ Kabardian – 80%
- ✓ Anglo-Kabardian – 20%

The Kabardian breeders of the stud were mainly from the stallions Atlas, Zurab and Zaichik (the last from Labinsky stud № 93) and Anglo-Kabardian ones were from Zulfigar and Pancyr'.

The average measures of the stallions were:

	Shoulder	Length of body	Chest	Fore cannon
Kabardian	152,6	153,6	174,7	19,0
Anglo-Kabardian	153,7	155,6	174,3	19,0

The best stallions of the Kabardinsky stud № 110 were:

- ✓ 79 ARSENAL 102, bay, born 1940 from Ararat 9 and Kabardian mare at Malkinsky stud № 34. He was transferred to the Malo-Karachaevsky stud in 1949 and returned back to Malkinsky stud in 1958. **Fig.7.**
- ✓ 166 ZALOG 116, bay, born 1939 from 28 Zurab and Alladina 69 at Malkinsky stud. He was transferred to the Malo-Karachaevsky stud in 1949 (153-177-19). **Fig. 130.**
- ✓ 167 ZALUKO 76, bay, born 1934 from Zurab and Kabardian mare № 311 at Malkinsky stud (158-160-180-19). **Fig. 129.**
- ✓ 241 UCHINARI, black-brown, born 1930 from the mare Uchi 95 at Kularsky stud № 73 (154-154-178-19).

The spawning school of the stud in 1948 was distributed (percents) in breeds as

Pure Kabardian	Kabardian crosses	Anglo-Kabardian of english blood		
		$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$
35,2	7,1	29,3	24,8	3,6

Because of the fact that the stud № 110 was oriented to produce Kabardian horses, the mares of high-english blood were gradually removed from the stud.

The mares of the stud were of following average measures in 1948:

Breed group	Age	Shoulder	Chest	Fore cannon	number of heads
Kabardian	4-year and older	151,1	175,5	17,9	75
Anglo-Kabardian	4-year and older	152,4	176,9	18,0	155

The mares of Labinsky stud from stallion Zaichik and mares of Malkinsky stud from stallion Erokko were among the best ones.

The territory of Kabardinsky stud № 110 with good pastures and haymows, cut with deep gullies, had natural calm places and drinking places with running water. The herds grazed there in winter, spring and autumn while in summer from 25 May to 10 September they climbed up firstly to "Dzhenal" and then to "Aursenth".

The stallions-breeders were in herds from 20 April to 15-20 July. The only way of coupling used at stud was the pairing in herds with the maximal number of mares per stallion of 30-35 heads. In the end of the coupling season the stallions were gathered in herds and housed by the central plot at Psynshoko being kept

under the shed in case of bad weather. At this period they were given up to 5 kilos of oats and 10-12 kilos of leguminous-cereals hay per head. The splintered barley, bran, millet and least amount of carrot were introduced into their diet after the March. The amount of concentrations given during the coupling season reached 6-8 kilos. **Fig. 177, 178.**

The mares were kept at pastures all the year. They were additionally fed with the best hay (10-20 kilos per day) in autumn-winter period depending on the state of plumpness. The mares grazed perfectly in winter and almost did not loose the fat. **Fig. 179.**

The early dropping started in April and was processed in the special place. The common foaling happened in May straight on the pasture. Two months before the taking away from their mothers foals were given 1,5-2 kilos of cereals and after the taking away, usually happening in the second part of November, the amount of cereals given reached 3-4 kilos. Besides, the taken-away foals were given the best hay in account of 5-10 kilos per head. The foals pastured on alfalfa fields in autumn-winter season. The culture group was selected from the best offspring.

The take-away foals were kept in the bases with sheds in winter, colts separated from fillies, and in the first days of May they were included to the offspring herds. The colts out of the training were planned to be fed with 2 kilos of oats all the year while the fillies only from November till January. The colts and fillies were given up to 10 kilos of hay in autumn and in winter, the licking salt was given always and freely. **Fig. 180, 181.**

**Fig. 177. The Arsenal's herd at the additional salt-licking on the mountain pasture Aursenth**



**Fig. 178. Stallions in herd on the base**



**Fig. 179. Winter grazing of herd horses on Psynshoko**



**Fig. 180. Taken-away foals on the base**



**Fig. 181. Additional nutrition of the sucking foals on the central plot**



The breeding school of the stud № 110 could be characterized by the following average measures and indices in 1952:

	Shoulder	Chest	Fore cannon	Index of chest	Bone factor	Number of heads
Stallions	153,6	178,0	19,4	115,8	12,6	23
Mares	149,8	173,4	18,0	115,8	12,0	280

The pedigree horses of the Kabardinsky stud № 110 were of average height, average mass and average bony but differed in their proportionality, solidity, dry legs, firm hoof, ease of moves, ability to fatten, breeding power and longevity. **Fig. 137, 138.**

The line distribution of the pedigree school of Kabardinsky stud № 110 in 1952 was the following:

Line of	Stallions	Fillies
Atlas	6	70
Zurab	7	59
Zaichik	2	11
Uchinari	1	7
Borei	1	2
Dausuz	1	-
out of any line	1	131
<b>Total:</b>	<b>19</b>	<b>280</b>

The mares out of any line were of unknown origin. The pedigree production of the Kabardinsky stud № 110 was realized at studs, State Stables and pedigree units of collective farms in Kabardino-Balkarian Autonomic Soviet Socialist Republic, Stavropol and Krasnodar Provinces, North-Ossetian Autonomic Soviet Socialist Republic, Checheno-Ingushskaya Autonomic Soviet Socialist Republic, Autonomic Soviet Socialist Republic of Dagestan, Soviet Socialist Republic of Azerbaijan and Georgia.

The Kabardinsky stud № 110 located in the piedmont area on the best Zolsky pastures in the middle of Kabardian horse-breeding had all the

opportunities to be the elite and give the best pedigree production of the Kabardian breed. However it was reorganized in 1954 and all the pedigree horses were sold out. The Malkinsky stud № 34 rearing Thoroughbred horses was reorganized too in 1956.

The Malkinsky stud № 34 was restored on the basis of its previous sections, the central one and Psynshoko with summer pastures on Aursenth, in 1958. The direction of the functioning of the stud was returned either: the rearing of the Kabardian and Anglo-Kabardian horses. There are 7 stallions-breeders of the Malkinsky stud at the moment (2 Kabardians, 2 Anglo-Kabardians and 3 Thoroughbreds) and 128 mares which are:

	Kabardian	¼ english	Half-english	¾ english	Total
Number of heads	86	19	22	1	128
Percents	67,2	14,8	17,2	0,8	100

The stallions-breeders of Malkinsky stud to be used in 1964 are:

**Table 179**

Name	Color	Born	Breed and blood	Father	Mother	Measures	Class
ANSAMBL 21	Bay	1960	Kabardian	Arbat 14	01047 Betsi	156-175-20	1
502 ZARYAD 50	Black	1958	Kabardian	Aldan 12	2424 Dada 100	160-160-178-19,5	Elite
0235 DAR 70	Bay	1951	Anglo 7/32 Arab 1/16 D 1/32	Debat 97	0106 Ara 278	157-158-185-20,5	Elite
LIVEN' 78	Bay	1958	¾ english	Lukki Thoroughbred	Izobilnaia 227	158-181-20	Elite
RADOVOD	Dark bay	1955	Thoroughbred	Aquince II	Rada	160-160-178-20	Elite
ROBOR	Bay	1957	Thoroughbred	Bims	2355 Raduga 6	161-157-188-20	Elite
FIBRIN	Black-Brown	1957	Thoroughbred.	Baltik-Baron	Fistachka	162-162-185-20	Elite

All these stallions except for the Ansambl were tried on their working ability at hippodromes. The positively rated stallion in respect to the offspring is only Dar.  
**Fig 182, 183.**

The present school of stallions of Malkinsky stud with overwhelming Thoroughbreds does not correspond to the aims of the stud and to the possibilities of stables-herd housing of Anglo-Kabardian horses of increased blood at the stud.

To carry out the intra-linear rearing in the pure-blood direction the stud has to buy the pure stallion from the sons or grand-sons of Zalog 116 or Arsenal 102.

**Fig. 182. Dar 70, bay, born 1951 from 0174 Debat and 0106 Ara**



**Fig. 183. Zaryad 50, black, born 1958 from Aldan 12 and 2424 Dada**



**Table 181**

**Average measures and indices of mares of Kabardinsky № 110 and  
Malkinsky № 34 studs**

Year	Mares of the stud №	Number of heads	Measures of			Indices of	
			Shoulder	Chest	Fore cannon	Chest	Fore cannon
1952	110	280	149,8	173,4	18,0	115,8	12,0
1963	34	120	152,9	183,1	18,6	119,6	12,2
Kabardian		71	152,2	182,0	18,6	119,8	12,2
Anglo-Kabardian		49	153,9	183,2	18,8	119,2	12,2

The average measures of the contemporary school of Malkinsky stud correspond in general to the plan.

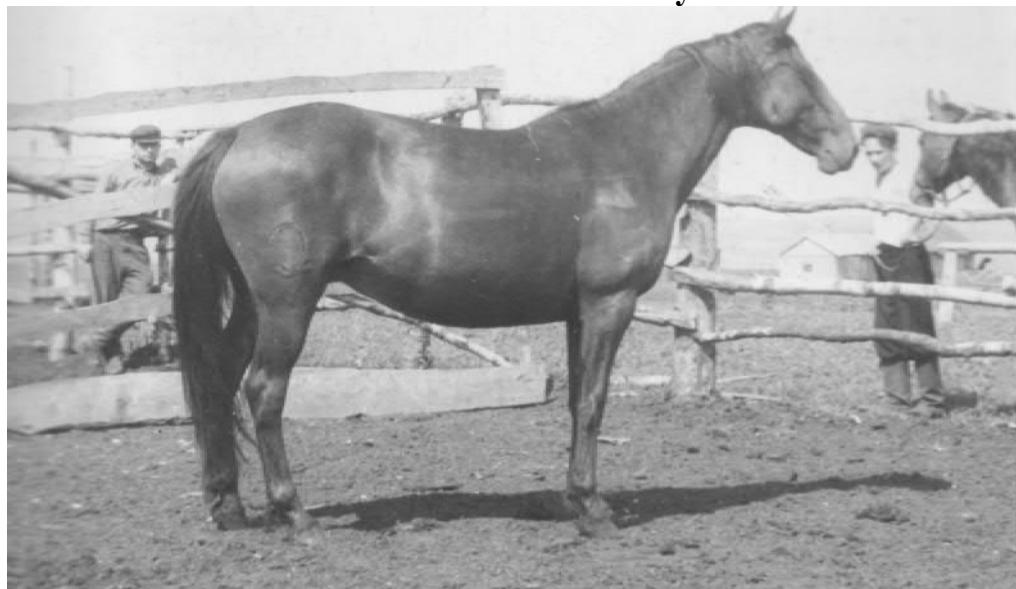
Only 17 out of 120 mares have been tried at hippodromes what gives 14,2%.

Compared to the mares from the Kabardinsky stud № 110 the class of the mare from Malkinsky stud № 34 has considerably increased:

Stud	Year	Class of mares, percents		
		Elite	First	Second
Kabardinsky № 110	1952	9,6	56,8	33,6
Malkinsky № 34	1963	13,3	76,7	10,0

The mares of Malkinsky stud correspond to the plan of pedigree work in breed direction, measures and class. The further improvement of them had to be done in the direction of the improving the exterior and working abilities. **Fig. 184, 185.**

**Fig. 184. 2671 Kaska 77, 1/16 english dark bay, born 1946  
from 374 Kazbek and Musyka 37**



**Fig. 185. Lisichka 257, half-english bay, born 1952  
from 0194 Legion and Sekcia 137**



The extensive use of Thoroughbred stallions at Malkinsky stud results in that the Anglo-Kabardian foals start dominating in their offspring of 1961. The unsound in the exterior stallions Televisor and Triumph have been used as breeders among the quite differing in type Thoroughbreds. The obvious preference of any Thoroughbreds to Anglo-Kabardian or Kabardian breeders at the stud does not respond to the planned direction of operating and increases the need for improved housing of stud horses. By the way, there are no observable shifts there. In the end, the amount of the refuse and bad in pedigree horses increases.

Without sufficient additional nutrition the pedigree offspring of the Malkinsky stud is retarded in measures from the control scale of progress of the Kabardian horses which was accepted for the studs of Northern Caucasus of Russia.

The herd conditions of horse housing at Malkinsky stud are especially negatively reflected on the development of more english foals. That is why the Anglo-Kabardian offspring of  $1/4 - 3/8$  of english blood owns better points than that of half or more english blood (see Tables 130 and 131).

If the stables housing condition of the trained offspring is improved then the immaturity of the crosses in the herds becomes compensated in some degree. The more-blooded Anglo-Kabardian horses overcome less-blooded ones after training and tests in measures, thus obtaining better ranking at bonitaions. This confirms the effectiveness of the rearing of Anglo-Kabardian horses by the increased blood and improved stables-herd conditions.

The Anglo-Kabardian offspring has been tested at hippodromes in Piatigorsk, Nalchik, Krasnodar and Tbilisi. The regular tests of the pure Kabardian offspring at the Piatigorsky hippodromes are stopped. Only several heads of

Kabardian 2-year-old horses (from Arsenal and Albatros) from Malkinsky stud were tried at Piatigorsky hippodrome in 1962. They raced the same group of Anglo-Kabardian and Anglo-Karachai horses what is completely wrong. The trained offspring of the Malkinsky stud were badly fed in winters of 1962 and 1963 and was immature, poor-boned and low. According to the reports of Piatigorsky hippodrome they were admitted ‘by force /see *Annual reports of Piatigorsky hippodromes for 1961-1963*/.

**Table 182**

**Number of tried horses from Malkinsky stud № 34**

Year	Place of tests	Total heads	including		
			2-year-old	3-year-old	4 -years and older
1959	Piatigorsk	21	10	9	2
1960	Tbilisi, Nalchik	15	15	-	-
1961	Krasnodar, Nalchik	19	16	2	1
1962	Piatigorsk	16	10	4	2
1963	Piatigorsk	17	15	1	1

**Table 183**

**Results of work of the training section of the Malkinsky stud at Piatigorsky hippodrome**

Year	Appearances	Won places					Sum of points	Traditional prizes	Trainer
		1	2	3	4	No			
1959	147	29	26	26	-	66	32020	1	Zhgun I.R.
1962	89	9	15	14	-	51	12965	-	Kokov Kh.Yu.
1963	117	20	20	17	3	57	15067	3	Kokov Kh.Yu.

The selection of pure Kabardian horses to training entirely stopped at Malkinsky stud in 1963 and 1964.

So, the offspring of the horses from the Malkinsky stud does not correspond well to the demands in measures, point system and working ability. In the substantial degree this happened because of underfeeding which decreases the effectiveness of the increasing of amount of english blood. However, even immature offspring sometimes demonstrates good results on races if its nutrition is improved. **Fig. 186, 187.**

The following numbers of Kabardian horses from Malkinsky № 34 and Kabardinsky № 110 stud are written into the State Stud Book:

	Pure		Half-blooded	
	Stallions	Mares	Stallions	Mares
Volume 1, 1935	6	279	16	62
Volume II, 1949	19	60	3	18
Volume III, 1953	10	90	4	19
Volume IV, 1964	1	62	1	47

**Fig. 186. Leopard 9, half-english bay, born 1958  
from 0194 Legion 144 and 0734 Poteha**



**Fig. 187. Izlom 32, light bay of 3/8 of english blood, born 1958  
form 0188 Indeks and Lihachka 252**



## **MALO-KARACHAEVSKY STUD № 168**

The Malo-Karachaevsky stud, organized 1930, is located in the Malo-Karachaevsky region of the Karachaevo-Cherkesskaia Autonomic Area of the Stavropol Province 12 kilometers from Kislovodsk.

The territory of the stud go in a narrow lane from small river Bugunty through the Burgustansky ridge, the valley of river Podkumok, through the gullies of rivers Alikonovka, Berezovaia, Kichmalka to the mountain tract Bichesyn.

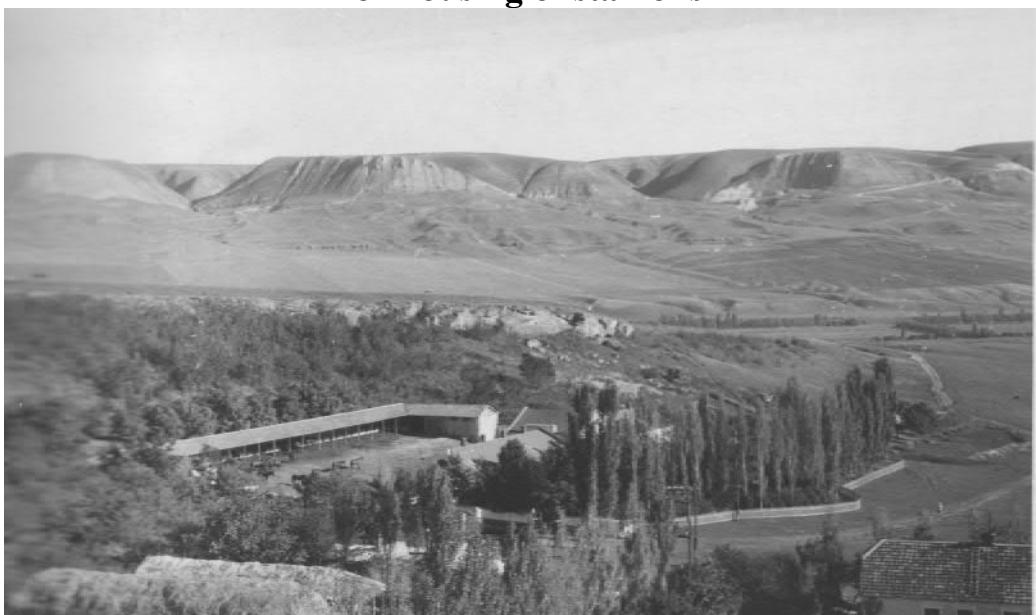
The big part of the stud is in the mountains. This complicates the agriculture but provides for the excellent summer mountain pastures located in the single body of 9240 hectares.

The lands of the stud are on various heights from 850 to 2800 meters above the sea level and are crossed by numerous gullies and gorges of sometimes steep breaks and rock in the direction south-west – north-east. This rugged country promotes for the covering of herds in winter weather but at the same time composes the hazard to the horses. The herd horses and especially the offspring turn their back to the wind at thunderstorms, downpours with hails and strong winds and try to escape the bad weather often galloping across the gullies and gorges. If the herds are not turned in-time then the behind horses can push afore horses from the ruptures.

The stud consists of following production buildings at the moment:

A) The stables for stallions-breeders, located 2 kilometers away from the central plot at "Kuyan-Balka", consisting of 2 sections divided by the manege. There are 10 stalls in the first and wall feeding racks with rings for winding the horses in the second. The base with split and two-sided shed joins the stables. Also the wooden house for 15 saplings stands by. **Fig. 188, 189.**

**Fig. 188. General view on the production place "Kuyan-Balka" for housing of stallions**



**Fig. 189. The stables with the split for stallions in “Kuyan-Balka”**



”

**B)** The mare's stable for the first herd and taking-away of fillies is located at “Stay Kommunstroj” and consists of 2 sections divided by another section with 2 stalls. The first section of this stable is equipped with up to 10 stalls for the dropping period while the second is prepared for tethering of 40 horses. The base with the split is next to the stable. The base is divided in two parts and has the shed for 25 horses.

**C)** The mare's stable for the second hers is located at “Arbakol” and consists of 2 sections divided by partition, the former with stationary stalls and the latter with stall and wall feeding-rack for winding 40 horses at a time. The base with split and the shed for 15 horses'are nest to stable.

**D)** The stable for the colt's herd is located in the gully of Medoby waterfall and is called “The fourth point”, includes 2 small sections each with wall feeding-rack for 20-225 heads and base with the split.

**E)** The exhibition stable on the central plot. Contains 10 well-equipped stalls and as for the housing of the offspring from the breeding school, meant to be demonstrated on exhibition and also for the pedigree offspring to be sold.

**F)** The first training stable located on the central plot consists of 2 sections 12 stalls each divided with the manege. Also includes the base with split.

**G)** The second training stable located of the central plot consists of 2 sections divided by the partition, one having 10 stalls and 19 benches, and another with 1 stall and 10 benches.

Malo-Karachaevsky stud called earlier Karachaevsky was arranged as military stud on the basis of pedigree farm of Karachaevskaia Autonomic Area existed since 1928. The Karachaevsky military stud was aimed at growing of the horses for the servicing and cavalry and at improving stallions for mountain regions of Caucasus.

There were 5 stallions, 304 mares and 241 sapling on the 1 January of 1931.  
**Fig. 190, 191.**

**Fig. 192. Kabardian stallion 15 Borei at “Kuyan-Balka”**



The actual pedigree use of stallions-breeders of various origins at Malo-Karachaevsky stud can be characterized by the following table composed by A.Sh. Hertek in 1959

**Table 184**

## **Stallions-breeders of Malo-Karachaevsky stud during 1931 - 1964**

Initially there was rather few Kabardian stallions used at the stud. Basically they were half-breed stallions without the blood of mountain horses selected on exterior and type suitable to mountain horse. This was motivated by the absence of corresponding stallions and by wish to increase the body of Kabardian horses thus making it available to be used in servicing of Red Army. There have been used Kabardian, Thoroughbred, Arab, Anglo-Arab, Anglo-Hungarian, Anglo-Kabardian, Anglo-Karachai, Anglo-Don, Don-Black Sea and other breeders at Malo-Karachaevsky stud since 1931 up to 1940.

Later the school of breeders gradually changed to the side of increasing of the number of Kabardian and Anglo-Kabardian stallions with lowering of the content of stallions from other breeds. The Don, Anglo-Don, Black Sea, Arab and Streletstkaia stallions were removed from the breeding school because they produced unsatisfactory offspring from mountain mares at the stud.

Starting 1944, the Kabardian, Anglo-Kabardian and Arab breeders were used at the stud.

From the very beginning the breeding work of the stud was being done on four famous Kabardian breeders: *Borei*, *Dausuz*, *Tugan* and *Shaman*. This allowed the stud not only to loose the aboriginal breeding group at the presence of 75% stallions of other breeds, but also to expand the breed by means of grounding lines and considerably improving and enlarging the horses in the breed.

Besides the pure-breeding the stud reared crosses on the basis of mountain horse. The half-breed direction one time dominated at the stud when the ratio of mares was 2:1 in advantage of crosses to pure horses. However there were no pedigree lines of half-blooded horses selected before the World War II as well as there was no work done of consolidation of the desirable type.

The territory of the stud was occupied during the war. The occupation caused the necessity for evacuating the horses what damaged the stud a lot. Total losses were 1239 heads, including the worthy stallions Borei, Dausuz, Tugan and others, a lot of mares and three sets of foals. Almost all pedigree documentation disappeared either.

After the clearing of the territory of Malo-Karashaevsy stud from the occupation the work on restoration of the pedigree began. In the beginning all the offspring was considered good without refuse. The zootechnician P.I. Dragalev composed the breeding plan of the stud under the supervision of E.L. Davidovich in 1946. The pedigree work between 1946 and 1953 was conducted according to that plan.

Both the pure and half-blooded directions of the Malo-Karachaevsky stud considerably improved after the war due to the systematic work, thus the quality of the pedigree production increased. Pure-breeding continued with the old lines of Borei, Dausuz and Tugan and two more lines appeared: of Atlas (through his grandson Arsenal 102) and of Zurab (through his son Zalog 116). The half-blooded direction enriched in pedigree lines of horses of great value from Lok-Sen and Istorik. However the work on the consolidation of desirable type of half-blooded horses was not finished at the stud that time. **Fig. 195, 196.** The work on the creation of enlarged “type” of Kabardian horses was finished after the war.

These horses inherited the massive, bony and solid constitution of Karachai horses. This type was approved by the Commission of Agriculture of the USSR in December of 1951 and it is described in literature (Dragalev, 1952, Krasnikov, 1953, Mishin and Dragalev, 1954). The stallions of this type met live interest as improvers in the main regions of the rearing of the Kabardian horses and played great role in the improvement of it.

The horses of broad body, wide chest, constitutionally solid, durable and unpretentious, possessing increased ability for fattening were formed in conditions of herd-base housing at Malo-Karachaevsky stud in mountains at vast variations of temperature in day and night, at high humidity in summer and dry cold in winter. Noted that features and applied the Michurin approach the workers of the stud created all necessary conditions for the development of horses in required direction at its herd housing.

The main zootechnician affairs determined the success of the work on the improving of the Kabardian horses at Malo-Karachaevsky stud were the following.

1. The implementation of the shed-basis method of housing transformed into the culture-herd one in conditions of mountains (with constant winter and summer producing plots, with stables for stallions and trained offspring, with sheds for early foaling of mares, with bases for all horses equipped with the portable cribs, feeding racks for concentrates, concrete vessels for water supply from natural sources, with splits for the zootechnician and veterinary work). **Figs 197-200.**

**Fig. 197. Breeding plot “Kommunstroj” for winter housing of mares**



**Fig. 198. Split for mares at “Kommunstroj”**



**Fig. 199. Roofed split at mountain pastures**



**Fig. 200. Split for stallions at “Kuyan-Balka”**



Contrary to the past primitive-nomad housing of horses in Kabarda and Karachai without genderless and ageless separation of horses in herds, the strict distinction of the pedigree horses of different age and gender was adopted at Malo-Karachaevsky stud, each group given special housing.

The majority of stallion of this stud pastures during the day and is kept in the bases, where they are given additional nutrition, at the time of no coupling.

The group herd-base housing of stallions acquires lesser efforts, forage and bedding at the same time making them better-bearing and making them keep their plumpness and ability for fattening in herd well. To prepare the stallions of the stud to the coupling in herds, they are subjected to the special herd motion within 1-1,5 hours since March due to which they got well physical hardening and learn leading the herds in mountains what requires supreme stamina and power. The mares of the stud are kept in herds all the year long. In winter they hide in natural safe places. The mares are in sheds only at their early foaling (February, March, April) and just for several days while the new-born foal is too weak. **Figs 201-203.**

**Fig. 201. Herded stallions on pasture**



**Fig. 202. Mares on summer mountain pastures**



**Fig. 203. Mares at winter grazing**



## 2. The correct, changeable-cell use of mountain summer and piedmont autumn, winter and spring pastures.

The horses reared in mountains was grown in the conditions of scanty feeding without concentrates at insufficient resources of hay and neglecting role of winter pastures. This resulted in remarkable emaciation of horses and to the great losses in spring, to the post-embryonic hypoplasia and resulted in the low height and type of local horse. The rationalization of the pasturing of horses at Malo-Karachaevsky stud with introduced additional nutrition with hay and concentrates softened the neediness of horses in natural forage in the mountains.

3. The regular additional nutrition of all groups of the pedigree school with hay and oats and with succulent foods from October till May (the carrot fresh and originally dried, stallions were additionally fed with sugar-beetroot). Figs. 204-206.

The well response of mountain horses to the additional nutrition with hay was revealed even on the first stage of the functioning of Malo-Karachaevsky stud. That is why the norms for feeding the horses were introduced at the stud in 1946.

The feeding norms and average annual expense of the forage per one head were the following at the Malo-Karachaevsky stud during 1946-1953:

**Table 185**

Pedigree groups	Season	Oats per day, kilos	Days of feeding	Annual expense of forage per 1 head				
				Concentrates, ×100 kg	Hay, ×100 kg	Carrot	Salt, kg	Travertine, kg
Stallions-breeders	Coupling	8	120§	19,4	30	7	16	7,5
	Non-coupling	4	245§					
Mares	Winter	2,5	150	3,75	30	3	16	7,5
Culture taken away foals	Winter	5	180§	12,0	14	4	8	3,5
Culture taken away foals	Summer	2	186§					
Other taken away foals	Winter	3	180	5,4	14	3	8	3,5
Trained offspring	Full year	6	365	21,6	22	4	10	5,2
Other offspring of 2-3 years	Winter	2	180	3,6	22	2	12	5,2

There was no so plentiful feeding of all the groups of Kabardian horses at any other stud. Along with the other zootechnician affairs and selection this additional nutrition undoubtedly affected on the increasing measures of the horses from the Malo-Karachaevsky stud.

**Fig. 204. Mares fed with hay**



**Fig. 205. Mares fed with grain**



**Fig. 206. Mares fed with carrot**



#### 4. The maximal use of best breeders at combined coupling at interrupted formation of herds from the sucking fillies of early foal and at separate but reduced herds of young mares going for the coupling for the first time.

The combined method of coupling is the covering of mares in March, before the stallions allowed to go to the herds, by hands or other way after the study of the mares on the ready follicles. The especially effective was this method for the single mares of difficult foaling-in which require many times of the pairing attempts. The latter increases the tension on the stallion during the coupling season.

The developed progressive method of interrupted formation of the herds, applied at the Malo-Karachaevsky stud, allowed the stud to increase the use of the best herd stallions 3-4 times.

The stallion 166 Zalog 116 who was fed with the daily ration of oats – 1-15 kg, bran – 3 kg, millet – 1 kg, barley – 0,5 kg, yellow maize – 0,5 kg and 5 eggs made 283 attempts within 112 days in 1951: all the 84 covered mares became foaled.

The early spring interrupted formation of the herds from the sucking mares before the beginning of the coupling season provided for the covering of dropped mares at the first turn with high percentage of foaling-in and excluded overexertion of the stallion at the first days of coupling season.

The order of the formation of the herd at this way of pairing was following: “3-4 horses are selected from the group of sucking mares one-one and half months before the beginning of the massive dismiss of herds; on the seventh day after their drop the stallion is allowed to reach them on the pasture. Regularly once per two days 1-3 sucking mares are added to the herd on the 6-8<sup>th</sup> day of the foaling. The 30-35 mares are added to the herd of stallion during 1-1,5 months this way. At the moment of massive formation of the herds to the stallions participating in such pairings the new norm of 25-30 heads is fixed to the stallions or new mares are added as mares become covered. In the first case the second horse herd wrangler is attached to the enlarged herd. In the second case, after the early rectal diagnostics at the beginning of May all the foaled mares are picked from the herd and directed to the general herd of mares. The investigation on the foal is being done regularly and foaled-in mares are every time directed to the mare’s herd. That is why there are usually not more than 30 mares in the herds of partial formation” /Dragalov, 1953/.

The novel method of early spring interrupted formation of the herds, possible only at presence of sheds for early foaling and at good preparation for the pairing campaign of mares and stallions was practically proven at other farms as well. /Mishin, 1951; Postnikov, 1952/.

The organization of separate reduced herds of young mares up to 20 heads first time going to the coupling and most reacting on the environmental changes and exhausting the stallion by their run, gave positive effect. Such herds are formed 1-2 weeks earlier than the common date and only strong, energetic but calm stallions were introduced in them. After the end of the coupling season and during the winter housing the young mares from these herds were given the best conditions of feeding and housing what provided for the high percent of the

successful drop and normal development of firstborns.

The becoming in-foal of mares at Malo-Karachaevsky stud was always high due to the above actions (see Tables 99-102 and Plot 10). This parameter lowered a bit only now:

Year	Becoming in-foal, %	Business outcome per 100 mares, %
1940	91,2	75,6
1945	93,2	88,5
1950	94,0	91,8
1953	95,7	79,3
1956	98,8	94,0
1960	90,0	84,0
1961		85,1
1962	92,5	78,0
1963	90,5	

The lowest quantities of the business outcome of foals at the stud were in 1940, 1953, 1954.

The Malo-Karachaevsky stud took the First place among the stud farms of the USSR at All-Union socialistic competition in 1950 and 1951. The stud was rewarded the financial support and transferring Red Banner of the Council of Ministers of the USSR. The stud participated in the extensive show at the All-Union agricultural exhibition in 1952.

5. The conducting of the pairing campaign in early spring dated and early foaling of mares in March-April is good for the health, keeping and more intensive development of the offspring.

The early foaling provided for the best keeping and development of foals at the presence of the corresponding rooms of roofless sheds which protected the foals against the winds, precipitates an frosts. The foals born in March and April were grown up by the time of pass on to the summer pastures and they endured the sever mountain conditions better. The plumpness of such foal after the 1-week stay in the mountains, in spite of cold and rainy weather, overcame that of later – foals. The quality of the early foals were better in older ages too. For example, the set of colts born 1948 bonitated in the age of 2,5 years had the percent of the first class and elite 62% for born in March-April and 31% for born in May-June, or two times less. That is why the stud generally changed to the early pairing and foaling which resulted in the 81,5% of foals in the February-April of 1952.

6. The application of the winter (in January) taking foals away from the mothers instead of autumn (in October) one.

The winter taking away in the age of 9-10 months (in January) with their additional nutrition from 5-6 months (from 15-20<sup>th</sup> of October) with concentrates and carrot prolonged the stay of the sucking foals under the mares in conditions of cold herd education in mountain climate. The Karachai and Kabardian mares produce a lot of milk and possess the long lactation period. Even young mares of the first drop produce much milk at additional nutrition. The foals easily bore the wintering, got dense and long hair. They finished the wintering plump, more developed, energetic, solid and prepared for herd conditions and they did not have bronchopneumonia and other illnesses from which early taken away foals suffered.

## 7. The stimulation of the development and the hardening of the offspring by the mountain climate of various heights at cold education in herds.

The directed growth of the offspring at Malo-Karachaevsky stud was not only the full feeding but the rational use of natural environmental factors. The older offspring herds were let on the highland pastures in May in the first turn. The herds of mares were let on pastures after those of offspring because the often rains and cold might delay the progress of the sucking foals. The latest herds on the pastures were the taken away foals. The descent from the pastures was in the reverse order.

The foal of the first year of life were supplied with the best food and housing. The norms of feeding with concentrates of the taken away foals were much higher than those of older offspring. The taken away foals were placed on the lowest wintering compared to the other groups of horses. The taken away foals pastured on southern well-heated by sun slopes in the day while they were kept at bases per nights. **Fig. 207.**

The older offspring is wintering on higher places and was led to the highland pastures the earliest: their stay at Bermamyt 2200-2600 meters above the sea level almost till snow was the longest. The older offspring is kept in herds on pastures all the time hiding from the bad weather in natural safe places. **Figs 208-209.**

## 8. The separation of the culture groups of the offspring for improved housing and education by means of organized motion and systematically limited moves with alternating allure on the crossed country.

20-25% of fillies and 10-15% of colts were considered the members of the culture group. The additional nutrition of the horses from the culture groups was reduced to 2 kg of oats per day per head but never stopped.

The offspring of the culture group was given the motion not only during the pasturing but also because of organized motion of herds with alternating allures (with repetitions of trot, pace and canter) in a closed body within 20-40 minutes under the supervision of several horse-herd wranglers. Such motion happened twice a day on winter places before the swap to the summer highland pastures in the morning and in the evening. The foals of unsatisfactory moves were found in the very early age what helped to refuse them from the culture groups and to avoid the wastes on the education of such foals. **Fig. 210.**

The best offspring from the culture groups was started to be trained in autumn in the age of 1,5 years. **Fig. 211.**

**Fig. 207. Winter housing of taken away foals at Burgustan (1000 meters)**



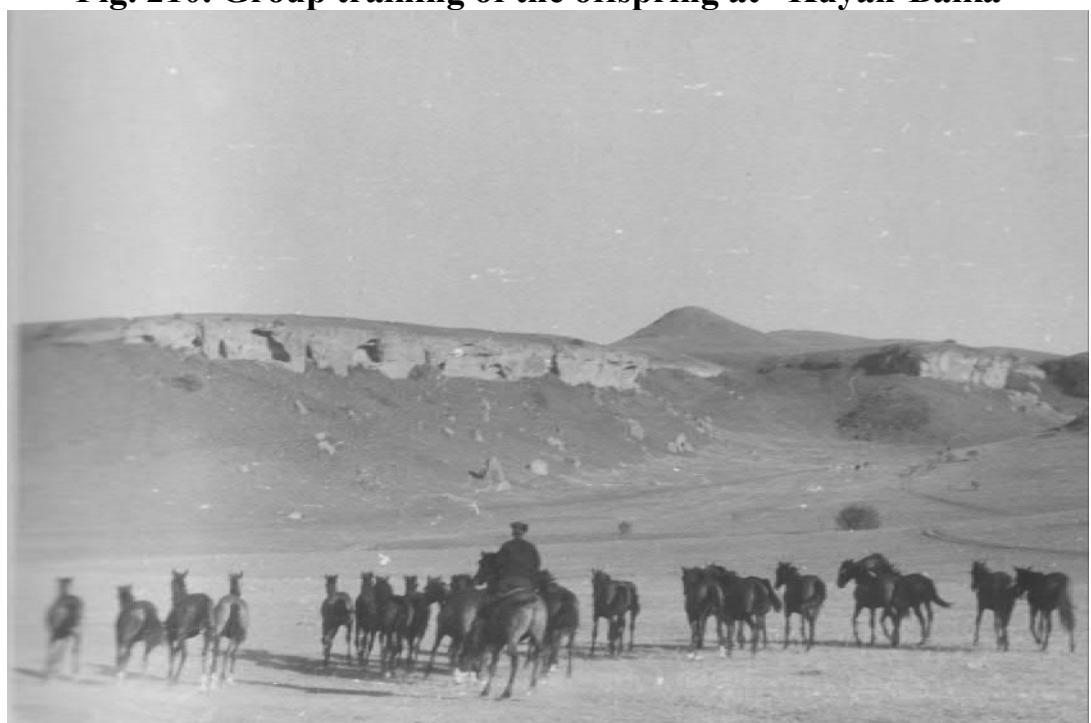
**Fig. 208. Summer stay of the offspring at Bermamyt (2586 meters)**



**Fig. 209. Offspring herd on Bermamyt**



**Fig. 210. Group training of the offspring at “Kuyan-Balka”**



**Fig. 211. 343 Drednout, black-brown, born 1944 from 136 Dalhat / 21 Dausuz-Hatri 604/ and 1543 Dunetka 1543 / 21 Dausuz-Energia 203/ with inbreeding on Dausuz II-II. Champion of the Stavropol Exhibition and All-Union record-winner on 3000 meters – 3.44.**



#### 9. The thought over and thorough zootechnician selection of the horses.

The selection of the horses into the self-servicing at Malo-Karachaevsky stud was always directed on the enlarging and improvement of horses. The demands here were for the complex of qualities: measures, exterior, constitutional firmness, adaptability for the herd housing and well exchange of foods (judging on the plumpness in the offspring herds), quality of moves (during the motion in herd and on trials), breeding power and milk merits (for mares). **Fig. 212.**

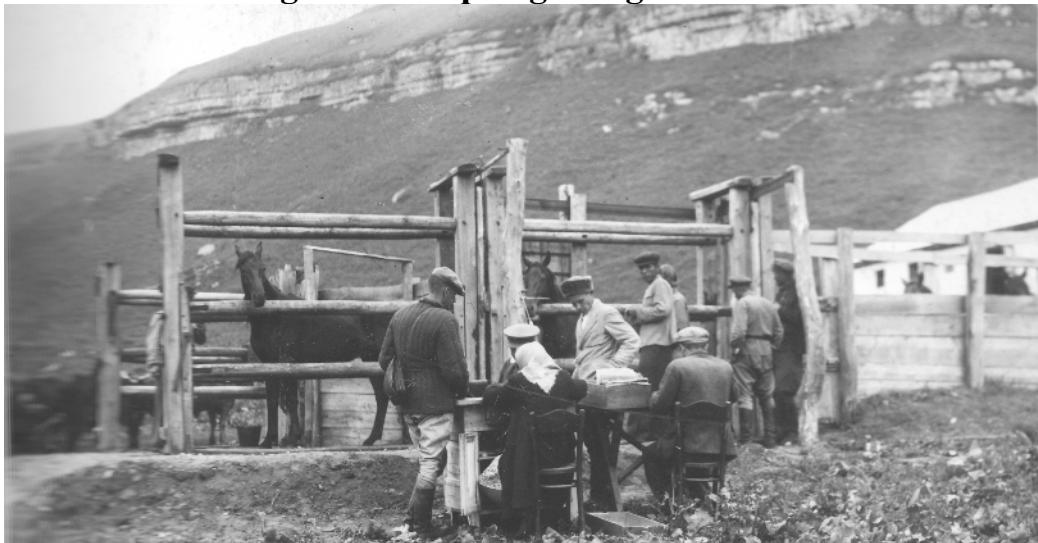
All the methods of rearing were used for the selection of horses at Malo-Karachaevsky stud: pure breeding with homo- and heterogeneous coupling, kindred breeding, breeding in lines, introductory, industrial and reproducing crossing.

The homogeneous in type coupling was the most common. Five lines were created at the stud this way: of Borei, Dausuz, Tugan, Shaman and Argamak. The intra-linear rearing with seldom close-related pairing /II-II, III-III/ took place mainly within the line of Dausuz, who had extremely well health and possessed massive body combined with dryness, pedigree and working abilities /343 Drednout, 341 Doklad/. The drop was usually used at heterogeneous coupling after the use of kindred breeding.

To enrich the horses in new qualities and for the increasing of the liveliness the crosses of the lines have been used. /For example of lines of Borei and Dausuz, 2468 Dobraia, 340 Dobry, 348 Dubochek/. This opened the way for the creation of new lines instead of old ones too.

## THE WORK IN SPLITS

**Fig. 212. Offspring being bonitized**



**Fig. 213. Dehelminization of the offspring**



**Fig. 214. Hoof-cut**



The introductory crossing was used mainly on the first stage of work. The industrial crossing was being performed for creation of the servicing horses. The reproducing crossing appeared at the stud rather recently.

#### 10. The full recover of the stud's horses from the infection and invasive diseases and use of novel methods of veterinary-zootechnician gynecology.

There were no infection diseases of the horses and death from helminthic invasions at the stud for many years due to the systematic veterinary preventive actions. The especially big role in resisting the helminthic invasion played the change-cell pasture of herds and regular dehelminization of all the horses by the tetrachlorcarbon and phenatyazyn. **Fig. 213, 214.**

The more new methods of the veterinary-zootechnician gynecology were applied at Malo-Karachaevsky stud. All the singled mares were subjected to the gynecological inspection before the pairing campaign (in February). The horses after the illnesses referred to the group of hard-foaling ones were taken under the special monitoring. The mares with the pathology of the womb (atony, metritis, endometritis) were given the treatment with 5-10% of hot saline uterine baths, hemotransfusion and massage of the uterus. The other horses of thorough interest were those of hard drop and of delayed placenta. All foaled mares which did not came into the wish or misfoaled after the second wish were examined in respect to their gender system and were subjected to hemotransfusion. The coupling by hands was conducted with the control of the growing follicle. The mares were subjected to the rectal analysis for the foaling after 30-35 days after the covering.

The size and quality of horses considerably increased in the result of all mentioned zootechnician and veterinary actions at the Malo-Karachaevsky stud.

**Table 186**  
**Change of average measures of horses at Malo-Karachaevsky stud**

Year	Stallions			Mares		
	Shoulder	Chest	Fore cannon	Shoulder	Chest	Fore cannon
1930	149,0	171,2	18,7	140,5	168,8	17,6
1946	157,6	188,0	20,2	152,4	183,4	18,4
1953	158,2	188,4	20,4	154,0	186,0	18,8
1963	158,5	185,4	20,3	153,3	185,6	19,3

The enlarged type of the Kabardian horse reared at Malo-Karachaevsky stud № 168 keeps the general tends and biological features of the Kabardian breed (high liveliness, breeding power, milk merits, ability for fattening and others) but differs in height and weight, possesses massive body, developed muscular system and is bony. This is evident from the comparison of the average measures of the Kabardian horses from various farms according to the data of 1952:

**Table 187**

Stud	Stallions				Mares			
	Shoulder	Chest	Fore cannon	Number of heads	Shoulder	Chest	Fore cannon	Number of heads
№ 168	156,4	184	19,9	21	153,6	183,6	18,6	155
№ 110	153,6	178,0	19,4	23	149,8	173,4	18,0	280
Cherkessky State seed plot	153,1	174,5	19,5	51	147,2	173,1	18,3	896
Kabardinsky State seed plot	152,7	177,6	19,3	131	146,2	174,9	17,8	1443

The horses of the Malo-Karachaevsky stud overcome the rest riding-draught breeds of the USSR except for the Budennovskaia, Kustanaiskaia and Don horses. The size of the stallions of the Malo-Karachaevsky stud excludes the necessity of crossing mountain mares with the stallions of other breeds if the purpose is the increasing of height and gauge of horses. Experience shows that the same result can be reached by the pure breeding with little augmentation in english blood.

The Kabardian stallions of the Malo-Karachaevsky stud differ little bit from the horses of other farms in body and type. That is why the flowing remark can be found in the selection-zootechnician plan for the 1946:

“Some experts point on the disparity of stallions to mares’ qualities, on the general roughness with inclination away from the riding horses when inspecting the stallions. Yes, the stallions of the stud possess thick, fleshy neck with the comb, well-developed chest at some weakly developed ass. All theses signs create the impression of roughness and non-riding-ness. But the thick neck, developed chest are nothing more than the display of the gender dimorphism. The thick fleshy neck with comb is the perfect place for fat sediments what helps the successful wintering in severe conditions of herd breeding. The fat layer sometimes reaches 20 centimeters. What is the most interesting, these rough stallions with thick fleshy necks produce mares not rough but of noble shapes and of rather acceptable dryness. The colts being early castrate do not have that thick neck when they are geldings. The castration of the mature stallions does not result in the disappearance of the rough characteristic to stallions. This confirms one more times the obviously expressed dimorphism.

The mares of the Malo-Karachaevsky stud also overcome remarkably the mares from other places in all measures and in the chest index. They have shorter format and bigger body. It is noted in the selection-zootechnician plan that this difference is so big that it is first seen. On this basis some experts are skeptic to the mares of the stud, announcing the strong inclination away from the riding horses and that losing the mountain type they shifted to the draughts. This is valid only in the respect of that the horse has been changed and today the horse is not the same as it is accustomed to be found in literature as the Kabardian horse.

The horse of the stud is the new population within the Kabardian breed which favorably differs from the rest of horses of this breed by its exterior. The enlarged horses of the stud have better develop levers of the front and rear belts of limbs. The specific exterior deficiencies of the mountain horses are reduced here.

However there still are the meaty throat, extended and soft spine, flattened carpus, clubfoot.

The enlarged horse of Malo-Karachaevsky stud possesses multisided working abilities (see Tables 158, 174, 177, 178 and Figs 166-171).

The type of riding-draught horse can be distinguished from the horses of the Malo-Karachaevsky stud reaching 600 kg of live weight. The horses of this type were of somewhat less denser and drier constitution compared to the riding type. Figs 134, 135.

There was mentioned in the Introduction to the Second Volume of the State Stud Book of Kabardian horses that the stud, in the result of improved conditions of feeding and housing of the grown production had solved one of the basic tasks – the increase of the gauge of horse. The measures of born and educated at the stud pure horses, compared to those of their mothers in the period of the establishing of the stud, became greater.

<b>Measures and horse group</b>	<b>n</b>	<b>Mean</b>	<b>Min</b>	<b>Max</b>
<b>1. Shoulder:</b>				
a) mares born at the stud	45	153,8	145	160
b) their mothers	45	148,5	142	158
<b>2. Chest:</b>				
a) mares born at the stud	45	185,6	174	196
b) their mothers	45	182,0	172	192
<b>3. Fore cannon:</b>				
a) mares born at the stud	45	18,43	17,25	19,5
b) their mothers	45	18,46	17,0	20,0

The experience of the stud explicitly demonstrates the possibilities of increasing of the Kabardian horses on the basis of more favorable conditions of feeding and housing of the pedigree livestock and especially of the grown offspring.

The Malo-Karachaevsky stud № 168 took the leading position amongst the studs rearing Kabardian horses after the World War II. More than 1000 of pedigree stallion and about 3000 mares were sold and passed to other studs and collective farms to be used at pedigree purposes at Stavropol and Krasnodar Provinces, Kabardino-Balkarian, North-Ossetian, Checheno-Ingushskaia, Dagestanskaia Autonomic Soviet Socialist Republics and Soviet Socialist Republics of Azerbaijan and Georgia within 1945-1951.

Starting 1953 the stud reduced the pedigree livestock and its mare's school was limited by 300 heads. This reduction happened due to the drop of demands of the Red Army in the servicing horses and was oriented on the increase of the quality of the pedigree stock and of the production of the stud. However facts reveal that not only the livestock but also the level of feeding and of pedigree work lowered either. The constant underfeeding occurred to be the sad reality of the stud what decreased the quality of the production.

The actual feeding of the pedigree horses in the years 1958 and 1959 compared to the norms of the selection-zootechnician plan of the horse-breeding (1946) can be seen from the following table.

**Table 188**

Horse groups	Concentrates			Hay		
	Norm	Actual expense		Norm	Actual expense	
	1946 г.	1958 г.	1959 г.	1946 г.	1958 г.	1959 г.
Stallions	21,0	19,7	18,56	30,0	16,8	12,6
Mares	6,0	3,25	1,50	30,0	14,4	10,8
Taken away foals	12,2	3,84	5,22	14,0	10,8	7,2
Offspring older 1 year	6,0	3,97	2,03	22,0	12,0	7,5

Compared to the norms of 1946 the expense of concentrated foods per 1 head decreased in 1958 in 46% for mares, 70% for taken away foals and 34% for the offspring of 1-year and older. That expense lowered next 1959 year even more: 75% for mares and 66% for the offspring. The similar picture was in the feeding with hay. The concentrates given to the pedigree horses at that time were the mixed-fodder (50%), bran and other least acceptable foods.

The weakening of the pedigree work on the horse-breeding at the latest years resulted in the total loss of the lines of Tugan, Shaman and Vostok at Malo-Karachaevsky stud. There are no satisfactory stallions of lines of Borei and Dausuz at the present. The perfectly used stallions Arsenal and Zalog are not presented well now. Only 13 daughters of the Thoroughbred stallion Lukki who produced horses of valuable working abilities and exterior for 10 years are left in the half-blooded section of the stud. Extremely worthy mares from the Thoroughbred Sinop left as well.

The Kabardian stallions-breeders grown at Malo-Karachaevsky stud are distributed per lines as follows:

Line of	Number of stallions
Borei	34
Dausuz	28
Argamak	5
Shaman	4
Tugan	3
Atlas	4
Zurb	2

The most used at the stud stallions were from Borei – 18 and Dalhat and Dusuz – 16 each.

The longest (10 years and more) used were the stallions Luvr, Dalhat, Istorik, Dausuz, darzho, Tugan, Zalog 116, Akhtyr and Beshtau.

The results of activity of these main stallions of the stud are gathered in the following table.

**Table 189**

**Aggregate table of the pedigree use of the leading stallions-breeder at the Malo-Karachaevsky stud**

Name	Number of years of pedigree use	Offspring of the stallion-breeder						
		Total head of pedigree offspring	Number of stallions-breeders of the stud	Number of the mares of the stud on 01.01.1960 at stud №		Number of heads registered in the State Stud Book		
				168	34	Stallions	Mares	Total
Luvr	18	421	2	37	6	8	24	32
Zalog	11	372	5	17	1	4	13	17
Dalhat	16	356	10	24	4	20	34	54
Istorik	15	350	4	26	4	5	8	13
Arsenal	9	336	3	19	7	2	13	15
Akhtyr	10	300	1	11	-	-	-	11
Tugan	11	245	3	1	-	1	20	21
Dausuz	11	239	10	-	-	3	21	24
Darzho	11	235	7	12	5	11	26	37
Borei	9	211	18	2	-	4	18	22
Barmen	8	193	2	8	4	12	14	26
Argamak	8	187	3	1	-	2	8	10
Lukki	8	163	-	3	4	-	-	-
Beshtau	10	140	2	1	4	7	13	20
Diplomt	5	95	1	5	5	4	17	21
Buk	7	97	1	3	4	8	8	16
Aivengo	7	31	1	1	4	5	6	11

There are 18 stallions (3 reserves) of the breeding school of the Malo-Karachaevsky stud at the moment, including 8 Kabardian, 5 Anglo-Kabardian, 4 Thoroughbred and 1 Russian heavy draught.

**Table 190**

**List of stallions-breeders of the Malo-Karachaevsky stud on 01.01.1964**

State Stud Book name	Color	Born	Breed	Father	Mother	Measures			Class
						Shoulder	Chest	Fore cannon	
<b>348 DUBOCHEK 182</b>	dark bay	1948	Kabardian	<b>Diplomat</b>	<b>Banderol'</b>	156	193	20,5	Elite
<b>?95 DROBOVIK 28</b>	dark bay	1959	Kabardian	<b>Dubochek</b>	<b>Bodraia 2</b>	156	188	20	1
<b>497 BLINDAZH 56</b>	black	1945	Kabardian	<b>Baron</b>	<b>Dacha</b>	158	184	20	1
<b>481 BUNCHUK 163</b>	dark bay.	1955	Kabardian	<b>Babak 1V</b>	<b>Nala</b>	158	187	20,5	1
<b>452 ADMIRAL 22</b>	dark bay	1957	1/8 english	<b>Arsenal</b>	<b>Dinastia</b>	155	185	19,5	Elite
<b>462 ARBICH 2</b>	dark bay	1958	Kabardian	<b>Aldan</b>	<b>Bodraia</b>	156	178	19	1
<b>?61 ARBAT 14</b>	dark bay	1954	1/8 english	<b>Akhtyr</b>	<b>Badochka</b>	157	178	19,5	1
<b>505 ZURAB 172</b>	bay	1952	Kabardian	<b>Zalog</b>	<b>Boevaia</b>	158	188	20	1
<b>0194 LEGION 144</b>	black	1944	½ english	<b>Luvr</b>	<b>Girlyanda</b>	156	185	20	1
<b>0251 LES III-237</b>	dark bay	1949	½ english	<b>Luvr</b>	<b>Sirena</b>	157	185	20	Elite
<b>0248 LADAN 155</b>	black	1957	¼ english	<b>Luvr</b>	<b>Dinastia</b>	160	179	19,5	1
<b>0188 INDEKS 205</b>	bay	1947	½ english	<b>Istorik</b>	<b>Druzhba</b>	159	192	21,5	Elite
<b>0240 IDEALIST 97</b>	dark bay	1956	11/16 english	<b>Istorik</b>	<b>Lenta</b>	158	187	20,5	1
<b>1658 ISTORIK</b>	bay	1939	Thoroughbred	<b>Inferno</b>	<b>Svirel'</b>	159	185	20	Elite
<b>GARAZH</b>	bay	1955	Thoroughbred	<b>Agregat</b>	<b>Gumannaia</b>	165	190	21	1
<b>BINOM</b>	black-brown	1956	Thoroughbred	<b>Mius</b>	<b>Badrnzerin</b>	164	196	21	1
<b>FREGAT</b>	bay	1959	Thoroughbred	<b>Raufbold</b>	<b>Fata</b>	161	181	20	Elite

ASLAN

**Fig. 215. 348 Dubochek 182, bay, born 1948  
from 149 Diplomat and 1320 Banderol**

**First degree certificate on the All-Union Agricultural Exhibition**



**Fig. 216. 0188 Indeks 205, dark bay, born 1947  
from half-blooded 1658 Istorik and 1536 Druzhba**

**First degree certificate on the All-Union Agricultural Exhibition**



**Fig. 217. Garazh, Thoroughbred bay, born 1955  
from 1238 Agregat and 2056 Gumaniaia**



**Fig. 218. 1314 Baiho 022, black, born 1938 from Bairam 3 and 1157 Harita**



**Fig. 219. 2468 Dobraia 96, light bay, born 1944 from 136 Dalhat and 1325 Berhanka. Champion of the exhibitions in Piatigorsk and Cherkessk. First degree certificate on the All-Union Agricultural Exhibition**



**Fig. 220. 3810 Zanda 184, bay, born 1950 from 166 Zalog and 1536 Druzhba 71. First degree certificate on the All-Union Agricultural Exhibition**



**Fig. 221. 0634 Izabella I-210, bay, born 1947 from Istorik and 1319 Balnaia**



**Fig. 222. 0889 Izabella III-217, bay, born 1949 from Istorik and 1319 Balnaia**



**Fig. 223. 01031 Lyustra 246, bay, born 1948  
from 0111 Luvr and 0374 Sibaritka**



**Table 191**

**Origin distribution of mares of basic lines and genealogical groups at Malo-Karachaevsky stud**

Lines and groups of Number of mares	Intra-linear breeding	Originated via									
		crosses with lines									
		pure					half-blooded				
		Dausuz	Borei	Zurab	Argamak	Tugan	Shaman	Istorik	Lokk-Sen	Sinop	
<b>DAUSUZ</b>	60	11	+	38	1	-	6	2	-	2	-
<b>ATLAS</b>	26	-	14	9	1	-	2	-	-	-	-
<b>ZURAB</b>	22	-	18	3	-	1	-	-	-	-	-
<b>ARGAMAK</b>	15	-	7	8	-	-	-	-	-	-	-
<b>BOREI</b>	13	-	11	-	-	1	-	1	-	-	-
<b>TUGAN</b>	3	2	-	-	-	-	+	1	-	-	-
<b>IATORIK</b>	41	-	9	11	-	-	3	-	-	16	2
<b>LOKK-SEN</b>	40	1	4	9	-	-	1	-	10	+	15
<b>LUKKI</b>	8	-	1	1	-	-	-	-	6	-	-
<b>Total:</b>	228	14	64	79	2	2	12	4	16	18	17

The lines of Dausuz, Istorik and Lokk-Sen dominate at the stud. All lines are systematically crossed at the stud.

Only the 13 mares (5,6%) appeared as the result of the intra-linear breeding, including 11 in the line of Dausuz.

The majority of the mares originated after the intra-breeding crosses – 124 mares (54,4%).

41 horses were obtained by means of the pure horses crossed to half-blooded (18,0%). 50 mares were obtained from the breeding of the half-blooded horses within themselves (21,9%), including on mare within the line of Lokk-Sen.

The most successive crosses of lines were after the heterogeneous matching: Dausuz and Borei, Borei and Zurab, Dausuz and Atlas and after the homogeneous matching: Dausuz and Tugan, Borei and Shaman, Argamak and Borei.

The inbreeding was used in the line of Dausuz. There are 32 mares inbred in levels II-II, III-III, III-IV, including the inbreeding on the Dausuz 18. That is not occasional, because the kindred rearing on Dausuz was conscious from the very launch of the stud aimed on the keeping and fixing the qualities of worth Karachaevsky eastern type of Dausuz in its offspring. The Dausuz could be characterized by the solid constitution, broad body, dry limbs and clear pedigree.

Judging on the results of bonitation of horses the kindred rearing did not give negative results at Malo-Karachaevsky stud. The solid constitution of the stud's horses emerged from the herd housing in mountains at sudden daily and seasonal changes of the temperature and climate allowed ones to avoid the harmful consequences of even very narrow inbreeding which gave positive results. The increased liveliness of the inbreeding of the offspring at Malo-Karachaevsky stud also resulted from the seasonal distinctions in feeding and housing of stallions and mares in differing vertical zones, from the crosses of lines of pairing animals and from complex inbreedings on several ancestors.

The inbred mares of Malo-Karachaevsky stud are almost the same as outbred ones in measures but overcome them in breeding power, duration of pedigree use and class. This can be proven by the following data.

**Table 192**

**Parameters of inbred and outbred pure mares of Malo-Karachaevsky stud**

Groups of mares	Shoulder	Chest	Fore cannon	% of successful drop	Number of pedigree heads on 1/III	% of elite	Number of heads
Inbred	152,4	182,4	19,1	93,7	5,8	34,4	32
Outbred	152,0	183,2	19,2	84,6	5,0	17,1	134

The mares of the Malo-Karachaevsky stud № 168 can be characterized by the following average measure and indices within the breed groups.

**Table 193**

Breed groups	Measures			Indices of		Number of heads
	Shoulder	Chest	Fore cannon	Chest	Fore cannon	
Pure	152,6	184,6	19,2	120,0	12,6	154
Half-blooded	155,0	185,0	19,2	119,9	12,4	105
Average at the stud	153,3	185,7	19,3	120,0	19,6	240

The half-blooded mares overcome the pure ones in shoulder and chest at the stud but are quite behind on the indices of chest and fore cannon. The mares of the stud can be characterized by the satisfactory height and quite good measures of chest and fore cannon in average.

The change of average measures of mare at the stud per years can be seen from these data:

Year	Shoulder	Chest	Fore cannon	Number of heads
1946	152,4	183,4	18,4	439
1953	154,0	186,0	18,8	
1963	153,3	185,6	19,3	240

At the moment, there exists some lowering of withers and chest measures of mares at increased measure of fore cannon due to the worsening of feeding conditions. **Tables 186, 187.**

Compared to 1946 the class of the mares increased considerably at Malo-Karachaevsky stud.

Year	Class of mares in percents			
	Elite	I class	II class	III class
1946	6,4	58	33,6	2,0
1964	27,0	72,3	0,7	-

It happened due to the reduction of the livestock of mares almost two times which happened in expense of less worthy mares.

The offspring of the Malo-Karachaevsky stud at herd-base housing was always developed depending on the feeding and climatic conditions for the number of years.

The offspring of the Malo-Karachaevsky stud was plentifully fed during 1946-1950. If one compares its measures to the average measures of the later sets when the level of feeding of horses lowered at the stud a little bit then he can notice the definite immaturity of the foals born 1954-1957.

**Table 194**  
**Average measures of the pedigree offspring of the Malo-Karachaevsky stud**

Sets of	Colts				Fillies			
	Shoulder	Chest	Fore cannon	Number of heads	Shoulder	Chest	Fore cannon	Number of heads
<b>In the age of 1 year</b>								
1946-1950	140,0	151,2	17,1	-	138,9	151,4	17,4	-
1950	140,3	149,8	17,5	311	-	-	-	-
1951	141,6	177,1	17,7	208	-	-	-	-
1954	135,1	144,1	16,5	160	133,6	142,2	16,1	151
1955	134,6	144,7	16,3	162	133,8	140,4	16,3	153
1956	134,4	140,0	16,2	150	133,2	141,4	16,3	169
<b>In the age of 1,5 years</b>								
1946-1950	146,2	164,7	18,3	-	147,7	167,4	18,1	-
1951	145,4	166,5	18,2	120	-	-	-	-
1957	140,7	152,6	17,3	129	140,5	161,5	17,3	121
1958	144,3	161,3	18,5	84	142,2	158,0	17,5	82
<b>In the age of 2 years</b>								
1946-1950	151,6	173,4	18,9	-	149,3	171,2	18,4	-
1954	146,0	159,3	17,7	-	144,1	158,1	17,6	-
1955	145,0	157,8	17,9	-	142,0	154,6	17,4	-
<b>In the age of 3 years</b>								
1946-1950	154,6	179,7	19,7	-	153,0	177,4	18,7	-
1954	150,6	169,8	18,9	-	149,9	165,9	18,3	-

Only the set of colts born 1958 from which the culture group of the age 1,5 years came close to the measures of 1946-1950 years and even overcame that data in the measures of fore cannon.

The working ability of the half-blooded offspring of the Malo-Karachaevsky stud can be characterized by the results of their tests at Piatigorsky hippodrome for last 5 years.

**Table 195**  
**Results of tests of half-blooded offspring of the Malo-Karachaevsky stud № 168 at Piatigorsky stud during 1959-1963**

Year	Heads tried	including			Appearances	Taken places					Total points	Traditional prizes
		2 year-old	3 year-old	4 year-old		1	II	III	IV	No		
1959	30	16	14	-	147	33	27	27	2	58	55095	2
1960	24	16	8	-	115	15	18	18	1	63	13390	-
1961	36	26	10	-	269	40	47	46	1	135	23365	1
1962	56	33	20	3	337	58	63	70	1	145	47270	2
1963	56	33	18	5	353	44	53	64	7	185	43038	2

The most successful year for the half-blooded offspring from the Malo-Karachaevsky stud was 1959. The best results on sportiveness at this hippodrome in 1963 were shown by the fosters of the stud Ilot of 4-year-old (3200 – 3.43,8), Fig. 163 and Igolochka (2800 – 3.13.5).

The bonitation of the offspring in the age of 2,5 years on the complex of signs with determining of the class characterizes the quality of this offspring the best. The corresponding data on the Malo-Karachaevsky stud for the number of last years are presented in the following table.

**Table 196**

**Class of the offspring of stallions-breeders of various breed groups at Malo-Karachaevsky stud according to the bonitation of 1958-1960 in the age of 2,5 years in percents**

Breed groups of stallions	Class of offspring				Number of heads
	Elite	First	Second	Pedigree waste	
Kabardian	14,8	55,4	24,1	5,7	175
Anglo-Kabardian	9,5	59,3	21,9	14,3	105
Thoroughbred	15,4	43,1	21,5	20,0	65
<b>Total for the stud</b>	<b>13,3</b>	<b>52,7</b>	<b>22,9</b>	<b>11,1</b>	<b>345</b>

The percentage of the pedigree production of the elite and first class is the highest for the Kabardian pure stallions – 70,2%, the half-blooded have this number 68,8% while the Thoroughbreds – 58,5%. The most numbers of elite and refuse are for the Thoroughbred stallions' offspring.

This estimation of the offspring of the stallions of various breed groups is undoubtedly linked to the conditions of the housing of the horses at Malo-Karachaevsky stud. If the feeding was normal and the education of the stud's offspring right in accordance to the features of the breed groups and requirement of the plan of the pedigree work then this estimation would be another. **Figs 224, 225.**

The following numbers of Kabardian horses from the Malo-Karachaevsky are written to the State Stud Book:

	Pure		Half-blooded	
	Stallions	Mares	Stallions	Mares
Volume I, published 1935	6	88	3	-
Volume II, published 1949	71	190	39	195
Volume III, published 1953	47	118	45	140
Volume IV, published 1964	7	159	7	150

**Fig. 224. Ilbars,  $\frac{1}{4}$  -english bay, born 1960  
from Ispolin 222 and Svobodnaia 168**



**Fig. 225. Idol,  $\frac{3}{4}$  -english, bay, born 1960  
from 1658 Istorik and 0678 Lesenka**



The horses from this stud registered in the State Stud Book represent 31,6% in the Volume II, 20,2% in the Volume III and 21,8% in the Volume IV.

## PROBLEMS AND WAYS OF FURTHER WORK WITH KABARDIAN BREED OF HORSES

The planned mission of the Malkinsky and Malo-Karachaevsky studs is the rearing of pedigree horses for the Caucasus, Crimea, Zakarpattie and Moldova and also the breeding of horses for the export, sport and border troops. These tasks require differentiated methods of the growth of the horses.

The producing of the pedigree and servicing horse has been provided by the culture-herd methods of housing of horses.

The education of the horses for the export and horse sports which is associated with the increasing of their blood in respect to Thoroughbred requires the necessity of the partial pass of the separate age-gender groups on stables-pasture housing.

Both Malkinsky and Malo-Karachaevsky studs have two directions: pure including the blood less than  $\frac{1}{4}$  of english and half-blooded in the range  $\frac{1}{4} - \frac{3}{4}$  of english.

The Malkinsky stud plans to produce the Kabardian and Anglo-Kabardino horses of simplified type, bay and light bay. The Malo-Karachaevsky stud produces denser horses of black, black-brown, dark bay and bay colors.

The Kabardian horses have to combine the worthy abilities to working under the saddle and in gear in mountains with the good use of the forage, of great health and breeding power. They can be of average height (stallions – 154 cm, mares – 152 cm) but should be of pedigree, mobile, unpretentious and possess the solid constitution, developed thorax, exact line of spine and firm, dry limbs with strong hoof. **Figs 226-228.**

The Anglo-Kabardian pedigree horses have to be bigger (stallions – 156 cm, mares – 154 cm) and possess more expressed riding forms with increased ability to working under the saddle at the simultaneous availability as draught. **Fig. 229.**

Anglo-Kabardian horses for sports and people's races ought to be of specialized riding forms: tall height, proportional head with prolonged back of the head, long with good launch neck, high withers, long aslant shoulder-blade, bony dry legs with well-developed joints and beaten off tendons. These horses have to be of easy producing moves, increased sportiveness, stamina and ability to overcome the hurdles.

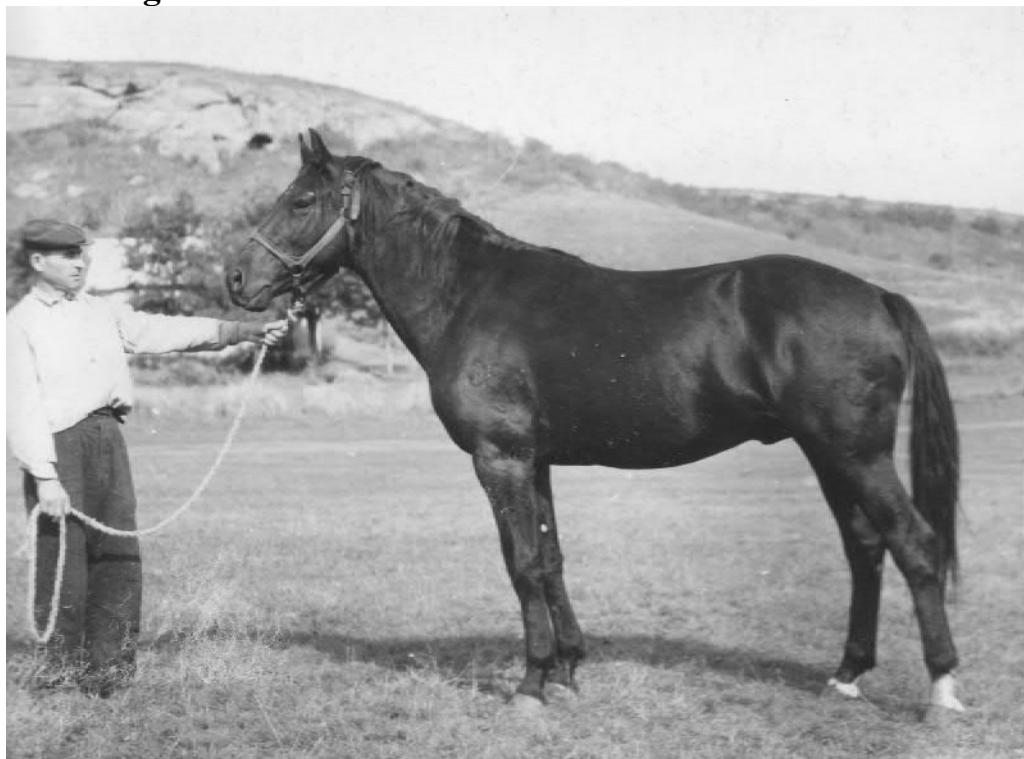
Anglo-Kabardian horses of  $\frac{3}{4}$  of english blood can reach the height of 158-160 cm on condition of the proper housing. Such shoulder accompanied with the stamina, friendly-riding, highly steadiness and prudence and possessing correct exterior might give the sportive horse for the triathlon and, probably, for the show jumping. **Fig. 230.**

**SERVICING HORSES IN THE AGE OF 3,5 YEARS**

**Fig. 226. Colt № 6 from 79 Arsenal and Divnaia**



**Fig. 227. Colt № 66 from 0188 Indeks and Antenna**



## PEDIGREE HORSES

**Fig. 228. 462 Arbich 2, dark bay, born 1958  
from 458 Aldan 12 and 1365 Bodraia**



**Fig. 229. 0245 Ispolin 222, 5/8-english bay, born 1949  
from 1658 Istorik and 0972 Lebeda 14.**

**First degree certificate on the All-Union Agricultural Exhibition**



**Fig. 230. 0981 Lenita 8, 3/4 english, bay, born 1957  
from 1701 Lukki and 0934 Istina 232**



## **METHODS OF REARING**

The novel methods of rearing find broader application at the breeding of Kabardian horses: pure breeding and crossing (industrial, introductory, reproducing, back).

The pure-breeding method of rearing of the Kabardian horses remains to be the basic at collective farms. It showed itself to be positive and it should be used in future. The pure and half-blood directions of the stud are planned with the equal numbers of mares.

The industrial crossing was the main way of breeding in the half-blood directions until now. This crossing of pure pedigree mares to the Thoroughbred stallions must lead to the production of the horse of pedigree and economical use. For this purpose the pure stallions-breeders have to be picked of solid constitution, exact exterior, massive and bony.

The experience of the Malo-Karachaevsky stud successfully obtaining half-blooded horses this way required the most serious attention. However, the inadequate Thoroughbred stallions in respect to their exterior and type are often used at Malo-Karachaevsky stud and other farms of Kabardino-Balkarian Autonomic Soviet Socialist Republic aimed only at producing of fast runners. This should be avoided in future.

The method of introductory crossing to the Thoroughbred can be recommended to be used more extensive. However this reasonable method is of small distribution.

The reproducing crossing is aimed on the rearing and fix of the half-blooded horses of single-typed worthy in respect to the pedigree importance and use. That horse may be consolidated into the new breed by means of further rearing. This method exists only at studs.

The back crossing of half-blooded mares to the thoroughbred stallions must not be applied a lot. It is reasonable for the obtaining of the offspring of mares declined from the type of mountain horses and unsuitable for breeding of sports horse. This crossing can be done with stallions of  $\frac{1}{4}$  of english blood with the target of lowering the blood in the offspring with the return to the type of mountain horse.

The SELECTION to the breeding school of pure and Anglo-Kabardian horses is being done at the moment on the measures and exterior. The origin, type and working ability are often ignored on practice. The tasks of further improvement of the breed requires the more thorough and grounded selection with the account of all worthy criteria.

The special attention should be paid to the type and breed, solidity of constitution, liveliness, milk merits, adaptability to herd housing, keeping of the fat in winter, good quality of moves and high working ability in conditions of mountains, well-behavior during the selection of the Kabardian horses to the pedigree school.

The demands for the expressed riding type and increased working abilities at races, crosses, steeplechases, show jumping and other sports should be considered

at selection of the half-blooded horses.

The most reliable results could be obtained during the selection of mares and stallions to the pedigree school from the parents recommended themselves by good pedigree.

The outranging and refuse of the horses have to be done with account for the age, qualities, type and needs of linear rearing. The older pedigree horses should not be outranged without convincing grounds. The horses of bad milk merits, loosing fat, often misfoaling and giving unsatisfactory drop must be outranged in the first turn. The stallions should be expunged after three sets of inadequate foals.

The MATCHING as well as the selection must be done in respect to the complex of criteria: origin and type, exterior, working ability and quality of the offspring.

The special attention has to be paid to the blood of horses at selection of half-blooded horses and one should not increase the blood above the half-english level. The increase of blood can be used only at the matching to mares intended for the producing of export of sportive horses. In this case the half-blooded mares of solid constitution can be appointed to the thoroughbred stallions or breeders of increased blood and their offspring should be educated in stables-pasture conditions.

The matching on the exterior should fix the exterior virtues of parents in their offspring and compensate the ancestor's deficiencies. The most important issues to be corrected at matching are the short, low-fastened apple-like neck, bad shoulder-blade, weak loins, excessive sword-ness and X-shaped rear legs, sunken wrist, bad hoofs.

The matching on the working ability is limited at the moment because there are least tried mares. Now, one should stay with the good moves and well temper of pairing horses at the matching.

The matching on the quality of the offspring must be grounded on the results of matching of previous years and on the repetitions of lucky combinations.

The BREEDING IN LINES within the Kabardian breed of horses is often formal today even at studs (figs. 182 and 183). After the analysis of the results of this work one can come to certain conclusions and draw recommendations on the further use of Kabardian horses of definite lines.

During the work with the line of Dausuz one should apply the intra-linear rearing which already gave good results. The intra-breeding rearing with allowed modest inbreeding can be recommended at the work with the lines of Atlas, Borei and Zurab. Good results were obtained also when crossing the lines of Dausuz and Borei, Zurab and Atlas, Atlas and Dausuz, Zurab and Dausuz, Argamak and Borei. The valuable horses were obtained from the crossing of lines of Istorik and Lokk-Sen at Malo-Karachaevsky stud. Besides the mentioned the crossings of the lines of Kopchik and Borei, Orlik and Dausuz, Argamak and Lahran can be recommended as well. However one should notice that both Malkinsky and Malo-Karachaevsky studs lock the selection work on few lines of old lines, as for example of Borei and Dausuz. The establishing of new lines and the expansion of the genealogy is required.

The KINDRED BREEDING takes essential place at the work with the Kabardian horses. About 10% of horses registered to the Volume IV of the State Stud Book were produced after the kindred rearing.

The inbreeding was successfully used at Malo-Karachaevsky stud at the beginning of the functioning. The valuable features of the forefathers were fixed in the offspring and separate inbred stallions, as already noted, played prominent role in the improvement of the breed, see Table 190.

The kindred rearing might be of help at further work with the Kabardian horses but only if definite conditions are met. The kindred breeding, admissible for fixing and improving of the worthy qualities from the forefathers, gives the effect only at the coupling of the irreproachable on constitution, exterior and health animals. The use of it must be related to the corresponding conditions of reproduction and growing of the offspring.

The pedigree work with the Kabardian horses is effective in full only at proper feeding and correct housing of horses.

The FEEDING and HOUSING of pedigree horses. The pedigree horses must be supplied with enough food providing for the conditions of their high breeding power and development of grown horses. The norms of feeding of the pedigree horses of the stables-pasture housing with the concentrated forage are approved by the Council of Ministers of the USSR in 1957. The following annual norms for the feeding of the pedigree horses in the mountains of Northern Caucasus of Russia are recommended.

**Table 197**  
**Annual norms of forage for pedigree horses (metric centners per head)**

Horse groups	Housing		
	Stable-pasture		Culture-herd
	Concentrates	Concentrates	Hay
Stallions-breeders	23	23	30
Mares	12	6	30
Sapling younger 1 year	5	5	14
Offspring from 1 to 2 years	16	7	20
Foals of 2 years and older	20	5	22

The main attention at feeding of the stallions-breeders should be paid to the quality of food especially during the preparation to and proceeding of the coupling campaign and on the regularity of the additional nutrition of stallions in herds. The stallions are wise to be used at easy work during the non-pairing season and two months before the couplings they should be put under the saddle.

The main deficiency of the herd-base housing of mares in Northern Caucasus of Russia is the scanty and insufficient feeding in winter and especially in spring. The mares should be fed with the concentrates up to 3 kilos per day per head in this period. The daily average norm of hay must be not less than 14 kilos. During the housing at base the mare requires 16-18 kilos of good hay. The hay norm should be increased to 20-25 kilos at frosts and snowstorms. The feeding of mares is valuable at nights using the daytime for the winter grazing.

The horses of high english blood suffer the most from the underfeeding in conditions of herd-pasture housing. But the demands for the more blooded horses grow due to the development of horse sports and expansion of export at the moment. This requires creation of improved basic or stables-pasture conditions, accompanied with the better feeding, of housing of half-blooded mares.

The places for the winter grazing of mares in the first half of wintering should be the southern slopes of gullies. Then the mares should be kept on more flattened areas to avoid the falls and abortions.

The climatic conditions of mountain are severe in summer as well. The rains, cold winds and mists in mountains in summer are often. This implies big responsibility on horse herd wranglers of mare herds. Only short stay under the cold wind or long stay in the fog may result in massive diseases of the sucking foals. At the same time there is the excellent not-burning in summer grass on highland pastures and almost absolute absence of flies and gadflies. The horses increase their fatness and prepare well for the winter in such conditions.

The pasturing in mountains must be according to the cell rotational system. The first used pastures have to be those located on lower areas, because the grass appears there earlier and lives longer. The early frosts on summer pastures (end of August, beginning of September) affect higher countries thus shrinking the vegetation period of grass on them and decreasing their value. The grass loses its nutritiousness in the last decades of the pasturing season and horses reluctantly eat it.

The FOALING in the mountain area of Northern Caucasus of Russia usually starts in the end of May. The majority of foals are born in April-May and many foals appear in June. The late foaling in July – September is very unwilling because the late foals are remarkably retarded in their development compared to other foals due to the worsening of mountain pastures by the autumn and decreasing lactation of mares. The most desirable optimal dates for the dropping are April, Amy and first half of June. Only half-blooded mares of supreme value should be foaled earlier in February – March given them the improved herd-base of stables-pasture housing.

The PAIRING CAMPAIGN in the mountain regions of the Northern Caucasus of Russia starts in April and ends in July. The covering by hands usually precedes the coupling in herds and it is preferable to be done since 10 April to 1 June on the wintering territory and it is better to finish the covering by hands the same place too. The stallions should be removed from the herds not later than 15 July.

#### The GROWTH OF THE OFFSPRING.

One and half month before the taking away straight after the lowering of mares to the wintering places the sucking foals have to be started to eat the concentrated forage. Otherwise the foals suddenly changing their ration grow thin, become retarded and sick. The part of the pasture equipped with the feeding-racks must be fenced for the arranging the additional nutrition. The lower beam of the rack must be 125-130 cm above the land what excludes others than the foal to eat.

2-3 weeks before the taking away the horses are branded.

The culture group must be recognized after the reviewing of all the foals under the mares. The final separation of the culture group is done 1-2 weeks after the housing of taken away foals in general herd when foals forget their mothers and learn to eat well. The selection of the foals into the culture group is done on the origin and exterior and with account for their development.

All the taken away foals must be taught to follow the lead, to allow cleaning them etc within 20 first days. The foals pasture in daytime and are kept on the base or in stables at nights and in bad weather. The housing of foals in open bases and freeing them in motions and at winter grazing combined to the plentiful diet provides for the good development and hardening of the organism. The weakened foals should be periodically selected to the group for the forced feeding.

The group training along with the walks since the middle of the winter is desirable to be introduced for the foals of culture group housed in the stables. The training consists of alternating repetitions of the pace and trot with increasing length of galloping up to 5-6 kilometers. The state of foals, their appetite and fatness should be thoroughly monitored all the time. The more carrot is desirable to be given to the culture foals comparing other offspring.

The colts and fillies of the culture group pasture in summer with simultaneous additional nutrition of 2-3 kilos of grain per head per night. The group training should continue.

The foals from general group are gradually transferred to the twenty-four-hour pasturing in spring, in May they are forwarded to the summer mountain pastures where they join older offspring.

The main kind of housing of the older offspring is the pasture culture-herd one. Only at the strong foul the offspring herds are kept at bases with sheds in winter. The feeding with hay as much as 10-12 kilos from small haystacks and with 3-4 kilos of grains from the racks around (per day) is arranged in winter.

The control over the development of the offspring is recommended to be done by registering the measures and comparing them to the scale of growth of Kabardian horses which was developed by us.

ASLAN

## **THE SPORT TRAINING OF THE HORSES**

**Fig. 231. First time riding**



**Fig. 232. Sport training of the offspring**



The average cost price for the growing of pedigree horses at Malkinsky and Malo-Karachaevsky studs is not high at the moment. But it increases a bit with the improved housing conditions and due to expenses for the growing of horses, extended training and trials.

**Average cost price of the growing of pedigree horses  
at Malo-Karachaevsky and Malkinsky studs**

Date to	Malo-Karachaevsky						Malkinsky					
	1958	1959	1960	1961	1962	1963	1958	1959	1960	1961	1962	1963
take away	200	255	250	193	209	268	-	-	-	-	-	-
1 year	233	225	278	214	224	283	202	298	250	317	225	296
2 year	348	367	413	449	364	-	347	370	309	461	399	412
3 year	492	580	685	816	599	483	1013	916	546	678	618	698

The following comes from this chapter:

1. The Malkinsky stud with two sections (stables-pasture and culture-herd) located on the piedmont area on the best Zolsky pastures can be the elite stud and give the best pedigree production of the Kabardian breed of horses. However there are still many considerable deficiencies in the matching and use of the stallions, in the housing of mares' school and in the growing of the offspring. Malkinsky stud yet unprofitable must be given all the needed support in appropriate organization of its manufacturing and provision with all the required rooms, technique, roads, communication and other.
2. The Malo-Karachaevsky stud, the territory of which is located in the range of average mountains with pastures gradually reaching the height of 2856 meters is the leading and the biggest enterprise in the field of rearing of the Kabardian breed of horses. The enlarged type of the pedigree production from the Malo-Karachaevsky stud as approved by the Ministry of agriculture of the USSR and is recommended for the broad use. The real possibilities of selling of the pedigree production provide the Malo-Karachaevsky stud for the annual profits.
3. The Kabardian breed of horses is rather plastic and has considerably changed to the side of increasing height, improved exterior and working abilities under the influence of the complex of zootechnician activities at the studs of Northern Caucasus of Russia. The main activities provided for that were the introduction of culture-herd housing of horses, thorough zootechnician selection and matching of stallions and mares, maximal use of the best stallions with using of the leading methods of veterinary-zootechnician gynecology, directed growth of the offspring, health improvement of the pedigree livestock by means of systematic prophylaxis.
4. The stud lines of Kabardian horses are not held in purity isolated one from another and always change. The crosses of lines are preferred to the intra-breeding rearing. The novel line of Dubochek is being formed at the moment on the basis of pairing of the stallions of the line of Dausuz to the mares of the line of Borei. This new line successfully combines the qualities of old ones.
5. The intra-breeding rearing within the Kabardian breed of horses was executed at studs mostly in the line of Dausuz. The close-relative rearing occurred to be successful in this line as well even in the degree of incest. The inbreeding within the line of Dausuz, differing in the solidity of constitution, provided for the inheritance and fixing of valuable qualities of the prominent breeder and his line on the genealogical tree of the breed.
6. The kindred breeding was less effective for the half-blooded Kabardian horses and was not so distributed as it happened among pure ones. This was in the relation to the lesser adaptability of half-blooded horses to the herd housing.

## **CONCLUSIONS**

The materials analyzed in this thesis allowed me to draw a number of conclusions:

### **On the history of horse-breeding in Northern Caucasus of Russia**

1. The rearing of the Kabardian horses was started by the semi-nomad proto-Adyga peoples of the Northern Caucasus of Russia using steppe and oriental horses and on the basis of Scythian – Sarmatian horse-breeding.
2. The feudal herd breeding was extensively distributed among Kabardians in the end of the XVI century when they took the central position on the piedmont valley and became the leading culture and political power of the Northern Caucasus of Russia.
3. The reduction of the pasture area on the valley (lands were expropriated by the Russian Tsar for cossack's settlements), the plunder of mountain herds by Tsar Army, the replacement of the feudal relations with the market ones, the development of the agriculture and of the fine-fleeced sheep-breeding and the absence of the profitable sell of the horses – all resulted in the decline of the Kabardian herd horse-breeding in XVIII – XIX centuries.
4. The period of capitalism can be characterized by the reduction of the herd horse-breeding of the Northern Caucasus of Russia while the role of the horse in agriculture and transport increased and the number of horses at private farms grew. The total number of horses increased and the basic use of the horses switched from pure riding to riding-draught, practical direction.
5. The actions of the Tsar administration to support the worsening breeding of riding horses within the privileged estates of highlanders gave no result. The quality of Kabardian horses went on falling until the October Revolution due to the poor housing of herds and because the care was given only to the growth of the horses in shoulder by means of various crossings without the improvement of housing conditions.
6. The highlanders of the Northern Caucasus of Russia reached the prominent results when restoring the horse-breeding, numerously interrupted during the Civil and World Wars, after the Great October Revolution.
7. The main areas of the production of horses in the mountain region of the Northern Caucasus of Russia are the Malkinsky stud of the Kabardino-Balkarian Autonomic Soviet Socialistic Republic and the Malo-Karachaevsky stud of the Karachaevo-Cherkesskaia Autonomic Province.
8. In spite of the development of the mechanization at collective farms many works, especially at servicing the distant livestock in mountains of Northern Caucasus of Russia, acquire the everyday involvement of horses.
9. The Kabardian breed of horses is distributed and recognized as improving on purpose in all republics of Caucasus, in Stavropol and Krasnodar Provinces of Russia, in Crimea and in Moldova. The Kabardian horses are successfully exported abroad and are preferable for servicing on the border of the USSR.
10. The pedigree work with the Kabardian horses is neglected in Northern Caucasus and continues only at Malkinsky and Malo-Karachaevsky studs.

## **B. On the formation and transformation of the mountain types and breeds of horses of Northern Caucasus of Russia**

1. The relief of the Northern Caucasus of Russia with mountains pastures in summer and piedmont pastures other times determines the housing of horses in different vertical seasonal zones and creates the possibilities for the geographical heterosis. The mountain relief gives the horses some special gymnastics and training because horses never move on a smooth country.
2. The mountain climate intensifies the activity of all systems of the organism, increases the metabolism and forces the growth and development of horses given enough food.
3. The mountain soils can be characterized by the ablation of carbonate salts, alkali bases and by the impoverishment in phosphorus-containing substances. The general content of the nitrous substances and of the sucrose increases but the amount of the cellulose and mineral substances decreases in mountain grass with height. This requires the special additional nutrition of horses with salt, travertine and others in mountains.
4. The ecological and geographical factors are of shape-generating importance. However, the breed-formation within domestic horses is determined not only by the adaptability of animals to the natural conditions of life by mainly by the arrangement of their housing, feeding and reproduction which are all governed by the man.
5. The livestock of horses in mountain area of Northern Caucasus of Russia was formed under the influence of various social, economical, geographical and zootechnician conditions.
6. The housing the majority of horses in mountain area of the Northern Caucasus of Russia as based on the natural forage. The type of feeding of mountain horses normally excludes the concentrates. The horses of mountain regions almost annually lack the food in winter and especially spring. This determines the embryonic and post-embryonic hypoplasia of them and at the same time their unpretentiousness and the stamina during the strict selection.
7. The detailed morphological characterization of the mountain horses reveals that the horses of mountain are of wide-bodied airizomic habit due to the developed thoracic cage in both width and depth. The height in shoulder of mountain horses decreases with the overcoming the sea level and the indices and measures of chest and fore cannon increases while the generally dryness of the constitution decreases, the heads become bigger and legs - sword-like.
8. The morphological study of different types of mountain horses of Northern Caucasus of Russia **does not give the foundations** for the separating them into the independent breeds. This does not emerge from the practical necessity either. **The Karachai horse must be considered as intra-breeding type or “otrodie” of the Kabardian breed of horses.** The Kabardian horse can be characterized by the light riding body predominantly bay in color.

The stallions of many diverse breeds were used before and until the Great October Revolution in mountain herds, at collective farms and studs. The study and generalization of the experience of inter-breeding crossings on the Northern Caucasus of Russia has revealed the definite effectiveness of the crossing between the Kabardian mares and Thoroughbred stallions.

The half-blooded Anglo-Kabardian crosses grown in conditions of culture-herd housing overcome thoroughbreds in main measures, exterior qualities and ability to work in forced marches.

The second generation crosses of  $\frac{3}{4}$  of English blood were little bit immature when grown in conditions of culture-herd housing though they were perfectly fit in stables-pasture conditions.

1. The crossing of Kabardian mares and Arab stallions is ineffective at the moment and exists only as the experimental procedure to keep the eastern type within the breed.
2. The crossings of Kabardian mares to the stallions of other breeds of riding horses are stopped at the studs as unproductive.
3. The crossing of the mountain horses to the small draughts which is distributed in Switzerland, Germany, Austria, Czechoslovakia, Yugoslavia, Albania and Romania and approved at Caucasus, in Kirghizia and Kazakhstan should be expanded on the Northern Caucasus of Russia with the aim to produce the working and meat horses with their fattening on the summer mountain pastures.
4. The Kabardian stallions are the best improvers for the mountain horses of Dagestan.

### **C. On the structure of mountain horses of Northern Caucasus of Russia**

1. The Kabardian breed of horses has been reared at the moment in two directions: pure and half-blooded.
2. The enlarged stud-type of such horses has been produced at Malo-Karachaevsky stud by means of pure breeding and small introductory crossing. This type of horses is approved by the Ministry of Agriculture of the USSR.
3. The half-blooded group of Anglo-Kabardian horses overcomes many riding breeds of horses in the number of useful qualities, indices of the body, breeding power and working ability. There are many grounds for the probing of these perspective breeding group of horses.
4. The genealogical structure of the Kabardian breed of horses consists of 8-10 pure breed, 2-3 half-blooded male lines and several female families at the moment.

## **D. On the main purposes of the horse-breeding within the mountain area of Northern Caucasus of Russia**

1. The studs of mountain area of Northern Caucasus of Russia are built to produce the pedigree horses for the Caucasus, Crimea and Moldova and also for the export, sport and border troops. So the required horses have to be of different type and grown either in culture-herd or stable-pasture conditions. The production of the pedigree and servicing horses is provided by the culture-herd method of housing of horses. The production of horses for the export or sport, which is associated with the increasing of the english level of their blood, determines the necessity for the partial switch of certain age-gender groups to the stables-pasture housing.
2. The main methods of pedigree work with the Kabardian breed of horses are the pure breeding and the introductory crossing to the Thoroughbred. The growing of the horses for the sport and export can be done on the basis of industrial crossing of these breeds. The consolidation of breed groups of Anglo-Kabardian horses into the new breed has to be done by means of reproductive crossing.
3. The selection and matching of Kabardian horses must be done with account for the complex of signs and according to the intra-breeding, stud and constitutional types described in the thesis.
4. One should not normally exceed the level of half-english blood of the offspring when matching the half-blooded horses. Only the mares intended to produce the export or sport horses are allowed to have increased level of english blood of the offspring above the mentioned value with the obligatory education of the foal in stables-pasture conditions.
5. Because of the closure of the breeding in lines of Kabardian breed of horses in the small amount of already aged lines it is necessary to establish new lines from the offspring of the best stallions and to expand genealogical complexes at the studs.
6. The training and the trials of pure and half-blooded pedigree Kabardian horses must be differentiated and directed on the development of such working qualities of these horses which are in demand for their use in agriculture, state defense, horse sports and export.
7. The methods of training and tests of pedigree Kabardian horses recommended by us lead to some increase in the expenses for their education. Experience however shows these expenses totally compensated by the realization prices of tried pedigree offspring.
8. The horse-breeding in the mountain area of Northern Caucasus of Russia is profitable when correctly arranged.