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ANTHROPOLOGICAL COMPOSITION OF THE POPULATION OF CENTRAL ASIA, AND THE ETHNOGENESIS OF ITS PEOPLES: III

BY

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PREFACE

In this the third and last section of Dr. L. V. Oshanin's great work on the physical anthropology of the peoples of Central Asia, the author continues his anthropometric studies on the Kazakhs, Kirghiz, Tadzhiks, Turkomans and other groups.

These three parts complement the anthropometric data obtained on the large series arranged according to the Harvard-Oxford system from Casablanca on the west to China on the east. In other words, the descriptive characters and the metric data recorded by Oshanin, IArkho, Debets, Zezenkova and others and their racial analyses help to fill the lacunae on the physical characters of the peoples of Central Asia.

Since this area was one of the principal regions of human development, it seemed most desirable to produce an English text organized and arranged for direct comparison with published data from Southwestern Asia to the south and Siberia to the northeast.

Because of certain difficulties in translation, the large number of tables, the quality of the photographs taken so many years ago, the completion of this presentation has required almost three years.

It is indeed unfortunate that Dr. L. V. Oshanin, who died in Tashkent on January 9, 1962, in his seventy-eighth year, did not live to see the translation. During the last few months of his life, I received several letters from him expressing the hope that he would live to see the English text. Born in Tashkent on March 7, 1884, Oshanin studied Biology at the University of Petrograd prior to military service. After completion of anthropological studies, he began research and since 1941 led twelve expeditions, mainly to Uzbekistan, Tadzhikistan and Turkmenia, and continued publication of the results obtained. After many years as Professor at the University of Tashkent, Oshanin in 1942 became associated with the Uzbek Academy of Sciences. For an obituary on L. V. Oshanin see Homo, Bd. XIII, Heft 4, p. 256, 1962.

I had the pleasure of meeting Oshanin in Moscow in 1934 and again in 1945. His contributions to the physical anthropology of the peoples of Central Asia and his studies on Tamerlane (Timur-i-Lang = The Lame One) and the Timurids stand as a permanent memorial to his ability, perseverance and insight.

The reader is referred to the Prefaces to Nos. 1–2; it seems unnecessary to recapitulate Mr. Eugene V. Prostov's comments regarding his translations and transliterations for these also apply to No. 3.

Mr. Vladimir M. Maurin, whose death during the spring of 1963 I record with deep regret, translated the text, table headings and photographic captions.

Because of the many technical terms, obscure geographical names and certain difficult passages, I invited Mr. Prostov to check the entire translation and make comments, many of which have been incorporated into the Notes. We are most grateful for his expert assistance.

Certain arbitrary spellings of geographical names with variations have been used: Azerbaidzhan in Transcaucasia but Azerbaijan in Iran; Barlas and Barlass; Ishkashim and Ishkashmi; Turkistan and Turkestan (after Webster); Yagnobi and Yagnobis (both plural); Zarafshan and Zerafshan. In many cases the variant spelling or spellings are given in parentheses. Capitalization of Northern, Southern, Eastern and Western follows Oshanin's style.

The numbers in brackets refer to the bibliographical references. Other words in brackets have been inserted to elucidate the text. Maps 1–2 were omitted because of the few names included. It was decided to use Mongolian Race and Caucasian Race; in all other cases race has been followed.

With regard to Arabic and Chinese names, I invited Professor H. A. R. Gibb, Harvard

University, and Professor Herrlee G. Creel, University of Chicago, to select preferred spellings. Attention is called to the following:

1. Contributions to the Anthropology of the Soviet Union, Smithsonian Miscellaneous Collections, vol. 110, no. 13, pp. 1–244, 1948, especially pp. 119 et seq. with excerpts from L. V. Oshanin, Iranskie plemena zapnogo Pamira [Iranian tribes of the Western Pamirs], Tashkent, 1937.

2. Henry Field and Eugene V. Prostov, "Excavations at Khwarazm, 1937–1938," Ars Islamica, vol. 6, pt. 2, pp. 158–66, 1940.

3. Henry Field, Contributions to the Anthropology of the Caucasus, Peabody Museum Papers, vol. 48, no. 1, pp. 1–154, 1953.

4. Henry Field, Ancient and Modern Man in Southwestern Asia: I–II, University of Miami Press, Coral Gables, Florida, 1956 and 1961.

5. Henry Field, Bibliographies on Southwestern Asia: I–VII with Subject Indexes, University of Miami Press, 1953–64.

6. V. V. Bunak, G. F. Debets, M. G. Levin et al., Contributions to the Physical Anthropology of the Soviet Union, Peabody Museum Russian Translation Series, vol. I, no. 2, pp. 1–192, 73 tables, 5 maps, 1960.

The handwritten translation by Mr. Maurin was typed by Birdie P. Levine, who also retyped the copy after Mr. Prostov's revision and the editorial changes by Mrs. Edith M. Laird and myself. I am grateful to Mrs. Laird for her assistance in checking the text, making editorial revisions and proofreading the IBM copy.

Mrs. Naomi Stratton, Editor of the Peabody Museum publications, contributed valuable suggestions regarding style and format as well as editorial revisions and corrections.

The composition of the copy for photo-offset was prepared in Coconut Grove, Miami 33, Florida, on my IBM electric typewriter by Mr. Mark Grant, who prepared the copy of this Russian Translation Series, vol. 1, nos. 1–3 and vol. II, nos. 1–2 as well as the entire Near East Series published by the University of Miami Press.

Dr. J. O. Brew, Director, Peabody Museum, has encouraged work on this Series, particularly the translation of Dr. L. V. Oshanin's important researches in Central Asia.

HENRY FIELD

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I. ETHNOGENESIS OF THE TADZHIKS AND UZBEK TRIBES OF SOUTHERN TADZHIKISTAN ACCORDING TO DATA OF COMPARATIVE ANTHROPOLOGY, HISTORY, AND ETHNOGRAPHY[1]

1. Variety of the Ethnic Composition of the Population of Southern Tadzhikistan. Comprehensive Joint Anthropological-Ethnographic Investigation of Uzbek Tribes and Tadzhiks

The southern part of Tadzhikistan, which is situated in the plains and foothills irrigated by the rivers Kafirnigan, Vakhsh and Kyzyl-Su, is distinguished by an extraordinary variety in the ethnic composition of its inhabitants. Numerous Uzbek tribes found a refuge in this territory which is separated from the plains of Uzbekistan by high mountains. Some of them merged during the ethnogenetic process with the Uzbek people, and are now part of the Uzbek Soviet Socialist nation. On the other hand, next to these tribes which immigrated from the north, from the common original area of tribes who were Mongoloid in type and spoke Turkic, there also live in Southern Tadzhikistan the Tadzhiks [Tajiks], who are the descendants of the ancient local, autochthonous, Iranian-speaking Europeoid population.

The open plains of the Central Asiatic Interfluvial Region were first settled by Mongoloid, Turkic-speaking tribes moving in from the Dasht-i-Kipchak steppes. Their basic mass assumed a sedentary life long ago, and imposed its language on the local, Iranian-speaking Europeoid population, but, as we saw, it became anthropologically "assimilated" by this population to a considerable degree.

A part of the Turki tribes, which penetrated furthest to the southeast, settled in the plains and foothills irrigated by the right-bank tributaries of the Upper Amu Darya, the Kafirnigan, Vakhsh and Kyzyl-Su rivers. Here, they found themselves isolated from the plains of the Central Asiatic Interfluvial Region where the basic mass of the Turki-Mongol tribes had settled. They are separated from the Ferghana Valley in the north by the Turkestan, Zarafshan, Peter I, and Hissar [Gissarskiy Khrebet][2] ranges; and from the Samarkand and Kashka Darya oblasts in the west by the southwestern part of the Hissar Range, and by the Baysan (Baisun) Tau Range. Surrounded by mountains, Southwestern Tadzhikistan is open only along the course of the Amu Darya toward the southernmost part of Uzbekistan in the Surkhan Darya Oblast. In N.G. Mallitskii's opinion, the high mountains which formed a serious obstacle to the movements of the nomadic horsemen served as a kind of "fortress" for the sedentary Tadzhik population [97, p. 66].

> The low mountains of [Southwestern] Tadzhikistan and their branches, on the contrary, are accessible to horsemen in all directions. In these mountains, lack of water prevented the development of agriculture. These low mountains, however, are very suitable for cattle-raising; numerous herds of cattle can graze here in the spring and early summer. As a result of these conditions, the nomads who succeeded in penetrating this favorable area of Southern Tadzhikistan remained here [97, p. 65].

A.A. Semenov, who had visited Southwestern Tadzhikistan in 1898, at that time noted the extraordinary variety of the ethnic composition of the population of these regions as well as the obvious distinction of the Uzbek tribes from the Tadzhiks not

only in regard to language but also as to the anthropological type [93, p. 101, footnote 2].

After the October Revolution, the ethnic composition of the population of Southwestern Tadzhikistan was defined much more accurately by the investigations of I. Magidovich [98] and N.G. Mallitskii [97, pp. 61-66]. During 1948-49, Associates of the Institute of History, Linguistics and Literature of the Tadzhik Branch of the Academy of Sciences of the USSR conducted two expeditions in Southern Tadzhikistan under the leadership of Senior Associate A.K. Pisarchik [100 and 101]. These expeditions collected extensive material on the ethnography of Tadzhik and Uzbek tribes in the Kulyab (Kuliab) Oblast. On the basis of this material, the ethnographer B.Kh. Karmysheva published a number of ethnographic-historical studies [91-94]. A special study by A.M. Belenitskii [39 and 40] was devoted to the history of the Kulyab Oblast. Material on the archaeology of this oblast is presented in the studies by M.M. Diakonov [49 and 50], and V.A. Litvinskii [63].

However, anthropologically Southwestern Tadzhikistan has hardly been investigated at all. In his well-known monograph on the anthropology of Tadzhikistan, V. V. Ginzburg [3] published material on only three small groups of Tadzhiks of the easternmost part of the Kulyab Oblast, of the Shuroabad, Dasht-i-Dzhum and Muminabad raions.

Taking into account the complete lack of knowledge of the anthropological composition of the numerous Uzbek tribes, the scanty knowledge concerning the Tadzhiks of Southern Tadzhikistan and the importance of comparative anthropological investigations on the Uzbek and neighboring Tadzhiks, the Institute of History, Archaeology and Ethnography of the Academy of Sciences of Tadzhikistan proposed to the Institute of History and Archaeology of the Academy of Sciences of Uzbekistan to undertake a joint comprehensive ethnographic-anthropological investigation of the population of Southwestern Tadzhikistan.

The anthropological team investigated the same raions and the same tribal groups which had already been studied by ethnographers. Thus, the comprehensive character of the investigation was preserved.

The general direction of the anthropological investigations was entrusted to Professor L.V. Oshanin. Two anthropological expeditions were conducted during the summer months of 1952 and 1953 in Southern Tadzhikistan. These expeditions were led by V. IA. Zezenkova, docent in the Department of Anthropology of the Central Asiatic State University [SAGU] and candidate in the Biological Sciences. In addition, the following were expedition members: Astafeva, a fifth year diploma student of the Faculty of Anthropology of the Central Asiatic State University; Kiiatkina, Nosakina, and Stepanenko functioned as laboratory assistants in the collection of material in 1952; and Kiiatkina and Nosakina in 1953. Males aged 20-60 and females aged 18-60 were studied; this increases considerably the reliability of the racial analysis.

All descriptive characters, which necessitate considerable experience, were determined by the docent V.IA. Zezenkova; all measurements were recorded by laboratory assistants under her supervision.

In 1935 Oshanin had studied a group of Lokais in the Obi-Kiik raion. These are included in our comparative anthropological tables.

The Tadzhiks, natives of Muminabad and Baldzhuan, who moved recently to the Kulyab raion, were studied there.

As has been frequently mentioned, Ethnogenesis is a complex problem which necessitates the combined investigation of representatives of various scientific disciplines. Investigations conducted in recent years in Southern Tadzhikistan by ethnographers, historians, archaeologists and anthropologists created exceptionally favorable conditions for the solution of problems not only concerning the Uzbek

people as a whole, but also concerning the ethnogenesis of some individual Turki tribes which appeared in the Central Asiatic Interfluvial Region at various times and which are now a part of the composition of the socialistic Uzbek nation.

The task of this chapter is to emphasize the fruitfulness of comprehensive joint investigations of one and the same ethnic groups and to clarify the following questions:

1. Did the Uzbek tribes of Southern Tadzhikistan preserve the "anthropological traces" of their origin on the Dasht-i-Kipchak, and which of these tribes preserved them to a higher degree?
2. To what degree do the results of anthropological investigations of Tadzhik and Uzbek tribes of Southern Tadzhikistan agree with the historical and ethnographic data of these tribes?

The number of investigated individuals of the various territorial and tribal groups varies considerably. Several groups were included in the statistical analysis (table 1).

2. Inter-Relation of Europeoid and Mongoloid Components among the Tadzhik and Uzbek Tribes of Southern Tadzhikistan

We saw that in the territory of Uzbekistan, the Uzbeks were found to be more Mongoloid than the Tadzhiks who live in the same towns and raions. The same relationship was observed among the population of Southern Tadzhikistan (Russian text, pp. 11-14).

In tables 2-5 are given the general average grades (M = mean for all groups of Uzbek tribes and all groups of Tadzhiks), and also the range (minimum and maximum) of the most important qualitative characters encountered among the various territorial groups of Tadzhiks and among various Uzbek tribes. N = the number of individuals studied for each character.

According to all basic qualitative characters, which distinguish Mongoloids from Europeoids, the males of Uzbek tribes appear markedly more Mongoloid than the Tadzhik males (table 2).

Epicanthic Fold. This is encountered much more frequently among Uzbeks than Tadzhiks.

Position of Eyeballs (grade 1 = deep-seated; 2 = medium; 3 = protruding). The lower the grade the more frequent are individuals with deep-seated or "sunken" eyes, the higher the grade the more frequent are "protruding" eyes. Judging from the general average grades, one encounters protruding eyes, which are characteristic for Mongoloids, more frequently among Uzbeks than Tadzhiks.

Beard Growth (grade 1 = very sparse; 2 = sparse; 3 = medium; 4 = abundant; 5 = very abundant). Judging from the general medium or average grades (M), and also from the minimum (M = min.) and maximum (M = max.) means encountered among the various investigated groups, the beard growth among Uzbeks is markedly less developed than among Tadzhiks. Lack of hirsuteness is a character peculiar to the Mongoloid Race.

Horizontal Facial Profile (grade 1 = flat; 2 = medium; 3 = projecting). The lower the grade, the more pronounced is the Mongoloid flatness of the face. Uzbek tribes are more Mongoloid than the Tadzhiks.

Height of Nasal Bridge (grade 1 = low; 2 = medium; 3 = high). The Mongoloids of Central Asia have a lower nasal bridge than the Europeoids. The average grade is lower among Uzbek tribes than among the Tadzhiks.

Position of Lateral Nasal Walls (grade 1 = almost vertical; 2 = medium; 3 = inclined). The lower the average grade, the more vertical is the position of the nasal

walls; the higher the mean, the greater the tendency to an inclined position, characteristic for Mongoloids.

Uzbek tribes have somewhat higher means than Tadzhiks; this confirms the more pronounced Mongoloid character of Uzbek tribes.

Transverse Profile of Nasal Ridge (grade 1 = flat; 2 = medium; 3 = projecting). A flattened nasal ridge is characteristic of Mongoloids. Judging from the means, one encounters individuals with "flat noses" more frequently among Uzbek tribes than among the Tadzhiks.

General Profile of Nasal Ridge (grade 1 = concave; 2 = straight or wavy; 3 = convex). In this character there is no difference between Tadzhiks and Uzbek tribes. Straight or curved noses are prevalent among both ethnic groups.

The more pronounced Mongoloid character of the Uzbek tribes is particularly evident when comparing the means (M). The number of individuals studied among the various tribes and in various raions differs quite considerably. It fluctuates from 12 individuals of the Merishkor (Mirishkor) tribes in the Shuroabad raion to 97 Lokais in the Yavan (IAvan) Valley, and from 12 Tadzhiks of Kyzyl-Mazar to 117 Tadzhiks of Baldzhuan and Muminabad. However, regardless of the great differences in the number of comparable statistical units, the minimum (M = min.) and maximum (M = max.) means encountered among all the investigated territorial and tribal groups confirm fully the more pronounced Mongoloid character of the Uzbeks as compared with the Tadzhiks.

A comparison of female groups (table 3) confirms fully the data obtained for the males.

The pronounced Mongoloid character of the Uzbek females as compared with Tadzhik is particularly sharply expressed in such important features as presence of the epicanthic fold, horizontal facial profile, height of nasal bridge, position of nasal walls, and the transverse profile of the nasal ridge or nasal profile.

We have had more than one occasion to point out that the representatives of the two Great Races in Central Asia--the Mongoloid and Europeoid--differ more sharply in qualitative than in quantitative characters.

There are no differences between Mongoloids and Europeoids in Central Asia in the basic indices (cephalic, facial and nasal). Both are brachycephalic, standing on the border of hyperbrachycephaly, typically narrow-faced with typically narrow noses. However, the basic diameters of the head and the face are greater among the Mongoloids (Kirghiz and Kazakhs) than among Europeoids (Tadzhiks).

A comparison of the basic quantitative characters of the Tadzhik and Uzbek tribes of Southern Tadzhikistan is given in tables 4 and 5. They contain the means (M), also the minimum (M = min.) and maximum (M = max.) means observed among the various groups of Uzbek tribes and Tadzhiks. The head breadth, morphological facial height, and bizygomatic breadth are larger among Uzbeks than Tadzhiks (table 4). The same differences are also noted among female groups (table 5).

Thus, according to all qualitative and quantitative characters, which differentiate Europeoids from Mongoloids, the Uzbek tribes of Southern Tadzhikistan appear clearly more Mongoloid than the Tadzhik population surrounding them.

3. Comparison of Uzbek Tribes of Southern Tadzhikistan According to the Degree of Their Mongoloid Characters

The anthropological team succeeded in investigating various numbers of representatives of various Uzbek tribes. Naturally, the most reliable are the distinctions which appear between the most numerous groups. Such groups in our material are those of the Lokais, Barlas (Barlass) and Karluks. Then follow in tables 2-6 the tribes of the Semiz and Kesamirs (Kisamirs or Kasamirs).

In table 6 these, the most populous tribes that we had investigated, are compared with typical representatives of the South Siberian Mongoloid race, the Kazakhs, and with clearly expressed representatives of the Europeoid race of the Central Asiatic Interfluvial Region, the Tadzhiks. In order to insure a greater degree of comparability of the data, we utilized the material collected by associates of the SAGU Department of Anthropology, who established sufficiently close standards for the determination of qualitative characters. For this purpose, the Kazakhs studied by Oshanin in the Talass Valley (1929) were included in table 6 as typical representatives of the South Siberian Mongoloid race. The observation of the descriptive characters of all other groups were conducted under the supervision and control of V.IA. Zezenkova. The Lokais, Barlas, Karluks and Tadzhiks were investigated at the same time during the summer of 1953. Furthermore, in the case of the Lokais, Karluks and Tadzhiks, table 6 presents data only for groups living in the same region, the Yavan Valley. The Semiz and Kesamirs were studied during 1951-53 in various regions, but always under the direction and control of V.IA. Zezenkova. The material on the anthropology of the Kazakh women of Alma Ata were recorded by V.IA. Zezenkova, and all the observations of qualitative characters of female groups in Southern Tadzhikistan were conducted under her direction. All this sufficiently guarantees the comparability of data that had been obtained [for the seven groups].

In table 6 are given the most important qualitative and quantitative characters, which differentiate Europeoids and Mongoloids. Distinctions appear particularly pronounced among the Lokais, Barlas and Karluks. Judging from the entire complex of characters, the Mongoloid features decrease steadily in the following order: Kazakhs – Lokais – Barlas – Karluks – Tadzhiks. The percentage of the presence of the epicanthic fold decreases unfailingly, beard growth becomes more abundant (the mean is even lower among the Lokais than among the Kazakhs), average grades of the horizontal facial profile, height of the nasal bridge, transverse profile of the nasal ridge, general profile of the nasal ridge (nasal profile) increase, and the average grades of the position of the nasal walls (grade 1 = almost vertical; 2 = average; 3 = flattened) and of the position of the eyeballs (grade 1 = deep-set or "sunken"; 2 = medium; 3 = "protruding") decrease. In the same sequence, the average values of the bizygomatic breadth and of the head breadth decrease. The data obtained for male groups are fully confirmed by those on females. In the direction from Mongoloid Kazakh women to Europeoid Tadzhiks, the Mongoloid features infallibly diminish in the same sequence: Lokais – Barlas – Karluks.

As to the degree of Mongoloid characters, the Lokais are as a whole close to the Kazakhs. This is particularly marked among female groups. The "anthropological traces" of the origin of the Lokais as the common original area of Mongoloid Turkic-speaking tribes are particularly significant against the background of the surrounding Europeoid Tadzhik population. Their type clearly indicates that their original home country was far to the northeast of their present habitations. On the contrary, the Karluks, males as well as females, do not differ in any essentials from the Tadzhik men and women. Therefore, we may consider present-day Karluks to be just as typical representatives of the Europeoid brachycephalic race of the Central Asiatic Interfluvial Region as the Tadzhiks. The Karluks did not preserve any traces of their origin in the common original area of Mongoloid Turkic-speaking tribes. They "dissolved" into the mass of the local population.

The Barlas occupy, according to all characters, an intermediate position between the Lokais and Karluks, but are considerably closer to the strongly Mongolized Lokais. The data obtained for males are fully confirmed by those obtained for females. In other words, the Barlas type exhibits clearly the "anthropological traces" of their origin in the common area of Mongoloid races, although to a lesser degree than the Lokais.

In regard to the small groups of the Semiz and Kesamirs, their Mongoloid character is also clearly evident among them. Judging from the complex of descriptive characters, according to the degree of their Mongoloid features, they are close to the Barlas.

Data for other Uzbek tribes of Southern Tadzhikistan are given in table 7. The number of individuals investigated is too small to form an opinion on the degree of their Mongoloid character. In tables 7 and 8, the characters are arranged according to the degree that the percentage of the presence of the epicanthic fold decreases. However, the tendency of the other characters does not at all follow that of this typically Mongoloid trait. The distribution of characters of female groups does not coincide with those of males. However, there is no doubt that as a whole these small tribes also contain a considerably greater admixture of Mongoloid traits than the surrounding Tadzhik population. This becomes evident in a comparison of range and means observed among the small Turki tribes and among the Tadzhik population which surrounds them (table 8). The epicanthic fold is encountered among Uzbek tribes of the Merishkors (Mirishkors), Dzhan-Katagans, Kungrats,[3] Kauchins, Musa-Bazars and other small groups much more frequently than among the Tadzhiks. Uzbek tribes also have a distinct tendency toward a lesser hair cover, a flatter face, a lower nasal bridge, a less pronounced transverse profile of the nasal ridge, and a larger bizygomatic breadth (at least among male groups).

Thus, from among the Turki tribes the Karluks which we investigated appear as typical representatives of the brachycephalic Europeoid race of the Central Asiatic Interfluvial Region, the Lokais are, in line with the degree of their Mongoloid features, close to the Kazakhs, and the Barlas occupy an intermediate position between the Lokais and the Karluks. Nevertheless, the Barlas also possess a considerable admixture of Mongoloid traits. This admixture is indubitable also among other Uzbek tribes of Southern Tadzhikistan (tables 7-8).

4. Comparison of the Results of Anthropological Investigations with the Results of Archaeological, Historical, and Ethnographic Investigations of Southern Tadzhikistan

The fertile valleys of the right bank tributaries of the Upper Amu Darya and the Lower Piandzh (Pyanzh) constitute areas of very ancient Central Asiatic cultures. At present this territory includes the southeasternmost part of Uzbekistan, the Surkhan Darya Oblast and the southwesternmost part of Tadzhikistan, the "raions of Republican importance" and the Kulyab Oblast. From the historico-cultural aspect, they represent an integral whole.

In ancient times all this territory was included in Bactria, whose northern boundaries extended to the Gissarskiy Khrebet, the Hissar Range [50, p. 308]. From the seventh-eighth centuries the name Bactria was no longer used for this territory. In Chinese Annals [Pei Shih] it was called Tu Ho Lo [Duholo]; in Arabic sources, Tokharistan [39, p. 10]. In the Middle Ages, the eastern part of Tokharistan[4] located between the Vakhsh and Piandzh rivers was called Khuttal or Khuttalia [39].

The numerous gorodishches, kurgans and other monuments which were investigated by A.M. Belenitskii, M.M. Diakonov and B.A. Litvinskii, show that the Kafirnigan, Vakhsh and Kyzyl-Su valleys were densely populated in ancient times [39, 50, 63]. Of especial significance is the bone [skeletal] material obtained by Diakonov from 29 interments at Tup-Khon locality near Hissar [49, pp. 154-62 and 176-78]. As pointed out in part II, this extremely valuable palaeoanthropological material, dated from the Bronze Age, and in upper strata from the first century B.C.

to the sixth-eighth centuries, was studied by the specialist on the anthropology of Tadzhikistan, V.V. Ginzburg, whose most important conclusions follow:

> 1. The basic population of Bactria was related to the brachycephalic Europeoid racial type of the Central Asiatic Interfluvial Region. Racially, it was completely similar to the population of adjacent Sogdiana.
>
> 2. The present-day population of the territories south as well as north of the Hissar Range belongs to the same racial type. Therefore, we have every reason to regard the modern inhabitants of these countries as the direct descendants of the Bactrians and Sogdians [5, p. 248].

The Tadzhiks of the various raions of the Kulyab Oblast and Yavan Valley, whom we studied, proved to be typical, clearly expressed representatives of the same brachycephalic Europeoid race of the Central Asiatic Interfluvial Region. No Mongoloid traits whatsoever are noticeable among them. The Tadzhiks of the Surkhan Darya Oblast in Southeastern Uzbekistan, who were studied by Nadzhimov, Associate of the SAGU Department of Anthropology, appeared to be similarly pronounced representatives of the same Europeoid race of the Central Asiatic Interfluvial Region as the Yavan and Kulyab Tadzhiks. With regard to all the important qualitative and quantitative characters, there are no essential differences among them.

The former, as well as the latter, appear to be the direct descendants of the local ancient population of northern Bactria.

Unfortunately, we do not have at present sufficient palaeoanthropological material for the solution of the question of the time of appearance of Mongoloid tribes in this area. It is true that V.V. Ginzburg notes that out of 20 crania obtained from the burial ground of Tup-Khon and examined by him, 3 exhibited "a slight Mongoloid cast." In his words, "one can observe in them only an insignificant admixture of Mongoloid features flattening, so to say, their Europeoid character." The most ancient of these crania is dated from the first-third centuries, the second from the fourth-sixth centuries, the third from the sixth-eighth centuries [5, p. 245]. This material is insufficient and not expressive enough ("slight Mongoloid cast") to form a basis for placing the appearance of the Mongoloids in this area during the first centuries of our Era. Therefore, for the solution of the question of the time of the appearance of Mongoloid tribes in Southwestern Tadzhikistan, it is important to make use of historical accounts concerning the time of the appearance of Turkic languages in this area.

As frequently mentioned before, the areas of Mongoloid settlement coincided originally with the territories of Turkic-speaking peoples. Hence, the parallelism of the two processes, Mongolization of the type and Turkization of the language of the most ancient Europeoid, Iranian-speaking population of Central Asia. True, the parallelism of these two processes was far from invariably complete, nor did it, even, always take place. However, in most cases Turkic-speaking tribes appeared at a time and in places when and where the admixture of Mongoloid traits with the Europeoid population started. Therefore, the appearance of the Turkic language during a definite period in a given area is for the anthropologist a kind of signal for the appearance there of the Mongoloid Race.

Apparently, the presence of Turki in the territory of Khuttal (the present-day Kulyab Oblast) was first mentioned indirectly about the year 675. Chinese sources report that after the victory of the Chinese over the Turki in that year, Khuttal became a special governorship of the Chinese Empire. In this connection, the Army Chief, a Turki and ruler of Vashgird (identified as modern Faizabad) [40, p. 135], suggested the re-establishment of the old boundary between Iran and Turan, including Khuttal in the latter [39, p. 111].

From that time the Turki are constantly mentioned in the territory of Khuttal in connection with various events.

Thus, during the fighting against the Arabs, the ruler of Khuttal (a Turki Khakan) moved in the year 725 against the Arab Viceroy Assad ibn Abdallah [39, p. 113]. In 737, the ruler of Khuttal called the Khakan of the Turki-Turgeshi, whose headquarter were at that time in the Chu Valley, for help against Assad. The Turki chief arrived in Khuttal after seventeen days, crossed the Amu Darya, but was defeated. The remnants of the Turki troops dispersed and settled all over Khuttal [39, p. 115]. At the court of the Chinese emperors a Turki title was established for the rulers of Khuttal; in 752 the king of Khuttal received the title of Yabgu (Dzhabgu = leader) [39, p. 117]. After the Ommayad dynasty was replaced by the Abbassides (in the second half of the eighth century) Khuttal continued the struggle with the Arabs. It is mentioned in the sources that in addition to other nationalities, the Turki, and among them the Karluk and Tokuz-Ghuze (Oghuze) tribes, were called to help [39, p. 119]. It is possible that the Karluks appeared in this area even before the eighth century. Thus, A.IU. IAkubovskii points out that the Karluks lived in Tokharistan, the eastern part of which was subsequently called Khuttal, during the sixth-eighth centuries [53, p. 9]. In the eighth century they formed a special group under their Yabgu in Tokharistan [78, p. 53]. Bartold regards the Karluks as a Turki tribe that came to the Dasht-i-Kipchak from the Altai [37, p. 8].

In the year 766 the Karluks destroyed the city of Suiab (Suyab) on the Chu and built in its place Balissagun (Balassagun or Balasagun). In Bernshtam's opinion, the rule of the Karluks lasted a long time, from 766-992 [42, p. 20].

IAkubovskii believes that it may be possible to attribute the beginning of the penetration of the Karluks into Central Asia not to the eighth but to the sixth century. This possibility is supported by the existence of a group in the Kulyab Oblast which calls itself "Turki." In the opinion of B.Kh. Karmysheva, the possibility is not excluded that the members of this tribe are the "descendants" of the Turki of the sixth century, namely, the Turki who were a part of the Western Turki Khakanate[5] [101, p. 79]. The antiquity of the Turki presence in the Kulyab Oblast is indicated by the fact that during the last three or four generations they lost the Turkic language and began to speak Tadzhik [101, p. 80]. The Turki, who accepted the Tadzhik language, consider themselves as Tadzhiks, but of the "Turki clan." In his time, I. Magidovich noted among the Tadzhiks a number of groups that remembered the names of their clans: Chagatai, Dzhalair, Bakhrin, Naiman and Mitan.[6]

However, by far the larger part of the tribes that moved from the Dasht-i-Kipchak into Southern Tadzhikistan preserved the Turkic language.

As we saw, these Turki tribes also preserved the "anthropological traces" of their origin in the Dasht-i-Kipchak in the form of Mongoloid traits. At the same time, these "traces" are the more pronounced the later a given tribe made its appearance in Southern Tadzhikistan. This is particularly evident among those tribes represented by sufficiently large numbers of individuals studied anthropologically. The Karluks, Barlas and Lokais are particularly indicative in this respect.

The Mongoloid character of these tribes clearly decreases in the following order: Lokais – Barlas – Karluks (Russian text, pp. 16-18 and table 6).

1. Karluks. These proved to be the same pronounced and typical representatives of the Europeoid race of the Central Asiatic Interfluvial Region as the Tadzhik population which surrounds them.

Among the Turki tribes which we investigated, the Karluks appear to be the earliest arrivals in Tokharistan. In literature they are known as the "Tokharistan Karluks." The time of their appearance in their present area is attributed to the eighth century. It is also possible that the Karluks arrived on the right bank of the Amu Darya earlier (sixth century). The Karluks came to the Dasht-i-Kipchak from the Altai. The ancient Europeoid population of the Altai was at that time already

strongly Mongolized. At that time even the Dasht-i-Kipchak became settled by a number of tribes which moved from the east, from the original area of the Turkic-speaking Mongoloid tribes. Here the Karluks found several Turkic-speaking Mongoloid tribes, some of which they apparently absorbed.

From all the evidence, the Karluks as well as other tribes which migrated to the Dasht-i-Kipchak from the East, from the very center of the formation of the Mongoloid Race, were Mongoloid in type. The Mongoloid element in their anthropological composition could have been markedly reinforced on the Dasht-i-Kipchak steppes. However, in the course of more than a thousand years of existence among the surrounding Tadzhik population their tribal individuality became considerably mitigated. At any rate, their tribal endogamy disappeared. B.Kh. Karmysheva and A.K. Pisarchik noted that mixed marriages between Karluks and Tadzhiks are very frequent. There even exists among the Karluks a feeling that they are close "relatives" of the Tadzhiks; the degree of kinship, it is felt, is, roughly, as between uncles and nephews [101, p. 82].

Frequent mixed marriages were recorded in the field records of the anthropological team.

2. Barlas. These are considerably more Mongoloid than the Karluks (table 6). They are also one of the ancient Turki tribes. Their name is mentioned since the time of Genghis Khan. Subsequently, they participated in the campaigns of Genghis Khan's successors, including those in India. "In the Punjab near Delhi, there still live some 15,000 Barlas up to the present time" [98, p. 202]. During Genghis Khan's rule, the Barlas spoke a Mongolic language [97, p. 62]. However, in Central Asia, like other Mongolic-speaking tribes, they soon became Turkized. The time of their first appearance on the right bank of the Amu Darya has apparently not been established. During the period of Timur [Tamerlane], who, as it is known, was himself a member of the Barlas tribe, they lived in the Kashka Darya basin. About 500 or more years ago they were forced out by other Turki tribes [97, p. 62]. In 1927, we found in the Kashka Darya Oblast only two or three representatives of the Barlas tribe. The basic mass of the Kashka Darya Uzbeks, who are well acquainted with their tribal names, was represented by the Sarai, Kenegez, Kungrat, Ming, Mangyt, Katagan, and other tribes. The Kashka Darya tribes, which we investigated, are less Mongoloid than the Barlas of Southern Tadzhikistan (table 9).

As may be seen from the statistical data, the epicanthic fold is much more frequently encountered among the Barlas, their hair cover is sparser, their nasal ridge is more depressed, their facial and head breadths are larger. According to the degree of the Mongoloid traits, the Barlas occupy a position intermediate between the Europeoid Karluks and the Mongoloid Lokais. Judging from the field notes of the members of the anthropological team, the Barlas, as a rule, are endogamic. Living in the extreme southeastern part of the area of distribution of Turki tribes, they were more isolated than the tribes which had settled in the plains of the Central Asiatic Interfluvial Region. For this reason they preserve to a high degree the "anthropological traces" of their origin in the common original area of Turki and Mongolian tribes.

3. Lokais. These are the most Mongoloid of all the tribes which we investigated. According to the degree of their Mongoloid traits, they are very close to the Kazakhs (Russian text, pp. 16-18 and table 6). In spite of the great number of studies devoted to the problem of the origin of the Lokais, this question remained open until the investigations carried out by the ethnographer B.Kh. Karmysheva in Southern Tadzhikistan. Some authors, such as M.E. Masson, set the time of their appearance on the banks of the Amu Darya as early as the sixth century; others, such as I. Magidovich, believe that they arrived here in the eighth century together with the Karluks; a third opinion expressed by F.I. Liutko, G.G. Khitenkov and others,

admit the possibility that the Lokais came to Central Asia with the hordes of Genghis Khan (thirteenth century); and a fourth group of investigators consider the Lokais as one of the tribes of the nomadic Uzbeks of the sixteenth century [94]. All these hypotheses bore the character of suppositions not founded upon sufficient and incontrovertible factual material.

In her studies, particularly in the historico-ethnographic monograph dealing with the Lokais [94], B.Kh. Karmysheva advances varied and convincing factual material, which indicates that the Lokais were part of the nomadic Uzbeks of the sixteenth century and that they came into Central Asia during the conquests of Sheibani Khan. It is true that the name of the Lokais is not mentioned [94, p. 14, footnote 4] in connection with the Uzbeks of the Sheibani period. However, Karmysheva utilized the ethnographic material, which she collected quite successfully and convincingly, as a kind of historical source indicating that the Lokais appeared in Southern Tadzhikistan not before the sixteenth century.

Let us cite some of this material.

Karmysheva showed that the Lokais are not an homogeneous group related by blood. Similar to other Turki tribes, they are a conglomerate of various ethnic groups. Mallitskii had already divided the Turkic-speaking tribes of Southern Tadzhikistan into two groups: (a) a more ancient one which included tribes that came to this area at various times, but long before the conquest by Sheibani Khan; and (b) tribes that migrated from the Dasht-i-Kipchak during the sixteenth century in connection with Sheibani's conquests [97, p. 62].

As is known, it is these very Dasht-i-Kipchak nomads of the sixteenth century who were called "Uzbeks." For convenience, we shall henceforth call them "Uzbek tribes proper," although all the preceding tribes also entered into the composition of the Uzbek people. Anthropologists and historians are unanimous in the opinion that the Uzbeks of the sixteenth century constitute merely one of the ethnic components entering into the composition of present-day Uzbeks. B.Kh. Karmysheva also divided the Turki tribes of Southern Tadzhikistan into two groups: (a) an ancient one, pre-Uzbek or "Turki-Karluks"; and (b) "Uzbek tribes proper." To the former belong the Turki, Karluk, Barlas, Musa-Bazari, Kaltatai and Mogul (Mogol) tribes; to the latter, the Lokai, Durmen, Kungrat, Katagan, Marka, Kauchin, Kesamir and Semiz tribes [94, p. 20].

In the ethnic composition of the Lokais, Karmysheva identified 159 names of clans and clan subdivisions. She discovered that 74 of these names were in use among other Turkic-speaking tribes; however, not one of these was to be found among the group of "pre-Uzbek tribes" [94, p. 16]. The Lokais have particularly many ethnonyms in common with the Kazakhs (53 out of 159). As is known, the Kazakhs and Uzbeks of the fourteenth-fifteenth centuries constituted one people, and even after the separation of the Kazakhs from the Uzbeks, the Kazakhs continued to call themselves "Uzbek-Kazakhs."

The large number of ethnonyms indicates that the Lokais and Kazakhs were formed from the same ethnic components, on the same territory, and during the same epoch when the Uzbeks and Kazakhs began to emerge.

The Tamgi Lokais also reveal similarities with the Tamgi of a number of Kazakh tribes [94, p. 19]. Furthermore, Karmysheva cites a number of distinctions in the economy, material culture and way of life among "Uzbek" and "pre-Uzbek" tribes (Turki-Karluk group]. According to a number of these features, the Lokais are very similar to other Uzbek tribes proper [94, pp. 27-30 and 133-34].

Apparently, the Turki tribes divide themselves into the same two groups: the Uzbek tribes proper; and non-Uzbek tribes. It is significant that the Lokais consider themselves to be Uzbeks; the Karluks, likewise, consider the Lokais as Uzbeks; but the Karluks do not include themselves among the Uzbeks. More than a

century ago, when Burns traveled through Hissar, "he heard the Lokais mentioned as Uzbeks" [94, pp. 22, 23, 27].

Unlike the Karluks, the Lokais lived in their present area of habitation, segregated not only from the Tadzhiks, but also from other Turki tribes [94, pp. 43, 64, 97].

In the field records of the members of the anthropological team, it is noted that the Lokais are strictly endogamic. Magidovich also wrote that, "the Lokais do not enter into marriage with other Uzbeks (not to speak of Tadzhiks), and even marriages among members of different clans are more expensive than those within the clan" [98, p. 199].

In view of their isolated existence and endogamy, the Lokais, more than any other Turkic-speaking tribe, preserved the "anthropological traces" of their Dasht-i-Kipchak origin. As mentioned above, in their anthropological composition they are very close to the Kazakhs. On the Dasht-i-Kipchak, the Kazakhs and Uzbeks formed one people. Thus, anthropological data agree completely with Karmysheva's point of view, which considers the Lokais as a tribe forming part of the sixteenth century Dasht-i-Kipchak Uzbeks.

4-5. Semiz and Kesamirs. These are represented in our material by a considerably smaller number of investigated individuals. However, the Mongoloid component in their composition (table 6) appears very conspicuous when comparing them with the markedly pronounced Europeoids, the Tadzhiks and Karluks. As to the degree of their Mongoloid features, they are closer to the Barlas, and, in some characters (frequency of the epicanthic fold, degree of facial flatness and position of eyeballs), they are as Mongoloid as the Lokais.

Karmysheva devoted a special study to the origin of the Semiz and Kesamirs [93]. Similarly, the Lokais, the Semiz and Kesamirs call themselves Uzbeks. Thus they are also called by the surrounding population. On the basis of an analysis of their ethnic composition and of some ethnographic features, Karmysheva believes that the Semiz and Kesamirs were among the first Uzbek tribes to come to Southern Tadzhikistan. Complementing the deductions obtained by Magidovich, Karmysheva also considers them as splinter groups of the Naiman tribe which were a part of the sixteenth century Dasht-i-Kipchak Uzbeks, and a part of the Kazakhs. The Semiz and Kesamirs are the easternmost Uzbek group on the right bank of the Piandzh River, where they penetrated, probably as early as the sixteenth century, together with the Naimans and Kungrats. The Semiz group was studied in the localities of their original settlement, on the right bank of the Yakh-Su, in the Dakhana and Muminabad areas. The Kesamirs were investigated in various raions, but likewise on the right bank of the Yakh-Su. "The Semiz and Kesamirs regard themselves as related groups and have been intermarrying for a long time, while, prior to the Revolution, they entered only very reluctantly into marriages with members of other Uzbek groups" [93, p. 106]. Their endogamy was also noted in the field records of the anthropological team. Thus, similarly to the Lokais, the Semiz and Kesamirs preserved clearly the "anthropological traces" of their origin on the Dasht-i-Kipchak steppes.

6. Other Tribes. The investigation of the Kungrat, Dzhan-Katagan, Kauchin, Musa-Bazari and Merishkor tribes included only an insignificant number of statistical units (males, 12-26; females, 14-27). This is probably the reason that a definite trend in the change of their characters, which would furnish an indication of the degree of the Mongoloid traits of each tribe separately, as is the case with the Karluks, Barlas, Lokais, Semiz and Kesamirs, could not be established. However, the only indubitable fact is that they all are more or less Mongoloid.

As we saw, this is particularly clearly evident when comparing the minimum and maximum means of these tribes with those of the various territorial groups of Tadzhiks.

The origin of the Merishkor tribe remains uncertain [101, p. 86]. The Musa-

Bazari are related to the group of "pre-Uzbek" tribes [97, p. 62]. Other tribes, for example, the Kungrat, Dzhan-Katagan (a group of the Katagan tribe) and Kauchin, were a part of the composition of the nomadic Uzbeks of the sixteenth century [94, p. 20].

The remaining tribes studied anthropologically include so few statistical units that it was necessary to combine them into one group. They appear in our tables under the heading "Miscellaneous Tribes." They include the most ancient, "pre-Uzbek" tribes of Turki, Kaltatai (groups forming part of the Turki tribe) [98, p. 200], and Mogul (Mogol); also included were a part of the sixteenth century nomadic Uzbeks, i.e., the Durmen, Naiman, Katagan [97, p. 64] and Kenegez tribes, [7] and three tribes which we could not trace in the literature, i.e., the Dzhust (Yuz), Kara tamgal and Kirchilik. As may be seen from table 7, this group of Small Tribes also preserved sufficiently clear "anthropological traces" of its origin on the Dasht-i-Kipchak.

SUMMARY

A comparison of the results of anthropological, ethnographic and historical investigations of Southern Tadzhikistan leads to the following conclusions:

1. The Tadzhiks of the various raions of the Kulyab Oblast and of the Yavan Valley are very pronounced, typical representatives of the brachycephalic Europeoid race of the Central Asiatic Interfluvial Region. They are the direct descendants of the Bactrians who lived south of the Hissar Range.

2. Numerous Turkic-speaking tribes of Southern Tadzhikistan preserved not only in language and in a number of ethnographic peculiarities but also in their anthropological type obvious "traces" of their origin in the common original area of Turkic speaking, Mongoloid tribes. This is proved by the presence of a larger or smaller admixture of Mongoloid traits among all Turki tribes.

3. The Mongoloid Turkic-speaking tribes reached the boundaries of northern Bactria not later than during the eighth century, perhaps even two centuries earlier. During the following centuries, the flow of these tribes into northern Bactria, which included the basins of the right bank tributaries of the Amu Darya and of the Lower Piandzh, increased steadily. The earlier a Turki tribe settled in this territory, the more it absorbed the local Europeoid race into its anthropological composition, and obliterated the "anthropological traces" of its origin in the common original area of Mongoloid races. On the other hand, the clearest "traces" of their origin were preserved by the latest arrivals that were a component element of the nomadic Uzbeks of the sixteenth century.

Consistent with this is the degree to which the Mongoloid traits increase in the following sequence: Karluks – Barlas – Lokais – Semiz and Kesamirs. The Karluks appeared in Southern Tadzhikistan during the eighth century (perhaps even during the sixth century), the Barlas probably during the epoch of Genghis Khan, while the Lokais, Semiz and Kesamirs were a component element of the Uzbek nomads of the sixteenth century.

The remaining tribes investigated anthropologically are represented by very small statistical units. However, even among them the "anthropological traces" of their origin in the common original area of Mongoloid Turkic-speaking tribes is clearly evident.

4. Taken as a whole, the results of anthropological investigations are fully consistent with the results of ethnographical and historical investigations of Southern Tadzhikistan.

II. ETHNOGENESIS OF THE MOUNTAIN TADZHIKS OF THE HEADWATERS OF THE ZARAFSHAN AND OF THE YAGNOBIS ACCORDING TO DATA OF COMPARATIVE ANTHROPOLOGY, HISTORY AND LINGUISTICS

1. The Place of the Pamir-Alai Population among the Europeoid and Mongoloid Races of Central Asia

The Pamir-Alai Mountains[1] border in the north and west on the area of distribution of the brachycephalic Europeoid race of the Central Asiatic Interfluvial Region. In the north it constitutes the clearly predominating racial component in the composition of the Tadzhiks and Uzbeks of the Ferghana Valley. In the west the latter populated the plains of the Central Asiatic Interfluvial Region down to Khiva Oasis. According to the investigations by D.D. Bukinich, this same race has spread not only westward of the Pamir-Alai region, but also southwest where it has become a part of the Tadzhiks inhabiting the Badakhshan Province of Afghanistan [20, pp. 51-53].

With regard to the areas extending eastward of the Pamir-Alai--Eastern Turkestan (Sinkiang), one would expect, on the basis of the material collected by [Sir Aurel] Stein, and examined by T.A. Joyce, that the same race mostly settled the oases located on the fringes of the Taklamakan Desert [123, 124, 125]. This was fully confirmed by our own investigations. In recent years we made studies of the Uigurs, who migrated from Sinkiang partly into Semirechie (Semirechye), partly into the Ferghana Valley. As pointed out in part I, chapter IV, the Uigurs, whom we investigated, do not differ in their racial composition from the Uzbeks in any way. The brachycephalic Europeoid race of the Central Asiatic Interfluvial Region predominates clearly among them, as among the Uzbeks, with an admixture of Mongoloid traits [21]. In all probability this ancient Europeoid population of Sinkiang, as that in Mawerannahr, spoke Iranian [132, p. 13]. Subsequently, it became completely Turkized in language, but only partly Mongolized in type.

Thus, the Pamir-Alai region is surrounded by peoples in whose anthropological composition the brachycephalic Europeoid race of the Central Asiatic Interfluvial Region clearly predominates. The Pamir-Alai region is situated in the very center of a vast area of this race, which covers the plains and the foothills of the entire Central Asiatic Interfluvial Region, Sinkiang and northern Afghanistan. Only in the south does the Pamir-Alai region border on the area of the Indo-Afghan Europeoid race, which enters into the composition of the Indo-Aryan tribes of northern India. However, this dolichocephalic Europeoid race is separated from the Pamirs by the Hindu Kush wall.

On the other hand, the South Siberian Mongoloid race, whose area covers the mountains and the steppes of Kirghizia and Kazakhstan, is separated from the Pamir-Alai region by the broad Ferghana Valley. Mongoloid elements penetrated into the Pamir-Altai Mountains in the composition of one or other of the Turki tribes. Some of them preserved not only the Turkic language but also the Mongoloid type. Such are the Alai Kirghiz and those of the Pamir Plateau and Karategin who were discussed in part II, chapter I, and some Turki tribes of Southern Tadzhikistan discussed in the preceding chapter.

All the rest of the Pamir-Alai population, the Tadzhiks, Yagnobis and tribes in regions adjacent to the Pamirs, speak Iranian languages, Tadzhik and Yagnobi, and various dialects of the Western Pamirs.

As a result of the investigations of Russian pre-Revolutionary and Soviet anthropologists, the racial composition of all of this Iranian-speaking population of the Pamir-Alai region is well-known today [2, 3, 4, 12, 18, 20].

In part II, chapter III, it was pointed out that in the territory of all ancient regions of Uzbekistan (Khwarizm, Chach, Davan [Ta Yüan], Sogdiana, and Bactria), the local Europeoid race of the Central Asiatic Interfluvial Region experienced the most intensive Mongolization in that part which was subsequently completely Turkized in language and which entered into the composition of the Uzbeks.

However, those Tadzhiks who preserved the Iranian language, and who lived in the plains and foothills of Uzbekistan, also became Mongolized, although to an insignificant degree. This is evident from tables 10-11, in which the plain and piedmont Tadzhiks of Uzbekistan are compared with piedmont and highland Tadzhiks of Tadzhikistan. This is brought out more sharply in a comparison of the Tadzhiks of Northern and Central Uzbekistan, who border with the Tadzhiks of Northern and Central Tadzhikistan. Among the Uzbekistan Tadzhiks one more frequently encounter the epicanthic fold, the eyeballs are less deeply-set in the orbital cavities, the hair cover is less developed, the horizontal facial profile is somewhat flattened, and the nasal bridge is higher. According to the transverse and nasal profile and the quantitative characters, there are no differences noticeable between the Tadzhiks of Northern and Central Uzbekistan and Tadzhikistan. No clear differences are observed between the Tadzhiks of Southern Tadzhikistan and Southern Uzbekistan. On the basis of the greater number of characters, the Surkhan Darya Tadzhiks are even more Europeoid than the Kulyab Tadzhiks (in regard to absence of the epicanthic fold, the position of the eyeballs, the position of the nasal walls, and the transverse and the general profiles). Only from the horizontal facial profile and beard growth could one assume a somewhat greater Mongolization of the Surkhan Darya Tadzhiks. In general, however, the Tadzhiks of Tadzhikistan are very close to those of Uzbekistan.

This single Khwarizmian-Sogdian-Bactrian stratum, although Mongolized on the plains of the Central Asiatic Interfluvial Region, was Mongolized only to an insignificant degree. However, both on the plains and in the mountains this most ancient stratum preserved the Iranian language.

This is corroborated by the fact that the most ancient finds of the brachycephalic Europeoid race were preserved in Bactrian territory, at the Tup-Khon site in the Hissar Range [5].

The present-day Tadzhik language was preceded in Khwarizm, Sogdiana and Bactria by the eastern branch of ancient Iranian languages which was represented by the Khwarizmian, Sogdian and Bactrian languages. It was only in the eighth century that the Tadzhik language--the so-called "Dari"--appeared in Bactria, in Balkh and Khuttal (the present Kulyab Oblast). It was during the tenth century that side by side with the Sogdian language the "Dari" literary language, the forerunner of the present Tadzhik language, began to spread in Bukhara [54, p. 224].

On the plains of the Central Asiatic Interfluvial Region the Tadzhik language forced out the ancient Iranian languages, only to be displaced in subsequent centuries by the Turkic language. However, in the isolated, closed and almost inaccessible valleys of the northern and southern Pamir-Alai, remnants of the old Iranian languages did survive. In the north, the Yagnobi language is such a remnant, which is very close to ancient Sogdian, and in the south the Rushan, Shugnan[2] and Vakhan (Wakhan) languages. It is possible that they are close to Old Bactrian, since no evidence of the latter has been found. The entire modern population of the Pamir-Alai may be divided into three groups:

1. Northern, which includes the Yagnobis and the Tadzhiks of the Upper Zarafshan Basin.

2. Southern, which includes the Tadzhiks of Southern Tadzhikistan and Iranian tribes of the southern Pamir region.

3. Central, which includes the Tadzhiks of Darvaz, Karategin and Central Tadzhikistan.

2. Isolation of the Tadzhiks of the Headwaters of the Zarafshan and of the Yagnobis from the Plains of the Central Asiatic Interfluvial Region

The Upper Zarafshan, which has its source in the mighty Zarafshan glacier, flows through a fairly wide valley flanked by high ranges covered with eternal snow, namely the Turkestan and the Zarafshan ranges. The uppermost part of this valley is called Matcha; the middle part, approximately where the Fan Darya joins the Zarafshan River, is called Falgar.

The most used route from the plains of ancient Sogdiana (the present Samarkand Oblast) to the headwaters of Zarafshan, to Falgar and Matcha, runs along the course of this river, which is closed at the point of its entry into the plain by a narrow gorge which is difficult to pass.

From the Ferghana Valley, the routes to Falgar and Matcha lead over the Turkestan Range across the Shakhristan, Oburdon, Kyrk-Kaz, Matcha, and other passes. The ancient Iranian-speaking population of Sogdiana and Davan [Ta Yüan] (Ferghana) most probably used these routes. From here these peoples penetrated the gorge of the Yagnob Darya partly over the passes of the Zarafshan Range, partly through the gorge of the Fan Darya, the left bank tributary of the Zarafshan (Map 1).

The Fan Darya was until recently "famous" for its precipices and artificial overhangs[3] (ovringi) which consisted of poles set into the steep cliffs of the river banks. It was significant that at the entry to the gorge the following inscription in the Tadzhik language was cut into the rock: "Traveler! There is only one step from you to the grave! Be as careful as the tear drop on the eyelid" [97, p. 93].

At the time of our Expedition in 1936 the precipitous overhangs on the Fan Darya had disappeared. Soviet engineers during the late thirties had built along the river bank a road which connected Stalinabad with the Ferghana Valley over the Anzob (Hissar Range) and Shakhristan (Turkestan Range) passes. Photographs 1, 1a, 2, 3 show the road along the Fan Darya as it existed in 1936.

The Fan Darya cuts the Zarafshan Range from south to north. South of the Zarafshan Range it is formed by the confluence of two turbulent mountain streams, the Iskander Darya which flows from Iskander Kul, and the Yagnob Darya which flows from east to west through the defile formed by the Zarafshan and the Hissar ranges.

The inhabitants on the middle and upper course of the Yagnob Darya are particularly isolated. Any traveler who ascends from the settlements of Anzob and Takfon along the Yagnob Darya will clearly perceive the boundaries of the geographic isolation of the Yagnobis.

During his travel to Yagnob in 1906, N.G. Mallitskii noted that below the settlement of Khshartob, situated on the right bank of the Yagnob Darya, this river cuts a narrow gorge through the massif which connects the Hissar and Zarafshan ranges [96]. During our 1936 Expedition we ascended, in order to bypass the precipices on both banks of the turbulent Yagnob Darya, along the left bank high up to the pass which crosses the massif connecting the Zarafshan (Zeravshanskiy Khrebet) and Hissar ranges described by Mallitskii. The trail leading to this pass follows along the precipice. From the top of the pass, the view opens onto the highland part of the Yagnob country, closed in between the Hissar and Zarafshan ranges. From here the path descends steeply to a small bridge across the Yagnob Darya. Here, the

traveler finds himself suddenly amidst another kind of forbidding landscape. In places the Yagnob Darya cuts through the spurs of the mountain ranges. In such places the banks are perpendicular (Photo. 4). Much more frequently, however, the banks form terraces on which are scattered very small settlements with 15-20 dwellings (Photo. 5). There are no trees. Only black currant bushes grow on the river banks. Dwarfed willows are planted among the dwellings. Dried dung is often used for fuel. Wheat seldom matures. Barley, mulk and mushang, which resemble peas, are sown. Mallitskii described this part of the Yagnob Darya, situated 2500 – 2600 m. above sea level under the name of Middle Yagnob. The highest eastern part of the valley with a still bleaker landscape was called by Mallitskii the Upper Yagnob. There are no permanent dwellings here; this part of the valley is used in summer for pasture. Much less forbidding is the lower part of the Yagnob Valley, leading from the above-described pass to the Middle Yagnob, the confluence of the Yagnob Darya and Fan Darya [96]. In the Lower Yagnob are located the settlements of Takfon and Anzob inhabited by Tadzhiks.

The population of the Middle Yagnob speaks a special language, which neither the Tadzhiks nor the Uzbeks understand. It is this population of the Middle Yagnob, numbering in 1934 only about 2000 men, women and children [90], which is known under the name of Yagnobtsi in Russian; their own name for themselves is Yagnobi.

3. Historical Outline of the Investigations of the Yagnobi and of Their Language. The Yagnobi Language as a Remnant of the Sogdian Language

Yagnob was first mentioned by Georges de Meyendorff [Egor Fedorovich Meiendorf], a Russian Army officer, who in 1820 traveled to Bukhara as a staff member of the Russian diplomatic mission. Meyendorff published a very interesting description of his travels in French [127]. The late, well-known bibliographer of Central Asia, E.K. Betger, translated this work which is of great importance for the history of Central Asia as well as for the history of its exploration. However, this translation has not been published. Meyendorff merely mentions Yagnob and Matcha as "villages" situated "somewhere to the north (?) of Kokand."

The Yagnobi were first mentioned as a people speaking some kind of a language of their own, which was not understood at all either by Tadzhiks or by the Turki, by Lehmann, who traveled during 1841-42 in Bukhara as a member of a Russian expedition, invited by the Emir of Bukhara to prospect auriferous sands in some districts of the Khanate. The members of the expedition, Lieutenant Bogoslovskii, geographer [Nicholas de] Khanikov [Nikolai Khanykov], and the naturalist Lehmann, went up the Zarafshan through Piandzhikent to Varziminor [now Zakhmatabad], from which place they proceeded through the Fan Darya gorges to Takfon, and then returned to Bukhara. Lehmann mentions in his notes that east of Takfon the people speak a separate language which the Tadzhiks do not understand at all. Lehmann's records were published in German in St. Petersburg by Academician Helmersen [126, "On the Yagnobi language," p. 42].

In 1870 A.P. Fedchenko participated in the expedition of General Abramov. He visited Iskander Kul and ascended the Yagnob to Takfon. Fedchenko remarked in his notes that, "at the headwaters of the Yagnob[4] one encounters the remnants of a separate people which speaks a language of its own, the relationship of which with other languages has not been fully established" [104, p. 50].

The ethnographer A. Kun participated in the same expedition of General Abramov in 1870. He traveled up the Yagnob as far as Merkhtumain. Three Yagnobi accompanied him to Samarkand, where they remained a month until their return home. Nobody in the bazaar could understand their language [89]. The priority in establish-

ing the relationship of the Yagnobi language with the Sogdian language belongs to Kun. He was the first to suggest that the Yagnobi are the descendants of the Sogdians [29, p. 49]. He also published three photographs of Yagnobis [103, table 20]. The "Yagnobi type," somewhat different from the Tadzhik, is clear in these photographs.

A. Grebenkin published in 1872 a detailed description of the headwaters of the Zarafshan in the "Turkestanskie Vedomosti" [Turkestan Intelligencer] [86]. He wrote that the Tadzhik language is spoken throughout this mountain country "with the exception of Yagnop," [sic] where people speak some other language. Grebenkin called this language "Dzhugi" [86, No. 23].

In 1874 Sh. Akimbetev crossed on foot from Matcha [Pass] to the headwaters of Yagnob. He kept a record of Yagnobi words and noted even some grammatical peculiarities [80].

In 1876 F. Korotkov reached Iskander Kul and Yagnob at the headwaters of the Zarafshan. He also noted that the Yagnobi spoke a mountain dialect of their own [95].

The French traveler, [Charles de] Ujfalvy, visited the headwaters of the Zarafshan in 1878. Ujfalvy reported, evidently according to information from Tadzhiks, that the Yagnobis did not understand the Tadzhik language [135, p. 14]. Much later, he published a special study of the Yagnobi language [136]. This article had an introduction by Girard de Real (Russ. Zhirar de Rial) in which it was pointed out that Ujfalvy did not use his own material but that of Akimbetev who, as indicated above, collected material on the grammar and for a dictionary of the Yagnobi language. Girard de Real remarks that in grammatical structure Yagnobi belongs among Indo-European languages, while its vocabulary is close to Iranian.

In Ujfalvy's study we find the reproduction of a letter of the eminent philologist, F. Müller, who, on the basis of Akimbetev's material, attributes the Yagnobi language directly to the Iranian group.

Thus, even the earliest accounts and casual observations of Russian travelers could not but attract the attention of scientists to the Yagnobi, while the material collected by Akimbetev enabled philologists to regard the Yagnobi language which is spoken by several hundred individuals as a separate language of the Iranian group.

The news about a "people" living in one of the most inaccessible gorges of the Pamir-Alai region, numbering only a few hundred individuals, and speaking some separate language of the Iranian group, induced the French scientist, G. Capus, to undertake a special trip to Yagnob. Capus published a description of his trip [115], together with detailed summaries of the travels of his predecessors, Lehmann in 1841, and particularly Kun and the Fedchenkos, husband and wife, during the Iskander Kul Expedition of 1870.

On June 21, 1881, Capus penetrated the Yagnob Gorge and described the difficulties of the road along the precipices of the Fan Darya. He recorded the elevations above sea level of Takfon (1890 m.) and Anzob (2000 m.). Capus proceeded from Takfon to Khshartob, which he regarded as the boundary between the Yagnobis and the Tadzhiks. Capus notes that the Yagnobi language was being progressively displaced by the Tadzhik language. At the time of Akimbetev's travels (1874), there were only 1420 persons who spoke Yagnobi. Capus stresses that on the basis of Akimbetev's material, F. Müller regarded the Yagnobi as a very ancient language of the Iranian group.

In 1905 the well-known ethnographer and geographer N.G. Mallitskii undertook a journey to the Upper Zarafshan. The results of his investigations were published much later [96].

At the very beginning of the twentieth century, [Sir Aurel] Stein's Expeditions discovered in Eastern Turkestan the first Sogdian documents [112, p. 445 and 469].

The discovery of these documents determined definitively the exact position of the Yagnobi language within the language system of the Iranian group. The Yagnobi language proved to be very close to the Sogdian. Bartold unconditionally calls the Yagnobi language "the only representative of the new Sogdian language" [105, p. 30].

The determination of the closeness of the Yagnobi language to the Sogdian aroused anew the interest of Western European scientists in the Yagnobi.

The French Academy, which was engaged in studies of historical documents, in 1913 sent its member [Robert] Gauthiot to Yagnob with instructions to study the Yagnobi language as thoroughly as possible and to determine how close it is to the Sogdian language.

In the same year [1913] the Heidelberg Academy of Sciences coöperated in a trip of Heinrich Junker, Lecturer of the Hessen [i.e., Darmstadt Technische Hochschule?] University, to Yagnob. He communicated with Gauthiot suggesting coöperation. The joint travels of Junker and Gauthiot to Yagnob were completed exactly a year before the outbreak of World War I. However, their results were published separately, each in his own country.

Gauthiot, in a publication of the French Academy [118], identified in the Yagnobi language two dialects, the eastern and the western. He fully agreed with the viewpoint of other scientists in regard to the closeness of the Yagnobi language to the Sogdian. The author placed the Yagnobi language close to mediaeval Sogdian.

Heinrich Junker described his investigations in two later works. One of them was in the nature of general impressions on the backwardness of the Yagnobis [121]. But the second one was virtually a monographic description of the Yagnob Valley and the Yagnobis [122]. The first part of this study contains a general description of the Upper Zarafshan basin; the second presents a very detailed exposition of all preceding investigations, beginning with Meyendorff, Lehmann, Akimbetev and including those of Mallitskii. Junker deals particularly in detail with Mallitskii's investigations and with the unpublished materials of Kun (1870). These materials are deposited in the Academy of Sciences in Leningrad; at the time, they were placed at the disposal of Junker by Academician Zaleman. In the third part are listed in detail all settlements (kishlaks), whose inhabitants speak the Yagnobi language. Attached to Junker's study is a detailed map, which has not yet lost its validity, of the languages spoken in the Yagnob Valley.

After the end of World War I and of the Civil War, the studies on the Yagnobis were resumed. In 1927 the Society for the Study of Tadzhikistan and of Iranian peoples beyond its boundaries dispatched an ethnographic expedition to Yagnob led by M.S. Andreev, eminent ethnographer of Central Asia [82].

This expedition recorded a great number of texts in the Yagnobi language as well as forty Yagnobi folk tales. In Andreev's opinion, there were 1000-1200 persons who spoke the Yagnobi language. In spite of the small number of inhabitants, who occupy a territory extending a few dozen miles along the middle course of the Yagnob Darya, the Yagnobi language is divided into four dialects: (a) on the "shady side" of the river; (b) on the "sunny side"; (c) on the upper reaches of the river; and (d) on the shores of a lake situated at the headwaters of the Yagnob Darya. Characteristically, the speakers of each dialect consider the other dialects as crude and corrupted. They would say of another dialect contemptuously: "Their language has no brains [sense]; it is an empty language" [82, p. 165].

The members of the expedition observed the survivals of some very ancient customs among the Yagnobis. For example, if the bridegroom had departed and could not be present at the wedding, the ceremony was nevertheless carried out with the bridegroom's knife. Andreev notes that this is a very ancient custom among Aryan tribes; it exists in Hissar, in Matcha and in South India. The Yagnobis believe in the harvest spirit or demon. One has to speed up the harvest "because one should not

prolong the agony of the dying field." There is an elder in the settlement (kishlak) called the "grandfather farmer" who plows the first furrow, followed then by the others.

Thus, the enclosed Yagnob Valley preserved not only the ancient Sogdian language but also very ancient customs.

Toward the end of the twenties there already existed abundant material on the Yagnobi language. However, as before, the Sogdian language was known only by the documents found far beyond the limits of Sogdiana, in the Sogdian colonies of Eastern Turkestan.

Of world-wide significance was the discovery of a whole archive of Sogdian documents at the confluence of the Fan Darya and the Zarafshan, near Zakhmatabad [formerly Varziminor], where there are ruins of a fortress which local inhabitants called Mug-Kala ("Fortress or Castle of the Magi").

In the spring of 1932 the Tadzhik shepherd, Dzhur Ali Makhmad Ali, an inhabitant of the nearby kishlak of Khaidarabad [Haidarabad], found in a chamber of this castle a willow basket which contained some document written in a strange script on a peculiar yellowish paper. The shepherd had evidently heard already that one should not discard all kinds of "ancient things." The document was forwarded to Stalinabad [formerly Dyushambe] where it was photographed. The photograph was then sent to the Academy of Sciences in Leningrad to the expert on Iran, A.A. Freiman.

On the basis of this photograph, A.A. Freiman was able "to determine beyond doubt that the manuscript is a document written in Sogdian cursive writing in the Sogdian language" [76, p. 7].

A systematic investigation of the "Castle of the Magi" [Mug-Kala] took place. Subsequently, additional 81 [i.e., 80] documents were found, 25 of them written on thin Kulyab paper, 32 on leather, and 23 on wooden sticks. Two documents on leather were in Arabic, 8 in Chinese, the remainder in Sogdian [76, p. 14].

The study of the two Arabic documents permitted I.IU. and V.A. Krachkovskii to establish definitely that all these documents represent an archive of the business correspondence of one Divastig, who fled from Samarkand into the mountains during the period of the Arab invasion. Krachkovskii was able to determine that the entire archive dates from the years 718-19 [76, p. 54]. Thus, the investigators came suddenly into the possession of extensive material for the study of ancient Sogdian. This material confirmed fully the closeness of the Yagnobi language to Sogdian.

4. The Problem of Dating Sogdian Settlement of the Upper Zarafshan Basin and the Displacement of Sogdian by the Tadzhik Language

We were unable to discover in historical sources any indication of how long ago the migrants from Sogdiana had settled along the headwaters of the Zarafshan with its tributary, the Fan Darya. In any event, this region had been lived in by people long before Divastig, who in the documents mentioned is styled "King of Sogdiana, Lord of Samarkand" [76, p. 12]. He left his archive in the "Castle of the Magi" near modern Zakhmatabad. The Magi (Mugi) were the priests of the pre-Moslem, Zoroastrian religion of Central Asia. [In the words of a recent history of Uzbekistan] "there can be found at present in the region of the Upper Zarafshan and its tributaries, the Fan Darya, Yagnob Darya, Iskander Darya, dozens of ruined castles similar to the Kala-i-Mug [Mug-Kala], some of them bearing the same name. In ancient times and during the early Middle Ages, this mountain region was truly a country of castles. Its population, which spoke Sogdian in the past, now speaks the Tadzhik language" [54, p. 146].

The antiquity of the settlements in the Upper Zarafshan basin is indicated by

some survivals of primeval communism in the relationships which existed among the Yagnobi until recently. The ethnographer A.N. Kandaurov [90], who traveled in 1934 to Yagnob, mentions some of them as follows: (a) presence of communal summer pastures for cattle and for haymaking; (b) communal mills; and (c) collection of taxes from the whole community, which was also noted by Kun. In addition to raising cattle, the Yagnobi also practise agriculture. They sow mainly barley and special varieties of fabaceous plants such as mulk and mushang. The Yagnobis believe in a heavenly protector, whom they call "The Grandfather of Agriculture." In the Yagnobi kishlaks, as well as among the Mountain Tadzhiks, there is a communal home, a kind of a clubhouse called "Mikhmon-Khona" (= guest house) or "Alai-Khona" (= home of fire or hearth) among the Tadzhiks. The original dwellings represent large, low, one-story structures where 8-10 families, related by blood on the male side, live under one roof (Photo. 6). Such original "multiple apartment houses" with a common roof are called by the Yagnobis "the Large Roof." Kandaurov regards the common dwelling of several families related by blood under one roof as a survival of the large patriarchal family.

As to the time when the Sogdian language was displaced by the Tadzhik, it can be said that at the headwaters of the Zarafshan this process began later than on the plains of Sogdiana, and even now it is not completed, as witnessed by the survival of the unique living "new Sogdian" language, as it is called by V.V. Bartold, i.e., the Yagnobi language [105, p. 30].

During our 1936 Expedition to the kishlak of Khshartob, situated at the foot of the pass leading from the Lower Yagnob to the Middle Yagnob, we found that it was the last kishlak where Tadzhik was spoken and the Yagnobi speech was not understood. In the kishlaks situated further up the Yagnob Darya, the "native" language was already Yagnobi, although the majority of the male population also spoke Tadzhik. Most of the women, however, spoke only Yagnobi. The latter served as the language of daily life, at home, while Tadzhik became the language of "international relations."

Capus, who made the trip to Yagnob in 1882, also considered the Khshartob kishlak as the boundary between the Tadzhik and Yagnobi languages. Further up only the Yagnobi language was spoken [115].

However, during the Iskander Kul Expedition in 1870, Kun noted that the Yagnobi language was still known in Khshartob. During Akimbetev's trip in 1881, the Yagnobi language was still spoken in the uppermost kishlaks of the Yagnob, in Kirionti and Dekhi-Kalon, but Mallitskii found in 1906 that the Yagnobi language in these settlements was already displaced by Tadzhik [96, p. 173].

During the joint travels of Heinrich Junker and Robert Gauthiot in 1913, the western limit of the Yagnobi language was no longer Khshartob but Varsaut, where they spoke Yagnobi as well as Tadzhik [122, p. 115]. The eastern limit was the kishlak of Dekhi-Kalon, whose population was bilingual.

Thus, the displacement of the Yagnobi language by Tadzhik took place from the west as well as from the east.

The process of displacement of the Sogdian language by Tadzhik proceeded from Sogdiana up the Zarafshan. The lower settlements probably accepted Tadzhik earlier. However, the official language of Sogdiana was the Sogdian language (as proved by Divastig's archive) not only during the period of Arab conquests in the eighth century but also during a later period. In the tenth century, Sogdian was the spoken language in Bukhara, while the "ancestor" of present-day Tadzhik, the so-called "Dari" language, played the part of the literary language [54, p. 224].

5. Distinctions of the Anthropological Type of the Yagnobi from the Type of Their Neighbors, the Mountain Tadzhiks

(For quantitative and qualitative characters see tables)

During the 1936 Expedition, I succeeded in recording anthropological data not only on the Yagnobi, but also on the neighboring Tadzhiks, who live along the Upper Zarafshan, the Fan Darya, and the lower course of the Yagnob Darya. During 1930 V.K. IAsevich studied the easternmost group of Tadzhiks of the Upper Zarafshan, the Tadzhiks of Matcha. In 1936 I examined Tadzhiks living nearest to the Yagnobi, those of Khshartob, Takfon, situated on the right bank of the lower Yagnob Darya, and of Zakhmatabad, located at the confluence of the Fan Darya and the Zarafshan. All these Tadzhiks of the Upper Zarafshan Basin are typical representatives of the Europeoid race of the Central Asiatic Interfluvial Region.

The Yagnobi represent a special variant of this type. Among them one encounters far more frequently than among the Tadzhiks individuals with Anterior Asia (Armenoid) features. In table 13 the Yagnobis are compared with neighboring Tadzhiks of the Upper Zarafshan and with typical representatives of the Anterior Asia (Armenoid) race, the Central Asiatic Jews. As indicated in part I, chapter IV, the Anterior Asia brachycephalic race is distinguished from that of the Central Asiatic Interfluvial Region by a number of taxonomically important characters: the Anterior Asia (Armenoid) race has a more abundant hair cover, a higher nasal bridge, higher nostrils, a less flattened transverse profile of the nasal ridge, a more convex nose, and a more vertical position of the nasal walls. In all these characters, the Yagnobis occupy an intermediate position between the Tadzhiks and the Jews.

As mentioned more than once before, a certain amount of subjectivity is unavoidable in the determination of descriptive characters. In this case, the reliability of the data is vouchsafed by the fact that the observations of descriptive characters were carried out by the same person, namely myself, with the exception of the Matcha Tadzhiks who were studied by V.K. IAsevich. However, IAsevich and I undertook jointly three expeditions. Since we had developed close standards for the determination of descriptive characters, our results were directly comparable (table 13).

At the same time, one cannot overlook the fact that the distinctions of the Europeoids of Anterior Asia from Europeoids of Central Asia tend to go in the same direction as the "distinctions of Europeoids from Mongoloids"[5]; the epicanthic fold disappears, the tertiary hair cover increases, facial flatness decreases, nasal root and nostrils become higher, and nasal walls are less inclined.

It is possible that in antiquity the race of the Central Asiatic Interfluvial Region was very close to the Anterior Asia (Armenoid) race, and that the distinctions which one now observes are the result of the Mongolization of the Europeoids of the Central Asiatic Interfluvial Region.

It is possible that the Anterior Asia character of the Yagnobi was preserved to a high degree due to their isolation, for many centuries, in the Yagnob Valley which made it possible for them to escape Mongolization completely.

III. ETHNOGENESIS OF IRANIAN TRIBES OF THE WESTERN PAMIRS ACCORDING TO LINGUISTICS AND COMPARATIVE ANTHROPOLOGY

1. Iranian Tribes of the Western Pamirs[1]

The Pamirs are the high altitude mountainous region situated at the junction of the world's highest mountain systems, the Hindu Kush, the Himalayas, the Karakorum, Kuen Lun and Tien Shan. According to topography, general landscape and climate, the Pamirs are divided into the Eastern and Western Pamirs.

The northeastern part, the so-called Eastern Pamirs, represents a plateau, or, more exactly, a system of very wide, flat valleys, separated by low mountain chains. However, in general, climatically as well as ecologically, it represents a highland desert-tundra, as even the valleys of this plateau have an elevation of 3500-4500 m. above sea level.

To the south and west of this plateau extend very high, snow-capped mountain ranges, the Vakhan, Shugnan, Rushan and Yazgulem (IAzgulem or Yazhulam) ranges, which constitute watersheds between the tributaries of the Piandzh, the Shakhdar, Gunt, Bartang and Yazgulem rivers.

As the narrow valleys and gorges through which the tributaries run south and southwestward toward the Piandzh, descend to lower elevation, the climate becomes milder, the vegetation more abundant, and the population denser.

The whole system of these ranges, which enclose the tributaries of the Piandzh (Pyandzh), as well as the Piandzh Valley itself, is bounded on the north and northeast by the precipitous slopes of the above-named mountain chains. To the south and southwest, the country, delimited by no less steep slopes of the Hindu Kush system, is called the Western Pamirs.

People settled in these locations wherever agriculture was possible, on river terraces, and alluvial cones of mountain streams, along the Piandzh and its tributaries.

Territorially, the population is separated into groups confined in mountain gorges It is these small groups, which are separated from each other by mountain chains, and which speak different independent dialects of the Iranian linguistic branch, that constitute those Iranian tribes in which we are interested.

2. Attribution of the Tribes of the Western Pamirs to the Iranian Linguistic Branch and Their Dialectic Subdivision

As is known, the Indo-European or "Aryan" languages of Asia are divided into two basic groups: the Iranian; and the Indo-Aryan. Iranian languages are spoken in Iran and in Central Asia, Indo-Aryan languages in India. The Pamirs are located at the junction of Indo-European or Aryan tribes: south of this range, beyond the Hindu Kush, the languages spoken are not Iranian but Indo-Aryan.

However, the fact that the tribes of the Western Pamirs belong to the Iranian linguistic branch is firmly established by linguists.

The basic work, explaining the principal features of the Piandzh languages, determining their position in a number of language families and groups, is by [Wilhelm] Tomaschek, who published the "Pamir dialects" more than half a century ago [134]. He processed scientifically the material on the Vakhan [Wakhi], Shugnan [Shughni] and Sarykol [Sariqoli] languages which was collected in the seventies of

the past century by the British traveler Shaw. At the time when "Gal'cha" [Ghalcha, originally Garcha] became known, the speech of the Pamirs was not understood by the Bukhara and Samarkand Tadzhiks who speak a language akin to "Farsi" [Persian or Iranian]. The term "gal'cha" is very indefinite. It is used in general to denote the "Mountain Tadzhiks" in contrast to the "Plains Tadzhiks." According to Bartold, the origin of the term "gal'cha" is as follows: Arab geographers called the country situated on the Upper Murghab River Garch or Garchistan, and the inhabitants of this country "Garcha." Simultaneously, this term was also used for the inhabitants of the Upper Zarafshan. According to Tomaschek, this term is derived from the ancient Bactrian word gar = mountain. Subsequently, "garcha" was pronounced "gal'cha," and was used to designate the "Aryan population of the headwaters of the Amu Darya," i.e., for the Piandzh tribes in whom we are interested [33, p. 27].

Tomaschek determined that although the speech of the tribes included in the general designation "Pamir gal'cha" is not understood by the Tadzhiks of the plains, who speak a language close to "Farsi," nevertheless, together with the Tadzhik language it must be related to the Iranian branch of Indo-European languages [134, p. 735].

Subsequent comparative linguistic investigations merely served to confirm definitely this basic position. In particular, one of the first investigators of the Pamirs, the geologist D.L. Ivanov, compiled during his travels in the Pamirs (1883) a Russian-Shugnani dictionary. Academician Zaleman, who regarded the material collected by Ivanov as "precious," processed and published it [108]. Zaleman, as well as Tomaschek, regarded the languages of the Upper Piandzh as the easternmost dialects of the Iranian group. "They are spoken by various Iranian tribes, the so-called Gal'cha, who were driven by fate into the mountain gorges near the headwaters of the Amu Darya and its tributaries" [108, p. 27].

The German linguist W. Geiger arrived at exactly the same conclusions [119]. He believed it to be beyond doubt that the "Pamir dialects" were merely the extreme northeastern branch of the Iranian language group [119, p. 290]. Geiger also emphasized that it was possible to regard the Pamir as an integral dialect of a single language group. This was deduced not only territorially, on the basis of their geographic relation to the headwaters of the Amu Darya, but also from the purely linguistic point of view since a historically evolved unity was represented.

At the same time, the Pamir group differs so greatly in its vocabulary from the Tadzhik language that its speech is not understood by the Tadzhiks. In the final analysis, examining the Iranian tribes of the Western Pamirs from the purely linguistic viewpoint, Geiger concluded that they were the descendants of those Iranian tribes who lived in eastern Iran (modern Afghanistan) during the period of "Moslem" (Arab) conquest (seventh-eighth centuries A.D.). In his opinion, the Rushans [Roshani], Shugnans [Shughni], Vakhans [Wakhi] and others were formed from splinter groups of tribes which retreated to the mountains in order to avoid subjugation by the conquerors and acceptance of a new religion--Islam. The latter spread in the Piandzh area later than in other parts of Central Asia. For this reason, vestiges of the ancient Iranian religion, Zoroastrianism, have been preserved among the Pamir Iranians up to the present time.

Thus, the Western Pamirs, which is open geographically ("open" only very relatively) only in the direction of Iran, is settled by tribes which, according to the unanimous admission of linguists, most be attributed to the extreme northeastern branch of Iranians.

The same basic conclusions determining the linguistic position of the tribes of the Western Pamirs were also reached, in addition to the above-cited authors, by a number of other investigators, i.e., Cunningham,[2] Shaw,[3] Drew,[4] and Biddulph[5] [31, p. 30].

The Iranian linguistic group of the Pamirs is in turn differentiated into a number of dialects.

The very small tribes of the Western Pamirs, enclosed in narrow gorges of the Piandzh and its tributaries, live in natural isolation; they are separated from each other by high, snow-capped mountains and by glaciers of mountain ranges that can be traversed only in a few places over very difficult passes. The population living on almost every one of the Piandzh tributaries, numbering only a few thousands and even hundreds of individuals, speaks its particular language. Linguists, it is true, regard these languages not as separate "languages," but only as "dialects." Nevertheless, these dialects are often so different from each other that in a number of cases two neighboring tribes do not understand each other.

In order to illustrate the isolation of the various tribes enclosed between the Vanch, Yazgulem, Rushan, Shugnan, Vakhan and Hindu Kush ranges, we limit ourselves, in the absence of an ethnic map of the Pamirs, to the use of a "schematic sketch of the peoples of the Pamirs," taken from Arved Schultz[6] [131]. We have inserted only a few revisions and additions,[7] as for instance the languages "Sanglich" (Sanglichi) and "Mundzhan" (Mundzhani or Munjani) which are spoken by the inhabitants of Sanglich (Sanglish) and Mundzhan (Munjan) situated to the southeast of Zebak, and the "Yidghah" language which is spoken on this side of the Hindu Kush, on the southern end of the Dro Pass in Indchigan [119, p. 291; 120, p. 6]. Unfortunately, we could not find that which is for us very important, namely, a complete classification of Pamir dialects with indicated relationship among the individual dialects, and their position among several other Iranian languages. Apparently, such a classification remains a task for the future, which will be possible to achieve only after a more profound investigation of the entire linguistic variety of the Pamir region and adjacent areas by linguists. Nevertheless, in comparing the conclusions obtained by various authors, similarities and distinctions become apparent between the separate Pamir dialects. We are citing below those data which we succeeded in finding among various authors.

To the northwest of the Western Pamirs, in the valley of the Yazgulem River, enclosed by the Vanch and Yazgulem ranges, live the Yazgulem people. Separated from them by the Yazgulem Range, the inhabitants of the Bartang defile do not understand the Yazgulem speech, although the Yazgulem language is closer to the Shugnan and Rushan than to the Vakhan and Ishkashim (Ishkashmi) dialects [120, p. 7]. It should be noted, however, that the Yazgulem speech survived only in part since a large portion of the population of the Yazgulem Valley had already adopted the Tadzhik language. Yet since the inhabitants of some kishlaks continue to speak Yazgulem, their nearest neighbors, the Bartangs, use the Tadzhik language in their relations with them [87, p. 104], which, as we observed also in other parts of the Pamirs, plays here the role of an "international language." Unfortunately, I did not succeed in finding Yazgulems in Shugnan, which is natural as the only possible communication between Yazgulem and Rushan is either the very difficult Yodudi Pass (4250 m.) over the Rushan Range, or the very dangerous escarpments along the banks of the Piandzh River which were flooded during our stay in Shugnan. We mention here the Yazgulems for the purpose of emphasizing the century-old isolation of the tribes of the Iranian Pamirs which produced their linguistic fragmentation.

The nearest neighbors of the Yazgulems, the Bartangs, consider themselves as a separate tribe and define as follows their own territory, which according to them extends along the course of the Bartang River from Basit kishlak in its upper course to Shundzhan (Shunjan) in its lower course. Thus, Shundzhan is the boundary between the Bartangs and the Rushans. This tribal boundary "fully coincides with the dialectical distinctions which, by the way, are not so significant as to prevent a person from Bartang from understanding a native of Rushan" [87, p. 104].

The Rushans occupy the estuary of the Bartang River, and also the Afghan and Soviet banks of the Piandzh in the section between the mouth of the Bartang and the Yazgulem Range.

Upstream along the Piandzh live their neighbors, the Shugnans, extending just about to the point where the river turns sharply north, and along its two tributaries, the Gunt and Shakhdar. The Shugnan language differs from the Rushan only in some dialectic peculiarities [119, p. 291]. In general, however, the Bartang, Rushan and Shugnan languages are so close to each other that they can be unified into one Rushan-Shugnan group [88].

The Sarykols belong to this same group. They are the easternmost Iranian tribe of the Pamirs and live beyond its limits in Sarykol. The closeness of the Sarykol and the Shugnan languages was already established by Tomaschek, who considered them as the eastern and western dialects of the Afghan language "Pushtu" [134, p. 742].

This placement of the Sarykol language in the Rushan-Shugnan group was fully confirmed by Geiger who included them in one common Shugnan-Sarykol group [119, p. 290].

However, the Sarykols are separated from the linguistically closest Shugnans by the Vakhans and Ishkashim, who speak their own language, i.e., Vakhan and Ishkashim (Ishkashmi), and who do not understand each other, nor the Sarykols or Shugnans. The Soviet and Afghan Ishkashim are situated along the banks of the Piandzh at the bend where it changes direction from west to north.

Tomaschek was as yet unaware of the existence of the Ishkashim language; that investigator did not mention it. On the basis of subsequent investigations, A.A. Bobrinskii noted that although the Ishkashim did not understand the Vakhans, their language was nevertheless closer to the Vakhan than to the Shugnan [83, p. 12]. It seems that the Ishkashim language was regarded as highly mixed, composed of many linguistic elements; this was due to its geographic location at the crossroads leading from west to east--from Badakhshan to Eastern Turkestan--and from north to south--from the Eastern Pamirs to the Western Pamirs, Chitral and India [83, p. 12].

Grierson, devoting a special study to the Ishkashim, Zebak (Zebaki) and Yazgulem languages, defines more closely the position of Ishkashim speech among several other Pamir dialects. In Grierson's opinion, the Ishkashim language leans toward those dialects spoken beyond the Piandzh, that is, on the northern slopes of the Hindu Kush, in Zebak and Sanglich. For this reason, one must include the Zebaki, Sanglichi and Ishkashim dialects into one "Ishkashim" (Ishkashmi) group [120, pp. 3-4].

Grierson quotes [Sir Aurel] Stein, according to whom the Ishkashim and Zebak, which are geographically a single entity, have been always united politically as well. This whole area was administered by its own Emirs, who were dependent on Badakhshan. Such a situation had been recorded by Marco Polo, who passed through these countries in 1273-74 on his way from India to Mongolia, through Vakhan and the Pamirs [120, p. 5].

The Mundzhani (Munjani) language, which was studied by I.I. Zarubin [109], is, according to Grierson, related to a certain degree to the Ishkashim group as is "Yidghah," a dialect of the Mundzhani language, which is spoken beyond the Hindu Kush on the descending side of the Dro Pass, in the Chitral settlements of Leotkuh [commonly called Lut Kho] and Indchigan. The latter is mentioned by Geiger [119, p. 291]. "Yidghah" is the only Iranian language (if one disregards the Vakhan colonies in Chitral), which is spoken on the other side of the Hindu Kush, within the limits of British India, the Indo-European tribes of which do not belong to the Iranian but to Indo-Aryan tribal groups [120, p. 7]. The latter case is pointed out

also by Geiger, who calls Yidghah the only Iranian language spoken south of the Hindu Kush, and the Sarykol language the only one spoken east of the Pamirs [119, p. 291].

Thus, Grierson's investigations being the latest (1920) have established the fact that an Ishkashim group, consisting of the dialects: (1) the Ishkashmi; (2) the Zebaki; and (3) the Sanglichi, may be distinguished within the Pamir dialects. According to Grierson, (4) the Mundzhani and its variant, (5) the Yidghah, belong to the same group. However, I could not find in Zarubin's study, which is especially devoted to the Mundzhani language [109], any direct reference to the close relationship of this language to Grierson's Ishkashmi group, although Zarubin's study was published later (1927) than Grierson's work (1920) which was devoted to the Sanglichi, Zebaki, and Ishkashmi languages and not to the Mundzhani language. On the other hand, the closeness of the Mundhzani language to the Sanglichi of Grierson's Ishkashmi group had already been noted by Tomaschek, who maintains that the Mundzhani language is in many ways close to Sanglichi, and differs from the latter only in some peculiarities [134, p. 738].

However, be that as it may, Grierson's segregation of those dialects spoken by tribes which inhabit the northern and partly the southern [Yidghah] slopes of the Hindu Kush, into a separate group, confirms fully what Geiger noted twenty years earlier. Thus, Geiger already subdivided the Pamir dialects into two groups, the Piandzh and the Hindu Kush, although we do not know whether this subdivision was based on purely territorial considerations or on data of comparative linguistics.

In a brief summary with which he introduces his special linguistic study Geiger offers the following scheme, if not classification, of Pamir dialects:

Geiger's Scheme

1. Piandzh Dialects: Vakhan (Wakhi); Ishkashim (Ishkashmi) not studied at that time; Shugnan (Shughni); and Sarykol (Sariqoli). Very close to Shugnan is Rushan (Roshani) which differs from the former only in some dialectic peculiarities.
2. Hindu Kush Dialects: Sanglichi, Mundzhani, and Yidghah.

Judging from Grierson's later investigations, the above scheme ought to be changed only to the extent that the Ishkashmi language belongs to the Hindu Kush dialects and not to those of the Piandzh group.

To summarize, if one compares the earlier with the later conclusions arrived at by linguists, the following facts appear to be sufficiently firmly established:

To the north and west of the Western Pamirs, in Badakhshan, Darvaz, Kulyab, Karategin, and in other areas of the Pamir-Alai region (with the exception of Yagnob), the Iranians speak Tadzhik, i.e., a language which is close to "Farsi." On the other hand, among the tribes of the Pamir area, linguists have noted the following similarities and distinctions which determine the degree of closeness among the various dialects.

Judging by the opinion of linguists cited above, the Piandzh group may be subdivided into the following three sub-groups: (1) Shugnan-Sarykol, including the Bartang and Rushan dialects, (2) Vakhan, and (3) Yazgulem, which, however, leans more toward the Shugnan-Sarykol group than toward the Vakhan [20, p. 7]. The degree of the closeness of the Hindu Kush dialects as understood by Grierson has been discussed earlier.

The Vakhan dialect apparently occupies a more isolated position. In Bobrinskii's study we found to this effect a vaguely worded remark that the Vakhan language is closer to Ishkashim than to Shugnan [83].

A few more words regarding the languages of tribes separated from the Western

Pamirs by the Hindu Kush. As mentioned before, from among the Iranian dialects south of the Hindu Kush, only the Yidghah dialect which is close to the Mundzhani was found, while all others are related to the Indo-Aryan linguistic branch. At the same time, G. Buschan notes that linguists do not regard these languages as originating from classical Sanskrit; they discern their similarity with Iranian languages [114, p. 457].

Finally, south of the Hindu Kush, in Kanjut (Kandjut or Kandzhut) proper, there exists, completely separated from all Aryan languages (Iranian as well as Indo-Aryan), the Kanjut language which was studied by Zarubin [110]. The Kanjut language in turn has become differentiated into two dialects, the Vershik (? Wershiki) and the Burish; on the schematic map by Arved Schultz (Map 2), the Kanjut language is given as "Burishki."

Thus, in the closed gorges of the Western Pamirs and Hindu Kush, separate, very small, isolated groups speak Iranian and Indo-Aryan languages, which are in turn subdivided into a number of dialects so different from each other that frequently two neighboring tribes of one and the same linguistic branch do not understand each other. From among these tribes, we investigated only the Iranians of the Piandzh group.

3. Isolation of Individual Tribes and Reports on Their Numbers

In the countries of the Upper Amu Darya, which derive their names from the tribes or vice versa (Rushan, Shugnan, Ishkashim, Goran and Vakhan), the Piandzh River, which is the State boundary between the USSR and Afghanistan, is by no means an ethnic boundary. A map, which we adopted from Arved Schultz, properly illustrates the relationship. Since his travels in 1911, the State boundary has not changed here. The boundaries of Rushan, Shugnan, Goran, Ishkashim and Vakhan in Afghanistan are indicated on the Badakhshan map attached to the Afghan geographer Burhan-ud-Din Khan Khushkaki (Russ. Burakhan-ud-Din Khan-Kushkeki) [84, p. 88].

Our data also contain among the Rushans, Shugnans and Vakhans some natives of kishlaks located across the Piandzh, within the boundaries of Rushan, Shugnan, and Vakhan in Afghanistan.

Apart from their pronounced isolation and separateness, the result of the topography, and apart from their linguistic differences, all the tribes investigated are characterized by their extraordinary smallness. The most numerous among the tribes of the Western Pamirs are the Shugnans. Yet, according to the 1926 Census [of the USSR], the Shugnans numbered only 21,000 men, women and children within the entire Soviet Shugnan, i.e., both those living in the kishlaks on the right bank of the Piandzh, which is most densely populated, and in the widely separated, small kishlaks of the Shakhdar and Gunt valleys. According to the reference data given in the same 1926 Census, the Shugnans in Afghanistan were estimated at 6000 persons. Thus, the whole tribe inhabiting the Soviet, as well as the Afghan Shugnan, numbered about 27,000 persons. The Vakhans are even less numerous. According to the 1926 Census in Soviet Vakhan there were not more than 6000 persons. The Bol'shaia Sovetskaia Entsiklopediia, whence came the above figures, does not mention the number of the inhabitants of Afghan Vakhan. The above-mentioned Afghan investigator Burhan-ud-Din gives a list of 64 Vakhan settlements belonging to Afghanistan. These settlements, however, apparently have few inhabitants, and consist merely of a few mountaineer huts (saklias). Burhan-ud-Din writes: "In view of the fact that the dwellings of these settlements appear as balkhans, in which several families of relatives live together under one roof, the number of the inhabitants of Vakhan, one may think, does not exceed 3500" [84, p. 54].

Within the limits of the USSR, the Ishkashim and the Gorans are now united in one district, the Ishkashim raion of the Gorno-Badakhshan [Mountain-Badakhshan] Autonomous Oblast. The number of the inhabitants of this raion, i.e., the Gorans and the Ishkashim within the USSR, is only about 1000. For Afghanistan, the estimated number is 2000. Therefore, the total for both tribes does not exceed 3000, according to the Bol'shaia Sovetskaia Entsiklopediia.

Unfortunately, I did not succeed in finding data on the number of Rushans and Bartangs. In earlier material of the Central Statistical Office of the Turkestan Republic[8] are given data which refer to a period preceding the national delimitation of Central Asia [in 1924]. In this material, there is shown only a very approximate estimate for the whole "Tadzhik" population of the "Pamir region" amounting to 19,000 [102].

I.I. Zarubin gives in his "List of Peoples of the Turkestan Krai" (according to Agricultural Census, 1917) a summary figure of 18,017 individuals for all Iranian tribes of the Western Pamirs [88]. Burhan does not indicate the number of Rushans.

However, for our purpose it is sufficient to note that judging from the territory of the Rushan area, and by its small and dispersed kishlaks, the number of the Rushans must be much fewer than that of the Shugnans. The Bartangs are one of the smallest groups.

Meanwhile, the Bartangs represent a particularly graphic example of the isolation of individual tribes resulting from topographical conditions. The Bartang Gorge, hemmed in by the gigantic Yazgulem and Rushan ranges, was always the least accessible. The widely-scattered and very small kishlaks of the Bartangs are located here and there on river terraces and alluvial bends of mountain streams, and communication among the kishlaks was until recent years always connected with great danger. The Bartang Gorge is famous for its ovringi.[9] We did not see these overhangs or ledges in the Pamirs ourselves, as travel in the Pamirs is now improved by modern methods: over the mountain ranges by air, in river valleys by automobile on excellent roads. Communications between Rushan and Yazgulem were very difficult. The difficulties in traveling from Eastern Turkestan to Badakhshan over Vakhan are described by Aristov in various parts of his work [31].

4. Endogamy and Rareness of Mixed Marriages

The isolation of all these tribes undoubtedly lasted for centuries. Only now with the development of Socialist construction, means of communication are quickly established, new and safe trails between the kishlaks are laid, automobile routes built, and air transportation with the center of Tadzhikistan established. Thus, the centuries-old isolation in mountain gorges is being abolished. This centuries-old isolation, conditioned by the topography of the region, together with the continuous feuds among the tribes in the past, when these tribes from time to time entered into the composition of small, independent principalities or submitted to various foreign conquerors, prevented any inter-tribal mestization on any large scale. And only now, after the unification of all these tribes into one Autonomous Gorno-Badakhshan [Mountain-Badakhshan] Oblast (AGBO), and with Soviet education of the youth, does tribal isolation disappear more and more.

Mixed marriages were not condoned until recent years. Thus, Zarubin remarks that here, "the feeling of nationality is quite strong, particularly among the Shugnans and Vakhans, and they do not intermarry with neighbors" [87, p. 6].

However, a particularly glaring example in this respect are the Bartangs, the most geographically isolated group. Zarubin reports that among the Bartang families he did not find one single woman from another tribe. Not only that, but even marriages among non-relatives are disapproved. In most cases, marriages are with first, second or third cousins, such marriages being particularly approved by the Bartangs [87, p. 133].

Our material also contains an insignificantly small number of mixed marriages. In contrast to the Issyk Kul Kirghiz, who, during our 1924 Expedition, reported that they follow the exogamous custom according to which urug ichinda kyz almaide, this is, one does not choose a bride from within the tribe, and in general one marries a woman from far away [15]. In the Western Pamirs marriages are made, as a rule, between representatives of one and the same tribe, and most frequently among the inhabitants of the same kishlak. Mixed marriages occurred only in a few individual cases.

5. Centuries-Old Ties of the Western Pamirs with the Territory of Bactria (Afghanistan)

The territory inhabited by the Rushans, Bartangs, Shugnans, Ishkashim, Gorans and Vakhans appears as if it were enclosed from three sides: in the north by the system of the southwestern ranges of the Pamirs; in the south by the Hindu Kush wall; and in the east by the ranges of the Kuen Lun (Kunlan) and Altyn (Astin) Tagh, which here join the Pamir Plateau and separate the Iranian tribes from those of the Tarim Basin.

Because of this, the valleys of the Upper Piandzh and of its tributaries are open only toward the west, in the direction of Iran (in the geographical sense of that name). In geographical sequence, by Iran is understood "the high tableland forming an inner basin, and bordering in the north with the Caspian and Aral basins, in the south, west and east with the Indian Ocean basin between the Tigris and the Indus" [35, p. 6].

From the cultural-historical and ethno-linguistic points of view, the population of the Upper Amu Darya represents merely the extreme northeastern branch of Iran in the ethnic and linguistic sense of that name.

The closest geographical link, connecting the population of the Piandzh basin with all other peoples of the Iranian world, which throughout known history "occupied the vast territory from the Caucasus to the Pamirs" [108], is represented by present-day Afghanistan.

At the present time, Afghan Shugnan constitutes a special sub-district of the Badakhshan-Faizabad District of the Kattagan-Badakhshan Province of Afghanistan. The roads which lead from Badakhshan to the true headwaters of the Piandzh at Vakhan cross in Ishkashim. Vavilov and Bukinich give a description of the route from Kabul to Ishkashim [85, pp. 511-19]. In the past, however, "in the ancient times before the Badakhshans pre-empted the headwaters of the Piandzh, Shugnan, Ishkashim, Vakhan, and Zebak were governed by independent rulers" [81, p. 1]. But even this independence was more often only nominal. The history of the Upper Piandzh in the last few centuries is one of incessant struggle with the Badakhshans [81, p. 1]. Almost the entire historical section of the monograph by the Afghan scholar Burhan-ud-Din, is a description of these permanent wars.

"Furthermore, Badakshan is situated on the direct route from Balkh to the east, over the Pamirs to Eastern Turkestan" [33, p. 17].

This role of a link between East and West was retained by the Badakhshan Province of present-day Afghanistan throughout historical times. Thus, during the era of Arab geographers (nineth-tenth centuries), "the Badakhshan town of Dzherm [?Jerm] which exists even today, was called by the ninth century geographer Ibn Yakub, the easternmost town belonging to Balkh when coming in the direction from the Tibetan country" [33, p. 17]. It is true, one speaks in this case about the route leading into countries of the Tibetan region which lie south of the Hindu Kush (to Ladakh? or Baltistan?). However, as mentioned before, Bartold indicates that the very same Badakhshan lies on the route from Eastern Turkestan over the Pamirs.

It is probable that since time immemorial (as far as one can judge from historical data of the first centuries of our Era) through Vakhan, Ishkashim, Goran, Rushan and Badakhshan, led the so-called "southern route" from China to India, and to the ancient Iranian countries of Central Asia, into Bactria (now Afghanistan) and Parthia (now Khurasan) [31]. In the thirteenth century, the famous Venetian traveler Marco Polo passed through Vakhan on his way from India to Mongolia [71, p. 67]. It is true that this "southern route" from China into western countries was of much less importance than the roundabout "northern route" which we shall discuss below.

The difficulties of the "southern route," which interests us most, and which leads from Afghanistan (then Bactria) over the Pamirs to Eastern Turkestan, are described in the Chinese Annals of the first century of our Era, thus:

> In the west (of present-day Yarkand [Soche, Sinkiang]) are mountains with precipitous passes. Over the mountains leads a road extending over 400 li [135 miles]. On this road one encounters lateral bridges under which lie dreadful precipices. Travelers cross them, supporting each other by a rope, hence the name of the gorge.

Indicating the difficulties of this "southern route," the Chinese Annals report in another place:

> After traveling 2000 li (it is not said from which town), one reaches a hanging span, where falling cattle are smashed to pieces even before falling halfway into the gorge, while it is difficult even to locate any person who falls. It is impossible to describe the dangers in those precipitous mountains.

These two citations, which we quote from Aristov [31, No. 3, pp. 40, 42], were translated from the Chinese Annals by the well-known historian and Sinologist, IAkinf Bichurin. N. Aristov, in his work on the ethnic relations in the Pamirs, also utilized as primary sources translations of these Chinese Annals into French by Abel Remusat, and into English by Vilte.[10] In Remusat's translation, the following is said about the "southern route" from China into western countries:

> After traveling a distance of 2000 li (here, too, the starting point is not indicated), the obstacles are by far not over: wandering in the gorges, the travelers who had become separated from each other lose their last strength and cannot help one another any more. It is impossible to describe the dangers to which they expose themselves in a country covered by such inaccessible mountains and impassable gorges.

Because of these difficulties it is natural that the caravans from China, when traveling to the ancient Iranian countries of Central Asia and to India, preferred to take a detour, the "northern route" which connected Eastern Turkestan with Ferghana where it does today (Kashgar-Alai Valley – Taldyk Osh Pass). In the same study on ethnic relations in the Pamirs, Aristov indicates the northern route more clearly by mentioning the fact that more commonly the caravans did not travel through the Ferghana Valley but through the Alai Valley, and further passing Karategin turned south through present-day Stalinabad [formerly Dyushambe]. This is indirectly corroborated by the report that the Tadzhiks told Olufsen a legend [tradition] according to which the Chinese had once built a large stone bridge across the Vakhsh on the route from Kurgan Tyube to Kabadian [128, p. 43]. They even showed him the remnants of this bridge in the form of two stone piles on the opposite banks of the Vakhsh. In Olufsen's opinion silk from China, which was in

growing demand in Iran and Byzantium, was carried over this route. In remarking that the Persian monarchs considered Bactria (present Afghanistan) the "heart of Iran" [130, p. 2], Rawlinson points out its exceptional role as a market place situated in the middle between China, India and Western countries. In his opinion, it is indubitable that Chinese caravans carrying mainly silk, came through Bactria from the northeast [130, p. 69]. It is true that Rawlinson does not specify exactly whether he had in mind the "northern" or the "southern route" from China to Western countries.

Be that as it may, next to the northern route, the southern route also played, although insignificant, a centuries-old role in the relations of China with Iran through Eastern Turkestan and the Pamirs. Thus, in addition to the above authors, A.A. Bobrinskii also believes that "as a result of its geographic location, the Vakhan Valley served as a much preferred road for caravans going from Iran, Balkh and Peshawar through the Pamirs to Eastern Turkestan, to Yarkand, Kashgar and Khotan" [83, p. 7]. In this he refers to such an authoritative investigator of Eastern Turkestan as [Sir Aurel] Stein, who notes the significance of Vakhan as the road connecting East and West, and gives for this reason a detailed description of the passes leading from the Tarim Basin to Vakhan.

For us, however, it is even more important that the countries of the Upper Piandzh played not only the role of a link connecting Afghanistan (ancient Bactria) with the east, but depended on it also economically. Thus, Bobrinskii reports that as a result of its geographical position the entire valley of the Upper Piandzh gravitated toward Badakhshan, Mundzhan and even Chitral. From the inhabitants of these places, the Vakhans and Ishkashim bought the necessities of life which they did not produce themselves, such as salt, rice, iron and other metal objects [literally, articles] [83, p. 6].

As far as the remote past is concerned, we could not find any direct indications that the countries of the Upper Piandzh were a part of the ancient [political] unions which emerged in the territory of present-day Afghanistan, i.e., of Bactria and the Graeco-Bactrian state which evolved from the former after the conquests of Alexander the Great. On the map, which Tomaschek gives in his work "Sogdiana," the boundaries of the Bactrian state adjoin only in the west the countries with which we are dealing. However, later, when the Scythian state of Tokharistan (first centuries of our Era) emerged on the ruins of Bactria, the Upper Piandzh region was called Upper Tokharistan, at least for some time [83, p. 14].

Thus, it is beyond any doubt, that the closest relation of the Upper Piandzh with the rest of the Iranian world, lasting for many centuries, was effected through Bactria, i.e., modern Afghanistan.

The Upper Piandzh region is connected to a lesser degree with the Indian world which lies south of the Hindu Kush. In addition to the complicated cultural and historical relations, this was also due to the geographical position of the countries in which we are interested. In describing roads of communication, Bobrinskii remarks that among all the passes leading over the Hindu Kush to India, only the Dro Pass, connecting Zebak and Mundzhan with Chitral, is suitable for horse travel in summer and winter. All other passes over the Hindu Kush are accessible only in summer, and only for travelers on foot. Even the latter have to overcome great difficulties as the road leads across glaciers [83, p. 7, footnote 8]. Thus, the population of the Upper Piandzh must have been formed by the same racial elements which constituted the racial composition of Afghanistan in the past, and which forms a part of its composition even at the present time.

Unfortunately, documents written in the language or languages of ancient Bactria have not yet been found.

However, linguists are in agreement on the fact that the Iranian tribes evolved

the various dialects not in places of their present habitations, not in the gorges of the Western Pamirs, but that they brought with them the remnants of ancient East-Iranian languages, and preserved them to a greater or lesser degree up to the present time.

It is from this point of view that Academician Zaleman emphasized the importance of studying dialects in general, and of the Pamir dialects in particular. He saw in the latter linguistic relics of groups the study of which should furnish material for the reconstruction of the intermediate link between the Avestan and the Old Persian language on the one hand and the modern Persian on the other [108, p. 270]. According to Tomaschek, the tribes living east of Bactria were a part of the "Amyrgian Scythians." He places them on his map of ancient Sogdiana under the name of "Amyrgian Sacae-Scythians" approximately where present-day Rushan and Shugnan are situated [133, p. 184].

In Tomaschek's opinion, they appear to be very ancient Iranian tribes which preserved the "purity of the type" to a higher degree than the Persians who experienced a considerable influence from the Semites [134, p. 736]. Among the present-day Pamir dialects, Tomaschek regards the Mundzhani dialect as the most ancient, and among the living languages, as the closest to the Avestan. To this corresponds the preservation of the cult of fire worship in the Western Pamirs even during the Arab epoch.

Zarubin, who made a special study of the Mundzhani language, determined more precisely its position, but did not deny the presence of ancient elements. In his opinion, the Mundzhani language occupies an intermediate position between the "Parthian," which is preserved today in Caspian and Central dialects of Iran, and the Afghan language. The latter occupies an intermediate position between the Mundzhani language and Pamir dialects [109, p. 129].

Grierson regards as a characteristic of all Pamir languages the presence of almost unchanged ancient words [120, p. 8]. He gives a list of words preserved from the Avestan and Sanskrit. Geiger points out the period during which, in his opinion, the settling of the Western Pamirs took place, since he regards the Iranians as the last remnants of those tribes, which fled to the mountains in order to avoid submission to the Arab conquerors, and acceptance of Islam [119, p. 290].

Thus, according to the unanimous agreement of linguists, the Iranian tribes of the Western Pamirs and those of the countries lying immediately south of the Pamirs appear to be remnants of ancient Iranian tribes which in all probability inhabited the territory of Bactria.

6. Similarity of the Anthropological Type of Iranian Tribes of the Western Pamirs with the Yagnobi Type and That of the Tadzhiks of Southern Tadzhikistan

(Quantitative and qualitative characters are given in the tables)

At the present time we have relatively extensive material on the anthropology of all Iranian tribes of the Western Pamirs living within the territory of the USSR.

The first investigator of these tribes was the anthropologist N. V. Bogoiavlenskii, who undertook an expedition into the Western Pamirs in 1901. He collected extensive material on the anthropology of the Rushans, Shugnans, Vakhans and Gorans. This material remained unpublished and unprocessed. These valuable data were processed during the thirties by modern methods of variational statistical analysis and published by the Leningrad anthropologist V. V. Ginzburg [2].

Diversified material on the anthropology of tribes of the Pamirs was collected at the beginning of the twentieth century by [Sir Aurel] Stein's expeditions; these were processed and published by T. A. Joyce [124, 125].

In 1935 I succeeded in collecting sufficiently extensive material on the anthropology of the Shugnans of Shakhdara, Gunt and Piandzh, and on the Rushans, Vakhans, Bartangs and Ishkashim. This material was published in a separate monograph [18].

Taking into account a certain amount of unavoidable subjectivity in the determination of descriptive characters, tables 14-16 include only data recorded by myself.

In these tables, the Iranian tribes of the Western Pamirs, which are from the linguistic point of view remnants of the ancient Bactrian population, are compared with the Yagnobis, the remnants of the ancient Sogdian population.

During 1936 I investigated the Yagnobis; this increases the reliability in the similarity of the individual characters.

Unfortunately, we do not have available material from Afghanistan. However, valuable tentative data collected by D.D. Bukinich are included at the end of our comparative anthropological tables.

However, Bactria, which was related so closely in the past with the Western Pamirs, also included the southern part of Tadzhikistan. In our comparative anthropological tables, the Tadzhiks of Southern Tadzhikistan from raions nearest to Afghanistan are listed as the representatives of the present-day migrants into northern Bactria. Actually, Piandzh, which forms the international boundary between the Tadzhik SSR and Afghanistan, divides the province settled by the southern Tadzhiks [45, p. 432]. The Tadzhiks of Southern Tadzhikistan were investigated by our associate, V.IA. Zezenkova, who adopted approximately the same standards as mine in the determination of descriptive characters.

All this vouchsafes sufficiently the comparability of the data obtained.

It was pointed out in chapter II that the Yagnobis differ from their neighbors, the Tadzhiks of the Upper Zarafshan, in some Anterior Asia traits: they have a more abundant hair cover; a higher nasal root and wings; and a more convex profile. According to all these characters, the Yagnobis occupy an intermediate position between the representatives of the Europeoid race of the Central Asiatic Interfluvial Region, the Tadzhiks, and the representatives of the Europeoid Anterior Asia race, the Jews.

As is evident from tables 14-16, the same "Near Eastern cast" is also characteristic for the Iranian tribes of the Western Pamirs. These tribes are in fact identical with the Yagnobis in all basic qualitative and quantitative characters.

Close to the Iranian tribes of the Western Pamirs are the contemporary inhabitants of Bactria, i.e., of northern Afghanistan and Southern Tadzhikistan.

This makes it possible to think that the Iranian tribes of the Western Pamirs preserved traces of their origin in Bactria not only in their languages but also in their type.

IV. ETHNOGENESIS OF THE HIGHLAND TADZHIKS OF KARATEGIN AND DARVAZ ACCORDING TO COMPARATIVE ANTHROPOLOGY[1]

1. Possible Natural Routes Used by the Sogdian-Bactrian Element in Settling Karategin and Darvaz

South of the Yagnob Darya, on the other side of the Hissar Range, are situated two mountain countries--Karategin and Darvaz--occupied by Tadzhiks.

Karategin is separated from the Zarafshan Basin, its left tributary the Fan Darya, and the latter's tributary the Yagnob Darya, by the Hissar Range.

The routes leading to Karategin from the north, from the Ferghana Valley, and from the northwest, from the Samarkand Oblast, this ancient center of Sogdiana, are very difficult to pass. They lead from the plains of Ferghana to Karategin over the passes of the Turkistan Range and into the headwaters of the Zarafshan and the Matcha, [2] and from there over the eastern part of the Zarafshan Range, which is called at this point the Matcha Range. However, in order to reach Karategin from the eastern part of the Ferghana Valley, it is necessary to negotiate the no less mighty Alai Range.

The route from the northwest, from Samarkand to Karategin, leads along the upper course of the Zarafshan to the Matcha River, whence it is necessary to climb very difficult passes over the same Zarafshan, Hissar, or, further east, the Matcha ranges. Nevertheless, the possibility of a penetration of Karategin by ancient Iranian peoples from the north and northwest is by no means excluded.

In 1878, at a time when V.F. Oshanin's Expedition discovered the Peter I Range and the Fedchenko glacier, communication routes from Ferghana and the Lower Zarafshan to Karategin were hardly any better than in antiquity. V.F. Oshanin listed five passes leading from Karategin to the Zarafshan Basin and Ferghana. The westernmost among them, Suboshi, leads to the headwaters of the Yagnob Darya, the others, namely, Pakshif, Vadif, Piobrut and Yarkhych lead to the Matcha [70, p. 5]. Prior to the October Revolution, which signified the beginning of large-scale road construction in Tadzhikistan, the same passes served as the most usable routes from Karategin to Ferghana and Samarkand. V.F. Oshanin mentioned that in the seventies, "all of them are accessible only with great difficulties, and are open only during summer months, but in spite of that they are frequently used by the inhabitants of the Upper Zarafshan, who, particularly over the Pakshif Pass (12,000 feet as measured with instruments by V.F. Oshanin's Expedition) export wheat from Karategin" [70, p. 5].

Furthermore, V.F. Oshanin wrote:

> Many Karategin Tadzhiks use these roads in quest of employment, most frequently as "sairaman"--workers in caravan sheds in all larger cities of Turkestan and Bukhara possessions. This occupation is almost exclusively their monopoly; their proven honesty and great strength which permits them to carry loads of 9-10 poods [325-60 lbs.], eliminates any competition from other nationalities. With the money earned they usually buy cotton yarn, for which there is always a demand in Karategin, and then they return home on foot carrying a load of some 2 poods [70, p. 28].

I am citing these data referring to 1878, in order to note the curious fact that

this "migratory trade" was also practised by the Karategins after the October Revolution, in the twenties of this century, and is preserved partly to this day. I collected all the material on the anthropology of the Karategin Tadzhiks during 1925-26 in the cotton-ginning plants of Tashkent and Tashkent Oblast where only Karategins are employed as loaders. According to them, late in the Fall, after the wheat harvest, they migrate to the cotton mills of the Tashkent and Ferghana oblasts where they work exclusively as loaders. Early in Spring they return to Karategin over the still closed, highly dangerous passes in order to arrive in time for the beginning of the field work. From the towns of Uzbekistan they carry relatively heavy loads, mainly dry goods, as they did during the time of V.F. Oshanin's Expedition.

In ancient times, the colonization of Karategin from Ferghana and Sogdiana could have taken the same course. For this reason we included in the comparative anthropological table Tadzhiks, who are geographically nearest to the above-mentioned oblasts, namely, those of the headwaters of the Zarafshan-Falgar--the localities of Matcha and Takfon, which lie on the right bank of the lower course of the Yagnob Darya.

The Karategin Valley is much more accessible from the west. From the center of ancient Sogdiana, the route leads directly from the west through the fertile region of Kashka Darya and on through the Hissar Range country. It was over this route that in 1878 the guides led to Karategin the expedition of one of the first explorers of the Pamir-Alai region, V.F. Oshanin. The route of his expedition led from Samarkand into the Kashka Darya Valley, then through Kitab, Shakhrasiab (Shakhrisyabz), Yakkobag and over the Sang-Girdon Pass to Hissar, further through Regar, Karatag and Hissar to Stalinabad, the present capital of Tadzhikistan, and, finally, through Fayzabad and Obi-Garm to Karategin [70, p. 1]. The nearest plains and foothills of the Kashka Darya Basin west of Karategin are now settled not by Tadzhiks but by Uzbeks. According to my investigations, in spite of the fact that they preserved a number of clan and tribal names, these Kashka Darya Uzbeks are very close to the Tadzhiks living on the plains of the Central Asiatic Interfluvial Region. They are, like the Tadzhiks, typical representatives of the brachycephalic Europeoid race of the Central Asiatic Interfluvial Region. Therefore, the Uzbeks of the Kitab, Shakhrasiab and Guzar raions, whom IAsevich and I had investigated, are included in the comparative anthropological table 17. I did not include in this table the Kashka Darya Uzbeks of the Karshinskiy raion who, according to my data, appear more Mongolized (table 17).

It is hardly possible to doubt that the prevalently agricultural population of Sogdiana and Bactria settled in the mountain countries adjacent to the Pamirs, where there are even at present Tadzhik settlements in valleys and river terraces suitable for growing crops. From the Kashka Darya Basin, the Sogdian population could descend to the Amu Darya, and then ascend along its right bank tributaries to Karategin and Darvaz. From the south, from Afghanistan (ancient Bactria proper), natural roads lead to Karategin through the same valleys of the right bank tributaries of the Amu Darya and Surkhan Darya, through which today a railroad leads to Stalinabad, along the Kafirnigan and Vakhsh. From Afghanistan we have at present available only tentative material collected by the late D.D. Bukinich among the Tadzhiks of the northern and southern slopes of the Hindu Kush. This tentative, but for us very valuable material, collected incidentally by D.D. Bukinich during his and N.I. Vavilov's Expedition in Afghanistan, are also included in our comparative anthropological table.

From the east, the route to Karategin leads through the Alai Valley, along the Kyzyl-Su, which forms the upper course of the Surkhob River, the banks of which lie in the center of Karategin. Along this route Mongoloid elements penetrated

Karategin, brought here by the Kirghiz, who still inhabit the easternmost part of the country. I did not succeed in investigating the Karategin Kirghiz. For this reason, the table includes Kirghiz of the Alai Valley whom I studied during 1935, and who are the closest to them. The introduction of this material is partly justified by the fact that the Alai Valley and Karategin were settled by the same Kirghiz clans. V.F. Oshanin found in 1878 among the Karategin Kirghiz only three clans: Teir [Kara Tait, according to Oshanin], Kydyrsha (Gydyrsha), and Tupchak (Kipchak) [70, p. 28]. We observed the same clans, Teit, Kydyrsha and Kipchak, among the Alai Kirghiz.

The same comparative anthroplogical data, which we show in table 17, are also important for the history of the population of Darvaz.

Darvaz is separated from Karategin by the wall of the Peter I Range. This is "the country of deep, rocky gorges, perpendicular cliffs and difficult roads leading now over cornices and ledges, now over small, swaying bridges across madly rushing rivers" [97, p. 98]. The Tadzhik kishlaks are situated in valleys and in gorges of the rivers Khingou (left tributary of the Surkhob below which the Surkhob River assumes the name Vakhsh), Vanch, a tributary of the Piandzh, and along the right bank of the latter. This population was no less isolated than that of the headwaters of the Zarafshan. "Difficult roads and the poverty of the country served as the best protection against raids by conquerors" [97, p. 110]. In pre-Revolutionary times, for example, during V.F. Oshanin's Expedition in 1878, only three passes leading from Karategin over the Peter I Range to Darvaz were mentioned: the westernmost and easiest Kamchirak; and the very high, always snow-bound Lyuli-Kharvi; and Gordon-i-Kaftar [70, pp. 11-12]. The same passes serve even at present as the usual communication routes between Karategin and Darvaz.

Darvaz is more accessible from the west, from the lower course of the Khingou River into the Gissar Valley, and from the south, downstream of the Vakhsh and Piandzh [97, p. 114]. Apparently, the colonization of Darvaz also occurred over these routes from the west, from the Sogdian plains and the Kashka Darya basin, and from Bactria in the south. Thus, the present inhabitants of the Kashka Darya Oblast, the Uzbeks, who are merely local Iranian people, whose language was Turkized and whose type was slightly Mongoloid, and the present inhabitants of North Afghanistan, the Iranian Tadzhiks, are of the greatest significance for comparative anthropology not only of Karategin, but also of Darvaz.

2. Karategin and Darvaz Tadzhiks as the Direct Extension of the Sogdian-Bactrian Stratum of the Population

From table 17 we see that the Kirghiz did not contribute to any considerable degree to the Mongoloid admixture among the Karategin Tadzhiks. According to basic Mongoloid characters, i.e., presence of epicanthic fold (column 8), sparse hair growth (column 2), facial flatness (column 7), low nasal root (column 3), flat position of nasal walls (column 5) and bizygomatic breadth (column 12), the Alai Kirghiz stand just as much apart from Karategin Tadzhiks as from all other groups of the Mountain Tadzhiks. Ginzburg noted among the Karategin Tadzhiks a higher percentage of the epicanthic fold (5.26 per cent) than did IAsevich (0.7 per cent) and myself (0.27 per cent). However, he did not note the presence of the epicanthus proper, but the presence of the "Mongoloid fold," and it is possible, therefore, that his observation refers to the ordinary fold of the upper eyelid in low position.

The Karategin and Darvaz Tadzhiks are, in all basic characters shown in table 17, equally close to the Zarafshan Tadzhiks, to the Uzbeks of the Kashka Darya Oblast examined by me, and to the Tadzhiks of Afghanistan studied by Bukinich.

Compared with the present settlers of the territory of ancient Sogdiana (Kashka

Darya) and Bactria (Afghanistan), they are distinguished by a greater morphological facial height (table 17, column 13), and an undoubtedly greater head breadth (column 9); in Darvaz by a more abundant hair growth (column 2), and by a higher nasal root in southwestern Darvaz (column 3), according to Ginzburg's observations. However, in regard to the latter character, Ginzburg's observation differs from mine and that of IAsevich. Ginzburg noted among the Karategins a considerably higher grade than we did (column 3). As already mentioned, IAsevich's observations of the development of the tertiary hair cover stand apart.

Particular attention is called to the fact that in Darvaz and Karategin one observes the greatest admixtures of depigmented, i.e., mixed, or less frequently, light eyes (column 1). Inasmuch as I observed in Central Asia the greatest admixture of mixed and light eyes among the Karategins, I requested IAsevich to collect as much material as possible on this character. He examined the eye color of 639 males, and obtained an average grade of 1.36, i.e., very close to that which I obtained (1.40). Bogoiavlenskii and Ginzburg obtained almost equally high average grades for the Darvaz Tadzhiks (1.29; 1.34; 1.35).

In general, however, regardless of some insignificant distinctions, the Karategin and Darvaz Tadzhiks appear as the direct extension of the "anthropological stratum" of the territory of ancient Sogdiana and Bactria.

3. The Question of Admixtures of Foreign Ethnic Elements in Karategin and Darvaz Tadzhiks

It is not incidentally that I gave a more detailed description of the routes along which the Iranians could have proceeded to colonize Darvaz and Karategin or made the most careful selection of population groups from adjacent countries for the supply of comparative data, or dealt with the geographical distribution of individual anthropological characters. In view of the extreme paucity of reliable historical accounts, the above approach is in this case perhaps the only possible one that would yield sufficiently dependable material for the clarification of the ethnogenesis of the Tadzhiks of the above-mentioned highland countries.

N.A. Kisliakov begins his outline of the history of the Karategin with the following statement:

> It is possible to assert without exaggeration that there does not exist any other region in Central Asia regarding which there would be available as little historical information as that concerning Darvaz and Karategin. We have from ancient times only fragmentary reports which in no way elucidate the history of these countries, but merely mention them in passing in connection with events which took place in adjacent areas... The question of the ethnic relation of the ancient inhabitants of Karategin cannot be answered with certainty at present, just as it cannot be answered for other countries adjacent to Karategin [60, p. 40].

It seems that Kisliakov utilized in his "Outline of the History of Karategin" the entire Russian and foreign literature on the problem under discussion, supplementing it by traditional accounts which he collected locally, and, for this reason, I shall limit myself in dealing with the changes in the ethnic-linguistic composition of the population to data cited by the author.

In connection with the noticeable concentration of depigmented eyes in Darvaz and Karategin, reports on the presence in these countries of the special groups Se-Sacae, Yuechi-Tokharians, and of Ephthalites-White Huns, who, according to Bartold are related to the latter, are of the greatest interest to us. However, all

relevant reports are very scarce and not always credible, and it is impossible, therefore, to come to any definite conclusions.

Thus, "Greek sources oppose the nomadic Sacae to the agricultural Sogdians, but there are no precise indications concerning territory which either group occupied" [60, p. 41]. V.V. Grigorev "assumed that the Sacae inhabited Karategin and the Alai already during the campaigns of Alexander the Great," that is, before they were forced out from the Syr Darya steppes by the Huns, whereas in N.A. Aristov's opinion, two centuries later, they undoubtedly were wandering on the Alai" [31, No. 3, p. 64]. On the basis of these opinions it is very difficult to perceive any kind of incontestable "anthropological traces" of their stay in Karategin, even let alone the fact that we can attribute the light coloring of the Wusuns only tentatively to the Sacae (part II, chapter I). Furthermore, it is very difficult to identify all of the Sacae of occidental sources only with the Se people which, according to Chinese Annals, lived north of the Syr Darya. The term Sacae (Saki) was used equally for all nomadic Iranians of Central Asia including those of the Central Asiatic Interfluvial Region and Transcaspia. We have no reason whatever to relate this whole conglomerate [confederation] of nomadic tribes to the "blonde" Dinlin race. Finally, Kisliakov does not indicate at all whether the Se or Sacae did live in Darvaz where one observes the same degree of relative depigmentation.

More trustworthy are reports concerning the presence of the Yuechi-Tokharians on the headwaters of the Amu Darya, inasmuch as this region bore the name of Tokharistan in ancient times. Moreover, the Chinese found the Yuechi at the end of the second century not only on the southern, but also on the northern bank of the Amu Darya [36, pp. 4-5]. However, in Aristov's opinion Darvaz was never a part of the Tokharian dominion, nor is there any indication that they ever lived in Karategin [60, p. 41]. As far as the Tokharian's kindred, the Ephthalites or White Huns are concerned, who appeared on the banks of the Amu Darya in the fifth century [36, p. 9], I could not find any indication in Kisliakov's work as to how far north they had reached at various times or whether they have ever penetrated into Darvaz and Karategin, and, particularly, in sufficient numbers for these areas to preserve "anthropological traces" of their stay.

Thus, we are lacking any trustworthy historical information, which would enable us to attribute a certain degree of concentration of relative depigmentation among the Tadzhiks of Karategin and Darvaz to an admixture of the "blonde" race which entered into the composition of the Wusuns (Usuns) and only supposedly into the composition of the Se and Yuechi nations.

It is quite probable that some depigmentation in Darvaz and Karategin, as in Yagnob, is the result of prolonged isolation of the population in the inaccessible mountain countries. Furthermore, Bukinich gives for the Badakhshan Tadzhiks, inhabitants of the territory of Tokharistan proper, considerably lower average grades of eye color (1.09-1.14). Apparently, the basic mass of the Tokharians-Yuechi moved further south after their conquest of areas in Afghanistan and India [36, p. 8].

Among other peoples, which could have brought to the territory of Karategin and Darvaz Europeoid racial elements from countries lying beyond the limits of the Central Asiatic Interfluvial Region, the Arabs deserve some attention.

The Arabs appeared in the mountain region north of the Amu Darya toward the end of the seventh century [60, p. 53]. Arab sources mention Khuttal (Khuttalia) and Saganian kings, and Kings Akhiruna and Shumona [60, p. 54]. In his monumental work "Turkistan during the Epoch of Mongolian Expansion," Bartold identifies the country of Khuttal with the region between the Piandzh and Vakhsh, Saganian with the Hissar country [Gissarskiy Krai] [60, p. 54], and, judging by assonance, by Shumon is probably meant Shugnan. There is no indication whether by the "kings"

of these countries are understood the representatives of local Iranian dynasties, or the chieftains of Arab forces who settled here with their warriors. It is stated only that those "kings" participated in the feuds among Arab generals [or military chiefs]. It is more probable that what is meant here are local rulers from the autochthonous Iranian population who could have been nominal representatives of the caliphate analogous to the entire mighty Iranian dynasty of the Samanids who ruled Maweranahr during the tenth century. During the Samanid period "all local dynasties of the mountain regions of present-day Tadzhikistan submitted, apparently, in name only to the Samanids and, according to Al-Mukaddisi (al-Maqdisi), sent only gifts but no tribute." Finally, the Arabs, during the period of their rule in Central Asia, were apparently preoccupied mainly with the littoral of the Amu Darya, and went to the mountains only for the purpose of protecting this zone from the raids of the mountaineers in the north. Thus, under Khuttal one should not understand by any means the whole of Darvaz situated between the Piandzh and Vakhsh, but only the northern bank of the Amu Darya to its confluence with the Vakhsh. Ships were equipped in Khuttal under the Ghaznevids [60, p. 55]. Under Arab domination were the Surkhan Darya region (Saganian), Termez, Kabadian, and perhaps the Hissar country (Akhirun), which are more accessible than Karategin and Darvaz. Under the circumstances, there cannot be any question of "Semitic" (Anterior Asia) admixtures so significant that they would be retained until the present time as "anthropological traces" among the inhabitants of Karategin and Darvaz.

We also wish to note that the identification by various authors (second century A.D.) of the Komedai[3] people mentioned by Ptolemy either with the Karategins, or with the Darvazi, does not contribute anything to the clarification of ethnogenetic problems, as nothing is known about that people except its name. The attribution of the name itself to one or another of the countries of the Pamir region is also quite controversial [60, pp. 49-53]. The linguistic and ethnic affinities of the Komedai people remain unknown, as are also facts regarding its being autochthonous or coming from one of the areas of distribution of various human races.

Of interest only is the fact that in Myron [for Marinos] of Tyre's time before circa 110 A.D. the route of the representatives of the Macedonian merchant Maes [Titianus] who traveled to China for silk [60, p. 50],[4] led through country adjacent to the Pamirs, probably through Karategin, if the identification of the latter with the Komedai country is correct. According to this information, we may assume that in any event, by the second century of our Era, Karategin, as well as the adjacent Darvaz, were already settled by the Sogdian-Bactrian stratum of the population toward which the present-day Karategin and Darvaz Tadzhiks obviously gravitate anthropologically.

In contrast with their role on the plains of the Central Asiatic Interfluvial Region, Turki and Mongolian tribes played almost no role in the evolution of the sedentary population of Karategin and Darvaz. The stream of Mongoloid characters by-passed the Pamir-Alai mountain system from the north as well as from the south, if one disregards the Kirghiz who came late to this area. However, not even the Kirghiz furnished any significant Mongoloid admixture even to their nearest neighbors, the Karategin Tadzhiks. This admixture is indicated only by an insignificant percentage of the presence of the epicanthic fold. However, judging from all other anthropological data in table 17, the Mongoloid admixture in all Mountain Tadzhiks is very insignificant.

In the meantime, the Turkic-speaking Mongoloid tribes, who came to Maweranahr from the Dasht-i-Kipchak, kept penetrating Hissar, Karategin and Darvaz without interruption from the time of the first nomadic Turkish Empire of the sixth century up to the period of Uzbek migration in the sixteenth century. Apparently, these tribes made only episodic raids into the mountains, and even if they remained

in some areas, they lived isolated from the earlier Iranian settlers, as the Kirghiz live in Karategin isolated from the Tadzhiks even today.

The first wave of the sixth century Turki was unable to leave any significant Mongoloid trace even in the plains of Maweranahr, since the Turki "remained on the steppes, in former possessions of the Wusuns, although they did subjugate civilized provinces as well... Rulers of Turkish origin governed in civilized areas of Turkestan, although, evidently, there was no sedentary population that spoke Turkish" [36, pp. 10 and 36].

During the period of Arab rule, the Turki did not penetrate further west than Hissar. Karategin was considered as the country whose borders constituted the limit for the nomadic Turki [60, p. 47]. Accounts relating to the period of Mongoloid expansion mention only military events such as the capture of Termez, and warfare of the Vakhsh [60, pp. 55-56].

Under Timur [Tamerlane] and the Timurids, the Turki element continued to penetrate Hissar country [Gissarskiy Krai] which was "the apple of contention among some of the representatives of the Timurid dynasty" [50, p. 57]. However, Karategin remained under the rule of a local dynasty, and served only as a temporary refuge, where chiefs of the various detachments participating in the continuous feuds and warfare remained in hiding. Finally, in the sixteenth century, during the period of Uzbek invasions, in addition to Hissar only the provinces lying south of it and the banks of the Amu Darya came under the domination of the Uzbeks. Thus, in the year 1047 A.H. (1636-38) Uzbeks captured Kala-i-Khumb, the capital of Darvaz, and, according to tradition, Karategin also came temporarily under their rule [60, pp. 61-63]. However, all these episodes do not indicate any admixture of the Uzbek element with the Iranian population of Darvaz and Karategin. On the contrary, even on the plains and foothills lying nearest to the Pamir-Alai region, the Kashka Darya Basin for example, the Mongoloid element was, as pointed out before, absorbed by the Europeoid Iranian. Within the boundaries of contemporary Tadzhikistan, the Uzbeks constitute one-fifth of the total population (about 175,000) and occupy mainly the plains and foothills of the country [97, p. 61].

Any participation of Turki and Mongolian tribes in the ethnogenesis of the Karategin and Darvaz Tadzhiks is precluded by the foregoing considerations.

As to the question of how long ago Darvaz and Karategin were first penetrated by the Sogdian-Bactrian stratum of its population, whose direct extension are the Tadzhiks in whom we are interested, we do not have at our disposal any relevant information, other than obscure traditions and apparently very ancient kurgans which have not yet been excavated. Moreover, these traditions belong to a later time--to the epoch of the appearance in Karategin of the Kirghiz who, for a time, succeeded even in forcing out the Tadzhiks. Attention must only be drawn to that tradition according to which, "in even more remote times the country was settled by fire-worshipers (otash parast), who were ancestors of the inhabitants of Vanch, Yazgulem and the Pamirs."

The building of the above-mentioned ancient kurgans is ascribed to these fire-worshipers "Mugi" (i.e., Magi, the representatives of Zoroastrianism) [60, p. 75]. With regard to the sources, it appears that only one among them has an indirect indication that in any event Karategin was already settled during the second century A.D. There is hardly any doubt that the process of the settling of Karategin and Darvaz by Sogdians and Bactrians began much earlier. That the Iranians penetrated this region in very remote times is indicated by the fact that east of Darvaz, in the even more inaccessible mountain gorges of the Western Pamirs, there exist to this day tribes which speak ancient Iranian dialects that are not understood by the present-day Tadzhiks.

V. ANTHROPOLOGICAL COMPOSITION OF THE TURKOMANS AND THEORY OF THE SCYTHIAN (SACAE) ORIGIN OF THE TURKOMAN NATION BASED ON DATA OF PALAEOANTHROPOLOGY, COMPARATIVE ANTHROPOLOGY AND HISTORY[1]

1. Anthropological Composition of Contemporary Turkoman Tribes

Among the contemporary Turkomans there clearly predominates a specific Europeoid type which differs sharply by its dolichocephaly from the brachycephalic Europeoid type characteristic of the Uzbeks and Tadzhiks. We named this dolichocephalic Europeoid type after its center of distribution on the Transcaspian steppes, as the "Transcaspian race." On the vast territory which extends from the Lower Amu Darya in the north to the boundaries of Iran in the south, from the Caspian Sea in the west to the boundaries of Afghanistan in the east, the cephalic index of Turkoman males fluctuates within fairly narrow limits--from 73.43 among the Salyrs in the Sarakhs (Serikhs) region to 77.84 among the Bayat (Baiat) tribe in the Takhta-Bazar region. The mean cephalic index of all Turkoman tribes lies within the limits of typical dolichocephaly (M = 75.67). The homogeneity of Turkoman males in this character is expressed in a frequency polygon graph with a single peak, which is fairly symmetrical and close to the type of a normal variation [Gaussian] curve. The average and median values coincide (M = 75.67, Med = 75.50) and are close to the mode (Mo = 74.5). Just as homogeneous in this character are Turkoman females of various tribes: their mean cephalic index (M = 74.88) is very close to that obtained for male groups, and ranges from 72.70 among Turkoman females of the Salyr tribe in the Sarakhs region to 77.48 among females of the Ersari tribe investigated in the Takhta-Bazar, Chardzhou and Kerki raions.

As indicated in part I, chapter IV, this stratum of dolichocephalic Europeoids extends far to the east, passing through central Afghanistan to northern India where it is represented by the Indo-Afghan race, a term long used by anthropologists. The possibility of identifying the Transcaspian race which we had associated [lit. described] with the Indo-Afghan race, already described by Deniker, was discussed before (part I, p. 111). The Turkoman tribes are fairly uniform in their morphological facial index. They are more narrow-faced than the brachycephalic Europeoids of the Central Asiatic Interfluvial Region (part I, chapter II). In all quantitative and qualitative characters the various Turkoman tribes are quite similar to each other (see tables).

In part I, chapter IV, it was indicated that the Transcaspian dolichocephalic race differs in some important descriptive characters from the neighboring dolichocephalic Europeoid race which has its center of distribution in the northern part of Iran, in Khurasan and Iranian Azerbaijan. According to the center of distribution we called it the "Khurasan race." Typical representatives of the Khurasan race are the Persians of Khurasan and the Azerbaijanis of Iranian Azerbaijan. The dolichocephalic Europeoid Khurasan race is distinguished from the dolichocephalic Europeoid Transcaspian race by a considerably more abundant tertiary hair cover and a specific shape of the nose known in anthropology under the name "Armenoid" (part I, pp. 143-44 and table 28a). The Khurasan race as identified by us reveals in these characters a striking similarity with the Armenoid brachycephalic race, long known in anthropology, which has its center of distribution in the northern part of Anterior Asia, i.e., Asia Minor, Transcaucasia and Mesopotamia (part I, pp. 117-18). The "Khurasans" then are a kind of dolichocephalic Armenoids.

The close historical relationship of Central Asia with Persia is well-known. The Persian population must have entered into the composition of the Turkoman nation to some degree as a result of the numerous raids--"alaman"--of Turkomans in the northern provinces of Persia, where masses of the population were taken away as slaves, with Persian women entering Turkoman families as concubines. Individuals with Armenoid facial features are still encountered among Turkomans.

In addition to the clearly predominating dolichocephalic Europeoid Transcaspian race, splinters of tribes of the Mongoloid racial type entered likewise into the composition of Turkomans. However, the admixture of Mongoloid traits with the dolichocephalic Europeoid race of the Transcaspian steppes is not large; it is not more so than the admixture of Mongoloid traits with the brachycephalic Europeoid race in the territory of the Central Asiatic Interfluvial Region.

As to the degree to which they are characterized by Mongoloid features, the Turkomans are very close to the Uzbeks. Together with the latter, they occupy an intermediate position between the Mongoloid Kazakhs and Europeoid Tadzhiks. However, in all characters which differentiate Europeoids from Mongoloids, the Turkomans as well as the Uzbeks are considerably closer to the Europeoid Tadzhiks than to the Mongoloid Kazakhs (part I, tables 4-11).

It should be possible to assess the varying degrees to which different Turkoman tribes possess Mongoloid features, only if the distribution of the basic racial-diagnostic characters among them conform to a definite pattern [literally, progressed in a definite direction]: that is, if the greatest percentage of the existence of the epicanthic fold corresponded to the smallest stature, to the greater degree of facial flatness, a lower nasal bridge, a less pronounced transverse profile of the nasal ridge, a greater admixture of concave nasal ridges, a tendency toward more sloping nasal walls, a more protruding position of the eyeballs, and a larger bizygomatic breadth.

Precisely such a definite pattern in the distribution of all the racial-diagnostic characters is observed among the Kirghiz, Kazakhs, Uzbeks, Turkomans and Tadzhiks (chapter II, part I). The same definite pattern in the distribution of all racial-diagnostic characters is observed, as we saw, among the Uzbek tribes of the Lokais, Barlas, and Karluks. Therefore, we can most definitely affirm that the most Mongoloid among these tribes are the Lokais, and the most Europeoid the Karluks, while the Barlas occupy an intermediate position between them in regard to the degree of their Mongoloid character.

As may be seen from table 18, such a definite distribution of the basic characters cannot be observed among the various Turkoman tribes. It is possible that this is due to the fact that observations were made by different investigators at different times. It has been repeatedly pointed out that descriptive characters are particularly important for the differentiation of racial types of Central Asia, while in defining these characters it is, unfortunately, difficult to avoid a certain amount of subjectivism.

2. Palaeoanthropological Data Testifying to the Remote Antiquity of the Habitation of the Europeoid Dolichocephalic Race in the Territory of Turkmenia

The origin of the Europeoid dolichocephalic type, which today clearly predominates among the various Turkoman tribes, is one of the basic questions in the problem of the ethnogenesis of the Turkoman people.

Already in our first studies on the ethnogenesis of the Turkomans, we expressed the opinion that their characteristic dolichocephalic Europeoid type is of very great antiquity [14 and 16]. We suggested that this type existed on the Transcaspian

steppes for many centuries before the appearance in this area of Turkoman tribes who in the Middle Ages bore the name of Ghuze.

This viewpoint is fully corroborated by the palaeoanthropological material obtained in the territory of Turkmenia.

The most ancient palaeoanthropological material from Turkmenia is that obtained by the Pumpelly Expedition to Anau near Ashkhabad. In addition to archaeological material, the Pumpelly Expedition collected exceedingly valuable craniological material. The crania obtained from the lower strata of Anau were studied by such an expert on the Mediterranean Race as the Italian anthropologist Sergi. The latter attributed all the crania obtained by the Pumpelly Expedition in Anau[2] to the type of the dolichocephalic Mediterranean Race.

On the basis of well-preserved children's crania (Nos. 3, 4, 5, 6) with a cephalic index of 66.4-73.4, one female cranium (No. 7) with an index of 76.2, fragments of three children's crania (Nos. 8, 9, 11), and one adult male (No. 2), Sergi came to the following conclusions:

1. In the structure of the crania from Anau, there are no differences whatsoever, neither in the cranial part, nor in the fragments of the facial skeleton, which would distinguish them from the structural characters evident in crania of the Mediterranean variety of the dolichocephalic form.

2. On the other side, these crania differ completely from the so-called Mongoloid type.

3. In Sergi's opinion, these finds confirm fully his hypothesis "on the penetration of a branch of the Mediterranean Race into Central Asia in ancient times" [129, pp. 445-46].

With regard to a more precise chronological dating, Pumpelly evidently overestimated the antiquity of his finds. He attributed the crania to the Neolithic and dated them from the seventh-sixth millennia B.C.

The extensive investigations conducted in recent years by the Southern Turkmenistan Archaeological Joint Expedition (IUTAKE), under the leadership of M.E. Masson, showed that the crania found by Pumpelly in the lower layers of Anau are not older than the end of the third millennium B.C.

The Masson Expeditions obtained much more extensive and diversified materials which confirm fully the remote antiquity of the dolichocephalic Europeoid race in the territory of Turkmenia. We submit the basic data from studies published by us earlier on this subject [19], which are of great importance for the whole problem of the ethnogenesis of the Turkomans.

V.IA. Zezenkova, docent in the Department of Anthropology of the V.I. Lenin Central Asiatic State University [9], processed the bone material obtained in the territory of Turkmenia by IUTAKE teams during the excavations of 1949, 1950 and 1951.

I. In 1949, IUTAKE Team No. 14 obtained skeletal material during the excavations of the extensive ancient settlement Namazgar-depe [tepe] located near the station of Kaakhka. On the basis of archaeological data, this material is dated in the second millennium B.C. Among bone fragments of the extremities, vertebrae, ribs and crania, two cranial vaults and the facial portions of one cranium were found. One of the calvaria, evidently of an adult male, has a cephalic index of 73.47, with a head length of 196, and a head breadth of 144 mm. The second cranium, of a young person, has a cephalic index of 77.96, with head length of 177, and a breadth of 138 mm. No traces of artificial cranial deformation were observed. The facial part of this cranium is of Europeoid type.

II. The excavations at Namazgar-depe continued in 1950. Nine children's interments were found under the floor of dwelling structures. The bone material belongs to individuals of various ages and is poorly preserved. It was possible to examine

the crania from five burials. The bones of an 8-10-year-old child were found in No. 3. The temporal part of the cranial vault was partly destroyed, but its restoration was easily accomplished. The cephalic index is 72.47, head length 174, and breadth 126 mm. No traces of artificial cranial deformation were noted. The preserved facial section is of Europeoid type.

No. 4 revealed skeletal fragments of an infant. The calvarium was only partly preserved. It was not possible to measure the head length and breadth, but its general form is dolichocephalic. Judging by the facial section, from which the nasal bones are unfortunately missing, this cranium is one of Europeoid type (deep canine sockets, projecting horizontal facial profile).

In No. 6 the skeleton of a 1-year-old child was found. It was possible to reconstruct the cranium and the facial portion. The cephalic index of this reconstruction is 75.56, with head length 135 and breadth 102 mm.

From No. 8 fragments of an infant's skeleton were obtained. The head length of this reconstruction is 108, the breadth 78, and the cephalic index 72.22. Judging by the preserved facial section the cranium is of Europeoid type.

No. 9 yielded a skeleton of a 6-7-year-old child. The cranium is incomplete. Only the facial section could be reliably restored. The cephalic index is 74.55, with head length 165, and breadth 123 mm.

Thus, the whole series of children's crania from Namazgar-depe belong to the dolichocranial Europeoid type.

III. In 1951, archaeologists of IUTAKE obtained several crania dating from different periods.

1. The most ancient among them are two crania obtained by Team No. 17 during the excavation of the ancient cemetery near Yangikala (IAngikala) in the Geoktepinsky[3] raion. Because of their brittleness, the crania were covered with paraffin. Judging from their general form, they belong undoubtedly to the dolichocranial and, more specifically, Europeoid type (very narrow and high face with a markedly protruding horizontal profile). M.E. Masson dates these crania from the end of the second and not later than the beginning of the first millennium B.C.

2. A well-preserved female cranium was found in the second cultural layer of an exploratory stratigraphic pit sunk by Team No. 10 of IUTAKE at the Dakhi settlement (gorodishche) of Izotkul in the Meshkhedi-[4]Misrianskiy raion. The cephalic index is 76.84, with head length 177 and breadth 136 mm. The facial section is undoubtedly of Europeoid type with a markedly projecting horizontal profile (grade 3), deep canine sockets (grade 3), average protruding nose (grade 2), and weakly protruding malars (bizygomatic breadth 118). This Europeoid dolichocephalic cranium is dated from the first millennium B.C.

3. Team No. 20 of IUTAKE obtained a cranium of a woman from a kurgan burial ground located 16 km. from the station of Bami. The cranium is mesocephalic with a cephalic index of 79.10, head length 177, and breadth 140 mm. Judging from the average projecting horizontal profile and the deep canine sockets (grade 3), this cranium is of Europeoid type. Archaeologists believe that the kurgan burial where this cranium was found was one of a nomadic tribe, and date it from the first centuries of our Era.

4. Team No. 1 of IUTAKE unearthed a late grave on the site of excavations of the complex of architectural remains of the Staraya Nisa gorodishche. There was found a well-preserved calvarium of an adult male of a dolichocranial type: cephalic index 75.53, head length 188, and breadth 142 mm. In the same locality a female cranium (from chamber No. 1), mesocephalic and Europeoid according to general form, was unearthed. This material dates from the seventeenth-eighteenth centuries.

There is only one brachycephalic cranium that stands apart (inventory No. V-14).

It belongs to an adult male with a cephalic index of 88.02. This cranium is characterized by a markedly flattened occiput (symmetrical, therefore not caused by the Uzbek cradle [beshik[5]]), a sharply protruding nose with convexity in its lower part, deep canine sockets and weakly expressed malars. It is possible that this cranium belongs to the type of the Anterior Asia Europeoid race. With the exception of this single brachycephalic cranium, all the other crania of investigated series belong to the dolichocranial Europeoid type.

They were obtained from several places, far removed from each other, from the Meshkhedi-Misrianskiy Plateau to as far as Kaakhka. No traces of artificial deformation were noted in any case, neither in the series obtained by Pumpelly nor Masson.

These materials cover various epochs and various ages. They are archaeologically well-documented for chronological dating, embracing the immense period of time from the third millennium B.C. to the seventeenth-eighteenth centuries.

All these facts do not permit any doubt that the dolichocephalic Europeoid race, which even now predominates among the Turkomans, appears to be a local, autochthonous race which was apparently formed here in the territory of the Transcaspian steppes. Initially, it was a component part of local, ancient tribes of the Transcaspian region, and bore the common designation of Sacan (Scythian) tribes.

3. Ancient Scytho-Sarmatian Tribes of Turkmenia and the Problem of Their Linguistic Attribution

According to V.V. Bartold, "In antiquity India and Iran alike were inhabited by a people which called itself Aryans" [35, p. 5]. Later, the designation Aryi changed first to "Eran," then to Iran. This term continued to be applied later on only for the territory west of the Indus River, while the country east of it was called India, and its population Indians. In contradistinction to these latest Aryi, i.e., the Iranians of Iran proper, were classified as the Turi (Tura) and Sairimi (Sairima) peoples living to the north of the former. "If by the latter--as it is supposed--the Sarmatians or Sauromatae of Greek writers are meant, then we are dealing with a Central Asian people which, in the opinion of most of the authorities, is related to the Iranians" [35, p. 5]. Bartold goes on to cite Eratosthenes (third century B.C.) according to whom the northern boundary separating the Iranians proper from the Turi or Sairimi people "was the Hindu Kush, and the mountain chains west of it," i.e., the Kopet-Dag [35, p. 6]. Thus, the Sairimi-Sarmatian or Turi tribes in ancient times inhabited the steppes of present-day Turkmenia. Only later, evidently after the Turkization of the language of the Transcaspian population, was Turan identified with Turkestan, i.e., the country of the Turks [35, p. 6].

The Sarmatians were one of the many tribes known under the name of Scythians.

The term Scythian covered a conglomerate [confederation] of tribes inhabiting not only the southern part of Russia but also the Transcaspian steppes. A branch of the Asiatic Scythians was called the Sacae. The most complete data on the geographical distribution of these tribes in Transcaspia are given as follows in the page proof of the "History of the USSR" published in 1939 [52, T. 1, pp. 188-93]:

1. As the northernmost of Scythian tribes, these were named the Sacae who wandered as nomads beyond the Jaxartes (Syr Darya). This is the Se (Sze) people of the Chinese Annals.[6]

2. Along the lower course of the Syr Darya and between the Aral and Caspian Sea up to Uzboi, the Massagetae were living as nomads. In S.P. Tolstov's opinion, the name Alani was at a later date transferred to the Massagetae of the Cis-Aral region [77]. The Massagetae occupied also a considerable part of the Transcaspian steppes.

Thus, Herodotus[7] reports that "The Caspian is a sea by itself, having no connection with any other... On the east it is followed by a vast plain, stretching out interminably before the eye, the greater portion of which is possessed by...Massagetae..." [41, p. 73].

3. Along the southeastern shore of the Caspian Sea, in the region named Hyrcania, lived Hyrcanians (hence the name Hyrcanian Sea for Caspian Sea), Caspi (hence the name Caspian Sea) and Tapuri tribes.

4. Further eastward from the Caspian Sea, in the Kara Kum Desert up to the lower course of the Tedzhen River, lived the Dahae (Dai or Dakhi) [52, p. 190]. The Dahae tribe also inhabited western Turkmenistan, north of the Atrek River. This region was called Dahistan after the name Dahae [55, p. 136].

5. Further south of these nomads, on the northern and southern slopes of the Kopet-Dag, there formed in the middle of the third century B.C. "as a result of a successful liberation movement of the local population against the Graeco-Macedonian rulers" the Parthian State [55, pp. 76 etc.].

The basic mass of the Parthians was composed evidently of the same Transcaspian Scytho-Sarmatian tribes.

Of all the enumerated tribes, the most data are given about the Massagetae and Sacae. Reports about these tribes are mainly due to Herodotus, for other historians of antiquity, including Strabo, merely repeat his information. In the translations of the original sources published under the editorship of L.V. Bazhenov, the Massagetae and the Sacae are most frequently mentioned [48]. The Dahae (Dai or Dakhi) are mentioned in Strabo's Geography [VII, 3, 12] who places them alongside Hyrcania [48, p. 23] near the southeastern shores of the Caspian Sea. As we noted before, the country on the shores of the Caspian Sea lying north of the Atrek River was called Dahistan after the Dahae.

In the "History of the Turkoman SSR," the entire conglomerate [confederation] of ancient Transcaspian tribes appears under the names of Sacan tribes, Sacae-Massagetae tribes, Dahae-Sacae-Massagetae tribes, Scythian tribes, etc.

Inasmuch as the conglomeration of all these ancient tribes which, undoubtedly, preceded in the Transcaspian steppes not only the Turkomans but also other Turkic-speaking tribes, also bore the general designation of Scythian and Sacae tribes, we retain this term to designate the entire Transcaspian, pre-Turki population.

The foregoing palaeoanthropological material obtained from various locations of Turkmenia, sufficiently removed from each other, showed that this most ancient Transcaspian population was characterized by the dolichocephalic Europeoid type. This ancient local Europeoid type also exists, as we have seen, at the present time among the various Turkoman tribes inhabiting the most diverse areas of Turkmenia.

At present, it is generally accepted that the ancient Scythian (Sacae) tribes of Transcaspia spoke languages belonging to the Iranian branch of the Indo-European linguistic family. Bartold expresses the opinion that prior to the time when literary documents belonging to the ancient population of Turkmenia were first available, this people spoke Iranian. In his opinion, the Scythian tribes of Transcaspia, who were known also under the name of Turi [?] and Sairimi (Sarmatian), were akin to the Iranians [35, p. 5].

In Bartold's works, the word "kinship" refers, as a rule, to "kinship" as to language. In another work, Bartold refers to F. Hirth who regards the Turkomans as the descendants of the Alans, a "people of Iranian origin" [38, p. 7]. Likewise, Bartold understands the term "origin" (a people of "Turkish," "Mongolian," "Tungusic," "Iranian," etc., origin) in the sense of linguistic attribution.

In the page proof of the "History of the USSR," all the above-mentioned Scythian tribes of Transcaspia are likewise considered to be of Iranian linguistic origin [52, T. 1, pp. 182-85]. A.IU. IAkubovskii takes the same point of view in his latest

only after they had settled [literally, spread] throughout the central area of distribution of this race. The thought that the Turkomans borrowed their dolichocephaly from the Scytho-Sarmatian tribes of the Transcaspian region was expressed more than thirty years ago by the late Professor N.G. Mallitskii. He did this in a personal conversation on the basis of ethnographic material which he had collected but which, unfortunately, remained unpublished.

We showed already in our first studies devoted to the ethnogenesis of the Turkomans [14 and 16] that the Turkoman-Oghuzes included in their composition the dolichocephalic Europeoid race already before their spread in the Transcaspian steppes, during the time when their basic mass wandered on the steppes surrounding Khwarizm (Khorezm) Oasis. Our conclusion was based on historical reports relating to the tenth century. Let us cite the most important [reports] of these.

5. Historical Evidence Indicating the Dolichocephalic Europeoid Type of the Turkoman-Oghuzes during Their Habitation in Khwarizm in the Tenth Century

K.A. Inostrantsev cites in his study "On the pre-Islamic Culture of the Khorezm Oasis" [51] an interesting report of the Arab geographer Al-Mukaddisi (Al-Muqaddisi, Al-Muqaddasi or al-Maqdisi). The latter [born in 946] reports that in the tenth century the Khwarizmian people came to resemble very closely the type of Turki who led a nomadic life on the periphery of the Khiva Oasis. The extent of similarity was such that when Khwarizmians visited neighboring countries, Mawerannahr or Persia, they were frequently taken for Turki nomads. Inasmuch as the latter had at that time constant feuds with sedentary Iranians, the Khwarizmians were sold into slavery as representatives of inimical tribes.

There was no reason in this case to ascribe the similarity of the Khwarizmians of the tenth century with the Turki nomads to the considerable admixture of Mongoloid traits which the Khwarizmians received from the latter. The process of Mongolization of the sedentary population of Khwarizm and Mawerannahr in the following centuries intensified continuously. At the same time, our investigations [17] as well as those of A.I. IArkho [26] showed that even the present-day Khwarizmians, as represented by the Khwarizm Uzbeks, appear as typical representatives of the Europeoid race of the Central Asiatic Interfluvial Region. There is only a negligible admixture of Mongoloid traits evident among them. The Khwarizm Uzbeks, as well as other Uzbek groups, are much closer to the typical Europeoids of Mawerannahr, the Tadzhiks, than to the Mongoloids of Dasht-i-Kipchak, the Kazakhs and Kirghiz.

From the anthropological point of view, it is necessary to consider the contemporary Khwarizm Uzbeks as the descendants of the ancient Khwarizmians. There is every reason to assume that the mediaeval Khwarizmians were less Mongoloid than their descendants. This conclusion is unavoidable if one takes into account the entire historically effected parallel process of the Turkization of the language and the Mongolization of the type of the ancient Iranian-speaking Europeoid population of Khwarizm and Mawerannahr. We dwelt on this parallel process several times in preceding chapters.

Thus, the Khwarizmians of the tenth century could hardly have acquired Mongoloid traits by mestizing with their neighbors, the Turki nomads. In other words, those Turki with whom the Khwarizmians of the tenth century had already mixed, were not typical Mongoloids, and, consequently, the Khwarizmians were not mistaken for Turki because of their general Mongoloid appearance.

However, of still greater importance is the circumstance that Al-Mukaddisi points out directly the somatic feature, which is not at all characteristic of the

present-day Turkic-speaking population of Khwarizm and Mawerannahr, and which made the Khwarizmians of the tenth century resemble the Turki who roamed during that period along the periphery of the Khiva Oasis.

In view of the importance of stating as precisely as possible this somatic character which in Al-Mukaddisi's opinion made the Khwarizmians of that period resemble the neighboring Turki, I am presenting an excerpt from one of my previously published studies bearing on this question [14].

In Al-Mukaddisi's words, the Khwarizmians of the Samanid epoch (tenth century) came to resemble the surrounding Turki nomads to such a degree (which he ascribes to their mestization with the latter), and the cases of their sale into slavery in adjacent countries, due to their mistaken identity with the Turki, were so frequent, that the Khwarizmian government was compelled to take special measures in order to change the external image of their subjects and make them resemble less the neighboring Turki nomads.

In the above-cited study by Inostrantsev, from which we took Al-Mukaddisi's very valuable testimony, it is mentioned that for this purpose "Khorezmian women were ordered to hang on each side of the head of newborn infants a bag with sand in order to make their skulls broader" [51, p. 304]. Inostrantsev reports in another passage that, according to the same author, Al-Mukaddisi, the Khwarizmians strove to make the heads of newborn infants broader and shorter in order to differentiate themselves from the surrounding Turki nomads [51, p. 304]. Al-Mukaddisi was not the only Arab geographer who noted the Khwarizmian custom of producing artificial cranial deformation. Thus, Yakut ibn Abdallah[8] [1179-1229] writing later, at the beginning of the thirteenth century, states that Khwarizmians had "broad heads and foreheads" which he ascribes to the custom of practising artificial cranial deformation [51, p. 304, footnote 9]. However, the late V.V. Bartold, after familiarizing himself with our study, pointed out to us that the second source is of little significance, because later Arab geographers often copied the words of their predecessors, and that quite possibly Yakut simply passed on what he read in Al-Mukaddisi. The original source--the reports of Al-Mukaddisi--is a different matter. Upon my request Bartold obligingly supplied the corresponding excerpts from Al-Mukaddisi. It turned out that the citations given by Inostrantsev conveyed correctly the meaning of Al-Mukaddisi's statement.

Accurate translations of the works of Al-Mukaddisi and Yakut were published, subsequently, in "Materials on the History of Turkmenia." The above-mentioned most valuable reports reproduced in this publication, correspond precisely with those cited by Inostrantsev [64, pp. 186 and 420].

Al-Mukaddisi's precise indication of the artificially broadened heads caused by placing weights (resembling in form saddle bags filled with sand straddling the head) on the heads of infants lying supine in the cradle, leaves no doubt that Al-Mukaddisi's contemporary Khwarizmians strove to change their dolichocephaly to brachycephaly. This was done in order to distinguish themselves from the surrounding Turki nomads.

Judging from the above-mentioned historical reports, the dolichocephaly which was frequently noted among the Khwarizmians of the tenth century in the course of the following millennium apparently became greatly attenuated as the present-day representatives of the Khwarizmians, the Uzbeks, are characterized by brachycephaly. A.I. IArkho obtained for the Khiva Uzbeks a mean cephalic index of 83.50; according to my data it is 82.21. These means are somewhat lower than those found among Uzbeks of other districts of Uzbekistan. It is possible that the admixture of the dolichocephalic element, which is reflected in a lower cephalic index, is preserved among the Khiva Uzbeks from the time when they mestized intensively with the surrounding dolichocephalic population. Al-Mukaddisi points out directly that in

the tenth century the Khwarizmians became dolichocephalic due to mestization with the Turki nomads who surrounded them. Meanwhile, all Turki peoples of Central Asia, nomadic as well as sedentary, are characterized not by dolichocephaly but by a markedly expressed brachycephaly.

However, among the present brachycephalic population of Central Asia as well, there is one single people who stand out prominently with its dolichocephaly, i.e., the Turkomans.

As mentioned before, the ancestors of contemporary Turkomans were called Ghuzes or Oghuzes. There are direct indications in historical records that the sedentary population of Khwarizm in the tenth century was in direct contact with the nomadic Oghuze-Turkomans. Thus, the Arab geographer and traveler Al-Istakhri,[9] who visited Khwarizm during the tenth century, writes as follows: "Khorezm is called that country which is separate from Khorasan and Maweran-nahr. It is surrounded on all sides by steppes, and in the north and west it borders on lands [nomad ranges] of Ghuzes" [44, p. 32].

The relationship between these nomadic Oghuzes, who already in the tenth century surrounded the northwestern part of the Khiva Oasis in a semicircle, and the sedentary inhabitants of this oasis was determined by two circumstances. The same Arab geographer Al-Istakhri writes: "The Khorezmians live in great danger from the Ghuzes, and are compelled to contain the latter constantly" [44, p. 33]. Another Arab geographer of the same period Al-Masudi[10] also reports on the constant hostility between the Oghuze-Turkomans and the sedentary Khwarizmians: "Caravans loaded with merchandise travel constantly back and forth between Bolgaria [Volga Bolgaria] and Khorezm, and have to protect themselves against nomadic Turki tribes through whose lands the route passes" [44, p. 31].

The route to Bolgaria, i.e., toward the Kama River region, led westward so that caravans from Khwarizm first had to cross the steppes inhabited by the Ghuze[11]-Turkomans. The caravans proceeding from Bolgaria to Khwarizm had to traverse the same steppes.

In the same earlier study [14], I had an opportunity of pointing out that the intercourse between the nomadic Oghuze-Turkomans and the sedentary Khwarizmians was not confined to the raiding of the irrigated lands of the oasis and to the plundering of caravans on their way to other countries. An intensive trade went on between the Khwarizmians and Turkoman-Oghuzes, probably for the most part by way of bartering the products of a cattle-raising economy with articles of artisans and agricultural products of the sedentary inhabitants of Khwarizm. Thus, Al-Istakhri, describing the wealth of Khwarizm and the prosperity of its population, notes:

> Here, there are no gold or silver mines, nor precious stones. The people derive their prosperity only from trade with the Turki [44, p. 38]. The large city of Al-Jorjania[12] (Urgench), which lies on the southern bank of the Jaihun River (Amu Darya), and which is, next to the capital, the largest town in the country, serves as the principal trading center for the Ghuzes [44, p. 33].

Thus, there are in the sources direct indications of an intensive trade taking place between the sedentary Khwarizmians and the Oghuze-Turkomans, who led a nomadic life on the borders of their country. However, the Oghuzes were not only nomadic cattle-raisers. Most recent, and quite extensive, investigations conducted by S.P. Tolstov corroborate fully the reports of one of the Arab geographers of the eleventh-twelfth centuries, Al-Idrisi,[13] concerning a number of cities belonging to the Oghuzes. S.P. Tolstov's Expeditions into the dry river bed region of Zhana Darya and Kuvan Darya revealed a number of settlements belonging to the Oghuzes [77]. The archaeological material obtained by Tolstov from these settlements

confirms the close relationship between the Oghuzes and the Khwarizmians.

Yakut ibn Abdallah, geographer of the thirteenth century, reports in his "Geographical Dictionary," that in Khwarizm, the intercourse between the sedentary inhabitants of Khwarizm and the nomadic Turki in the adjacent country was so close that an intermediate dialect, in a class by itself, developed in Khwarizm, "neither Khorezmian nor Turki" [44, p. 20].

However, this incipient displacement of the ancient Khwarizmian language, a dialect of the Iranian branch of the Indo-European linguistic family, by the Turki language does not necessarily imply possible mestization of the Turkic-speaking tribes with Iranian-speaking tribes was taking place. By comparing the facts reported in Arabic sources of the tenth century, we gained a very definite picture of the relationship between these tribes.

As warrior-horsemen, the Turkoman-Oghuzes raided the periphery of the irrigated Khwarizm Oasis and the roads leading to it, while as cattle-raisers they conducted an intensive trade with prosperous Khwarizm, evidently for short periods, crowding into the large centers of Khwarizm on market days. Actual mixed marriages could hardly be concluded among these feuding tribes. A somewhat greater degree of mestization may have been produced by the Turki guard, which lived within the irrigated oasis and which served as the mainstay for the Khwarizmian government. However, that guard could not have been very numerous at that time (perhaps a few thousand), and furthermore, we could not find direct indications of the practice of hiring in Khwarizm guards from among the Turki as early as the tenth century. Very definite indications in this regard are available only in a later period, during the rule of the Khwarizm-Shah dynasty of the twelfth century [32, pp. 347-55].

Accordingly, there existed something like two adjacent, yet closed worlds. The nomadic Turan and the sedentary Iran lived side by side, yet isolated one from another, which permitted only a slow, limited diffusion between the two.

The most probable source of mestization on a mass scale, that could have changed the basic anthropological type of the Khwarizmian population and made it resemble the Turki, who lived in the territory of the oasis, were the numerous captives, and particularly the female captives whom the Khwarizmians abducted en masse in the constant skirmishes and wars with the nomadic Turki. There were at that time few families managed without male and female captives, and the latter were taken into the harems as concubines. On this subject we have direct reports from Al-Mukaddisi. Inostrantsev points out especially this custom of obtaining slaves from among the Turki as the cause of mestization and of the similarity between the Khwarizmians and the Turki.

All the data enumerated above permit us, we feel, to state, with a sufficient degree of credibility, the following:

1. The Turki who in the tenth century surrounded the Khiva Oasis, as reported by Arab geographers, were Turkomans who in that period were called Ghuzes or Oghuzes, [14] and who appeared only later under their present name of Turkomans.
2. It was due to mixing with them that the Khwarizmians of the tenth century acquired dolichocephaly, which was not their original feature, that made them resemble the Ghuzes.
3. Consequently, the ancestors of the Turkomans--the Ghuzes--were a thousand years ago as dolichocephalic as their descendants, the Turkomans, are today.

Judging from the above data, the sedentary population of Mawerannahr and of other countries adjacent to Khwarizm mistook the Khwarizmians for Turkoman-

Oghuzes due to their "melon-shaped" heads, a feature which was not characteristic of the Khwarizmians. It was precisely this "Oghuze" feature that the Khwarizmians wanted to be delivered from by placing sand bags on the heads of newborn infants. Under the circumstances, the question arises, does the present brachycephalic population of Central Asia recognize this distinguishing characteristic of the Turkomans as something unusual, immediately striking the eye?

A fully affirmative answer can be given to this question. I had occasion to hear repeatedly from Uzbeks, as well as Russians who were not at all acquainted with anthropology, the question as to why Turkomans have such long "melon-shaped" heads? Here one cannot help but mention the very telling fact which we have already cited in this work (part I, p. 106). Back in 1923, during an expedition to Khorezm, an individual who lived through the siege of Khiva during the winter of 1923 by the Basmachi-Yomuds, told me the following interesting fact. Among the Basmachi,[15] who besieged Khiva, some Uzbeks and Turkoman-Yomuds participated. When one of the Basmachi was taken prisoner, the first question asked was: "melon or cantaloupe?" The Red Army soldiers grouped the bearers of an elongated head in the form of a cantaloupe with Yomud-Turkoman, while the bearer of a "watermelon" shaped round one was listed as Uzbek.

In the light of these facts, there is no reason to doubt that in the tenth century the local brachycephalic population of Mawerannahr distinguished Oghuze-Turkomans at once by their dolichocephaly.

The Turki tribes became known in Khwarizm under the name of Oghuzes only after the tenth century. Inasmuch as the Oghuzes appear to be emigrants from the very center of distribution of the Mongoloid Race, i.e., from Mongolia, we have sufficient grounds for supposing that the Turkomans absorbed the Europeoid component only after arriving in the new places of their settlement. This is also brought out by a direct historical record.

6. Progressive Change in the Type of the Turkoman-Oghuzes in the Course of Their Spreading within the Europeoid Area, and Information on Scytho-Sarmatian Tribes which Preceded the Oghuzes in the Lower Syr Darya and Amu Darya Regions

In the opinion of Abulghazi, the author of the genealogy of the Turkomans, the Turkoman-Oghuzes had initially the usual features of the Turko-Mongolian type. They acquired Europeoid traits only much later, after they were forced out of the Issyk Kul area to the lower Syr Darya region by the "Naimans, Khitais and Kanglis," and thence still further south to Mawerannahr. Abulghazi Khan writes:

> At first, the Tadziks called Turki the Turkomans who happened to be in Mawerannahr. After five or six generations they changed under the influence of the soil and water... they became shorter, their eyes larger, their faces became smaller and their noses larger. When traders and slaves, belonging to tribes which had settled in the Turkoman country, began appearing in Mawerannahr, they began to call Turkmanend those Turki whose appearance had changed. The meaning of this word is: resembling the Turki. Plain people, who were unable to pronounce the work Turkmanend, simply called them Turk (men) [28, p. 40].

In other words, in Abulghazi's opinion, the Turkomans acquired in the new geographic landscape, under the influence of a changed environment ("soil and water"), new features: large eyes, a "small" (evidently narrow) face and a large nose. These Europeoid features can best be explained by the fact that the Turkomans who settled

in the south were mestizing with the local Europeoid population. The Tadzhiks reserved the term Turki for the typical Turko-Mongoloids, but they used the word Turkomans for those who merely "resembled the Turki," probably according to similarities of language and customs.

As indicated by the foregoing historical references, the Turkoman-Oghuzes acquired the dolichocephalic Europeoid component, as far back as the tenth century, when they lived on the lower Amu Darya and Syr Darya before large scale resettlement in the territory of present-day Turkmenia.

On the steppes of the Aral region, on the Lower Amu and Syr Darya, a stratum of Iranian-speaking Scytho-Sarmatian tribes preceded the Turkic-speaking tribes. This stratum extended, as is known, far to the west where it was represented by Scytho-Sarmatian tribes in the Black Sea, Sea of Azov and Caucasian steppe regions. S.M. Seredonin points out in his historical geography that Herodotus placed the Scythians between the Boristhenes (Dnieper) and Tanais (Don), and eastward of the latter extended the stratum of Sarmatian or Alan tribes. The steppes of the northern Caspian and Aral region were called Sairima, i.e., the country of the Sarmatians [75, p. 38, Fig. 3]. According to S.P. Tolstov's new and extensive investigations, one of the Scytho-Sarmatian tribes, the Alani occupied the vast area from the Syr Darya and Khwarizm to Ciscaucasia. This region was known to the Chinese first under the name of Yentsai[16] and later as Alana[17] [77, p. 75].

Tolstov considers the Oghuzes of the eighth-tenth centuries as the "direct descendants" of this local Alan population. In the Lower Syr Darya region the Alani were preceded by a still older local population, "the ancient Sacae-Massagetae tribes, the Massagetae of the marshes and islands, the [?] Apasiacae (Water Sacae), who spoke, evidently, partly archaic Indo-European languages. About the beginning of our Era, these tribes acquired to some degree a language of the Sarmatian (North Iranian) type, and appeared then under the name of Alani, Arsii (Aorsi) or Asii (Yasi, Yatii)" [77, p. 100].

Thus, in S.P. Tolstov's investigations, the direct ancestors of the Oghuze-Turkomans appear not at all "Oghuze tribes" emigrating from Mongolia, but the local, autochthonous, Iranian-speaking population which only later became Turkized in language.

This viewpoint coincides completely with our own.

In this manner, the most ancient population which preceded the Oghuze-Turkomans not only in the territory of present-day Turkmenia, but also along the borders of the Khwarizm Oasis and in the Lower Syr Darya and Amu Darya region, was represented by the dolichocephalic Europeoid race, which entered originally into the composition of Iranian-speaking "Scytho-Sarmatian tribes."

The process of the Turkization of the language and Mongolization of the type of this ancient "Scytho-Sarmatian" stratum began already before the appearance of the Oghuze-Turkomans on the historical stage.

7. The Question of the Time when the Process of the Turkization of the Language and Mongolization of the Type of Scytho-Sarmatian Tribes Began in the Aral Region, and of the Scythian (Sacae) Tribes in the Transcaspian Steppes

This process would have started in the eastern Aral region already during the fourth century of our Era. S.P. Tolstov reports on the basis of Chinese sources (Pei Shih)[18] that "about the middle of the fourth century of our Era, there appeared in the eastern part of the Aral region newcomers coming from beyond the northeastern border of Central Asia, a branch of the western Huns who subjugated the ancient local Sarmato-Alan population and laid the foundation for an Alan-Hunnish barbarian state" [77, p. 77].

The appearance of the Huns in Northern Turkmenistan is placed at about the same time by the "History of the Turkoman SSR" [55, p. 129]. The penetration of the Huns further west also coincided with the same period, as historians place the date of the defeat of the Alans in the Caucasus region by the Huns in the seventies of the fourth century of our Era [52, Vols. III-IV, pp. 31 and 37].

As is generally known, historians and linguists usually consider the language spoken by the Huns as belonging to the family of Turkic languages. With regard to the anthropological type of the Huns, the palaeoanthropological material, found not only in Hunnish interments east of Lake Baikal, but also in those found in Hungary, proves their pronounced Mongoloid features [7, p. 121].

The Mongoloid nature of the type of the Huns, who penetrated into Europe during the fourth century, is also confirmed by historical sources. Their Mongoloid appearance, which distinguished them sharply from the local Europeoid population, is brought out clearly in the descriptions of the Roman historian of the fourth century, Ammianus Marcellinus, and the historian of the Goths of the sixth century, Jordanes [75, p. 78].

The Huns represent the first wave of the numerous tribes which moved from the original center of distribution of Turkic-speaking Mongoloid tribes. In their migration westward these tribes crossed the steppes of the Aral and Caspian regions, and a part of them remained there. From the sixth century there appeared on these steppes further newcomers arriving from Mongolia, the Avars. The latter also included the ancient Mongolian tribes, particularly the Bayat (Baiat or Bayaut) tribe [77, p. 101, and 57, p. 57]. This tribal name has been preserved among the Turkomans to this day. The Bayat tribe of the Turkomans was studied by Nadzhimov in 1955 in the vicinity of Chardzhou. Thus, the process of Turkization of the language and Mongolization of the type of the Scytho-Sarmatian tribes on the steppes of the Aral region could have started several centuries before the unification of these local tribes under the name of Oghuzes. From the tenth-eleventh centuries, the tribal conglomeration [confederation] in the Aral region was blanketed under the term Oghuzes [56 and 77]. By this time, the Scytho-Sarmatian tribes, which had entered into the composition of the Oghuzes, were already Turkized in language. As mentioned before, the Arab geographers of the tenth century called the Oghuzes, who led a nomadic life around Khwarizm Oasis, Turki. Parallel with the Turkization of the language of the local population occurred to some degree also the process of Mongolization of its type. However, judging from all the above data, the local dolichocephalic Europeoid type and not the Mongoloid predominated in the composition of the Oghuzes of the tenth century. The processes of racial and linguistic assimilation can operate in opposite directions: the incoming people assimilates the local population in regard to language, but itself becomes "dissolved" in the local population, i.e., becomes assimilated by the local population which is frequently much more numerous. As we have already seen, a comparable situation of opposite processes of racial and linguistic assimilation has been observed in the Central Asiatic Interfluvial Region.

The process of Turkization of Scytho-Sarmatian tribes on the Transcaspian steppes apparently started somewhat later than in the Lower Amu Darya and Syr Darya regions. The Transcaspian steppes are situated south of the usual route along which the Turki Mongoloid tribes moved westward. This route led north of the Syr Darya across the broad northern steppe belt of Central Asia which extends further into the South Russian steppes. However, this process could have started in Transcaspia as well, several centuries before the mass migration of the Turkoman-Oghuzes during the eleventh century into this territory. As is known, from this time on the Turkoman-Oghuze tribes have not infrequently been called Turki-Seljuks in literature.

The Turki tribes appeared in the territory of present-day Turkmenia after the epoch of the Turki Kakhanate of the sixth century, the frontiers of which extended "to the borders of Persia and Byzantium" [34, p. 9].

"During the rule of the Turki Kakhanate there appeared in the territory of Turkmenistan a considerable number of new Turki tribes. Subsequently, these tribes also constituted the component elements which later formed the Turkoman nation" [55, p. 151].

In the sixth century, Turki tribes lived along the southern shores of the Caspian Sea. A.IU. IAkubovskii reports that the Sassanid [monarch] Khusrau [Chosroes] Anushirvan (539-71) built a wall "extending from the sea to the mountains." This wall was built for the specific purpose of protecting Gurgan Province against the raids of the Turki nomads [78, p. 53]. It seems that during the sixth century their camping area also extended further eastward. Thus, according to V.V. Bartold:

> It is possible to assume that the steppes east of the Caspian Sea were occupied by Turki already in the sixth century, as the clash between the Turks and Sassanid Persia took place at that time, and that the Ghuzes or Oghuzes of Arab geographers were the descendants of the same Turki... [38, p. 13].

However, it is not mentioned here precisely how far to the east of the Caspian Sea the Turki of the sixth century had settled. Already during the following seventh-eighth centuries it is indubitable that their nomadic areas reached not only to the center of present-day Turkmenia but to the borders of Afghanistan. A.IU. IAkubovskii reports on the basis of Arab sources that "in the seventh and at the beginning of the eighth centuries the nomadic population in the area of Merv and Balkh and in Bagdis was quite dense. Turki appeared here more than once, as troops. After such campaigns, it was natural that some part of these Turki settled down here. Precisely this happened with the Karluks who formed in the eighth century the group of Tokharistan Karluks with their own Yabgu" [78, p. 53].

As is known, Tokharistan consisted of the northeastern part of Afghanistan (Badakhshan Province), the southwestern part of present-day Uzbekistan (Surkhan Darya Oblast) and the southeastern part of Tadzhikistan. This territory was inhabited by a people that was called the Tokhari [Tochari] or Ephthalites. The latter spoke the Tokharian [Tocharian] language [55, p. 133], which was related to the Iranian language group. Judging by the description of Ammianus Marcellinus (fourth century) and of Procopius of Caesarea, the Ephthalites were of Europeoid type [17, part II, p. 174]. This is also attested by the representations of Ephthalite kings. There are no Mongoloid traits whatsoever in these representations [55, pp. 134-35]. Later, the Ephthalites became Turkized in language [78, p. 54] and entered into the composition of the Turkoman people. However, one of the Ephthalite designations, Abdali, was preserved among the names of groupings [sub-tribes] of Turkoman tribes, the Chaudyrs and Saryks [55, pp. 133-34]. The Chaudyr tribe was studied anthropologically in 1930 within the limits of Khwarizm by A.I. IArkho, and the Saryk tribe by K. Nadzhimov in the vicinity of Iolatan (Yolatan) and Takhta-Bazar. Both these tribes turned out to be typical representatives of the Europeoid dolichocephalic Transcaspian race with the usual, for the Turkomans, admixture of Mongoloid traits.

As mentioned above, the Scytho-Sarmatian tribe of Alani was widespread on the steppes of the Aral region. Regarding the stay of the Alani on the steppes of present-day Turkmenia, A.IU. IAkubovskii writes:

> Unfortunately, we do not possess at present material [physical] monuments from the territory of Turkmenia which we could identify as Alan monuments...

> However, the fact that the Alans inhabited the territory of Turkmenia before and after the appearance of the Oghuzes is undisputable... The process of Turkization of [these] non-Turki elements in the territory of Turkmenia started already before the appearance of the first group of the Oghuzes, i.e., before the ninth century. The process of Turkization intensified particularly after the accumulation of large numbers of Oghuzes in the territory of Turkmenia during the ninth-tenth centuries. The Alani and the Asii lost their language and became linguistically Turkized. However, the ethnic, or more accurately, the anthropological characters of their physical type did not disappear without a trace. They transferred their dolichocephaly to the people which finally formed here under the name of Turkomans [78, p. 54].

In conclusion, IAkubovskii mentions that this point of view was first advanced by us in two of our first studies devoted to the ethnogenesis of the Turkomans [14 and 16].

In summary, the process of Turkization of the language of the "Scytho-Sarmatian," more precisely Scythian or Sacan pre-Turki population of Transcaspia, began not only long before the pre-Seljuk migration, i.e., the mass migration of the Oghuzes into Turkmenia during the eleventh century, but even before the ninth century, possibly even during the epoch of the Turki Kakhanate in the sixth century of our Era. During these four-five centuries, some admixture of Mongoloid traits could have taken place among the Europeoid dolichocephalic population of Transcaspia which formed part of the local "Scytho-Sarmatian" (Scythian or Sacae) tribes.

8. The Time when the Oghuzes Settled the Territory of Present Turkmenia, and the Question of Racial Components which They Introduced

A.IU. IAkubovskii attributes the first appearance of the Oghuzes in the territory of Turkmenia to the ninth century. The first movement of a part of the Oghuzes,[19] who then lived "on the middle and lower course of the Syr Darya and on the steppes north of Ust-Urt between the Emba and the Yaik rivers," began already two centuries before the mass migration of the Ghuze-Turkomans, who appear in historical sources after the eleventh century under the name of Seljuk Turks. This was the first "wave of the Oghuzes." It occurred during the first half of the ninth century. IAkubovskii synchronizes the second "wave of the Oghuzes" with the epoch of the westward mass migration of the Pechenegs in 893 or 898. The latter pushed the Oghuzes south of their original habitations. This "second wave" of the Oghuze movement occurred, therefore, toward the end of the ninth and the beginning of the tenth centuries. The third most extensive "wave of the Oghuzes" was the mass migration of the Oghuze-Turkomans into Turkmenia during the Seljuk period in the eleventh century [79, pp. 3-12].

The question arises as to what extent were the Oghuzes Mongoloid during the period of their habitation on the Syr Darya and between the Emba and the Yaik. It seems to us that all the above-cited data leave no doubt that at that time the Europeoid dolichocephalic type already predominated among a larger part of the Oghuzes. Otherwise, the Oghuzes could not have imparted to the Khwarizmians such a significant admixture of dolichocephaly so that the latter were mistaken by this characteristic for Turkoman-Oghuzes and sold into slavery.

On the other hand, a part of the Ghuzes and, in particular, those who had not yet become settled, continued to lead a life segregated from the local population, and, therefore, during the period under discussion preserved Mongoloid traits which characterized the initial, root-groups of the Ghuzes. This is indicated by

IAkubovskii in a citation from Al-Masudi.[20] Regarding the Turki who lived on the Syr Darya near Yangikent, which served as administrative center of the Oghuz tribes, Al-Masudi reports as follows:

> Predominant among the Turki in this area are the Ghuzes who are [partly] nomadic and [partly] sedentary. This is a Turki tribe which is divided into three groups, i.e., the lower, upper and middle Ghuzes. They are, among them, the smallest in stature, and they have the smallest eyes.

IAkubovskii remarks correctly that this report by Al-Masudi "depicts these Ghuzes as resembling very little the tall, long-headed Turkomans of later years" [78, p. 50]. It is possible that by the "small eyes" in this case Al-Masudi meant the to him unfamiliar narrow eye slits caused by the epicanthus and the Mongolian eye fold. During the ninth-tenth centuries, various groups of Oghuzes, we feel, most probably had a different anthropological composition, with the Europeoid component predominating among the western Oghuzes, the Mongoloid component among the eastern. Bartold locates the eastern boundary of the Ghuzes at Isfidzhab [38, p. 6], which was located on the lower course of the Syr Darya, while IAkubovskii notes that according to Al-Istakhri, the eastern limit of the Ghuzes was considerably further east, at Taraz, the present Dzhambul [78, p. 50].

The population which preceded the Ghuzes in Transcaspia had, most probably, only an insignificant admixture of Mongoloid traits, if any at all. Among all the above-cited palaeoanthropological material obtained from various places in Turkmenia, Mongoloid characters are completely lacking. The Mongolization of the dolichocephalic Europeoid race which entered into the composition of the "Transcaspian Scythians" was intensified partly by the Ghuzes and partly by subsequent stratifications of tribes which came from the north, from the original area of Mongoloid races. Nevertheless, as was indicated, the Europeoid dolichocephalic type clearly predominates also among contemporary Turkoman tribes living in the different oblasts and raions of Turkmenia.

The question as to which one of the Mongoloid races of the second order entered into the composition of the Turkomans is for the time being still open.

A dissenting opinion is held by G.F. Debets, who asserts that dolichocephalic Mongoloids entered into the anthropological composition of the Turkomans together with a brachycephalic Mongoloid component. As Debets published only a brief note on this subject, it is difficult to judge to what extent such an opinion is justified [6, p. 325].

Most probably, we feel, it was the brachycephalic Mongoloid type which entered into the composition of the Turkomans. This type clearly predominates in the present population of the Dasht-i-Kipchak, namely the Kazakhs and Kirghiz.

Such a viewpoint is supported by preliminary material collected in Nuratau in the Samarkand Oblast.

The Arab geographer of the tenth century Al-Istakhri mentions that a part of the Ghuzes settled in Samarkand, Sogdiana and in the area of Bukhara [78, p. 50]. Turkoman settlements still exist in the Samarkand and Bukhara oblasts. On the initiative of the late N.G. Mallitskii, the Institute of History and Archaeology of the Academy of Sciences of the Uzbek SSR conducted in 1944 preliminary investigations of these Turkomans. Associates of this Institute, ethnographer V.G. Moshkova and anthropologist V.IA. Zezenkova, collected material on the ethnography and anthropology of Turkomans who settled in the Nuratin Mountains [Nuratinskiye Gory]. Moshkova reports that the Nuratin Turkomans preserved a tradition, which indicates that part of the Turkomans came to this region very long ago, directly from the banks of the Syr Darya. They had fallen behind the basic mass of the

Turkomans who were moving westward, beyond the Amu Darya, to the territory of present-day Turkmenia and further into Iran and Asia Minor [99]. In Moshkova's opinion, this small ancient group (the clans Kandzhigals, Bugodzhals, Aitamgals and Kazaiaklys) settled in the vicinity of the Nura-Bukhara raion at least a thousand years ago. Two clans of these ancient settlers, the Kandzhigals and Aitamgals, appear to be, according to Zezenkova's observations, typical brachycephalic Mongoloids [8]. This supports our assumption that prior to their mixing with Scythian tribes, the Ghuzes were characterized by the brachycephalic Mongoloid type. Among the Nuratin Turkomans investigated by Zezenkova and Moshkova, are also groups which came only recently, during the eighteenth-nineteenth centuries, from the territory of Turkmenia. According to Zezenkova's observations, these "returnees" belong to the dolichocephalic Europeoid type which is usual for the Turkomans.

9. The Dolichocephalic Europeoid Type of the Scythian Tribes of South Russia

The conglomerate [confederation] of Iranian-speaking tribes, known under the common name of "Scytho-Sarmatians" was widely distributed not only on the steppes of Transcaspia, of the Aral and Ciscaspian regions, but extended westward onto the steppes of the Cis-Caucasian, Azov, Black Sea and Dnieper regions.

The anthropological stratum of dolichocephalic Europeoids also penetrated into these steppes of Eastern Europe in ancient times. On the Transcaspian steppes, the dolichocephalic Europeoid type could be traced as we have seen as far back as the third millennium B.C., and on the South Russian steppes it can be traced even to the early Palaeometallic Epoch (fifth-second millennia B.C.). In the Ukraine, [skulls of] dolichocranial Europeoids were obtained from the Mariupol burial ground, then from the Middle Dnieper region (14 with C.I. 73.04), and, with a brachycephalic admixture, in the Black Sea area [7, pp. 95, 98-99]. Particularly extensive material was obtained on the South Russian steppes from interments attributed by archaeologists to Scytho-Sarmatian tribes.

The dolichocephaly of Scythian tribes living in South Russia was first determined some eighty-five years ago. Subsequent, and by now sufficiently extensive, investigations confirm fully the dolichocephalic Europeoid type of these tribes without any admixture of Mongoloid traits.

During the seventies of the past century Samokvasov and Kibalchich investigated the kurgans in the Ukraine and obtained from them craniological material which was later processed by the founder of Russian Anthropology, A.P. Bogdanov. On the basis of this material Bogdanov published the first investigation of the craniology of Scythians [1]. We cite here figures of the cephalic index only from the kurgan near the village of Aksiutenets, former Poltava Province, Romensk District, because the investigators had no doubt whatever regarding the Scythian attribution of this kurgan.

SCYTHIAN CRANIA FROM AKSIUTENETS KURGAN, POLTAVA PROVINCE

CI--	67.36	68.42	69.61	70.78	71.42	71.97	72.22	72.77	72.82	85.97
No.--	1	2	1	1	1	1	1	1	1	1

Thus, ten of the Scythian crania examined by Bogdanov were extremely dolichocephalic, and only one was found to be brachycephalic. This single cranium was so different from all others that Bogdanov did not attribute it to the Scytho-Sarmatians, but to some other tribe. On the other hand, the variants at the extreme left of the

given series, yielded such low figures for the cephalic index that the thought arises whether an artificial increase of dolichocephaly is involved here? We shall deal with this question later.

The series of Scythian crania from Aksiutenets, investigated by Bogdanov, was subsequently supplemented by crania obtained from other Scythian kurgans of the Middle Dnieper region. All Scythian crania (24) from this region appeared to be dolichocranial (C.I. 72.30). Furthermore, Debets notes that the whole series of these Scythian crania "closely resembles the crania of the Palaeometallic Epoch of the same location" [7, p. 159]. Dolichocranial types also predominate among Scythian crania obtained in the Black Sea region, while here also "nothing essentially new is noticeable in comparison with the Palaeometallic Epoch of the same area" [7, pp. 160-62]. Moreover, not one of these crania exhibited any Mongoloid traits. An admixture of brachycranial forms was noted in this series just as in the preceding group.

A significant series of 77 crania was obtained from Scythian kurgans in Bessarabia. Dolichocranial forms predominate with an admixture of brachycrania. The average values of the whole series are within the limits of mesocephaly (57 males, CI 76.7; 20 females, CI 77.4) [7, p. 163]. The so-called "fields of burial urns" in the Middle Dnieper region belong to the Sarmatian period. A series of crania from these interments was examined by Debets. Dolichocephaly is characteristic for this series as for the preceding (16 males, CI 72.4; 11 females, CI 74.9) [7, p. 165].

At the end of the first millennium of our Era, the dolichocephalic Europeoid type continued to exist in the Ukraine without any Mongoloid admixture. Particularly indicative in this regard is the Verkhne-Saltanov catacomb grave, in the former government of Kharkov. The majority of investigators (Spitsyn, [21] Gautier, [22] Chuchukalo) considers this to be an interment of the Alani, that is, of one of the Sarmatian tribes. Others believe this to be a Khazar burial. However, the Khazars, as Turki-Tatars, were probably brachycephalic. At the same time, the whole series of the Saltanov crania is dolichocranial with only an admixture of brachycranial forms (39 males, CI 75.3; 33 females, CI 76.9). Furthermore, the dolichocranial skulls are similar to those of all other Scythian series of the Ukraine [7, pp. 251-54]. Contemporaneous with the Saltanov grave is the Zlivkinskiy burial ground, excavated by V.A. Gorodtsov in 1901 in the Izyum district of the former government of Kharkov. It dates from the end of the first and the beginning of the second millennium of our Era. The series of crania obtained from the Zlivkinskiy burial ground was examined by D.N. Anuchin, then by T.A. Trofimova, and recently by K. Nadzhimov, Lecturer in the Department of Anthropology of SAGU. Dolichocranial forms are completely lacking in the whole series from the Zlivkinskiy burials (9 males, CI 83.0; 7 females, CI 85.7). Nadzhimov undertook a special examination for the purpose of determining precisely the racial character of this series.

Among the brachycranial types of the Zlivkinskiy burials there is also noticeable a slight Mongoloid admixture, evidently brought by this time by Turki Mongolian tribes who came from the east. The ethnic relationship of the brachycephalic Europeoids from the Zlivkinskiy burial ground has not yet been clarified. We merely note that brachycephaly also occurred among Scytho-Sarmatian tribes of the south. Thus, the brachycephalic Europeoid type was found in the Sarmatian burials on the Volga [13].

In this manner, the dolichocephalic Europeoid stratum is traceable in the steppe zone of Eastern Europe as far back as the early Palaeometallic Epoch. It is this type which entered into the composition of the Scytho-Sarmatian tribes of South Russia. We may assume that part of these Iranian-speaking tribes were Slavicized

as to language and that it merged into the southern group of Eastern Slavs. At any rate, during the Middle Ages dolichocephalic Europeoids predominated among these Slavs.

This fact was established precisely by V.V. Bunak on the basis of very carefully processed material [113].

Bunak investigated 41 crania of the Severyane[23] tribe from the kurgans of Sudzha and Chernigov on the Lower Desna River, a tributary of the Middle Dnieper. From further north, he examined 47 crania of the Vyatichi tribe from the kurgans of Podolsk and Kolomna on the Middle Oka. Finally, from still further north, Bunak studied 67 crania of the Krivichi tribe from the kurgans of Dorogobuzh and Belsk on the Upper Dnieper. All of this material dates from the beginning of the second millennium of our Era.

Having selected the corresponding comparative material on European craniology, Bunak assigned the Krivichi to one of the northern subraces of Europe, which is of no interest to us in this case. On the other hand, the southernmost of the Severyane and the neighboring Vyatichi are assigned by Bunak to the dolichocephalic Mediterranean Europeoid race. In order to compare the crania which he examined with those of the Mediterranean Race, Bunak utilized a series of Sardinian crania.

The crania of the Severyane and of the Vyatichi disclosed very close similarity with the Sardinian crania.

Sardinia, just as other islands in the Mediterranean, is, in fact, the very center of distribution of the Mediterranean Race. The term "Mediterranean Race" used to include the whole stratum of dolichocephalic Europeoids from the peninsulas and islands of the Mediterranean Sea to India, traversing North Africa, Arabia, Turkmenia and Afghanistan. This whole stratum of dolichocephalic Europeoids appeared in the works of Soviet anthropologists under the designation "Mediterranean Race in a broad sense." In their monumental work entitled, "Principles of Anthropology" IA.IA. Roginskii and M.G. Levin suggest a much more apt term, "Indo-Mediterranean race." V.V. Bunak designated a variant of this race, which in ancient times spread in the steppes of the Black Sea region, as the "Pontic race." Only subsequent stratification and mestization brought about a considerable increase of the cephalic index among the present population of the areas formerly inhabited by the Severyane and Vyatichi.

Much more extensive material on the craniology of the ancient Slavs was published by T.A. Trofimova [22]. Her summary also includes, in addition to the material investigated by V.V. Bunak, material contributed by other authors beginning with the second half of the nineteenth century. From this compilation in tables 19-20 we give the data on those Slavic tribes, which lived in areas formerly inhabited by Scytho-Sarmatian tribes. Here belong, in addition to the Severyane and the Vyatichi, also the Polyane and the Drevlyane.

In general, Trofimova's investigations corroborate fully Bunak's conclusions. All series belong to the circle [group] of the dolichocephalic Europeoid race. Only among the easternmost tribe, the Vyatichi, does Trofimova find an admixture of the Ural race which was first identified by Bunak. This race appears as an "attenuated" variant of the Great Mongoloid Race.

In the light of the above data, there is little doubt that the Scytho-Sarmatian crania obtained from locations which were subsequently inhabited by Drevlyane, Polyane, Severyane, and partly by the Vyatichi, belong to that variant of the Indo-Mediterranean race which Bunak calls the "Pontic race."

Herodotus located the Scythians proper between the Boristhenes (Dnieper) and the Tanais (Don), and the Sarmatians east of the Don, on the Cis-Caucasian steppes. As is known, many historians, already in Miller's time, have considered the Osetes (Ossetes)[24] to be the descendants of the Sarmatian tribe "Osi." Among the

material obtained from ancient Osete graves, Ivanovskii found 59.9 per cent dolichocephaly [10]. In his time, Gilchenko suggested that "the dolichocephalic crania found in ancient Osete graves belong to the ancestors of the Osetes, the Sarmatian tribe of the Alani" [10]. According to Gilchenko's investigations, the present Osetes are brachycephalic with an average cephalic index of 82.6. Gilchenko explains this increase in the cephalic index among the descendants of the Sarmatians --the Osetes--as due to mestization with brachycephalic tribes.

Still further east, in the Sairima or Alonia countries, the tribes of the Alani and the Massagetae spread up to the lower course of the Syr Darya. We have already discussed the historical data which assign them to dolichocephalic Europeoids.

A further eastward extension of the dolichocephalic Europeoids is represented in the Transcaspian race which we identified, and which even at present clearly predominates among the Turkomans.

The stratum of dolichocephalic Europeoids of dark coloring [complexion] extending across southern Eurasia, beginning from the littoral and islands of the Mediterranean in the west to North India in the east, was known long ago. It was designated by the general term of the Mediterranean Race. As has already been noted, the conventional designation for this entire stratum, accepted at one time by Soviet anthropologists, was the "Mediterranean Race in a broad sense." A much more appropriate name suggested by IA.IA. Roginskii and M.G. Levin is "Indo-Mediterranean race." In the classification suggested by N.N. Cheboksarov, the cephalic index is not taken into account at all [23, p. 315 etc.]. To us, this point of view appears to be incorrect. The southern dolichocephalic Europeoids have a very definite area of distribution in which dolichocephaly can be traced for a minimum of five-six millennia. The areas of distribution of different variants of dolichocephalic and brachycephalic Europeoids are always diverse (Alpine and Iberian-Insular; Anterior Asian and Khurasanic; Central Asiatic Interfluvial Region and Transcaspian; etc.).

Occupying a vast area, the Indo-Mediterranean race is naturally not homogeneous. The various "subraces" or variants of this race have not yet been studied sufficiently, particularly in regard to descriptive characters. As we have already noted, we feel that as yet it is sufficient to identify these variants by their center of distribution.

One of such subraces, the Transcaspian, predominates even now among the present-day Turkomans and, in the past, was a component in the Scytho-Sarmatian tribes of Transcaspia. The other subrace, the Pontic, entered into the composition of the Scytho-Sarmatian tribes inhabiting the steppe zone of Eastern Europe.

10. Some Customs Common to Turkomans and to European Scytho-Sarmatians

A study of L.A. Matsulevich is devoted to the cultural-historical ties between the Central Asiatic and European Scythians. He considers the Asiatic and European Scythians and Sarmatians as one closely connected entity. The Sarmatians played a quite important role in the "extended process of mutual interrelationship of southeastern Europe with the northern regions of Central Asia, Uzbekistan in particular" [65, p. 125]. Referring to Chinese sources, Matsulevich underlines the "fact of the historical unity of the Aral-Caspian and the Cis-Caucasian region" [65, p. 137]. Tolstov also mentions the close relationship between the Alani of the Syr Darya and those of the Cis-Caucasian region [77, p. 69].

Under these circumstances it is quite probable that some customs of European and Asiatic Scythians were held in common. Of course, the study of all relationships of this kind belongs within the competence of historians, archaeologists and ethnographers.

However, we believe it would not be irrelevant to discuss here two customs. One custom undoubtedly belongs within the scope of anthropologists: the custom of placing bandages on the heads of newborn infants which is widely practised by various Turkoman tribes. The other custom is mentioned in "Turkoman genealogy" by Abulghazi Boghadur Khan.

In chapter IV, part I, we described the custom of placing bandages on the heads of infants which is practised by some Turkoman tribes. The custom of placing bandages[25] on the heads of newborn infants derives from the Turkoman desire to emphasize and strengthen the following racial trait. The longer the head, the "purer" the Turkoman, the more valuable is his "blood" relationship with the Turkoman people. The Turkomans themselves invariably gave us the very same explanation of this custom. Similar customs attempting to emphasize one or the other racial trait are not exceptional. In his time, Darwin[26] already cited relevant facts [117, pp. 343-45].

In 1929 we conducted our investigations in the Mary [anc. Merv] area. Thirteen years later, in another area, in Ashkhabad, M.G. Levin obtained from Teke Turkomans information which explained this custom on hygienic grounds, by the desire to protect the head of the infant from heat in summer and from cold in winter [11]. However, ethnographers record many cases where the original meaning of customs becomes obliterated in national memory. And in our epoch of fundamental changes of all customs, such a loss of "ethnographic memory" occurs very quickly.

Artificial cranial deformation is not mentioned in any of the above-cited material on the craniology of Scytho-Sarmatian Slavic tribes. Nevertheless, the custom of artificial cranial deformation did exist among some Scytho-Sarmatian tribes. K. Z. IAtsuta reports on that in his short but very interesting study [27].

IAtsuta writes that in addition to long-headed crania, which are not deformed at all, there are found in South Russian kurgans crania which are undoubtedly deformed, and a number of them to such an extent that the occiput protrudes to a maximum degree which produces an excessively long shape of the cranium with a forehead sloping backward. We observed among the Turkomans individuals with markedly expressed hyperdolichocephaly, a greatly protruding occiput and a sharply sloping forehead. Such cases led us always to believe that artificial cranial deformation was involved here.

However, according to IAtsuta's observation, one encounters in South Russian kurgans crania which are deformed in such a manner that the greatest longitudinal diameter is sharply reduced, and that it acquires a "tower-like form." The question arises which of these crania are Scytho-Sarmatian, the "tower" shaped, or the low-headed hyperdolichocephalic? In our opinion, the accounts of Hippocrates cited below play a decisive role in this question. Judging from these accounts, the Scythian tribes did practise the custom of producing an artificial hyperdolichocephaly

Such crania were found, in addition to non-deformed dolichocranial forms, in ancient graves in the Crimea (the so-called "Kerch" and "Kherson" crania), in the Don region, and in the Caucasus.

Nevertheless, it is necessary to point out here two difficulties:

1. The ethnic attribution of such artificially elongated crania, the so-called macrocephals of Hippocrates, remains very debatable and unexplained. Besides the Sarmatians, in whom we are interested, authors ascribe the deformation of crania in South Russia sometimes to the predecessors of the Scytho-Sarmatians, the Cimmerians, sometimes to later tribal stratifications of the Avars, Huns, Armenians and Tatars. In this manner, along with the Scythians, the authors enumerate peoples (Avars, Huns, Armenians, Tatars) into whose composition the dolichocephalic Europeoid race did not enter, at any rate not as a clearly predominating component.

is distinct from other peoples. It is called Sauromatae" [62, pp. 59 and 46, p. 297].

Comparing the foregoing reports of Hippocrates concerning the Sarmatians of the Azov region with the above-mentioned finds of longheaded crania in the Crimea, some of which appeared to be dolichocranial without any traces of deformation, while others turned out to be hyperdolichocranial with obvious signs of deformation, there can be hardly any doubt that we are dealing here with a dolichocephalic people which emphasized this racial trait artificially by the use of bandages.

One cannot avoid comparing this with the endeavor of Turkomans to intensify their natural dolichocephaly by the method practised by the Teke tribe which we and M.G. Levin had investigated. This custom was "reduced" by other tribes to the degree of an "ethnographic rudiment" (Yomuds) or disappeared completely (Gokleni). Nevertheless, the Gokleni as well as the Yomuds are naturally dolichocephalic.

It is possible that common legends may be found, for example, in the folklore of the Turkomans and Osetes, which would testify to a close relationship between Asiatic and European Scythians. As a case in point the legend of the Amazons may serve; this was widespread in many countries. It is not part of our task to consider what is "legendary" and fantastic and what is historical truth in this legend. This problem is dealt with in a special study by Kosven [61]. However, for us it is interesting to note that, judging by Hippocrates' reports, this legend was widespread among Scythian tribes in Europe, and that obscure memories of this legend apparently existed also among Turkomans.

Hippocrates reports that "in Europe there is a Scythian people, which inhabits the country near the Lake Maeotis, and which differs in many ways from other peoples: these people are called Sauromatae. Their women ride horses, shoot arrows and throw spears, and war against enemies..." [46, p. 297].

M.I. Rostovtsev in his book on Iranian and Hellenistic influence in the south of Russia [73], and S.M. Seredonin in his historical geography [75], see in the persistence with which ancient authors connect the legend of the Amazons with the Sarmatians, an indication of the privileged, ruling position of women among the Sarmatian tribes. It is significant that the Greeks regarded the Sarmatians as "gynecratumens,"[29] i.e., a people ruled by women. Seredonin suggests that the designation "Sarmat" may have been derived from the Iranian words "Sar" = Tsar, and "Mada" = maiden. It is interesting to note that we find echoes of "gynecocracy"[30] in Abulghazi Khan's "Genealogy of the Turkomans" written in the seventeenth century.

Abulghazi concludes the book with a chapter which has no connection with other parts of the report, but which seems to be merely a supplemental record of facts known to the author. It is entitled thus: "The maidens who were Beks [Beys] of the Oghuze tribe" and continues,

"Knowing well the history, old men and women [? Bakhshi] narrate that seven maidens subjugated the whole tribe of the Oghuzes, and ruled many years as Beks" [28, p. 73]. This is followed by a listing of the names of the seven maiden rulers. With this Abulghazi concludes his manuscript.

In comparing the "gynecocracy" among the Sarmatians, as reported by ancient authors, with Abulghazi's report, one is inclined to regard Abulghazi's tale of the ruling position of women as a distant memory of power enjoyed by women among the Sarmatians.

It is possible that historians and ethnographers will find in the future some more analogous parallels.

* * * * * * * * * * * * *

It seems that the conjectures regarding the origin of the Turkomans from Scythian (Sacae) tribes go back half a century. Bartold notes that the Sinologist F. Hirth advanced back in the nineties of the past century the theory that the Turkomans appear to be the descendants of the Alani who were subjugated by the Huns. In connection with this he "expressed the opinion that the determination of this fact will help to clarify the genealogy of the Turkoman people" [38, p. 7].

At that time, in the nineties of the past century, Aristov in his by now classic "Notes on the Ethnic Composition of Turki tribes" expressed the opinion that "the dolichocephaly of the Turkomans may be explained by an admixture of nomadic, longheaded Iranian tribes" [38, p. 7].

As we have seen, S.P. Tolstov [77, p. 70] now holds the same view that the Turkomans are the "direct descendants" of the Alani.

Referring to anthropological data, A.N. Bernshtam considers the "Massagetae-Alani tribes as the remote ancestors of the Turkoman people." Later they became Turkized by Hunnish-Oghuz tribes and entered into the composition of the latter [43, p. 200]. A.IU. IAkubovskii, the most competent student of the history of the Turkoman people, fully supports the theory of the Scythian origin of the Turkomans as based on anthropological data [78 and 79, pp. 3-5 and 11]. In K.V. Trever's opinion it was the fate of the most numerous Scythian tribe, the Massagetae "to become one of the most ancient ancestors of present-day Turkomans" [53, p. 46].

It should be noted that in the contributions of historians, including those of V.V. Bartold, the term "nomadic Iranian tribes" did not refer to "Transcaspian Scythians" but to the pre-Turki inhabitants of the Dasht-i-Kipchak, i.e., of the steppes north of the Syr Darya, which were known to the Chinese under the name of the Se [Sze or Szu], and Wusun [Wu Sun or Usun] peoples.

In connection with this I intended to do research on the source of Turkoman dolichocephaly among these people which, as the Wusuns, were neighbors of the Oghuz tribe in the latter's original homeland, located, according to Abulghazi, on Issyk Kul. I was "tempted" to ascribe to the Se, Yuechi and Wusun nations not only blond hair but also dolichocephaly.

However, the orally expressed opinion of my late teacher, N.G. Mallitskii, regarding the widespread distribution of Scythians on the Transcaspian steppes, prompted me to look for the source of Turkoman dolichocephaly and of their general Europeoid type, not among the newcomers, the "Oghuze tribe," but among the local, autochthonous population which preceded the Oghuzes in Transcaspia.

It has been frequently mentioned before that one of the basic problems of ethnogenesis is the determination as to which basic mass of the population predominates in the composition of a given people, the local, autochthonous element, or the one which came from other countries. This problem is solved by anthropological investigations.

Anthropological investigations have shown that the local, autochthonous, dolichocephalic race, which we identified as the "Transcaspian race," clearly predominates in the composition of the Turkomans. The same race was a part of the composition of the ancient Iranian-speaking population of Transcaspia, which was known under the name of the Sacae or Scythian tribes.

From the anthropological point of view, the Turkomans appear to be the direct descendants of these Asiatic Scythians. Only later did their language become Turkized and their type Mongolized by subsequent stratifications of Turkic-speaking Mongoloid tribes coming from the northeast.

This point of view is, as we saw, now fully shared by Soviet historians, and likewise by Soviet anthropologists (A.I. IArkho, V.V. Ginzburg, G.F. Debets, and IA. IA. Roginskii).

We believe that in the light of the above-cited anthropological investigations and their comparison with the results of investigations made by historians, archaeologists, ethnographers and linguists the hypothesis of the Scythian origin of the Turkomans, formulated by us for the first time thirty years ago, now acquires more and more the character of a well-founded theory from many aspects.

TABLE 1: TERRITORIAL AND TRIBAL GROUPS OF SOUTHERN TADZHIKISTAN

Uzbeks

Tribe	Raion	Date	Male	Females
Lokais	Obi-Kiik	1935	67	0
Lokais	Dangar	1952	95	100
Lokais	Yavan Valley	1953	97	35
Karluks	Dangar	1952	29	46
Karluks	Yavan Valley	1953	79	77
Barlas	Gissar Valley	1953	76	150
Semiz	Dangar, Shuroabad, Muminabad	1952	31	32
Kesamirs	Dangar, Shuroabad, Muminabad	1952	35	43
Musobars	Gissar Valley	1953	26	16
Dzhan-Katagans	Shuroabad	1953	22	22
Kauchins	Gissar Valley	1953	21	14
Kungrats	Gissar Valley	1953	17	25
Merishkors	Shuroabad	1953	12	24
Small Tribes	Various		18	43
		Totals...	625	627

Tadzhiks

Raion	Date	Male	Females
Baldzhuan, Muminabad	1952	117	126
Dangar		5	65
Kangurt		38	64
Khovaling		36	49
Kizil-Mazar		12	40
Yavan Valley		94	87
	Totals...	355	431

TABLE 2: COMPARISON OF TADZHIKS AND UZBEK TRIBES OF SOUTHERN TADZHIKISTAN ACCORDING TO DISTINCTIVE METRIC DATA ON EUROPEOIDS AND MONGOLOIDS (MALES)

	Epicanthic Fold %				Eyelid Folds			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	1.99	0.60	2.55	352	1.58	1.45	1.80	353
Uzbek Tribes	31.78	3.70	50.00	623	1.66	1.45	2.06	625

	Beard Growth				Horizontal Facial Profile			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	3.50	3.32	4.17	125	2.22	2.05	2.36	351
Uzbek Tribes	2.58	1.90	3.03	359	1.60	1.41	2.10	625

	Height of Nasal Bridge				Height of Nasal Wings			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	2.46	2.25	2.55	351	1.74	1.38	1.92	321
Uzbek Tribes	2.16	1.83	2.50	622	1.85	1.40	2.08	625

	Transverse Profile of Nasal Ridge				General Profile of Nasal Ridge			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	2.22	2.00	2.39	352	2.07	2.00	2.19	352
Uzbek Tribes	2.07	1.94	2.46	624	2.05	1.89	2.25	624

TABLE 3: COMPARISON OF TADZHIKS AND UZBEK TRIBES OF SOUTHERN TADZHIKISTAN ACCORDING TO DISTINCTIVE METRIC DATA ON EUROPEOIDS AND MONGOLOIDS (FEMALES)

	Epicanthic Fold %				Eyelid Folds			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	6.50	1.50	11.50	431	1.86	1.60	1.96	353
Uzbek Tribes	50.03	20.78	79.10	626	1.74	1.55	2.03	633

	Horizontal Facial Profiie				Height of Nasal Bridge			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	1.98	1.94	2.13	426	2.17	2.08	2.24	429
Uzbek Tribes	1.61	1.27	2.06	633	1.97	1.64	2.45	629

	Height of Nasal Wings				Transverse Profile of Nasal Ridge			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	1.82	1.53	1.98	429	2.03	1.96	2.10	430
Uzbek Tribes	2.03	1.59	4.42	631	1.92	1.71	2.16	633

	General Profile of Nasal Ridge			
Group	Mean	Min.	Max.	No.
Tadzhiks	1.96	1.92	2.05	427
Uzbek Tribes	1.93	1.71	2.15	634

TABLE 4: COMPARISON OF TADZHIKS AND UZBEK TRIBES OF SOUTHERN TADZHIKISTAN ACCORDING TO BASIC QUANTITATIVE CHARACTERS (MALES)

	GOL				GB			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	181	179	182	353	153	152	155	361
Uzbek Tribes	181	178	184	622	156	152	158	620
	MFH				Biz. B			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadziks	126	121	129	350	140	139	142	352
Uzbek Tribes	130	125	132	612	144	140	145	618
	MFD				Big. B			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	107	107	109	345	107	107	109	355
Uzbek Tribes	109	107	112	601	111	110	113	575
	NH				NB			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	56	51	63	348	37	36	38	348
Uzbek Tribes	59	51	62	626	38	34	40	622
	CI				MFI			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	85	84	87	355	90	85	92	349
Uzbek Tribes	86	84	87	614	90	86	92	598
	NI				Stature			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	66	64	72	235	165	164	165	207
Uzbek Tribes	65	62	71	616				

TABLE 5: COMPARISON OF TADZHIKS AND UZBEK TRIBES OF SOUTHERN TADZHIKISTAN ACCORDING TO BASIC QUANTITATIVE CHARACTERS (FEMALES)

	GOL				GB			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	173	172	174	433	148	147	149	433
Uzbek Tribes	173	170	174	627	150	148	152	580
	MFH				Biz. B			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	118	117	110	432	132	131	133	435
Uzbek Tribes	121	118	125	621	134	130	136	626
	MFD				Big. B			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	105	104	107	433	101	99	101	432
Uzbek Tribes	107	105	108	626	104	100	105	525
	NH				NB			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	53	51	55	429	33	32	34	435
Uzbek Tribes	55	52	59	627	34	33	36	627
	CI				MFI			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	86	85	87	431	89	88	90	432
Uzbek Tribes	86	84	87	626	89	88	90	618
	NI				Stature			
Group	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
Tadzhiks	63	62	65	354	154	150	156	72
Uzbek Tribes	62	59	65	621				

TABLE 6: COMPARISON OF THE MOST NUMEROUS UZBEK TRIBES OF SOUTHERN TADZHIKISTAN WITH KAZAKHS – MONGOLOIDS AND TADZHIKS – EUROPEOIDS

Kazakhs, Uzbek Tribes, and Tadzhiks

	Group	Locality	I	II Mean	II No.	III	IV	V	VI	VII	VIII	IX	X	XI	XII	No.
Males	Kazakhs	Talass Valley	73.00	2.16	80	1.15	1.62	....	1.92	2.28	2.52	149	132	160	187	100
	Lokais	Yavan Valley	45.34	2.05	68	1.44	2.06	1.96	1.94	2.03	1.82	146	134	158	181	97
	Barlas		32.47	2.66	66	1.78	2.20	2.06	2.09	1.75	1.68	143	131	157	181	77
	Karluks	Yavan Valley	3.90	3.03	56	1.96	2.50	2.46	2.25	1.40	1.66	144	130	156	181	79
	Tadzhiks	Yavan Valley	3.84	3.32	50	2.15	2.48	2.39	2.15	1.38	1.45	141	129	153	182	93
	Kesamirs		52.78	2.68	22	1.41	2.25	2.03	2.11	1.69	1.86	143	131	154	181	36
	Semiz		22.58	2.76	21	1.55	2.16	2.03	2.16	1.84	1.45	143	131	153	182	31
Females	Kazakhs	Alma-Ata	67.70			1.31	1.69	1.79	1.86	....	1.92	138	116(?)	152	175	98
	Lokais	Yavan Valley	60.50			1.35	1.78	1.71	1.71	2.42	1.98	136	124	152	173	38
	Barlas		53.33			1.56	1.92	1.92	1.93	1.98	1.71	135	120	150	174	150
	Karluks	Yavan Valley	20.78			1.81	2.42	2.13	2.09	1.59	1.65	135	121	150	173	77
	Tadzhiks	Yavan Valley	11.50			1.94	2.24	2.10	2.05	1.53	1.60	133	120	149	173	100
	Kesamirs		52.78			1.44	2.00	1.88	1.93	1.98	1.77	133	122	149	173	43
	Semiz		57.57			1.46	1.92	2.03	2.03	1.78	1.58	134	125	150	177	39

Note: I = epicanthic fold in percentages; II = beard growth, aged 25 or +; III = horizontal facial profile; IV = height of nasal bridge; V = transverse profile of nasal bridge; VI = general profile of nasal bridge; VII = position of nasal walls; VIII = position of eyeballs; IX = bizygomatic breadth; X = minimum frontal diameter; XI = maximum head length; XII = maximum head breadth.

TABLE 7: COMPARISON OF SMALL UZBEK TRIBES OF SOUTHERN TADZHIKISTAN WITH MONGOLOIDS – KAZAKHS AND EUROPEOIDS – TADZHIKS

Kazakhs, Uzbek Tribes, and Tadzhiks

	Group	Locality	I	II Mean	II No.	III	IV	V	VI	VII	VIII	IX	X	XI	XII	No.
Males	Kazakhs	Alma Ata	72.60	2.16	80	1.15	1.62	....	1.92	2.28	2.52	149	132	160	187	100
	Merishkors		50.60	?	7	1.75	2.33	2.33	2.25	1.75	1.66	140	129	152	180	12
	Kungrats		47.05	1.90	10	1.70	1.83	1.94	2.00	2.06	1.53	145	132	156	183	17
	Various Tribes		44.40	2.17	12	1.44	2.22	1.94	2.18	1.83	1.72	144	132	155	182	18
	Dzhan-Katagans		40.91	2.53	15	1.68	2.23	2.09	2.00	1.82	1.45	144	129	155	182	22
	Kauchins		38.10	1.91	11	1.76	2.14	2.05	2.05	1.74	1.47	142	129	155	179	21
	Musa-Bazari		34.61	2.70	10	1.45	2.22	2.00	2.00	1.80	1.58	142	128	155	178	26
	Tadzhiks	Yavan Valley	3.84	3.32	50	2.15	2.48	2.39	2.15	1.38	1.45	141	129	153	182	93
Females	Kazakhs	Alma Ata	67.70			1.31	1.69	1.79	1.86	....	1.92	138	116(?)	152	175	98
	Musa-Bazari		81.25			1.38	1.94	1.81	1.81	2.25	1.81	134	120	151	173	16
	Small Groups		79.10			1.37	1.92	1.81	1.89	2.16	1.63	134	121	149	174	43
	Kungrats		69.23			1.27	1.64	1.73	1.80	2.37	1.69	135	120	149	175	26
	Dzhan-Katagans		63.64			1.59	?	2.09	1.86	1.90	1.55	133	122	148	175	22
	Merishkors		50.00			1.66	2.25	2.16	2.15	1.66	1.77	130	120	145	173	27
	Kauchins		23.08			1.77	2.00	1.93	1.83	2.14	1.64	133	118	148	174	14
	Tadzhiks	Yavan Valley	11.50			1.94	2.24	2.10	2.05	1.53	1.60	133	120	149	173	100

Note: I = epicanthic fold in percentages; II = beard growth, aged 25 or +; III = horizontal facial profile; IV = height of nasal bridge; V = transverse profile of nasal bridge; VI = general profile of nasal bridge; VII = position of nasal walls; VIII = position of eyeballs; IX = bizygomatic breadth; X = minimum frontal diameter; XI = maximum head length; XII = maximum head breadth.

TABLE 8: MINIMUM AND MAXIMUM AVERAGE GRADES OF THE MOST IMPORTANT TAXONOMIC CHARACTERS OF SMALL UZBEK TRIBES AND TADZHIK GROUPS OF VARIOUS RAIONS OF TADZHIKISTAN

Ethnic Groups	I		II		III		IV		V		VI		VII		No.
Males															
Small Uzbek Tribes	34.61	50.00	1.90	2.70	1.44	1.76	1.83	2.33	1.94	2.33	1.74	2.06	140	145	116
Tadzhiks	0.60	2.55	3.32	4.17	2.05	2.36	3.25	2.55	2.00	2.39	1.38	1.92	138	142	350
Females															
Small Uzbek Tribes	23.08	81.25			1.38	1.77	1.64	2.25	1.73	2.16	1.66	2.55	130	134	145
Tadzhiks	1.50	11.50			1.94	2.13	2.08	2.24	1.96	2.10	1.53	1.98	133	133	433

Note: I = epicanthic fold in percentages; II = beard growth, aged 25 or +; III = horizontal facial profile; IV = height of nasal bridge; V = transverse profile of nasal ridge; VI = position of nasal walls; VII = bizygomatic breadth.

TABLES

TABLE 9: COMPARISON OF UZBEK TRIBES OF THE SHAKHRASIAB RAION WITH THE BARLASS OF THE GISSAR [HISSAR] VALLEY ACCORDING TO BASIC CHARACTERS DIFFERENTIATING MONGOLOIDS FROM EUROPEOIDS

Tribes	Locality	I	II	III	IV	V	VI	VII	VIII	No.
Uzbeks	Shakhrasiab	8.40	3.22	2.31	2.06	140	122	154	181	190
Barlas	Hissar Valley	32.47	2.66	2.20	1.68	143	131	157	181	77

Note: I = epicanthic fold in percentages; II = beard growth, aged 25 or +; III = height of nasal bridge; IV = general profile of nasal ridge; V = bizygomatic breadth; VI = minimum frontal diameter; VII = maximum head breadth; VIII = maximum head length.

KEY TO TABLES 10-12

Series	Oblast
1	Northern and Central Uzbekistan, Ferghana, Tashkent, Bukhara, and Samarkand
2	Northern Tadzhikistan, Upper Zerafshan and Karategin
3	Central Tadzhikistan and Darvaz
4	Southern Tadzhikistan, Kuliab Oblast
5	Southern Uzbekistan, Surkhan-Daryn Oblast

TABLE 10: COMPARISON OF PLAIN AND PIEDMONT TADZHIKS OF UZBEKISTAN WITH MOUNTAIN AND PIEDMONT TADZHIKS OF TADZHIKISTAN ACCORDING TO BASIC CHARACTERS WHICH DIFFERENTIATE EUROPEOIDS FROM MONGOLOIDS

	Epicanthus (%)				Eye Folds				Beard				Horizontal Facial Profile			
Series	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
1	4.0	2.0	9.1	711	1.97	1.95	1.98	209	2.80	2.58	3.20	528	1.89	1.68	2.20	572
2	0.8	0.0	2.2	1068	1.80	1.71	1.87	464	2.96	2.69	3.04	715	2.09	1.91	2.24	635
3	2.5	0.0	3.1	481	....	....	....	...	3.49	3.42	3.52	286	2.29	1.90	2.53	514
4	2.0	0.0	3.3	352	1.66	1.45	1.80	353	3.50	3.32	4.15	125	2.22	2.05	2.36	351
5	0.0	...	...	221	1.51	....	....	251	3.04	....	....	182	1.92	....	....	221

TABLE 11: COMPARISON OF PLAIN AND PIEDMONT TADZHIKS OF UZBEKISTAN WITH MOUNTAIN AND PIEDMONT TADZHIKS OF TADZHIKISTAN ACCORDING TO BASIC CHARACTERS WHICH DIFFERENTIATE EUROPEOIDS FROM MONGOLOIDS

	Height of Nasal Bridge				Transverse Profile of Nasal Ridge				General Profile of Nasal Ridge				Position of Nasal Walls			
ries	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
1	2.16	2.00	2.36	711	2.22	1.99	2.31	209	2.14	2.04	2.31	711	1.89	1.87	1.91	155
2	2.22	2.15	2.44	1068	2.22	2.20	2.27	212	2.13	2.03	2.29	1068	1.97	1.96	2.00	212
3	2.37	2.26	2.60	551	....	....	....	...	2.08	2.01	2.14	334	....	....	....	...
4	2.46	2.25	2.55		2.22	2.00	2.39	322	2.07	2.00	2.19	352	1.74	1.68	1.92	321
5	2.29	....	....	221	2.39	....	....	220	2.27	....	....	220	1.65	....	....	221

TABLE 12: COMPARISON OF PLAIN AND PIEDMONT TADZHIKS OF UZBEKISTAN WITH MOUNTAIN AND PIEDMONT TADZHIKS OF TADZHIKISTAN ACCORDING TO BASIC CHARACTERS WHICH DIFFERENTIATE EUROPEOIDS FROM MONGOLOIDS

	Biz. B				MFH				GB				GOL			
eries	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
1	141	138	143	754	127	120	130	654	153	151	158	959	183	180	185	959
2	141	139	142	1071	125	121	129	1071	154	153	156	1113	184	180	186	1113
3	140	139	142	546	125	125	125	514	152	149	155	685	182	181	185	685
4	140	139	142	352	126	121	129	350	153	152	155	351	181	179	182	351
5	141	...	...	221	126	...	...	221	155	...	...	221	182	...	...	221

KEY TO TABLE 13

Series*	Oblast	Raion	Observer	Year	Ethnic Group
1	Upper Zerafshan	Matcha	IAsevich	1930	Tadzhiks
2	Upper Zerafshan	Zakhmatabad	Oshanin	1936	Tadzhiks
3	Yagnob Darya	Takfon	Oshanin	1936	Tadzhiks
4	Yagnob Darya	Khshartov	Oshanin	1936	Tadzhiks
5	Yagnob Darya	Yagnob	Oshanin	1936	Yagnobi
6	Bukhara	Bukhara	Oshanin	1926	Jews
7	Kashka Daryn	Shakhrasiab	Oshanin	1927	Jews

Note: Nos. 1-4 belong to Central Asiatic Interfluvial race; nos. 6-7 to Anterior Asian race.

TABLE 13: COMPARISON OF THE YAGNOBI WITH REPRESENTATIVES OF THE CENTRAL ASIATIC INTERFLUVIAL REGION RACE, THE TADZHIKS, AND WITH THE REPRESENTATIVES OF THE ANTERIOR ASIA RACE, THE JEWS

Series	I	II	III	IV	V	VI	VII	VIII	IX	No.
1	0.0	2.11	....	2.15	2.16	....	2.00	....	1.16	102
2	0.0	1.97	2.69	2.24	2.18	2.21	2.23	1.97	1.11	101
3	0.0	1.91	2.78	2.20	2.24	2.20	2.07	1.96	1.03	60
4	0.0	2.00	3.04	2.33	2.50	2.27	2.08	2.11	1.09	51
5	0.0	2.03	3.16	2.56	2.54	2.55	2.25	1.84	1.23	103
6	0.0	2.25	3.95	2.66	2.53	....	2.63	1.64	1.17	136
7	0.0	2.26	4.09	2.75	2.65	....	2.71	1.44	1.4	103

Note: I = epicanthic fold in percentages; II = horizontal frontal profile; III = beard growth, aged 25 or +; IV = height of nasal bridge; V = height of nasal wings; VI = transverse profile of nasal ridge; VII = general profile of nasal ridge; VIII = position of nasal walls; IX = eye color.

KEY TO TABLES 14-16

Series	Ethnic Group
1	Yagnobi
2	Iranian Tribes of the Western Pamirs
3	Tadzhiks of Southern Tadzhikistan
4	Tadzhiks of Afghanistan recorded by D.D. Bukinich

TABLE 14: COMPARISON OF IRANIAN TRIBES OF THE WESTERN PAMIRS WITH THE YAGNOBI AND THE TADZHIKS OF SOUTHERN TADZHIKISTAN AND NORTHERN AFGHANISTAN

	Epicanthus (%)				Eye Folds				Horizontal Facial Profile				Beard			
Series	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
1	0.0	...	...	103	1.69	....	....	103	2.03	....	....	102	3.16	....	....	84
2	0.0	0.0	0.0	348	1.66	1.47	1.80	348	2.10	2.00	2.26	348	3.45	3.00	4.00	197
3	1.9	0.0	3.3	352	1.66	1.45	1.80	353	2.22	2.05	2.36	351	3.50	3.32	4.15	125
4	0.0	0.0	0.0	245	....	....	....	...	....	....	....	...	....	....	....	...

TABLE 15: COMPARISON OF IRANIAN TRIBES OF THE WESTERN PAMIRS WITH THE YAGNOBI AND THE TADZHIKS OF SOUTHERN TADZHIKISTAN AND NORTHERN AFGHANISTAN

	Height of Nasal Root				Height of Nasal Wings				Transverse Profile of Nasal Ridge				General Profile of Nasal Ridge			
Series	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
1	2.56	....	....	103	2.54	....	....	103	2.55	....	....	103	2.25	....	....	102
2	2.62	2.52	2.67	348	2.59	2.43	2.69	348	2.43	2.08	3.00	348	2.20	2.00	2.33	348
3	2.46	2.25	2.55	351	....	....	....	...	2.22	2.00	2.39	322	2.07	2.00	2.19	352
4		2.07	2.11	245	....	....	....	...	....	....	....	....		2.08	2.14	245

TABLE 16: COMPARISON OF IRANIAN TRIBES OF THE WESTERN PAMIRS WITH THE YAGNOBI AND THE TADZHIKS OF SOUTHERN TADZHIKISTAN AND NORTHERN AFGHANISTAN

	Biz. B				Morphological Facial Height				GB				GOL			
Series	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.	Mean	Min.	Max.	No.
1	139	...	...	103	124	...	...	103	152	...	...	103	183	...	...	103
2	139	136	142	608	123	121	127	608	153	151	155	664	181	177	185	664
3	140	139	142	352	126	121	129	350	153	152	155	161	181	179	182	351
4	...	...	...	...	...	...	...	...	...	150	152	123	183	182	184	123

KEY TO TABLE 17

Series	Peoples	Locality	Observer	Date
1	Kirghiz	Alai	Oshanin	1928
2	Tadzhiks	Matcha	IAsevich	1931
3	Tadzhiks	Falgar	Oshanin	1936
4	Tadzhiks	Takfon	Oshanin	1936
5	Tadzhiks	Karategin	Bogoiavlenskii	1901
6	Tadzhiks	Karategin	Oshanin	1925
7	Tadzhiks	Karategin	IAsevich	1931
8	Tadzhiks	Karategin	Ginzburg	1932
9	Tadzhiks	Khingou, Piandzh, Vanch	Bogoiavlenskii	1901
10	Tadzhiks	E. and C. Darvaz	Ginzburg	1932
11	Tadzhiks	Southern Darvaz	Ginzburg	1932
12	Tadzhiks	Northern Hindu Kush	Bukinich	1924
13	Tadzhiks	Southern Hindu Kush	Bukinich	1924
14	Uzbeks	Kitab	Oshanin	1927
15	Uzbeks	Shakhrasiab	Oshanin	1927
16	Uzbeks	Guzar	IAsevich	1927

Note: Nos. 2-4 from Zerafshan Basin; Nos. 9-11 from Darvaz; Nos. 12-13 from Afghanistan.

TABLE 17: COMPARATIVE ANTHROPOLOGICAL DATA OF THE KARATEGIN AND DARVAZ TADZHIKS

Series	I	II	III	IV	V	VI	VII	VIII	IX
1	1.08	1.22	1.48	....	....	1.77	1.03	71.4	186
2	1.16	3.46	2.15	2.18	....	2.23	2.11	0	180
3	1.11	2.69	2.24	2.25	1.97	2.03	1.97	0	180
4	1.16	2.78	2.20	2.25	1.96	2.08	1.91	0	180
5	1.11	....	....	....	....	2.17	....	....	185
6	1.40	3.01	2.18	1.80	....	2.06	....	0.23	186
7	1.36	3.84	2.16	2.23	....	2.29	2.02	0.70	185
8	1.17	2.96	2.44	1.53(?)	....	2.19	2.24	5.26	184
9	1.34	....	....	....	....	2.29	...	....	185
10	1.29	3.42	2.26	2.04	....	2.02	2.53	2.28	184
11	1.35	3.52	2.46	1.89	....	2.15	2.28	3.14	181
12	1.09	3.23	2.09	....	....	2.08	....	0	184
13	1.14	3.46	2.07	....	....	2.14	....	0	182
14	1.13	2.86	1.98	2.01	2.09	2.10	1.81	12.37	179
15	1.07	3.22	2.31	2.04	2.02	2.06	1.71	8.40	181
16	1.13	3.34	2.02	2.20	1.98	2.12	1.65	5.24	181

Series	X	XI	XII	XIII	XIV	XV	XVI	No.
1	155	84	147	126	85	..	165	35
2	156	86	140	123	86	70	164	102
3	156	86	140	121	86	70	165	101
4	153	85	140	122	87	66	165	60
5	155	84	134	126	94	68	165	42
6	154	83	142	126	88	62	166	433
7	155	83	139	126	90	63	165	150
8	155	84	142	129	90	59	166	197
9	150	81	138	120	87	70	165	177
10	152	83	140	126	89	59	164	152
11	152	84	139	125	90	59	166	185
12	152	83	139	120	87	73(?)	...	36
13	150	83	138	121	87	68	...	209
14	155	86	141	118	84	66	165	202
15	151	85	142	122	87	63	163	190
16	153	84	141	124	87	63	165	267

Note: I = eye color; II = beard growth, aged 25 or +; III = height of nasal root; IV = height of nasal wings; V = position of nasal walls; VI = transverse profile of nasal ridge; VII = horizontal facial profile; VIII = epicanthic fold in percentages; IX = maximum head length; X = maximum head breadth; XI = cephalic index; XII = bizygomatic breadth; XIII = morphological facial height; XIV = morphological facial index; XV = nasal index; XVI = stature in centimeters.

TADZHIKS OF UPPER ZARAFSHAN, YAGNOB DARYA AND YAGNOBI

KEY TO TABLES 21-51

Series	People	Location	Observer	Year
1	Tadzhiks	Matcha Upper Zarafshan	IAsevich	1930
2	Tadzhiks	Zakhmatabad Upper Zarafshan	Oshanin	1936
3	Tadzhiks	Lower Yagnob	Oshanin	1936
4	Tadzhiks	Middle Yagnob	Oshanin	1936
5	Yagnobi	Middle Yagnob	Oshanin	1936

TABLE 21: EYE COLOR

		I		II		III		
Series	Mean	No.	%	No.	%	No.	%	Total
1	1.16	87	85.29	13	12.75	2	1.96	102
2	1.11	91	90.20	8	7.90	2	1.90	101
3	1.03	58	96.67	2	3.33	..	....	60
4	1.09	46	90.20	5	9.80	..	....	51
5	1.23	80	77.68	22	21.53	1	0.97	103

Note: In Martin's scale Nos. 1-5 = dark; Nos. 6-10 = mixed; Nos. 11-16 = light.

TABLE 22: HEAD HAIR COLOR

	Black-Brown (No. 4)		Brown (No. 6)		Black (No. 27)		
Series	No.	%	No.	%	No.	%	Total
2	26	36.62	1	1.41	44	61.97	71
3	15	40.54	..	....	22	59.46	37
4	27	58.70	..	....	19	41.30	46
5	32	42.11	..	....	44	57.89	76

Note: Fischer's scale.

TABLE 23: BEARD COLOR

	No. 4		No. 5		No. 6		No. 7		No. 8		No. 9		No. 27		
Series	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Total
2	16	29.09	..	.....	1	1.82	..	....	2	3.64	..	....	36	65.45	55
3	12	27.90	..	.....	..	....	1	2.33	..	....	..	....	30	69.77	43
4	14	29.17	1	1.08	2	4.17	..	....	2	4.17	1	2.08	28	58.33	48
5	22	27.85	..	....	1	1.26	1	1.26	2	2.53	1	1.26	52	65.84	79

Note: According to Fischer's scale, No. 4 = black-brown; Nos. 5-7 = brown; No. 8 = dark blonde; No. 9 = light blonde; No. 27 = black.

TABLE 24: BEARD GROWTH

Series	Mean	I		II		III		IV		V		Total
		No.	%	No.	%	No.	%	No.	%	No.	%	
2	2.69	2	2.90	25	36.80	34	50.10	6	8.80	1	1.40	68
3	2.78	1	2.43	8	19.35	31	75.62	1	2.43	..	....	41
4	3.04	..	....	5	10.70	36	76.50	5	10.70	1	2.10	47
5	3.16	..	....	7	8.33	62	73.81	9	10.72	6	7.14	84

Note: I = almost absent; II = sparse; III = average; IV = abundant; V = very abundant. Males aged 25+.

TABLE 25: FOREHEAD SLOPE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
2	2.27	1	0.99	72	71.29	28	27.72	101
3	2.32	1	1.71	37	63.80	20	34.49	58
4	2.43	1	1.96	27	52.94	23	45.10	51
5	2.45	1	0.97	54	52.43	48	46.80	103

Note: I = slight; II = average; III = marked.

TABLE 26: FRONTAL BOSSES

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
2	1.94	24	23.76	59	58.42	18	17.82	101
3	2.05	9	15.00	39	65.00	12	20.00	60
4	1.76	16	31.37	31	60.79	4	7.84	51
5	2.09	21	20.38	51	49.52	31	30.10	103

Note: I = absent; II = present; III = prominent. Literally, Forehead bosses.

TABLE 27: SUPERCILIUM

Series	I		II		III		IV		Total
	No.	%	No.	%	No.	%	No.	%	
2	14	13.86	51	50.50	22	21.78	14	13.86	101
3	20	33.34	32	53.34	7	11.66	1	1.66	60
4	11	21.57	20	39.22	17	33.33	3	5.88	51
5	32	31.07	56	54.37	13	12.62	2	1.94	103

Note: I = absent; II = weak; III = average; IV = pronounced. Literally, Development of Supercilium.

TABLE 28: HORIZONTAL FACIAL PROFILE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	2.11	7	6.90	77	76.30	18	16.80	102
2	1.97	6	5.90	90	91.20	3	2.90	99
3	1.91	5	8.62	53	91.38	..	.....	58
4	2.00	1	1.90	49	96.20	1	1.90	51
5	2.03	2	1.96	94	92.16	6	5.88	102

Note: I = flat; II = average; III = narrow.

TABLE 29: HEIGHT OF NASAL BRIDGE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	2.15	1	0.90	85	83.40	16	16.70	102
2	2.24	3	2.90	70	69.40	28	27.70	101
3	2.20	1	1.66	46	76.67	13	21.67	60
4	2.33	..	....	34	66.70	17	33.30	51
5	2.56	..	....	45	43.68	58	56.32	103

Note: I = low; II = average; III = high.

TABLE 30: HEIGHT OF NASAL WINGS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	2.18	2	1.90	80	78.40	20	19.70	102
2	2.25	3	2.90	69	68.40	29	28.70	101
3	2.25	1	1.66	43	71.67	16	26.67	60
4	2.50	1	1.90	23	45.52	27	52.90	51
5	2.54	..	....	47	45.63	56	54.37	103

Note: I = low; II = average; III = high.

TABLE 31: TRANSVERSE PROFILE OF NASAL RIDGE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
2	2.21	3	2.90	73	72.40	25	24.70	101
3	2.20	1	1.66	46	76.67	13	21.67	60
4	2.27	..	....	37	72.50	14	27.50	51
5	2.55	..	....	46	44.66	57	55.34	103

Note: I = flat; II = average; III = pronounced.

TABLE 32: GENERAL PROFILE OF NASAL RIDGE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	2.23	4	3.90	70	68.60	28	27.50	102
2	2.03	6	6.10	39	79.80	14	14.10	99
3	2.08	3	5.26	44	80.71	8	14.03	55
4	2.11	1	1.90	43	84.40	7	13.70	51
5	2.25	7	6.86	62	60.79	33	32.35	102

Note: I = concave; II = straight or wavy; III = convex.

TABLE 33: POSITION OF NASAL TIP

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	2.22	7	6.80	65	63.80	30	29.40	102
2	2.14	7	6.93	73	72.28	21	20.79	101
3	2.20	2	3.33	44	73.34	14	23.33	60
4	2.33	..	....	34	66.67	17	33.33	51
5	2.36	1	0.97	63	61.17	39	37.86	103

Note: I = raised; II = horizontal; III = dropping.

TABLE 34: POSITION OF NASAL BASE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	2.25	5	4.90	66	64.70	31	30.40	102
2	2.13	7	6.93	74	73.27	20	19.18	101
3	2.18	2	3.33	45	75.00	13	21.67	60
4	2.22	1	1.96	38	74.51	12	23.53	51
5	2.33	1	0.97	67	65.05	35	33.98	103

Note: I = raised; II = horizontal; III = dropping.

TABLE 35: POSITION OF NOSTRIL AXIS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	2.23	10	9.90	58	56.80	34	33.30	102
2	2.18	3	2.97	76	75.25	22	21.78	101
3	2.33	..	....	40	66.67	20	33.33	60
5	2.11	..	....	91	88.35	12	11.65	103

Note: I = horizontal; II = average; III = sloping.

TABLE 36: POSITION OF NASAL WALLS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
2	1.97	3	2.90	98	97.10	..	....	101
3	1.96	3	5.00	56	93.34	1	1.16	60
4	2.00	1	2.00	47	96.00	1	2.00	49
5	1.84	16	15.53	87	84.47	..	....	103

Note: I = almost vertical; II = average; III = markedly sloping.

TABLE 37: POSITION OF EYEBALLS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	1.74	38	36.20	53	52.80	11	10.90	102
2	1.87	13	12.87	88	87.13	..	.....	101
3	1.95	12	20.00	45	75.00	3	5.00	60
4	1.71	15	29.41	36	70.59	..	.....	51
5	1.69	31	30.09	72	69.91	..	.....	103

Note: I = sunken; II = average; III = protruding.

TABLE 38: WIDTH OF EYE SLITS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	2.14	7	6.80	74	72.50	21	20.70	102
2	2.00	7	6.93	87	86.14	7	6.93	101
3	2.18	1	1.66	47	78.34	12	20.00	60
4	2.14	..	....	44	86.27	7	13.73	51
5	2.14	1	0.97	86	83.50	16	15.53	103

Note: I = narrow; II = average; III = wide.

TABLE 39: EPICANTHUS AND EYELID FOLDS

Series	Epicanthus	Upper Eyelid								Total
		0		I		II		III		
		No.	%	No.	%	No.	%	No.	%	
1	0.0	68	66.60	15	14.50	13	12.20	6	5.70	102
2	0.0	47	46.53	13	12.87	21	20.79	20	19.81	101
3	0.0	33	61.67	7	11.66	10	16.67	6	10.00	60
4	0.0	33	64.71	3	5.88	9	17.65	6	11.76	51
5	0.0	76	67.97	4	3.88	19	18.45	10	9.70	?

Note: Simple fold of upper eyelid observed. Total for Series 5 illegible but in other tables 103, sometimes 102.

TABLE 40: CEPHALIC INDEX

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
1	85.79±0.30	3.08±0.21	3.50±0.25	102
2	86.79±0.37	3.76±0.26	4.31±0.26	101
3	84.99±0.52	4.06±0.37	4.78±0.44	60
4	85.94±0.50	3.57±0.35	4.15±0.41	51
5	83.01±0.38	3.86±0.27	4.65±0.32	103

TABLE 41: HEAD LENGTH

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
1	180.32±0.66	6.69±0.38	3.70±0.26	102
2	180.42±0.57	5.70±0.40	3.16±0.22	101
3	180.15±0.73	5.67±0.52	3.15±0.29	60
4	181.88±0.68	4.88±0.48	2.68±0.27	51
5	183.28±0.59	6.02±0.42	3.28±0.23	103

Note: Literally, Longitudinal Head Diameter. This has been changed to Harvard-Oxford style as have headings for subsequent tables. (H.F.)

TABLE 42: HEAD BREADTH

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
1	155.93±0.48	4.92±0.34	3.10±0.21	102
2	155.97±0.59	5.92±0.42	3.80±0.27	101
3	152.97±0.79	5.64±0.52	3.69±0.34	60
4	156.25±0.78	4.69±0.55	3.54±0.35	51
5	152.00±0.56	5.72±0.40	3.76±0.26	103

TABLE 43: MORPHOLOGICAL FACIAL INDEX

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
1	86.12±0.52	5.30±0.37	6.10±0.43	100
2	86.43±0.37	3.74±0.28	4.33±0.30	101
3	86.67±0.66	5.08±0.47	5.86±0.54	60
4	87.74±0.47	3.36±0.33	3.83±0.38	51
5	88.59±0.40	4.27±0.28	4.82±0.30	103

TABLE 44: MORPHOLOGICAL FACIAL HEIGHT

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
1	121.41±0.66	6.68±0.46	5.50±0.39	102
2	121.79±0.51	5.09±0.56	4.18±0.30	101
3	121.63±0.85	6.56±0.60	5.39±0.49	60
4	124.73±0.60	4.30±0.43	3.45±0.34	51
5	123.75±0.58	5.89±0.40	4.76±0.33	103

Note: Measured from lower edge of eyebrow to nasal tip.

TABLE 45: BIZYGOMATIC BREADTH

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
1	140.40±0.55	5.62±0.32	4.00±0.28	102
2	140.42±0.45	4.57±0.32	3.25±0.23	101
3	140.47±0.51	3.97±0.36	2.83±0.25	60
4	142.27±0.69	4.95±0.49	3.48±0.35	51
5	139.70±0.44	4.51±0.36	3.22±0.22	103

TABLE 46: NASAL INDEX

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
1	70.50±0.77	7.66±0.54	10.90±0.78	100
2	70.54±0.83	8.32±0.59	11.76±0.84	101
3	66.25±0.76	5.87±0.53	8.86±0.21	60
4	69.35±0.71	5.07±0.50	7.31±0.73	51
5	66.85±0.74	7.48±0.52	11.19±0.75	103

Note: Since the nasal height was not measured from nasion, all nasal measurements and indices cannot be compared directly with our data (H.F.).

TABLE 47: NASAL HEIGHT

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
1	50.22±0.39	4.02±0.21	8.00±0.56	102
2	50.18±0.30	3.58±0.20	7.27±0.51	101
3	51.68±0.36	2.81±0.26	5.44±0.50	60
4	52.08±0.40	2.85±0.28	5.47±0.54	51
5	51.83±0.38	3.41±0.24	6.68±0.46	103

Note: Measured from nasal tip to lower edge of eyebrows.

TABLE 48: NASAL BREADTH

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
1	36.20±0.34	3.08±0.17	8.50±0.60	102
2	34.82±0.25	2.50±0.18	7.18±0.51	101
3	34.15±0.33	2.57±0.23	7.52±0.69	60
4	36.06±0.36	2.54±0.26	7.04±0.70	51
5	34.48±0.28	2.87±0.25	8.32±0.59	103

TABLE 49: MINIMUM FRONTAL DIAMETER

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
2	106.66±0.43	4.34±0.30	4.07±0.29	100
3	106.36±0.68	5.20±0.48	4.89±0.45	59
4	109.37±0.69	4.96±0.49	4.54±0.45	51
5	106.34±0.50	4.99±0.35	4.69±0.33	101

TABLE 50: BIGONIAL BREADTH

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
2	106.94±0.55	5.55±0.39	5.19±0.37	101
3	108.52±0.48	5.57±0.51	5.13±0.47	60
4	108.71±0.68	4.82±0.49	4.43±0.44	51
5	107.16±0.47	4.74±0.33	4.42±0.33	103

TABLE 51: STATURE

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
2	164.78±0.61	6.13±0.43	3.72±0.25	101
3	163.58±0.59	4.54±0.42	2.78±0.25	60
4	166.46±0.77	5.48±0.55	3.29±0.33	51
5	163.80±0.63	6.45±0.45	3.94±0.27	103

TABLE 52: IRANIAN TRIBES OF THE WESTERN PAMIRS
(231 Shugnans, 42 Rushans, 13 Bartangs, 52 Vakhans,
7 Ishkashim, 7 Gorans: Total, 352)

QUALITATIVE CHARACTERS (OSHANIN, 1935)

		I		II		III		IV		V		
Character	Mean	No.	%	No.	%	No.	%	No.	%	No.	%	Total
Beard Growth	3.67	..	....	6	3.03	100	54.32	73	37.06	11	5.59	197

Note: Beard growth recorded on individuals aged 25+. III is given as 10 individuals with 54.32%; IV is 73 individuals with 37.06%; total is also incorrect. (H.F.)

		I		II		III		
Character	Mean	No.	%	No.	%	No.	%	Total
Eye Color	1.15	295	86.03	47	13.32	2	0.60	344
Forehead Slope	2.20	17	4.97	240	70.18	85	24.85	342
Frontal Bosses	1.19	63	18.10	227	65.23	58	16.67	348
Supercilium	2.09	87	25.0	166	47.70	73	20.98	348
Vertical Facial Profile	1.38	232	66.67	99	28.45	17	4.88	348
Horizontal Facial Profile	2.10	4	1.15	290	83.33	54	15.52	348
Height of Nasal Bridge	2.62	...	.....	133	38.22	215	61.78	348
Height of Nasal Wings	2.59	1	0.29	140	40.23	207	59.48	348
Transverse Profile of Nasal Ridge	2.71	...	.....	100	28.74	248	71.26	348
Nasal Profile	2.20	30	8.62	217	62.38	101	29.00	348
Nasal Base	2.17	18	5.17	252	72.42	78	22.41	348
Position of Nostrils	2.30	...	.....	243	69.83	105	30.17	348
Lip Thickness	1.53	104	29.89	204	58.62	40	11.49	348
Upper Lip Height		120	34.48	216	62.07	12	3.45	348
Upper Lip Profile	1.28	258	74.14	83	23.85	7	2.01	348
Width of Eye Slits	2.34	2	0.57	224	64.37	122	35.06	348
Position of Eyeballs	1.66	122	35.06	224	64.37	2	0.57	348
Epicanthus	0							348

Note: Eye color according to Martin's Scale, I = Nos. 1-5, dark; II = Nos. 6-10, mixed; III = Nos. 11-16, light.

Forehead Slope, I = marked; II = average; III = straight.

Frontal bosses, I = absent; II = present; III = prominent.

Supercilium, I = absent; II = weak; III = average; IV = pronounced. No. IV had 22 individuals with 6.32 per cent.

Vertical facial profile, I = straight; II = slight protrusion; III = marked protrusion.

Horizontal facial profile, I = flat; II = average; III = narrow.

Height of nasal bridge, I = low; II = average; III = high.

Height of nasal wings, I = low; II = average; III = high.

Transverse profile of nasal ridge, I = flat; II = average; III = prominent.

General profile of nasal ridge, I = concave; II = straight or wavy; III = convex.

Position of nostrils, I = transverse; II = sloping; III = sagittal.

Lip thickness, I = thin; II = average; III = thick.

Height of upper lip, I = low; II = average; III = high.

Profile of upper lip, I = procheilia; II = orthocheilia; III = opisthocheilia.

Width of eye slits, I = narrow; II = average; III = wide.

Position of eyeballs, I = sunken; II = average; III = protruding.

Presence of epicanthus is given in percentages but not in this table.

TABLE 53: IRANIAN TRIBES OF THE WESTERN PAMIRS (OSHANIN, 1935)

Measurements and Indexes	Tribe	M±m(M)	σ±m(σ)	V±m(V)	No.
Cephalic Index	Shugnans	84.25±0.25	3.94±0.17	4.67±0.21	231
	Rushans	84.47±1.00	6.48±0.71	7.55±0.83	42
	Vakhans	85.46±0.51	3.72±0.36	4.25±0.42	52
Head Length	Shugnans	183±0.41	6.37±0.29	3.48±0.16	231
	Rushans	185±0.97	6.38±0.69	3.45±0.38	42
	Vakhans	180±0.77	5.56±0.51	3.09±0.30	52
Head Breadth	Shugnans	154±0.36	5.48±0.25	3.55±0.16	231
	Rushans	154±0.97	6.39±0.68	4.08±0.45	42
	Vakhans	153±0.64	4.62±0.45	3.01±0.29	52
Morphological Facial Index	Shugnans	87.79±0.33	5.09±0.23	5.79±0.26	230
	Rushans	87.22±0.71	4.58±0.50	5.24±0.57	42
	Vakhans	87.69±0.71	5.82±0.50	5.84±0.57	52
Morphological Facial Height	Shugnans	123.6±0.46	7.03±0.32	5.68±0.26	231
	Rushans	121.7±1.07	6.91±0.76	5.68±0.62	42
	Vakhans	121.8±1.05	7.56±0.74	6.20±0.61	52
Bizygomatic Breadth	Shugnans	140.7±0.31	4.72±0.22	3.35±0.15	230
	Rushans	139.9±0.69	4.71±0.48	3.22±0.35	42
	Vakhans	138.8±0.55	4.00±0.39	2.88±0.28	52

TABLE 54: IRANIAN TRIBES OF THE WESTERN PAMIRS (OSHANIN, 1935)

Measurements and Indexes	Tribe	M±m(M)	σ±m(σ)	V±m(V)	No.
Minimum Frontal Diameter	Shugnans	106.8±0.30	4.64±0.22	4.34±0.20	219
	Rushans	105.7±0.63	4.01±0.44	3.79±0.56	41
	Vakhans	107.2±0.56	3.97±0.40	3.79±0.37	51
Bigonial Breadth	Shugnans	106.9±0.34	5.22±0.24	4.88±0.25	229
	Rushans	106.7±0.81	5.24±0.34	4.92±0.54	42
	Vakhans	105.8±0.72	5.21±0.51	4.92±0.48	52
Nasal Height	Shugnans	52.10±0.21	3.33±0.21	6.20±0.28	231
	Rushans	51.50±0.46	3.04±0.33	5.91±0.64	42
	Vakhans	52.10±0.59	4.23±0.42	8.10±0.80	52
Nasal Breadth	Shugnans	34.60±0.17	2.66±0.12	7.74±0.35	231
	Rushans	34.20±0.33	2.16±0.23	6.34±0.69	42
	Vakhans	34.30±0.35	2.55±0.25	7.42±0.73	52
Nasal Index	Shugnans	66.00±0.45	6.86±0.32	10.38±0.48	231
	Rushans	66.70±0.98	6.34±0.69	9.55±1.05	42
	Vakhans	66.20±1.00	7.20±0.71	10.87±1.09	52
Stature	Shugnans	167.72±0.41	6.29±0.29		231
	Rushans	166.41±0.59	3.85±0.42	2.31±0.25	42
	Vakhans	164.08±0.79	5.68±0.56	3.46±0.34	52

KARATEGIN AND DARVAZ TADZHIKS

KEY TO TABLES 55-74

Series	Locality	Observer	Year
1	Karategin	Bogoiavlenskii	1903
2	Karategin	Oshanin	1925
3	Karategin	IAasevich	1930
4	Karategin	Ginzburg	1931
5	Darvaz (Khingou Valley)	Bogoiavlenskii	1903
6	Darvaz (Piandzh Valley)	Bogoiavlenskii	1903
7	Darvaz (Vanch Valley)	Bogoiavlenskii	1903
8	Darvaz (central and eastern)	Ginzburg	1931
9	Darvaz (southwestern)	Ginzburg	1931
10	Karategin	Bogoiavlenskii	1898

TABLE 55: EYE COLOR

		I		II		III		
Series	Mean	No.	%	No.	%	No.	%	Total
1	1.12(?)	32	94.12	..	.....	2	5.88	34
2	1.40	262	60.50	167	38.60	4	0.90	433
3	1.36	494	71.30	149	25.50	50	7.20	693
4	1.17(?)	142	84.52	23	13.69	3	1.79	168
5	1.36	34	75.76	5	11.11	6	13.33	45
6	1.18	71	83.53	2	2.35	12	14.12	85
7	1.38	32	76.19	4	9.52	6	14.29	42
8	1.29	105	77.21	23	16.91	8	5.88	136
9	1.35	115	70.55	39	23.92	9	5.52	163

Note: According to Martin's scale, I = Nos. 1-5, dark; II = Nos. 6-10, mixed; III = Nos. 11-16, light.

TABLE 56: BEARD GROWTH

		I		II		III		IV		V		
Series	Mean	No.	%	No.	%	No.	%	No.	%	No.	%	Total
2	3.01	37	8.85	92	22.01	135	32.30	138	33.01	16	3.83	418
3	3.83?	12	8.00	9	6.00	30	20.00	42	28.00	57	38.00	150
4	2.96	15	10.64	27	19.14	50	35.46	46	32.63	3	2.13	141
8	3.42?	7	5.43	15	11.63	36	27.91	59	45.74	12	9.30	129
9	3.52?	5	3.18	21	13.38	37	23.57	73	46.50	21	13.38	157

Note: I = almost absent; II = sparse; III = average; IV = abundant; V = very abundant. Males aged 25+. Column IV percentage, which is given as 118.01, has been corrected (H.F.).

TABLE 57: HORIZONTAL FACIAL PROFILE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
3	2.09	15	10.00	106	70.30	29	19.70	150
4	2.24	17	9.97	96	56.14	58	33.92	171
8	2.53	7	5.43	46	35.66	76	58.91	129
9	2.28	13	8.18	89	55.97	57	35.85	159

Note: I = flat; II = average; III = narrow.

TABLE 58: HEIGHT OF NASAL BRIDGE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
2	2.18	18	4.16	315	72.75	100	23.09	433
3	2.16	2	1.30	122	81.40	26	17.30	150
4	2.44	4	2.34	87	50.87	80	46.78	171
8	2.26	3	2.27	91	68.94	38	28.79	132
9	2.46	4	2.52	78	49.06	77	48.43	159

Note: I = low; II = average; III = high.

TABLE 59: HEIGHT OF NASAL WINGS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
2	1.80	53	23.77	165	74.10	5	2.24	223
3	2.23	6	4.00	103	68.70	41	27.30	150
4	1.53	83	48.53	83	48.53	86	50.29	171
8	2.04	38	28.79	62	46.97	32	24.25	132
9	1.89	64	40.26	48	30.19	47	29.56	159

Note: I = low; II = average; III = high. Nos. I-III in Series 4 have incorrect Nos. and Percentages (H.F.).

TABLE 60: GENERAL PROFILE OF NASAL RIDGE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	2.16	..	.....	20	83.33	4	16.67	24
2	2.06	33	7.62	340	78.52	60	13.86	433
3	2.29	10	6.60	88	58.70	52	34.70	150
4	2.19	11	6.43	116	67.84	44	25.73	171
5	2.26	..	.....	17	73.90	6	26.10	23
6	2.26	..	.....	42	73.68	15	26.32	57
7	2.42	..	.....	7	58.33	5	41.67	12
8	2.02	25	18.94	80	60.61	27	20.45	132
9	2.15	17	10.68	102	64.16	40	25.16	159

Note: I = concave; II = straight or wavy; III = convex.

TABLE 61: EPICANTHUS AND EYELID FOLDS

Series	Epicanthus	Mean	0		I		II		III		Total
			No.	%	No.	%	No.	%	No.	%	
2	0.16	1.0	136	31.41	44	10.16	12	28.17	123	28.41	425
3	0.00	0.34	120	80.00	15	10.00	9	6.00	6	4.0	150
4	5.26	1.00	76	44.45	35	20.46	44	25.73	16	9.36	171
8	2.28	0.87	55	41.67	47	35.60	22	16.67	8	6.06	132
9	3.14	1.52	36	22.64	38	23.90	51	32.08	34	21.39	159

Note: Epicanthus given in percentages; simple folds of upper eyelids observed.

TABLE 62: WIDTH OF EYE SLITS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
2	2.08	29	6.70	346	79.91	58	13.39	433
3	2.18	4	2.70	115	76.70	31	20.60	150
4	1.68	71	41.52	84	49.12	16	9.36	171
8	2.06	32	24.25	60	45.45	40	30.30	132
9	2.33	14	8.81	79	49.69	66	41.50	159

Note: I = narrow; II = average; III = wide. Series No. III percentage and total given as 44.51 and missing; corrected to 41.50 and 159 (H.F.).

TABLE 63: CEPHALIC INDEX

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
10	84.36±0.67	4.33±0.48	5.13±0.56	42
2	82.77±0.21	4.31±0.15	5.21±0.18	433
3	82.82±0.38	4.70±0.27	5.70±0.33	150
4	83.51±0.33	4.31±0.23	5.16±0.28	174
5	82.67±0.57	3.84±0.40	4.64±0.49	46
6	80.64±0.47	4.43±0.33	5.49±0.42	88
7	81.37±0.75	4.94±0.53	6.07±0.66	43
9	83.95±0.33	4.50±0.23	5.36±0.43	184
8	82.01±0.33	4.00±0.23	4.84±0.28	150

TABLE 64: MORPHOLOGICAL FACIAL INDEX

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
10	94.02±1.18	7.57±0.84	8.05±0.89	41
2	87.78±0.22	4.65±0.16	5.30±0.18	433
3	90.22±0.45	5.50±0.37	6.10±0.35	150
4	90.59±0.40	5.27±0.28	5.82±0.32	172
5	88.18±0.76	4.35±0.54	4.93±0.61	33
6	87.66±0.58	5.38±0.41	6.14±0.47	87
7	84.14±0.98	6.44±0.70	7.65±0.83	43
9	90.06±0.38	4.79±0.27	5.28±0.30	156
8	89.76±0.43	5.03±0.30	5.62±0.34	137

TABLE 65: HEAD BREADTH

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
10	184.64±1.16	7.55±0.82	4.09±0.45	42
2	185.82±0.33	6.86±0.23	3.69±0.12	433
3	184.76±0.59	6.84±0.38	3.70±0.21	150
4	184.02±0.57	7.52±0.40	4.08±0.22	174
5	184.02±0.96	6.52±0.68	3.54±0.37	46
6	185.00±0.71	6.64±0.50	3.59±0.27	38
7	184.54±1.03	6.76±0.73	3.66±0.40	43
9	180.89±0.49	6.71±0.35	3.71±0.19	184
8	183.70±0.58	7.11±0.41	3.87±0.22	150

TABLE 66: HEAD LENGTH

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
10	155.07±0.94	6.08±0.67	3.92±0.43	42
2	154.12±0.29	6.05±0.20	3.92±0.13	433
3	154.94±0.39	4.84±0.27	3.14±0.18	150
4	153.91±0.44	5.86±0.31	3.81±0.20	174
5	151.02±0.89	6.01±0.63	3.89±0.42	46
6	149.00±0.61	5.77±0.43	3.87±0.29	88
7	150.15±0.88	5.75±0.62	3.83±0.41	43
9	151.58±0.43	5.88±0.30	3.89±0.20	184
8	151.98±0.36	4.45±0.26	2.93±0.17	150

TABLE 67: MORPHOLOGICAL FACIAL HEIGHT

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
10	126.38±1.12	7.16±0.79	5.66±0.63	41
2	125.73±0.31	6.39±0.22	5.08±0.17	433
3	125.91±0.57	6.96±0.40	5.50±0.32	150
4	129.34±0.59	7.68±0.42	5.94±0.32	172
5	121.32±0.94	5.40±0.67	4.45±0.55	33
6	120.74±0.66	6.15±0.47	5.09±0.39	87
7	117.41±0.95	6.26±0.67	5.33±0.58	43
9	125.35±0.52	6.33±0.37	5.21±0.30	156
8	125.67±0.59	6.97±0.42	5.55±0.34	137

TABLE 68: BIZYGOMATIC BREADTH

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
10	134.46(?)±0.98	6.29±0.69	4.68±0.52	41
2	142.20±0.26	5.50±0.19	3.87±0.13	433
3	139.22±0.50	6.16±0.35	4.40±0.26	150
4	142.31±0.41	5.43±0.29	3.82±0.21	172
5	135.87(?)±0.83	5.65±0.59	4.16±0.44	46
6	137.87(?)±0.55	5.14±0.39	3.73±0.28	88
7	139.63±0.88	5.80±0.62	4.15±0.45	43
9	139.32±0.37	4.58±0.26	3.29±0.19	156
8	140.12±0.41	4.87±0.29	3.46±0.21	137

TABLE 69: MINIMUM FRONTAL DIAMETER

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
2	110.46±0.33	4.77±0.23	4.32±0.21	204
3	119.63(?)±0.59	7.21±0.42	6.03±0.35	150
4	107.83±0.42	5.50±0.30	5.10±0.59	171
9	107.12±0.38	4.85±0.27	4.52±0.26	156
8	107.57±0.41	4.67±0.29	4.33±0.27	131

TABLE 70: BIGONIAL BREADTH

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
2	108.73±0.31	6.34±0.22	5.83±0.21	407
3	117.01(?)±0.60	7.35±0.43	6.28±0.36	150
4	108.23±0.45	5.85±0.32	5.40±0.29	172
9	106.36±0.49	6.16±0.35	5.80±0.35	156
8	107.89±0.52	6.00±0.37	5.57±0.35	131

TABLE 71: NASAL HEIGHT

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
10	51.71±0.57	3.66±0.40	7.08±0.79	41
2	54.28±0.20	4.19±0.14	7.72±0.26	433
3	55.20±0.33	4.14±0.23	7.50±0.43	150
4	58.82±0.32	4.14±0.23	7.03±0.38	172
5	52.85±0.63	4.28±0.45	8.10±0.85	46
6	50.30±0.48	4.54±0.34	9.02±0.68	88
7	51.02±0.56	3.69±0.40	7.23±0.74	43
9	57.10±0.34	4.22±0.24	7.39±0.44	156
8	58.50±0.36	4.13±0.26	7.05±0.44	131

Note: Measured from nasal point at lower edge of eyebrows, not nasion, therefore not directly comparable with our data (H.F.).

TABLE 72: NASAL BREADTH

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
10	35.01±0.54	3.43±0.38	9.80±1.87	41
2	33.62±0.12	2.59±0.09	7.70±0.26	433
3	35.40±0.20	2.44±0.13	6.90±0.40	150
4	34.79±0.22	2.83±0.16	8.29±0.45	172
5	35.02±0.47	3.19±0.33	9.11±0.95	46
6	35.93±0.32	3.03±0.23	8.43±0.64	88
7	35.18±0.41	2.69±0.29	7.65±0.83	43
9	33.86±0.24	2.97±0.17	8.78±0.49	156
8	34.54±0.23	2.62±0.16	7.69±0.47	131

TURKOMANS

TABLE 75: EYE COLOR

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	1.04	184	96.34	6	3.14	1	0.52	191
2	1.11	140	90.32	13	8.39	2	1.29	155
3	1.12	134	89.33	14	9.33	2	1.33	150
6	1.15	170	85.43	27	13.57	2	1.00	199
7	1.33	81	72.32	25	22.32	6	5.36	112
8	1.23	40	72.73	15	27.27	..	....	55
9	1.18	96	84.21	15	13.16	3	2.63	114
10	1.07	275	93.54	15	5.44	3	1.02	293
11	1.11	99	90.00	10	9.09	1	0.91	110
12	1.13	1219	88.38	140	10.15	20	1.49	1379

Note: According to Martin's scale, I = dark, Nos. 1-5; II = mixed, Nos. 6-10; III = light, Nos. 11-16.

TABLE 76: HEAD HAIR COLOR

Series	No. 4		No. 27		No. 10		No. 24		Total
	No.	%	No.	%	No.	%	No.	%	
1	71	64.6	38	34.5	..	.....	1	0.9	110
2	23	57.5	16	40.0	1	2.5	..	.....	40
3	23	63.9	13	36.1	..	.....	..	.....	36
12	117	62.9	67	36.1	1	0.5	1	0.5	186

Note: According to Fischer's scale, No. 4 = black-brown; No. 27 = black; No. 10 = light-blond; No. 24 = ash-blond.

TABLE 77: BEARD COLOR

Series	No. 4		No. 27		No. 7		No. 8		No. 9		No. 17		No. 1		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
1	34	52.3	28	43.1	2	3.1	1	1.5	..	....	..	....	..	....	65
2	20	24.4	58	70.8	1	1.2	1	1.2	1	1.2	..	....	1	1.2	82
3	40	44.5	44	48.9	1	1.1	3	3.3	1	1.1	1	1.1	..	....	90
12	94	39.7	130	54.9	4	1.7	5	2.1	2	0.8	1	0.4	1	0.4	237

Note: According to Fischer's scale, No. 4 = black-brown; No. 27 = black; No. 7 = brown; No. 8 = dark-blond; No. 9 = light-blond; No. 17 = light-blond; No. 1 = red.

TABLE 78: BEARD GROWTH

Series	Mean	I		II		III		IV		V		Total
		No.	%	No.	%	No.	%	No.	%	No.	%	
1	3.23	3	2.6	7	6.03	75	64.7	22	18.9	9	7.8	116
2	2.77	13	10.3	25	19.8	68	54.0	18	14.3	2	1.6	126
3	2.68	13	12.0	22	20.4	61	56.5	11	10.2	1	0.9	108
4	3.38	2	2.5	8	10.1	31	39.3	34	43.0	4	5.1	79
5	2.49	26	17.2	57	35.1	48	31.8	20	13.2	4	2.7	151
6	2.53	18	11.3	51	32.1	77	48.4	13	8.1	..	....	159
7	2.20	26	25.0	37	35.6	39	3.5	2	1.9	..	....	104
8	2.46	7	14.0	17	34.0	22	44.0	4	8.0	..	....	50
9	2.28	11	11.95	45	48.91	35	38.04	1	1.09	..	....	92
10	2.17	56	22.05	108	42.52	81	31.89	9	3.54	..	....	254
11	2.40	14	15.56	29	32.22	44	48.89	3	3.33	..	....	90
12	2.54	189	14.22	402	30.25	581	43.71	137	10.31	20	1.51	1329

Note: All individuals aged 25 or plus.

TABLE 79: HORIZONTAL FACIAL PROFILE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	1.69	70	35.00	121	60.50	9	4.50	200
2	1.77	38	24.52	114	73.55	3	1.93	155
3	1.71	48	32.00	97	64.70	5	3.30	150
4	2.14	5	4.70	82	76.60	20	18.70	107
5	1.77	49	24.50	148	74.00	3	1.50	200
6	1.76	51	25.50	146	73.00	3	1.50	113
7	2.28	12	10.62	61	53.98	40	35.40	55
8	2.22	3	5.45	38	69.09	14	25.45	55
9	2.35	10	8.77	52	45.61	52	45.62	114
10	2.29	21	6.95	170	56.29	111	36.76	302
11	2.27	7	6.36	66	60.00	37	33.64	110
12	1.99	314	18.40	1095	64.19	297	17.41	1706

Note: I = flat; II = average; III = narrow.

TABLE 80: VERTICAL FACIAL PROFILE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	1.59	90	45.9	96	49.0	10	5.1	196
2	1.79	40	26.2	105	68.6	8	5.2	153
3	1.72	44	29.3	104	69.4	2	1.3	150
12	1.69	174	34.9	305	61.1	20	4.0	499

Note: I = straight; II = slight protrusion; III = marked protrusion. All observations by L. V. Oshanin.

TABLE 81: CRANIAL FORM

Series	I		II		III		IV		V		VI		VII		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
1	1	0.5	85	42.7	94	47.2	..	....	..	....	19	9.6	..	....	199
2	..	...	60	39.2	84	54.9	..	....	..	....	9	5.9	..	....	153
3	..	...	93	62.0	52	34.7	..	....	..	....	5	3.3	..	....	150
4	1	1.0	78	76.5	17	16.7	2	1.9	1	1.0	..	...	3	2.9	102
5	1	0.5	132	69.8	34	18.0	10	5.3	6	3.2	..	...	6	3.2	189
12	3	0.4	448	56.49	281	35.43	12	1.51	7	0.88	33	4.16	9	1.13	793

Note: I = pentagonal; II = egg-shaped; III = elliptical; IV = wedge-shaped; V = round; VI = reversed egg-shaped; VII = other shapes. Oshanin heads table Shape of cranial pan. Series 12, under II No. corrected to 448.

TABLE 82: PROFILE OF CRANIAL VAULT

Series	I		II		III		Total
	No.	%	No.	%	No.	%	
1	...	.....	...	.....	161	100.0	161
2	...	.....	...	.....	127	100.0	127
3	...	.....	9	6.2	135	93.8	144
12	...	.....	9	2.1	423	97.9	432

Note: I = raised forward; II = horizontal; III = raised backward. Observations by L.V. Oshanin, 1929.

TABLE 83: SAGITTAL OCCIPITAL PROFILE

Series	I		II		III		Total
	No.	%	No.	%	No.	%	
1	...	.....	12	6.1	184	93.9	196
2	1	0.7	7	4.7	140	94.6	148
3	2	1.4	4	2.8	135	95.8	141
4	...	.....	15	14.8	86	85.2	101
5	6	3.2	51	27.1	131	69.7	188
12	9	1.16	89	11.5	676	87.34	774

Note: I = flat; II = angular; III = round.

TABLE 84: FOREHEAD SLOPE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	1.89	75	38.70	66	34.00	53	27.30	194
3	1.96	38	26.20	74	51.00	33	22.80	145
6	1.37	137	68.50	52	26.00	11	5.50	200
7	1.41	68	60.18	44	38.94	1	0.88	113
8	1.44	31	56.36	24	43.64	...	.....	55
9	1.66	44	39.99	63	56.25	5	4.46	112
10	1.81	88	29.14	182	60.26	32	10.60	302
11	1.45	62	56.36	46	41.81	2	1.82	110
12	1.64	543	44.11	551	44.77	137	11.12	1231

Note: I = slight; II = average; III = marked.

TABLE 85: SUPERCILIUM

Series	Mean	I		II		III		IV		Total
		No.	%	No.	%	No.	%	No.	%	
6	1.69	90	40.72	109	49.32	21	9.50	1	0.45	221
7	1.71	36	31.86	74	65.49	3	2.65	...	.....	113
8	1.89	12	21.82	37	67.27	6	10.91	...	.....	55
9	1.74	31	27.19	82	71.93	1	0.88	...	.....	114
10	2.18	46	15.23	150	49.67	106	35.00	...	.....	302
11	1.79	37	33.64	60	54.54	13	11.81	...	.....	110
12	1.88	252	27.30	512	56.21	150	16.38	1	0.11	915

Note: I = absent; II = weak; III = average; IV = marked. Literally, Development of Supercilium.

TABLE 86: FRONTAL BOSSES

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
6	1.83	50	41.50	67	33.50	83	25.00	200
7	1.83	19	34.51	55	48.67	39	16.81	113
8	1.95	16	29.09	26	47.27	13	23.64	55
10	1.80	105	34.78	150	49.66	47	15.56	302
11	2.21	18	16.36	50	45.45	42	38.18	110
12	1.88	261	33.46	348	44.61	171	21.92	780

Note: I = absent; II = visible; III = prominent. Literally, Forehead bosses.

TABLE 87: HEIGHT OF NASAL BRIDGE

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
13	2.13	19	11.59	104	63.41	41	25.00	164
1	2.26	6	3.00	135	67.50	59	29.50	200
2	2.23	7	4.52	106	68.40	42	27.10	155
3	2.15	9	6.00	110	73.30	31	20.70	150
14	2.13	4	9.30	29	67.44	10	23.26	43
4	2.17	8	7.48	73	68.22	26	24.30	107
5	1.77	56	28.30	131	66.20	11	5.50	198
6	2.12	5	2.50	166	83.00	29	14.50	200
7	2.03	1	0.88	107	94.69	5	4.42	113
8	2.07	...	.....	50	92.59	4	7.41	54
9	2.10	1	0.88	100	87.72	13	11.40	114
10	2.09	6	1.99	264	87.42	32	10.59	302
11	2.08	...	.....	101	91.82	9	8.18	110
12	2.09	122	6.32	1476	77.27	312	16.34	1910

Note: I = low; II = average; III = high.

TABLE 91: GENERAL PROFILE OF NASAL RIDGE

		I		II		III		
Series	Mean	No.	%	No.	%	No.	%	Total
13	2.00	24	14.60	117	70.90	24	14.50	165
1	2.11	18	9.00	142	71.00	40	20.00	200
2	2.26	18	11.60	79	51.00	58	37.40	155
3	2.25	8	5.30	96	64.00	46	30.70	150
14	2.18	3	7.00	29	67.40	11	25.60	43
4	2.24	3	2.00	75	70.10	29	27.1	107
5	2.12	17	8.60	140	70.70	41	20.70	198
6	2.11	6	3.00	164	82.40	29	14.6	199
7	2.11	1	0.90	98	87.50	13	11.60	112
8	2.05	2	3.60	48	87.30	5	9.10	55
9	2.10	8	7.02	86	75.43	20	17.54	114
10	2.17	9	2.98	244	80.79	49	16.23	302
11	2.14	..	....	95	86.36	15	13.64	110
12	2.13	117	6.12	1413	73.98	380	19.89	1910

Note: I = concave; II = straight or wavy; III = convex.

TABLE 92: POSITION OF NASAL BASE

		I		II		III		
Series	Mean	No.	%	No.	%	No.	%	Total
13	1.97	11	9.40	99	84.60	7	6.00	117
1	2.01	30	15.10	136	68.70	32	16.20	198
2	2.19	18	11.60	90	58.10	47	30.30	155
3	2.23	9	6.00	97	64.70	44	29.30	150
14	2.00	3	10.30	23	79.30	3	10.00	29
4	1.77	46	43.00	39	36.40	22	20.60	107
5	1.75	87	43.90	73	36.90	38	19.20	198
6	1.93	28	14.00	158	79.00	14	7.00	200
7	1.94	11	9.32	102	86.44	5	4.24	118
8	1.87	11	20.00	40	92.72	4	7.28	55
9	1.85	25	21.93	80	70.17	9	7.90	114
10	2.02	55	18.21	183	60.60	64	21.19	302
11	1.82	40	36.36	49	44.54	21	19.10	110
12	1.96	374	20.18	1169	63.09	310	16.73	1853

Note: I = raised; II = horizontal; III = dropping.

TABLE 93: POSITION OF NASAL TIP

		I		II		III		
Series	Mean	No.	%	No.	%	No.	%	Total
13	1.91	33	20.10	113	68.90	18	11.00	164
1	2.03	28	15.80	116	65.50	33	18.70	177
2	2.20	18	11.60	88	56.80	49	31.60	155
3	2.27	9	6.00	92	61.30	49	32.70	150
14	2.06	5	11.60	30	69.80	8	18.60	43
4	1.85	39	36.40	45	42.10	23	21.50	107
5	1.89	67	33.80	86	43.50	45	22.70	198
12	2.03	199	20.00	570	57.40	225	22.60	994

Note: I = raised; II = horizontal; III = dropping.

TABLE 94: POSITION OF NASAL WALLS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	2.01	4	2.08	181	94.27	7	3.65	192
2	2.00	5	3.23	145	93.55	6	3.23	155
3	2.01	2	1.33	145	96.67	3	2.00	150
6	1.90	23	11.56	172	86.43	4	2.01	199
7	1.91	11	9.82	101	90.18	..	.....	112
8	1.84	9	16.36	46	83.64	..	.....	55
9	1.80	25	21.93	87	76.32	2	1.75	114
10	1.88	37	12.25	265	87.75	..	.....	302
11	1.86	15	13.64	95	86.36	..	.....	110
12	1.92	131	9.43	1237	89.05	21	1.51	1389

Note: I = almost vertical; II = average; III = markedly sloping.

TABLE 95: POSITION OF NOSTRIL AXIS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
13	1.98	4	3.00	128	95.50	2	1.50	134
1	2.02	4	2.00	183	93.40	9	4.60	196
2	2.09	..	.....	135	91.20	13	8.80	148
3	2.07	1	0.70	135	91.20	12	8.10	148
14	1.93	2	6.90	27	93.10	..	.....	29
4	2.21	8	7.50	68	64.20	30	28.30	106
5	1.95	37	18.90	131	66.80	28	14.30	196
12	2.04	56	5.90	807	84.30	94	9.80	957

Note: I = horizontal; II = average; III = sloping.

TABLE 96: FORM OF NOSTRILS

Series	I		II		III		IV		Total
	No.	%	No.	%	No.	%	No.	%	
13	..	.....	11	8.30	121	91.70	..	.....	132
1	3	1.50	26	13.10	169	85.40	..	.....	198
2	6	3.80	9	5.70	142	90.50	..	.....	157
3	1	0.70	18	12.00	131	87.30	..	.....	150
14	..	.....	3	10.30	26	89.70	..	.....	29
4	1	0.90	2	1.90	101	95.40	2	1.80	106
5	5	2.60	9	4.60	179	91.30	3	1.50	196
12	16	1.60	78	8.10	869	89.80	5	0.50	968

Note: I = round; II = triangular; III = oval; IV = other forms.

TABLE 97: WIDTH OF EYE SLITS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	1.78	54	27.00	136	68.00	10	5.00	200
2	1.95	28	18.20	106	68.80	20	13.00	154
3	1.77	38	25.30	109	72.70	3	2.00	150
6	1.99	4	2.00	191	96.60	3	1.50	198
7	1.76	28	24.78	85	75.22	..	.....	113
8	1.56	24	43.64	31	56.38	..	.....	55
10	1.82	53	17.55	249	82.45	..	.....	302
11	1.82	19	17.27	91	82.73	..	.....	110
12	1.84	248	19.34	998	77.85	36	2.81	1282

Note: I = narrow; II = average; III = wide.

TABLE 98: POSITION OF EYEBALLS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	1.94	19	10.20	159	85.50	8	4.30	186
2	2.01	12	5.71	185	88.10	13	6.10	210
3	1.85	30	20.70	107	73.80	8	5.50	145
6	1.74	52	26.13	145	72.86	2	1.01	199
7	1.82	20	17.70	93	82.30	..	.....	113
8	1.80	11	20.00	44	80.00	..	.....	55
9	1.84	18	15.79	96	84.21	..	.....	114
10	1.77	69	22.85	233	77.15	..	.....	302
11	1.76	26	23.64	84	76.36	..	.....	110
12	1.84	257	17.92	1146	79.91	31	2.16	1434

Note: I = sunken; II = average; III = protruding.

TABLE 99: PRESENCE OF EPICANTHUS

Series	%	No.
13	6.88	160
1	19.00	200
2	5.16	155
3	16.00	150
14	7.32	41
4	6.60	106
5	2.53	198
6	3.00	200
7	6.19	113
8	1.85	54
9	0.88	114
10	0.33	302
11	1.82	108
12	5.99	1901

TABLE 100: LIP THICKNESS

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
13	1.67	52	32.70	97	60.00	10	6.30	159
1	2.03	32	16.20	127	64.50	38	19.30	197
2	1.94	23	14.90	118	76.10	14	9.00	155
3	1.89	26	17.30	114	76.00	10	6.70	150
14	1.71	16	38.10	23	54.80	3	7.20	42
6	2.07	24	12.00	139	69.50	36	18.00	200
7	1.98	14	11.86	92	77.96	12	10.17	118
8	1.90	7	12.73	46	83.64	2	3.63	55
9	2.04	19	16.66	71	62.28	24	21.06	114
11	2.05	9	8.18	86	78.18	15	13.64	110
12	1.95	222	17.07	913	70.23	164	12.62	1300

Note: I = thin; II = average; III = thick.

TABLE 101: HEIGHT OF UPPER LIP

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
13	1.86	42	26.20	99	61.90	19	11.90	160
1	2.09	15	7.60	150	76.10	32	16.30	197
2	2.05	18	11.70	111	72.10	25	16.20	154
3	2.01	17	11.70	110	75.30	19	13.00	146
14	1.95	9	20.90	27	68.80	7	6.30	43
4	1.92	25	23.60	65	61.30	16	15.1	106
5	2.20	22	11.10	114	57.60	62	31.3	198
12	2.03	148	14.80	676	67.30	180	17.90	1004

Note: I = low; II = average; III = high.

TABLE 102: PROFILE OF UPPER LIP

Series	Mean	I		II		III		Total
		No.	%	No.	%	No.	%	
1	1.36	134	67.00	61	30.50	5	2.50	200
2	1.47	87	56.20	63	40.60	5	3.20	155
3	1.44	84	56.8	63	42.60	1	0.60	148
4	1.90	20	18.9	77	72.60	9	8.50	106
5	1.57	88	44.50	106	53.50	4	2.00	198
6	1.83	16	8.00	167	83.50	17	8.50	200
7	2.06	...	.....	110	93.22	8	6.78	118
8	2.05	1	1.81	50	90.91	4	7.28	55
9	2.05	...	.....	108	94.73	6	5.27	114
11	2.05	2	1.82	100	90.90	8	7.28	110
12	1.74	432	30.77	905	64.46	67	4.77	1404

Note: I = procheilia; II = orthocheilia; III = opisthocheilia.

TABLE 103: CEPHALIC INDEX

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
13	76.33±0.26	3.25±0.18	4.27±0.24	160
1	74,46±0.20	2.81±0.14	3.77±0.17	199
2	75.86±0.20	2.52±0.14	3.32±0.19	155
3	76.03±0.19	2.35±0.13	3.09±0.18	150
14	76.16±0.48	3.17±0.34	4.16±0.45	43
4	75.16±0.27	2.80±0.19	3.72±0.26	107
5	77.24±0.23	3.28±0.16	4.25±0.21	200
6	76.79±0.22	3.04±0.15	3.96±0.20	200
7	76.26±0.30	3.20±0.21	4.19±0.28	113
8	77.84±0.38	2.84±0.27	3.65±0.35	55
9	74.30±0.22	2.44±0.16	3.28±0.21	114
10	73.43±0.17	2.98±0.12	4.05±0.16	288
11	76.18±0.25	2.68±0.18	3.51±0.23	110
12	75.66±0.07	3.18±0.05	4.20±0.07	1851

TABLE 104: HEAD LENGTH

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
13	193.21±0.49	6.30±0.35	3.26±0.18	165
1	196.00±0.40	5.66±0.28	2.89±0.14	200
2	193.00±0.49	6.17±0.35	3.21±0.18	155
3	194.00±0.47	5.62±0.33	2.89±0.17	150
14	195.65±0.84	5.51±0.60	2.82±0.30	43
4	194.25±0.60	6.30±0.43	3.24±0.22	107
5	193.16±0.47	6.54±0.33	3.39±0.70	200
6	192.10±0.40	5.70±0.28	2.97±0.15	200
7	193.22±0.59	6.26±0.55	3.20±0.21	113
8	190.52±0.86	6.42±0.61	3.36±0.32	55
9	194.48±0.55	5.91±0.58	3.04±0.20	114
10	195.62±0.36	6.21±0.25	3.17±0.13	288
11	193.40±0.53	5.64±0.38	2.91±0.19	110
12	193.86±0.15	6.25±0.10	3.23±0.05	1857

TABLE 105: HEAD BREADTH

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
13	148.04±0.44	5.69±0.31	3.84±0.21	164
1	147.00±0.36	5.06±0.25	3.45±0.17	200
2	147.00±0.36	4.51±0.25	3.07±0.18	155
3	149.00±0.34	4.13±0.24	2.78±0.16	150
14	148.91±0.89	5.81±0.63	3.90±0.42	43
4	145.70±0.42	4.35±0.30	2.98±0.20	107
5	149.00±0.36	4.98±0.26	3.34±0.17	200
6	147.41±0.36	5.05±0.25	3.43±0.17	200
7	147.26±0.48	5.10±0.34	3.46±0.23	113
8	148.13±0.57	4.20±0.40	2.83±0.27	55
9	144.50±0.40	4.32±0.28	2.98±0.19	114
10	143.72±0.29	5.07±0.21	3.45±0.14	288
11	147.05±0.50	5.25±0.35	3.56±0.24	110
12	146.81±0.12	5.21±0.09	3.55±0.06	1856

TABLE 106: MORPHOLOGICAL FACIAL INDEX

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
13	92.22±0.42	5.35±0.30	5.80±0.32	162
1	90.72±0.38	5.36±0.27	5.91±0.28	200
2	92.28±0.39	4.96±0.28	5.37±0.31	161
3	96.71±0.40	4.96±0.28	5.40±0.26	150
14	94.09±0.82	5.39±0.58	5.72±0.62	43
4	94.57±0.48	4.97±0.34	5.26±0.36	106
5	93.85±0.34	4.75±0.24	5.96±0.25	200
6	91.77±0.37	5.19±0.26	5.65±0.28	198
7	92.00±0.44	4.71±0.31	5.11±0.34	113
8	92.81±0.65	4.83±0.46	5.20±0.50	55
9	94.40±0.51	5.49±0.36	5.81±0.38	114
10	90.08±0.28	4.92±0.20	5.43±0.24	193
11	89.02±0.48	4.98±0.34	5.59±0.38	107
12	91.86±0.12	5.29±0.09	5.75±0.10	1845

TABLE 107: MORPHOLOGICAL FACIAL HEIGHT

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
13	130.20±0.54	6.87±0.38	5.28±0.29	163
1	126.00±0.54	7.63±0.38	6.11±0.31	192
2	127.00±0.55	6.82±0.39	5.36±0.31	155
3	127.00±0.56	6.80±0.39	5.36±0.31	150
14	132.42±1.06	6.99±0.75	5.28±0.57	43
4	130.42±0.59	6.24±0.42	4.78±0.33	106
5	133.90±0.48	6.72±0.34	5.06±0.25	200
6	128.70±0.54	7.60±0.38	5.90±0.30	200
7	129.64±0.66	7.05±0.47	5.44±0.36	113
8	130.33±0.84	6.24±0.59	4.79±0.46	55
9	129.97±0.64	6.90±0.46	5.31±0.35	114
10	125.71±0.40	6.84±0.28	5.44±0.22	288
11	124.54±0.70	7.35±0.49	5.90±0.40	110
12	128.32±0.17	7.38±0.12	5.75±0.09	1854

TABLE 108: BIZYGOMATIC BREADTH

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
13	141.19±0.45	5.81±0.32	4.12±0.23	165
1	139.00±0.38	5.33±0.27	3.82±0.19	200
2	138.00±0.35	4.41±0.25	3.19±0.18	155
3	140.00±0.43	5.25±0.30	3.75±0.21	150
14	140.81±0.73	4.80±0.52	3.40±0.37	43
4	138.16±0.44	4.65±0.31	3.37±0.23	106
5	141.82±0.34	4.80±0.24	3.38±0.17	200
6	140.21±0.38	5.35±0.27	3.82±0.19	199
7	141.16±0.49	5.28±0.35	3.74±0.25	113
8	140.65±0.53	3.96±0.38	2.81±0.27	55
9	138.04±0.55	5.94±0.39	4.30±0.28	114
10	138.07±0.29	5.07±0.21	3.67±0.15	289
11	139.18±0.49	5.16±0.34	3.70±0.24	110
12	139.62±0.12	5.26±0.09	3.77±0.06	1855

TABLE 109: MINIMUM FRONTAL DIAMETER

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
13	106.85±0.35	4.50±0.25	4.21±0.23	165
1	109.14±0.30	4.30±0.21	3.94±0.20	200
2	108.95±0.31	3.89±0.22	3.57±0.20	155
3	110.90±0.37	4.54±0.26	4.09±0.24	150
14	105.88±0.76	4.95±0.54	4.68±0.51	43
4	104.97±0.38	3.97±0.27	3.74±0.26	105
5	107.30±0.29	4.02±0.21	3.75±0.19	200
6	104.39±0.33	4.61±0.23	4.42±0.22	200
7	105.26±0.43	4.56±0.30	4.33±0.29	113
8	104.72±0.51	3.81±0.36	3.63±0.34	55
12	107.18	.....	.....	1386

TABLE 110: BIGONIAL BREADTH

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
13	111.03±0.46	5.92±0.33	5.33±0.30	164
1	109.84±0.29	5.71±0.41	5.20±0.26	194
2	108.25±0.51	6.04±0.36	5.58±0.33	140
3	108.10±0.54	6.57±0.38	6.08±0.35	150
14	111.53±1.01	6.62±0.72	5.93±0.63	43
4	107.89±0.52	5.28±0.37	4.89±0.28	150
5	111.58±0.40	5.65±0.28	5.08±0.26	200
6	108.80±0.43	6.11±0.31	5.62±0.28	198
7	110.63±0.55	5.91±0.39	5.34±0.36	113
8	112.28±0.73	5.52±0.52	4.91±0.46	55
9	109.19±0.61	6.57±0.43	5.10±0.33	114
12	109.70	.....	.....	1521

TABLE 111: NASAL INDEX

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
13	60.49±0.45	5.73±0.32	9.47±0.53	163
1	64.81±0.48	6.57±0.34	10.42±0.52	199
2	61.47±0.47	5.92±0.34	9.63±0.55	156
3	63.74±0.48	5.97±0.34	9.37±0.54	150
14	62.72±0.92	6.02±0.65	9.91±1.07	43
4	60.92±0.61	6.34±0.43	10.41±0.71	107
5	60.43±0.36	5.04±0.26	8.34±0.42	199
6	60.28±0.39	5.46±0.27	9.06±0.46	198
7	63.02±0.61	6.46±0.43	10.25±0.68	113
8	61.28±0.90	6.68±0.64	10.90±1.04	55
9	60.94±0.58	6.32±0.41	10.37±0.76	114
12	61.83	.....	.....	1497

Note: Nasal height measured from lower edge of eyebrows.

TABLE 112: NASAL HEIGHT

Series	M±m(M)	σ±m(σ)	V±m(V)	Total
13	58.99±0.31	3.98±0.22	6.75±0.37	165
1	55.67±0.29	4.10±0.21	7.36±0.37	199
2	57.55±0.36	4.39±0.25	7.63±0.44	153
3	56.68±0.35	4.20±0.25	7.41±0.43	148
14	59.07±0.61	4.02±0.48	6.80±0.74	43
4	59.51±0.37	3.95±0.26	6.55±0.45	107
5	59.64±0.28	3.87±0.20	6.49±0.33	199
6	60.96±0.32	4.56±0.23	7.48±0.38	200
7	58.80±0.37	3.92±0.26	6.67±0.44	113
8	60.52±0.58	4.34±0.41	7.23±0.69	55
9	59.86±0.47	5.10±0.56	8.51±0.56	114
12	58.67	.....	.....	1496

TABLE 113: NASAL BREADTH

Series	M±m(M)	σ±m(σ)	V±m(V)	Total
13	35.94±0.19	2.49±0.13	7.02±0.39	165
1	35.27±0.19	2.64±0.13	7.49±0.38	199
2	35.12±0.20	2.48±0.14	7.08±0.40	154
3	35.97±0.24	2.89±0.17	8.03±0.47	149
14	35.74±0.42	2.72±0.30	7.61±0.82	43
4	35.80±0.39	2.98±0.20	8.32±0.57	107
5	35.85±0.18	2.46±0.13	6.86±0.34	199
6	36.57±0.20	2.81±0.14	7.69±0.39	200
7	37.08±0.28	3.00±0.19	8.09±0.54	113
8	37.52±0.57	4.24±0.40	11.30±1.09	55
9	36.28±0.27	2.96±0.19	7.33±0.48	114
12	36.00	.....	.....	1492

TABLE 114: STATURE

Series	M±m(M)	σ±m(σ)	V±m(V)	Total
13	170.53±0.51	6.50±0.36	3.81±0.21	163
1	169.66±0.36	5.14±0.25	3.02±0.15	200
2	168.50±0.44	5.41±0.31	3.21±0.18	155
3	168.46±0.54	6.66±0.38	3.95±0.23	150
14	169.15±1.20	7.88±0.85	4.65±0.50	43
4	166.37±0.56	5.88±0.40	5.53±0.24	105
5	166.42±0.40	5.55±0.28	3.33±0.17	208
6	166.83±0.40	5.58±0.29	3.35±0.17	190
7	167.24±0.61	6.09±0.43	3.58±0.25	101
8	165.50±0.90	6.12±0.64	3.69±0.39	46
9	169.16±0.64	6.63±0.45	3.91±0.26	106
10	167.75±0.38	6.39±0.27	3.81±0.16	275
11	167.63±0.54	5.49±0.38	3.27±0.23	100
12	167.93±0.14	6.08±0.10	3.62±0.06	1799

TURKOMAN FEMALES

TABLE 115: PRESENCE OF EPICANTHUS

Series	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
15	27.00	1.80	2.01	....	1.80	2.02	2.00	....	....	1.04	100
16	20.00	1.76	2.02	....	1.90	2.05	2.04	....	....	1.02	100
7	7.41	2.31	2.00	2.00	2.08	2.03	1.97	1.05	1.28	1.16	39
8	1.59	2.21	1.95	2.02	1.39	2.02	1.92	1.08	1.38	1.16	63
9	6.06	2.29	1.98	2.00	2.18	2.05	1.97	1.02	1.74	1.17	280
10	4.83	2.20	2.00	2.24	2.14	2.01	1.88	....	....	1.01	207
12	10.15	2.22	2.00	2.06	2.10	2.03	1.96	1.03	1.55	1.08	789

Note: I = presence of epicanthus in per cent; II = horizontal facial profile; III = height of nasal bridge; IV = transverse profile of nasal ridge; V = general profile of nasal ridge; VI = position of nasal walls; VII = position of eyeballs; VIII = supercilium; IX = frontal bosses; X = eye color (Martin's scale).

TABLE 116: CEPHALIC INDEX

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
15	74.50±0.28	2.80±0.20	3.76±0.27	100
16	77.40±0.28	2.80±0.20	3.62±0.26	100
7	77.48±0.56	3.48±0.39	4.49±0.51	39
8	77.18±0.33	2.60±0.23	3.37±0.30	62
9	75.06±0.15	2.66±0.11	3.41±0.14	279
10	72.70±0.19	2.67±0.13	3.65±0.18	194
12	74.88	.....	.....	774

TABLE 117: HEAD LENGTH

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
15	182.00±0.60	6.00±0.42	3.30±0.23	100
16	182.00±0.66	6.60±0.47	3.63±0.26	100
7	185.15±1.01	6.33±0.72	3.42±0.39	39
8	183.62±0.58	4.59±0.41	2.49±9.22	63
9	186.26±0.35	5.94±0.25	3.18±0.13	279
10	188.42±0.40	5.58±0.28	2.96±0.15	194
12	185.25	.....	.....	775

TABLE 118: HEAD BREADTH

Series	M ± m (M)	σ ± m (σ)	V ± m (V)	Total
15	139.00±0.51	5.10±0.36	3.67±0.26	100
16	141.00±0.48	4.80±0.34	3.40±0.24	100
7	142.94±0.75	4.68±0.53	3.27±0.37	39
8	141.62±0.98	7.80±0.70	5.51±0.49	63
9	139.70±0.25	4.26±0.17	3.04±0.13	279
10	136.99±0.33	4.70±0.23	3.36±0.17	194
12	139.48	.....	.....	775

TABLE 119: MORPHOLOGICAL FACIAL INDEX

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
7	90.47±0.77	4.80±0.54	5.30±0.60	39
8	90.29±0.67	5.31±0.47	5.87±0.52	63
9	92.09±0.30	5.07±0.21	5.50±0.23	279
10	88.76±0.31	4.47±0.22	5.03±0.24	194
12	90.25	.....	.....	374

TABLE 120: MORPHOLOGICAL FACIAL HEIGHT

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
7	120.55±0.84	5.25±0.59	4.35±0.49	39
8	120.58±0.81	6.42±0.57	5.32±0.47	63
9	120.00±0.40	6.75±0.28	5.62±0.23	279
10	117.13±0.43	6.03±0.30	5.14±0.26	194
12	119.14	.....	.....	575

TABLE 121: BIZYGOMATIC BREADTH

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
15	128.00±0.67	6.70±0.47	5.23±0.37	100
16	128.00±0.54	5.40±0.38	4.22±0.30	100
7	133.00±0.76	4.74±0.54	3.56±0.40	39
8	133.39±0.57	4.50±0.40	3.37±0.30	63
9	131.23±0.27	4.65±0.19	3.54±0.14	279
10	131.32±0.34	4.80±0.24	3.65±0.18	194
12	130.89	.....	.....	775

TABLE 122: MINIMUM FRONTAL DIAMETER

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
7	105.53±0.68	4.23±0.48	4.01±0.46	39
9	105.83±0.24	4.11±0.17	3.88±0.16	279
10	102.05±0.34	4.83±0.24	4.73±0.23	194
12	104.19	.....	.....	512

TABLE 123: BIGONIAL BREADTH

Series	M ± m(M)	σ ± m(σ)	V ± m(V)	Total
7	102.62±0.73	4.59±0.52	4.47±0.51	39
8	102.17±0.61	4.83±0.43	4.73±0.42	63
9	101.03±0.26	4.47±0.18	4.42±0.18	279
12	101.38	.....	.....	381

Figure 1: Overhangs (ovringi) on Fan Darya prior to construction of motor road from Stalinabad to Ura-Tiube.

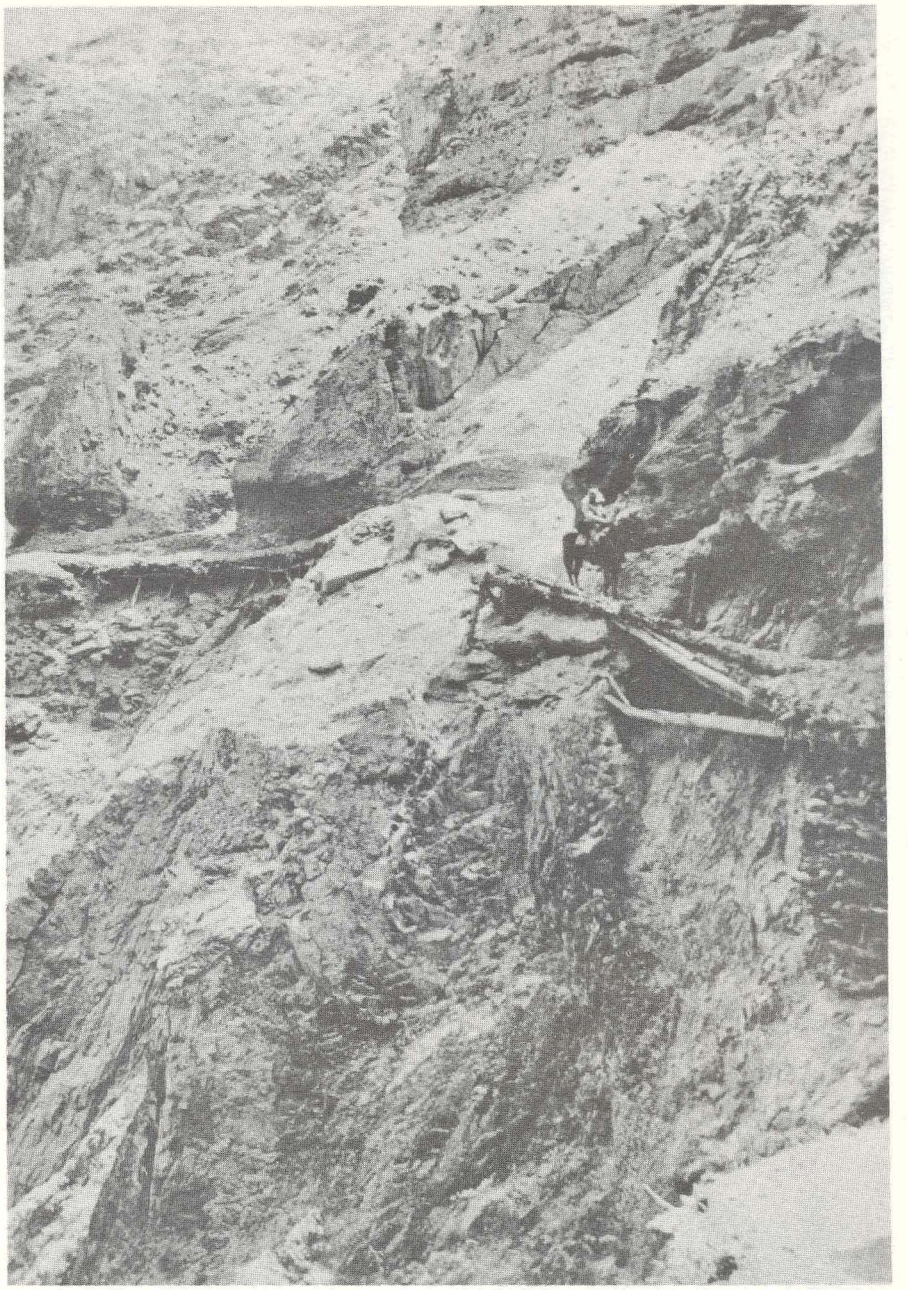

Figure 1a: Overhangs (ovringi) on Fan Darya prior to construction of motor road from Stalinabad to Ura-Tiube.

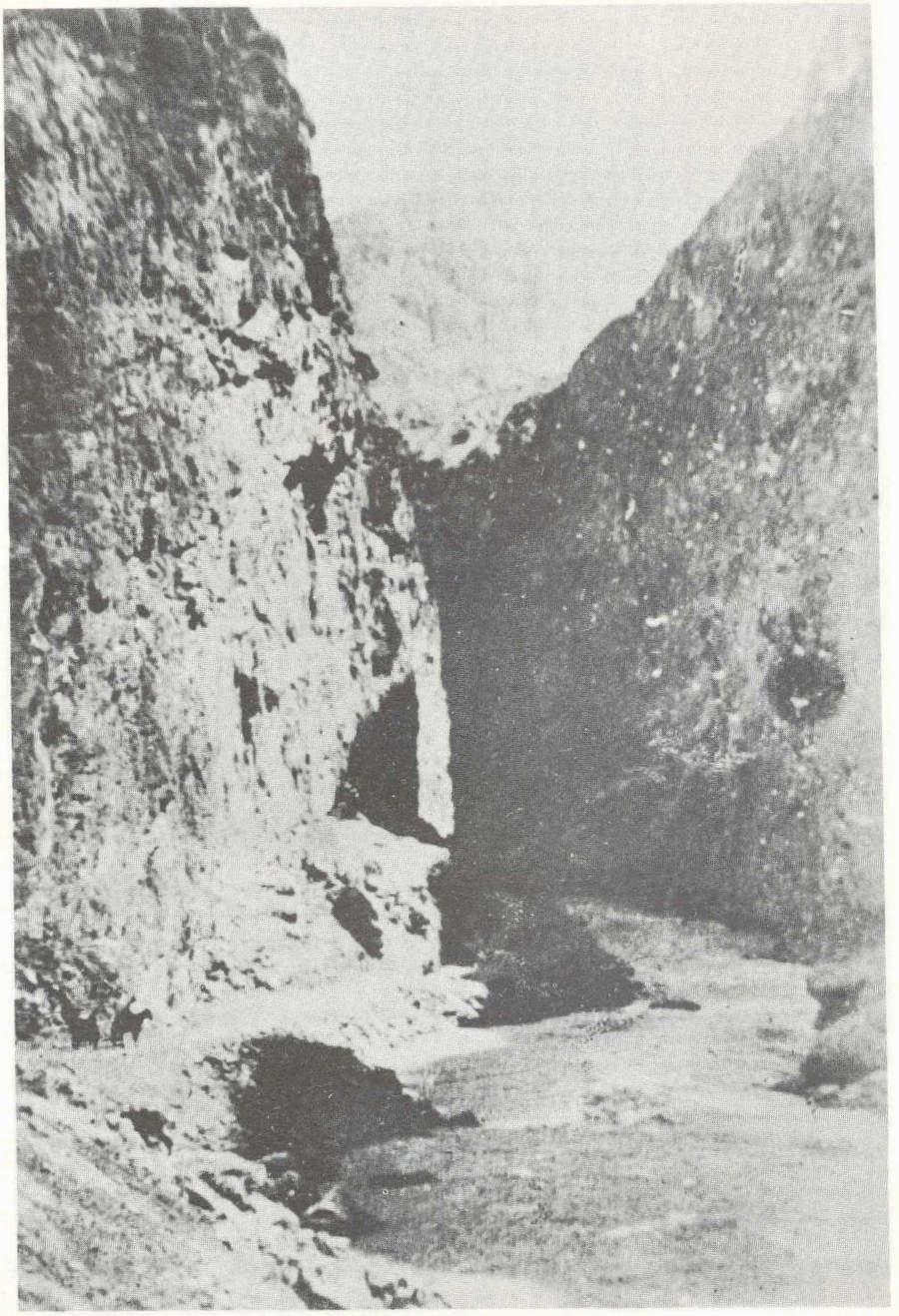

Figure 2: Beginning of motor road along Fan Darya where ovringi commence.

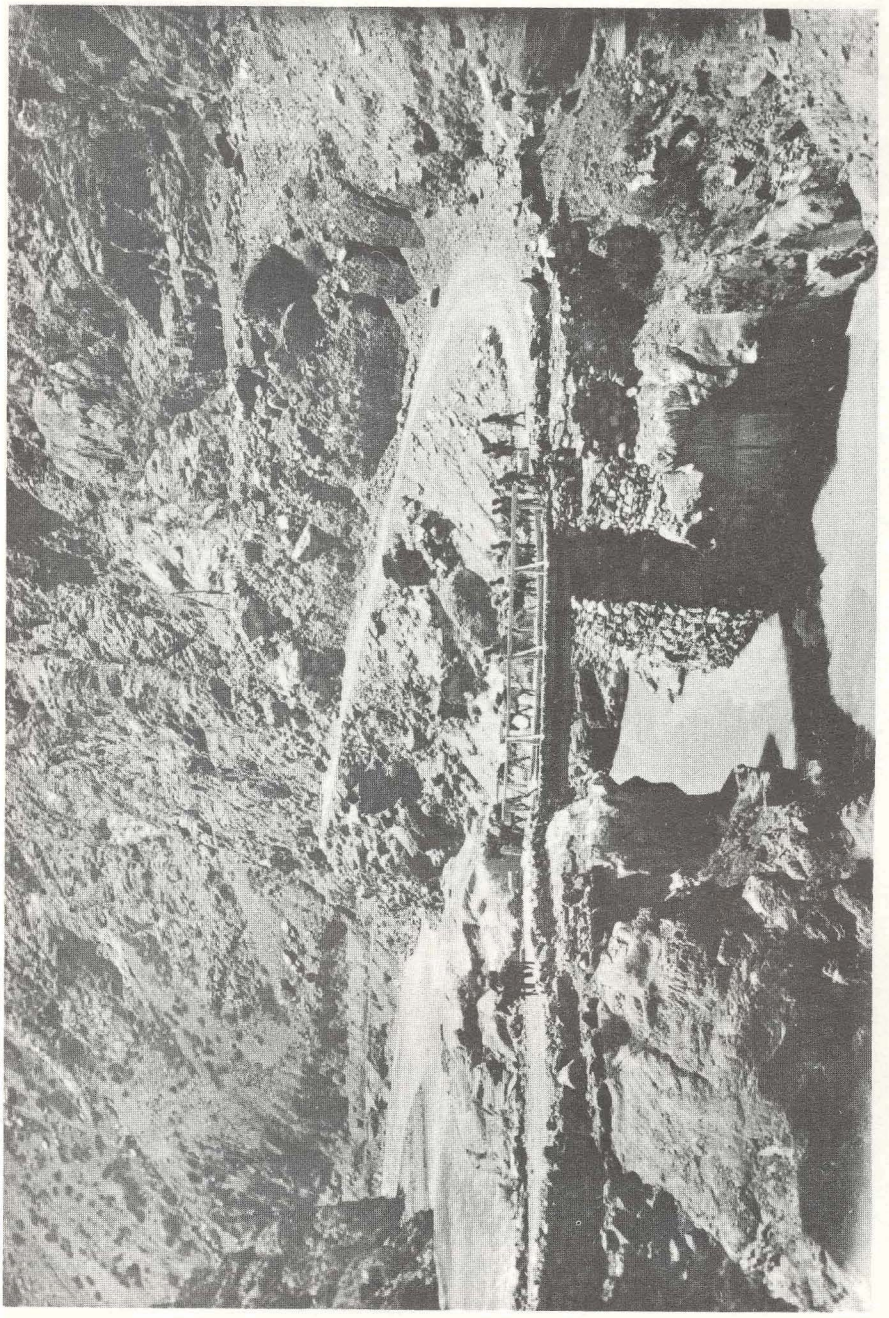

Figure 3: Motor road and bridge under construction over Fan Darya.

Figure 5: Khshartob settlement in Yagnob.

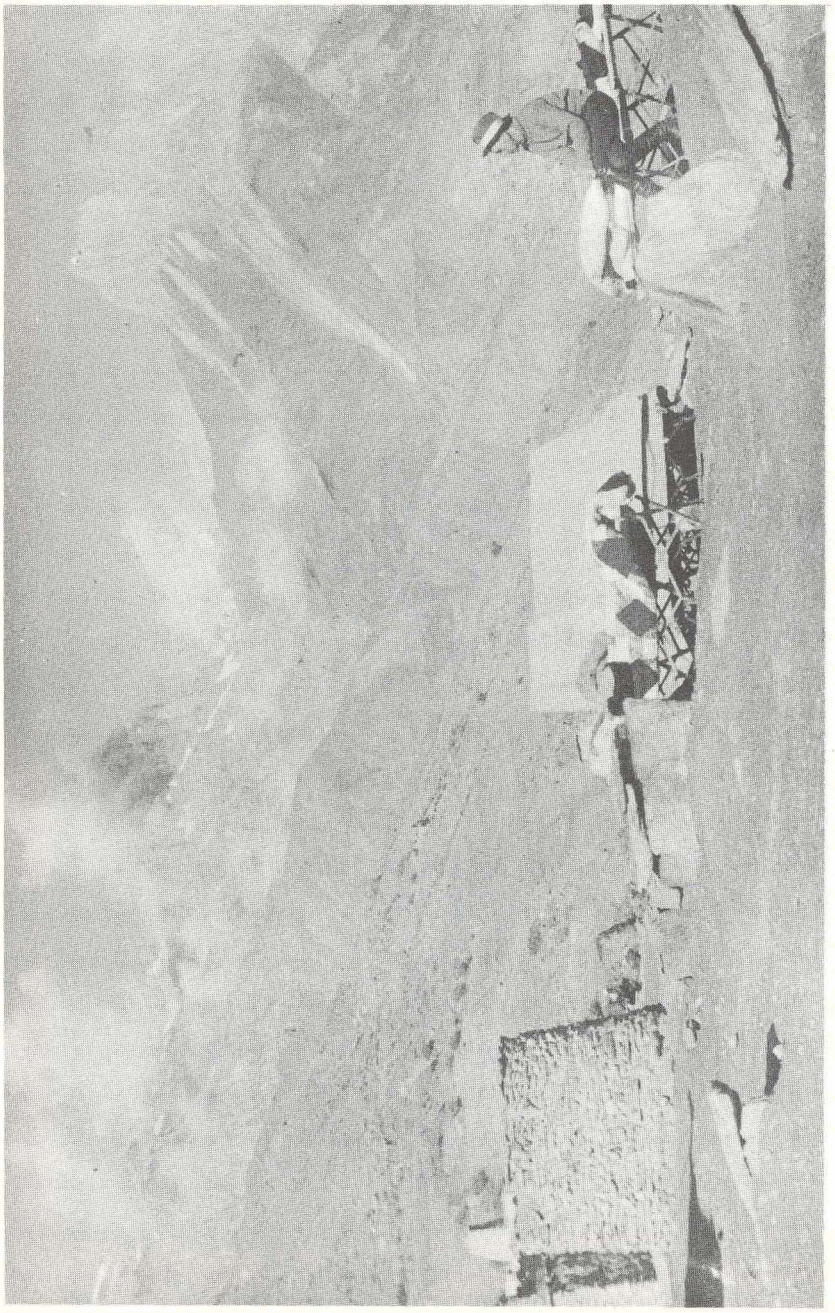

Figure 6: Expedition camp on top of large Yagnob house.

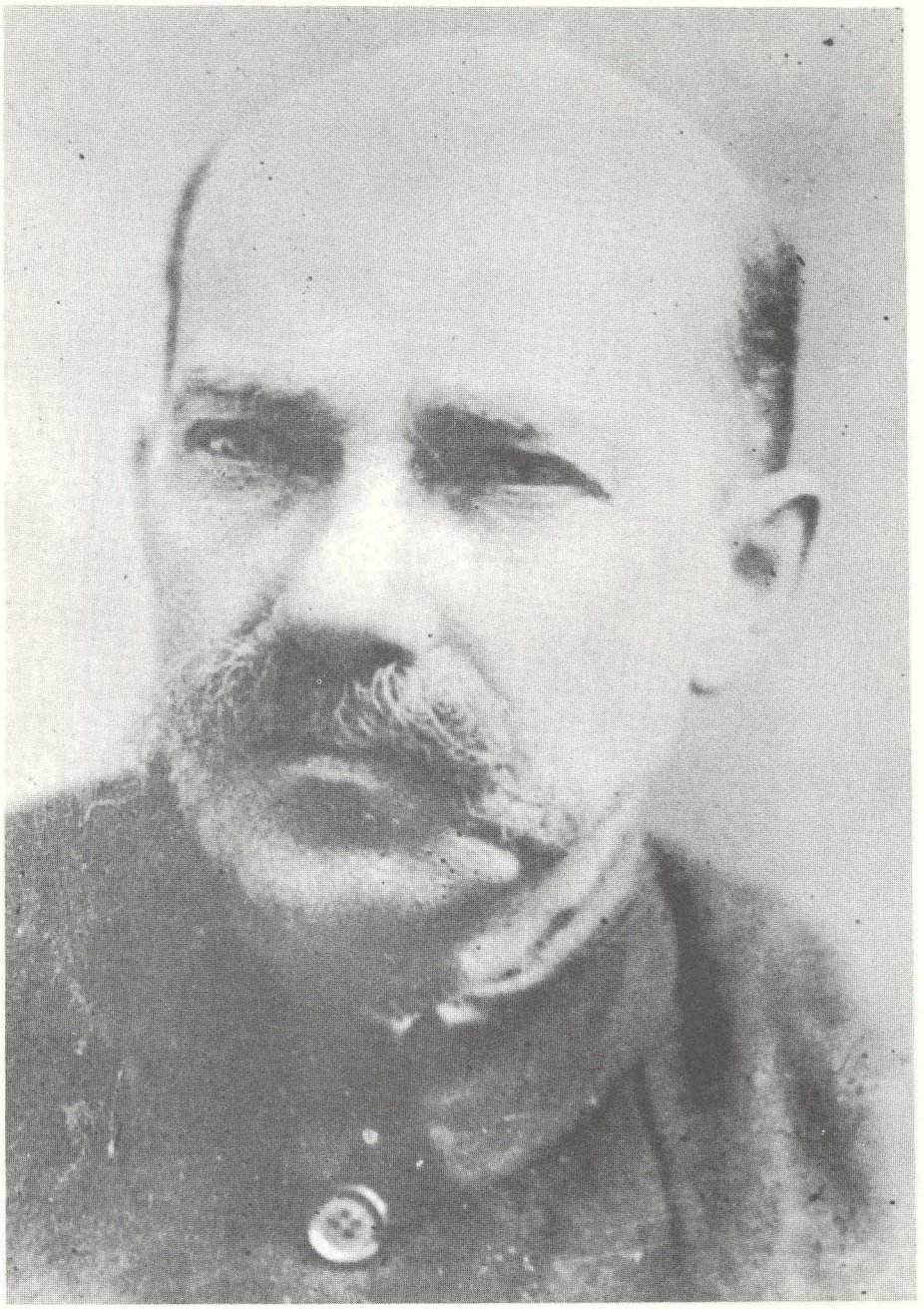

Figure 7: Nikolai Gurevich Mallitskii, 1924.

Figure 8: Moscow University graduates, 1865. Center, A.P. Fedchenko; standing left, V.F. Oshanin.

Figure 9: Aleksei Pavlovich Fedchenko, 1873.

Figure 10: Vasilii Fedorovich Oshanin, 1878.

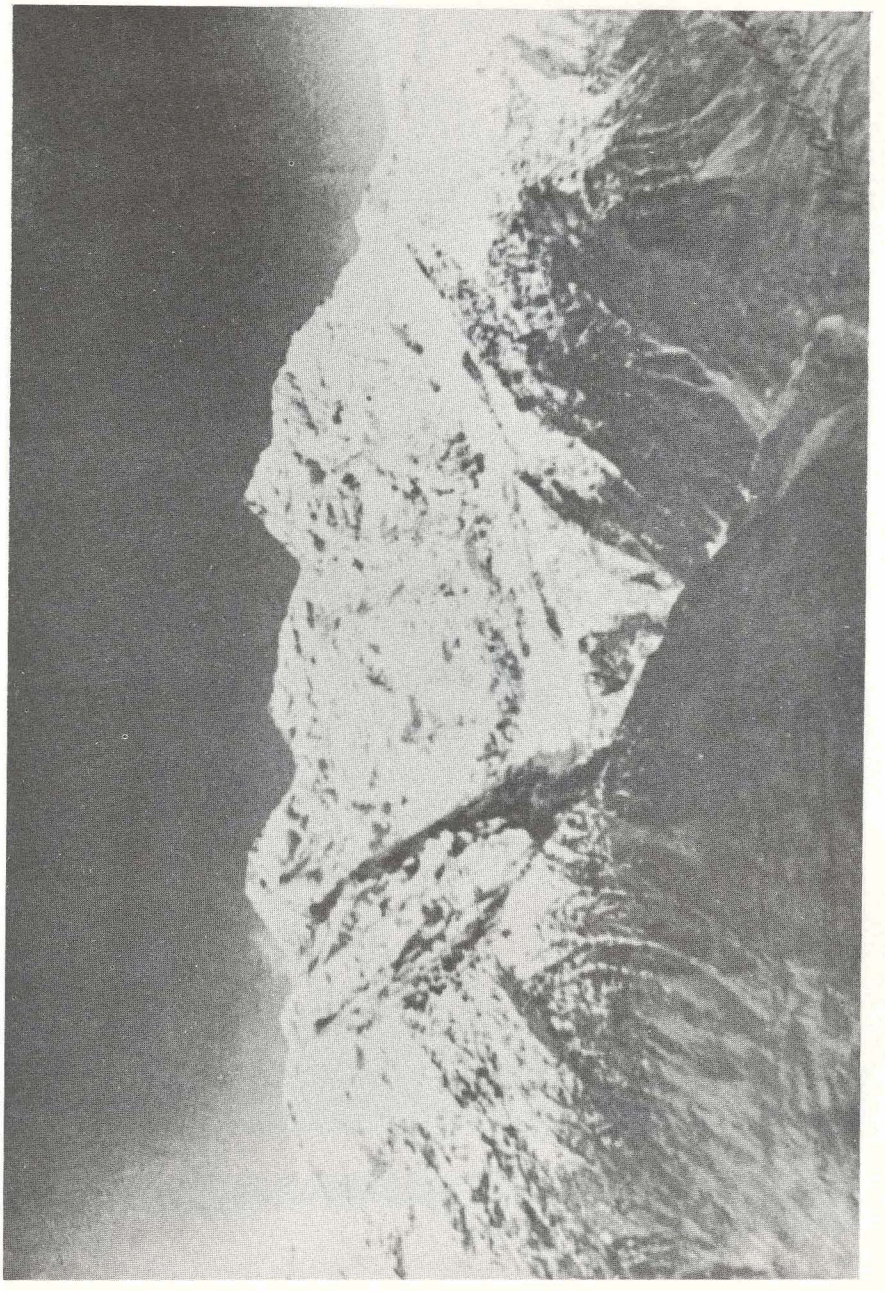

Figure 11: Peter I Range from point where first seen by V. F. Oshanin, 1878. Photograph by N. L. Korzhenevskii.

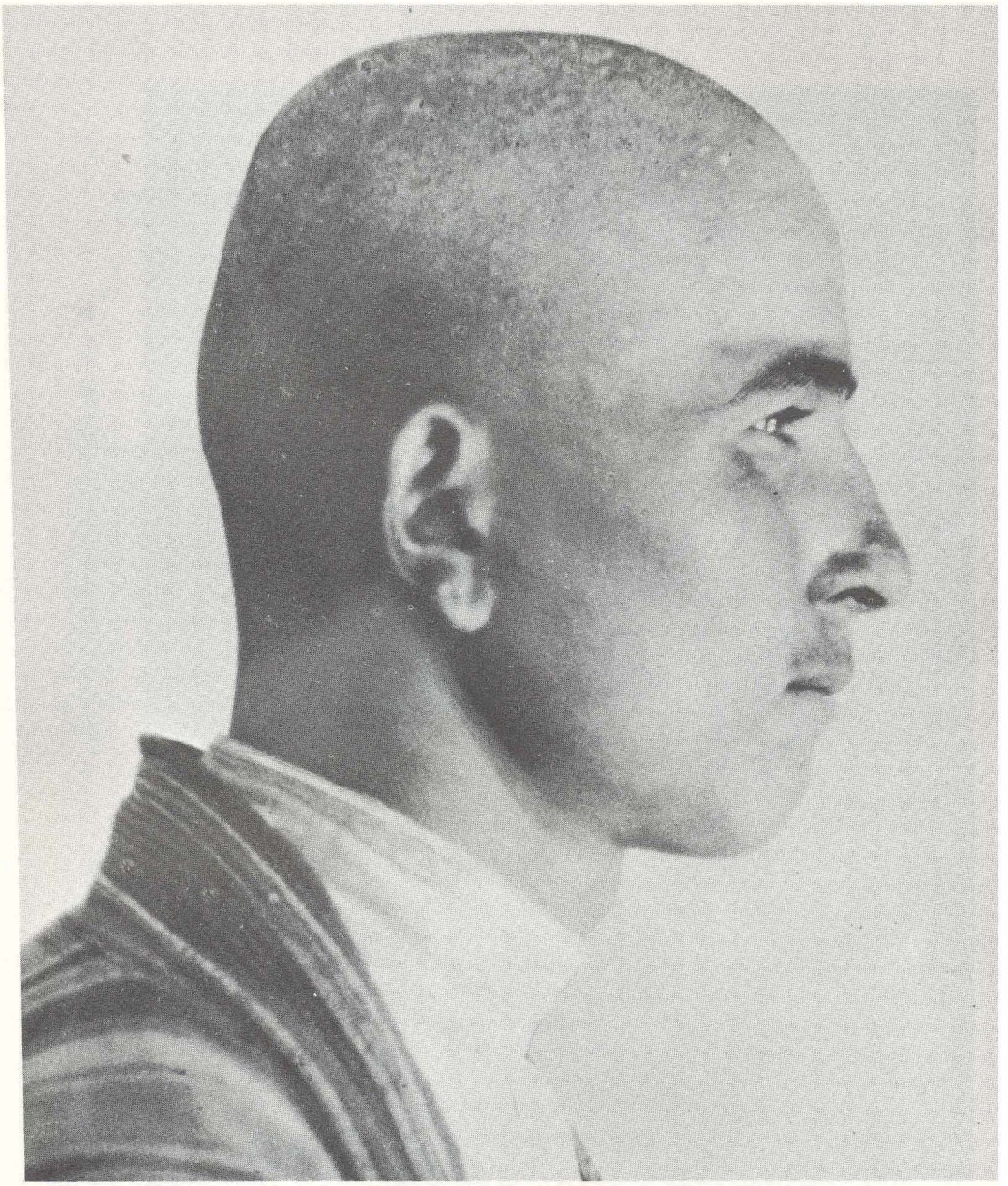

Figure 12: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik from Takfon kishlak on Yagnob Darya.

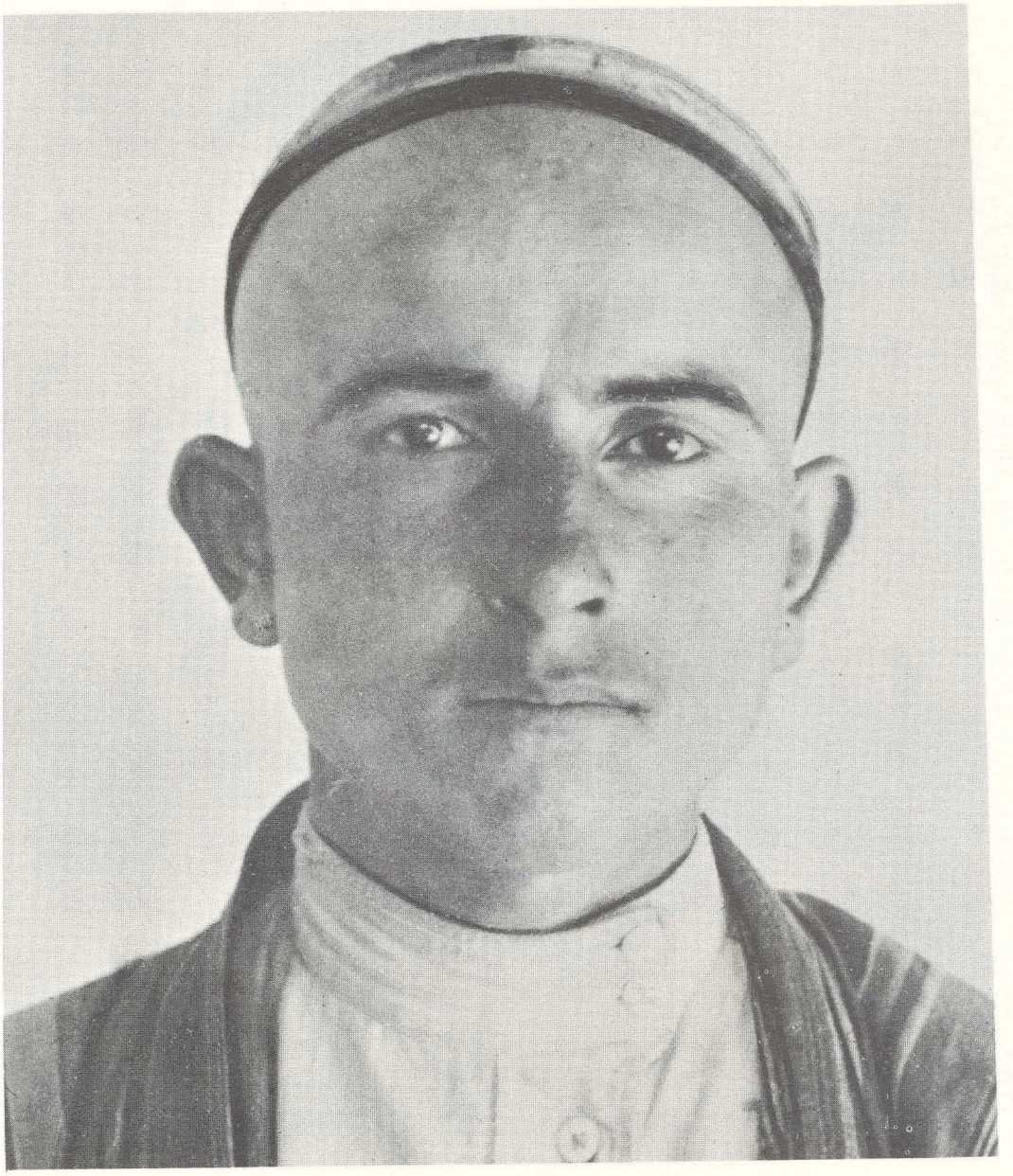

Figure 13: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik from Takfon kishlak on Yagnob Darya.

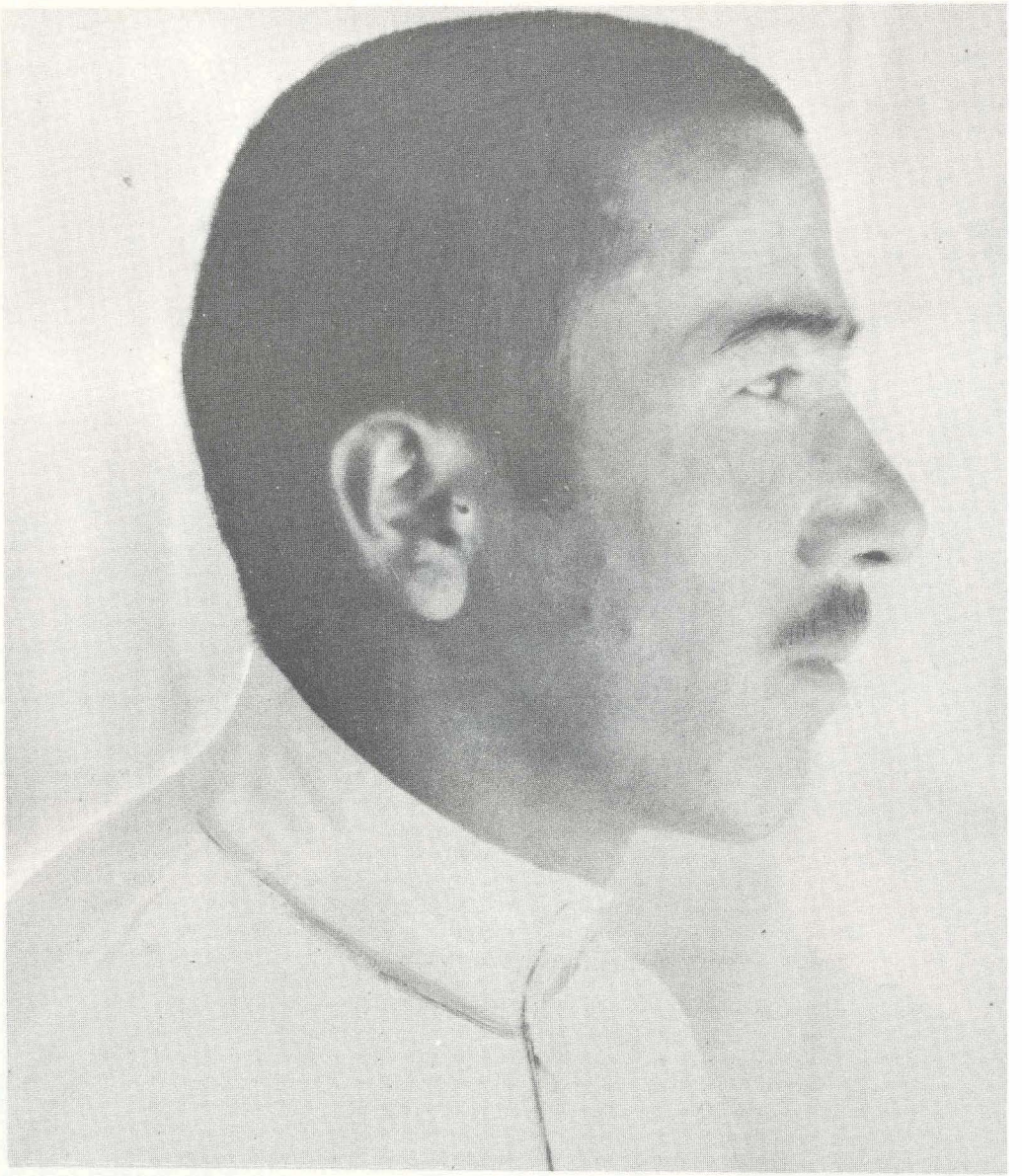

Figure 14: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik from Takfon kishlak on Yagnob Darya.

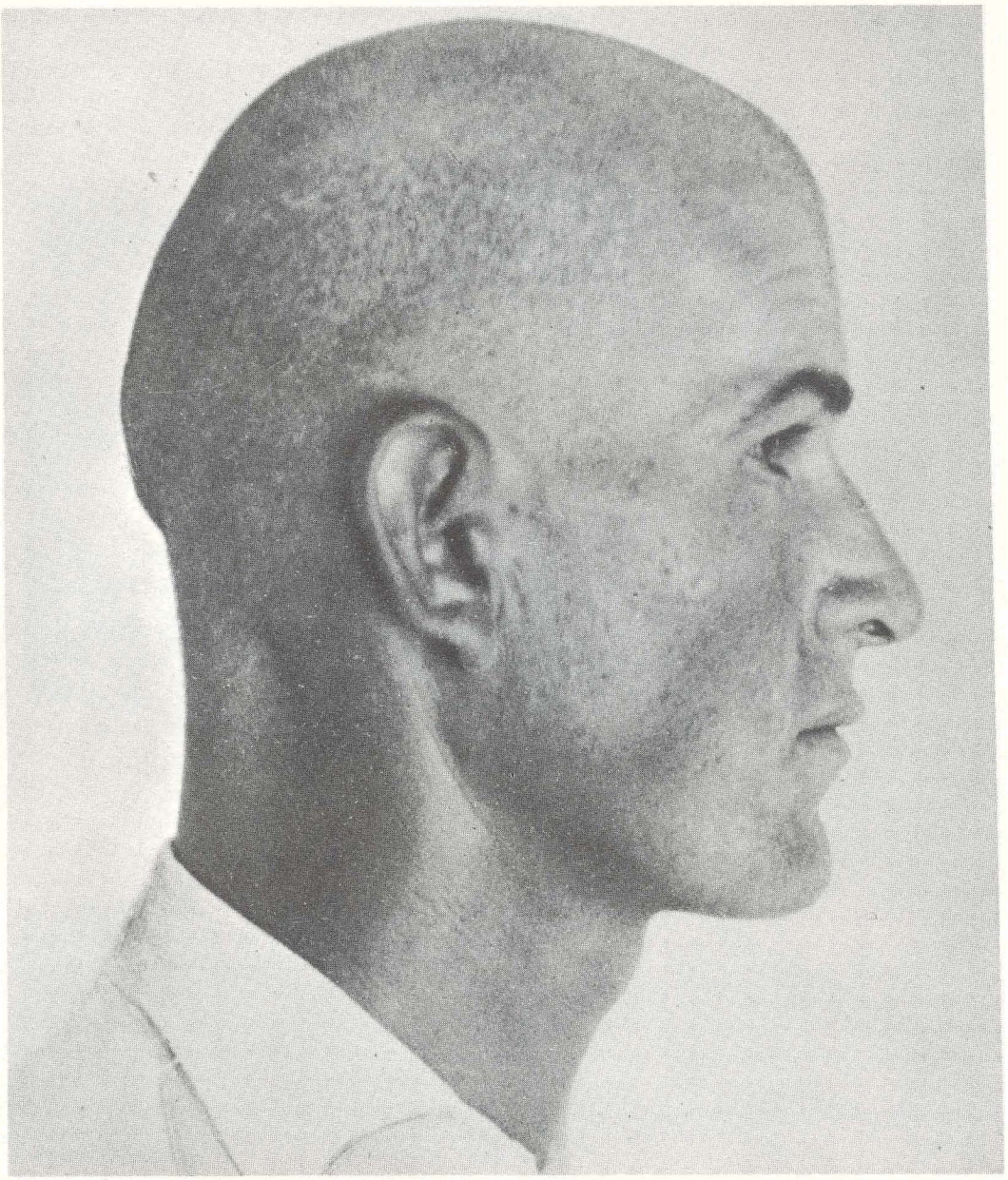

Figure 16: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik from Khshartob kishlak on Yagnob Darya.

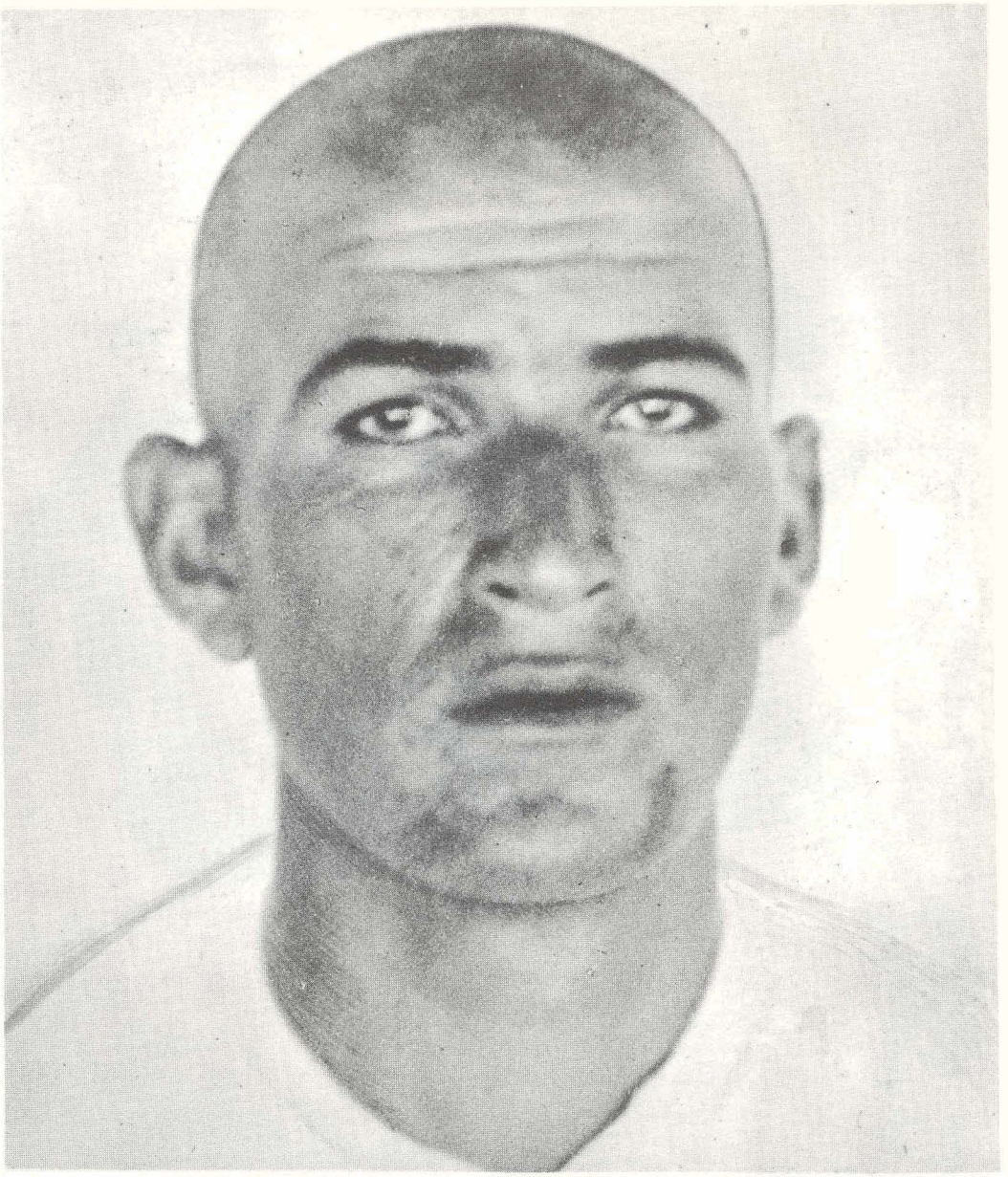

Figure 17: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik from Khshartob kishlak on Yagnob Darya.

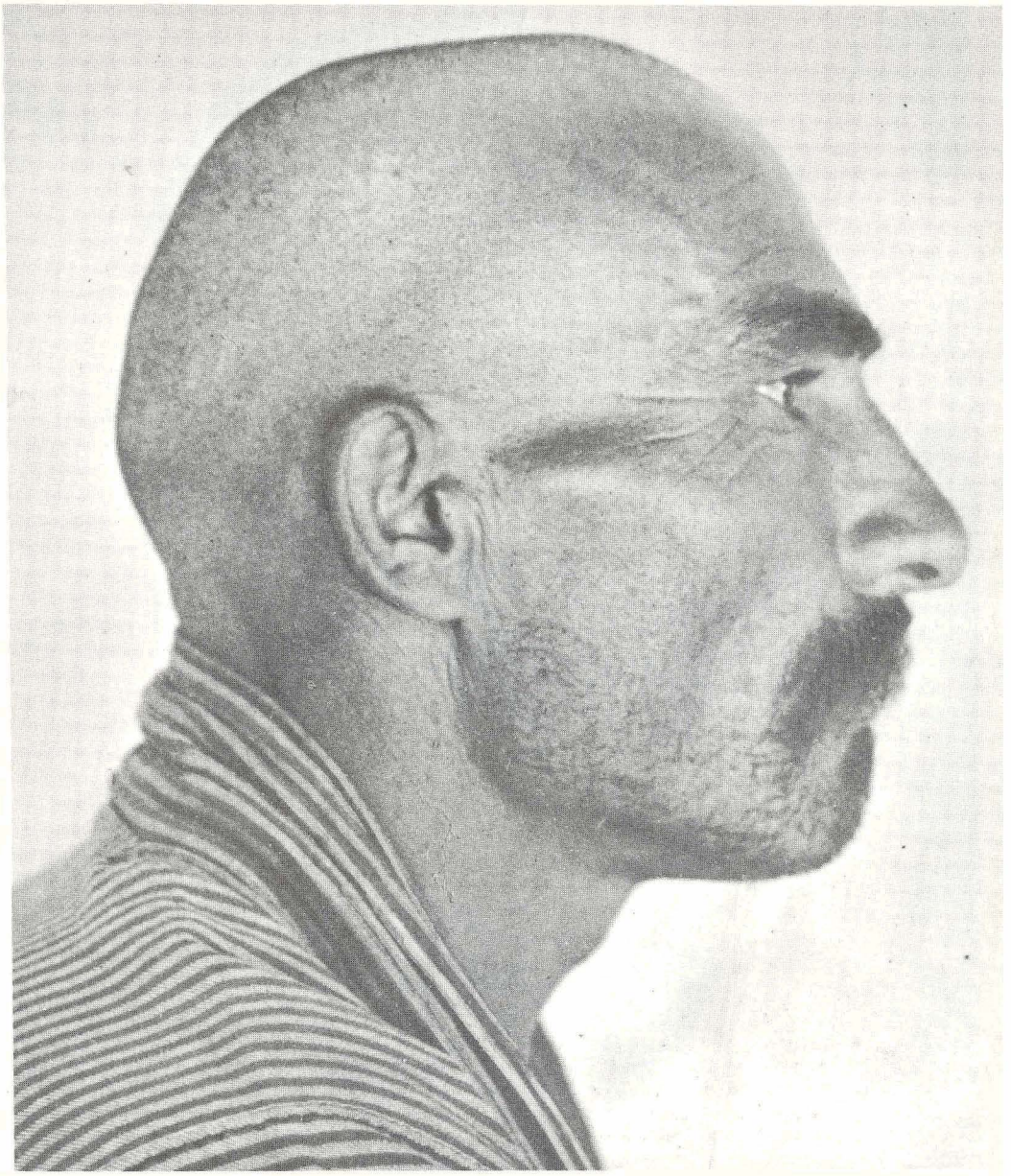

Figure 18: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik from Zakhmatabad kishlak on Zarafshan River.

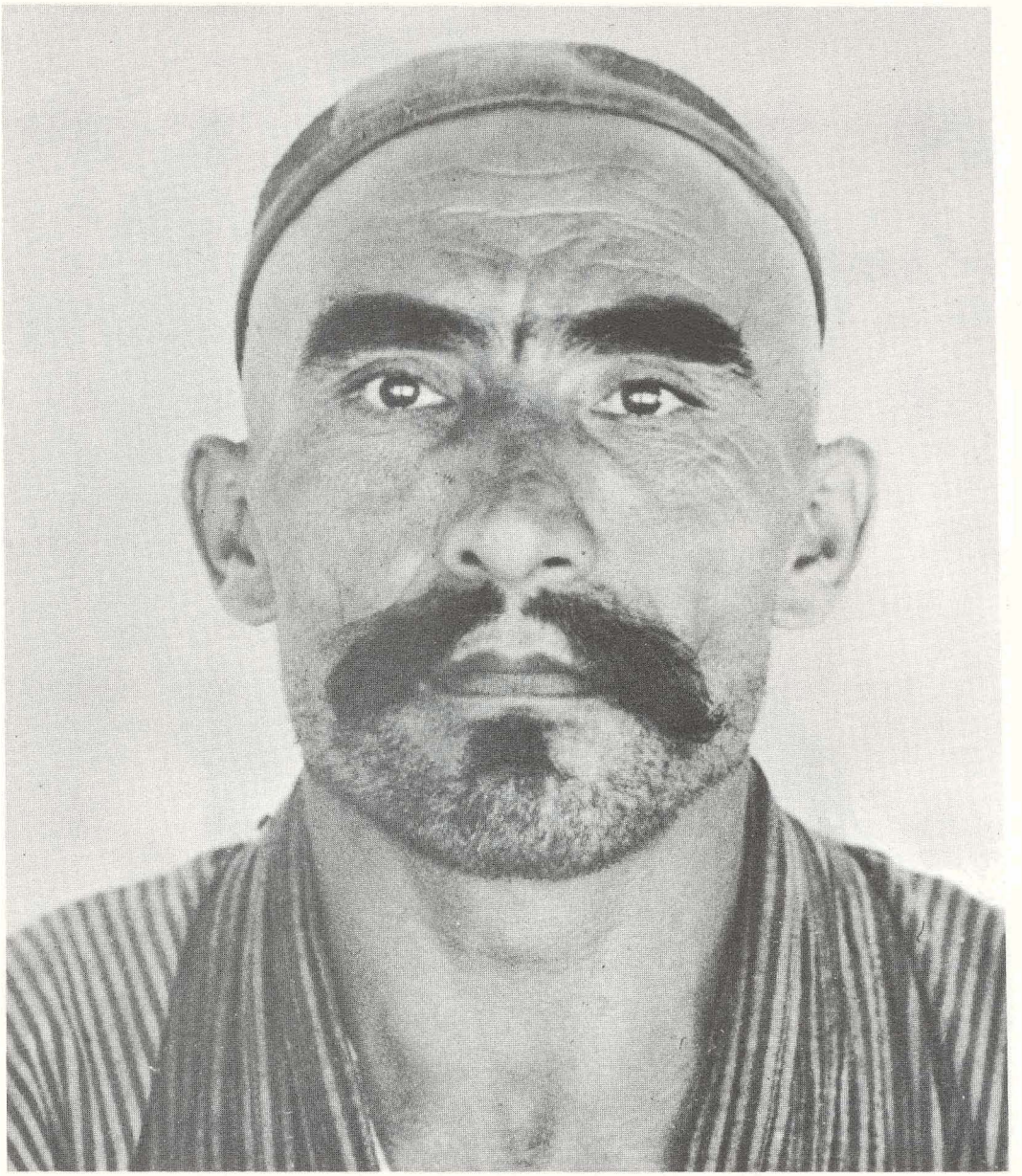

Figure 19: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik from Zakhmata-kishlak on Zarafshan River.

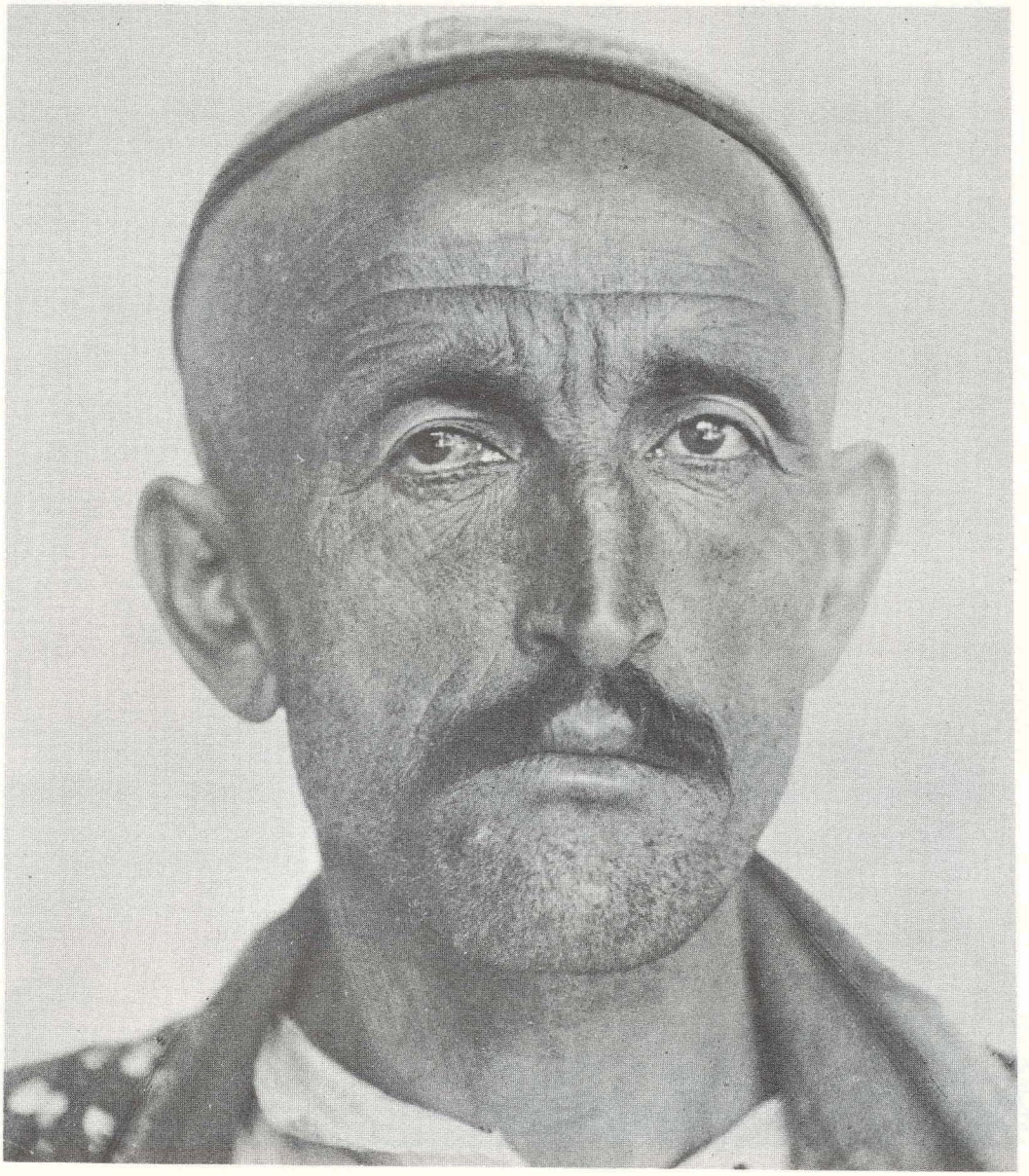

Figure 21: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik of Zakhmatabad kishlak on Zarafshan River. Note: Nasal base and wings are unusually high.

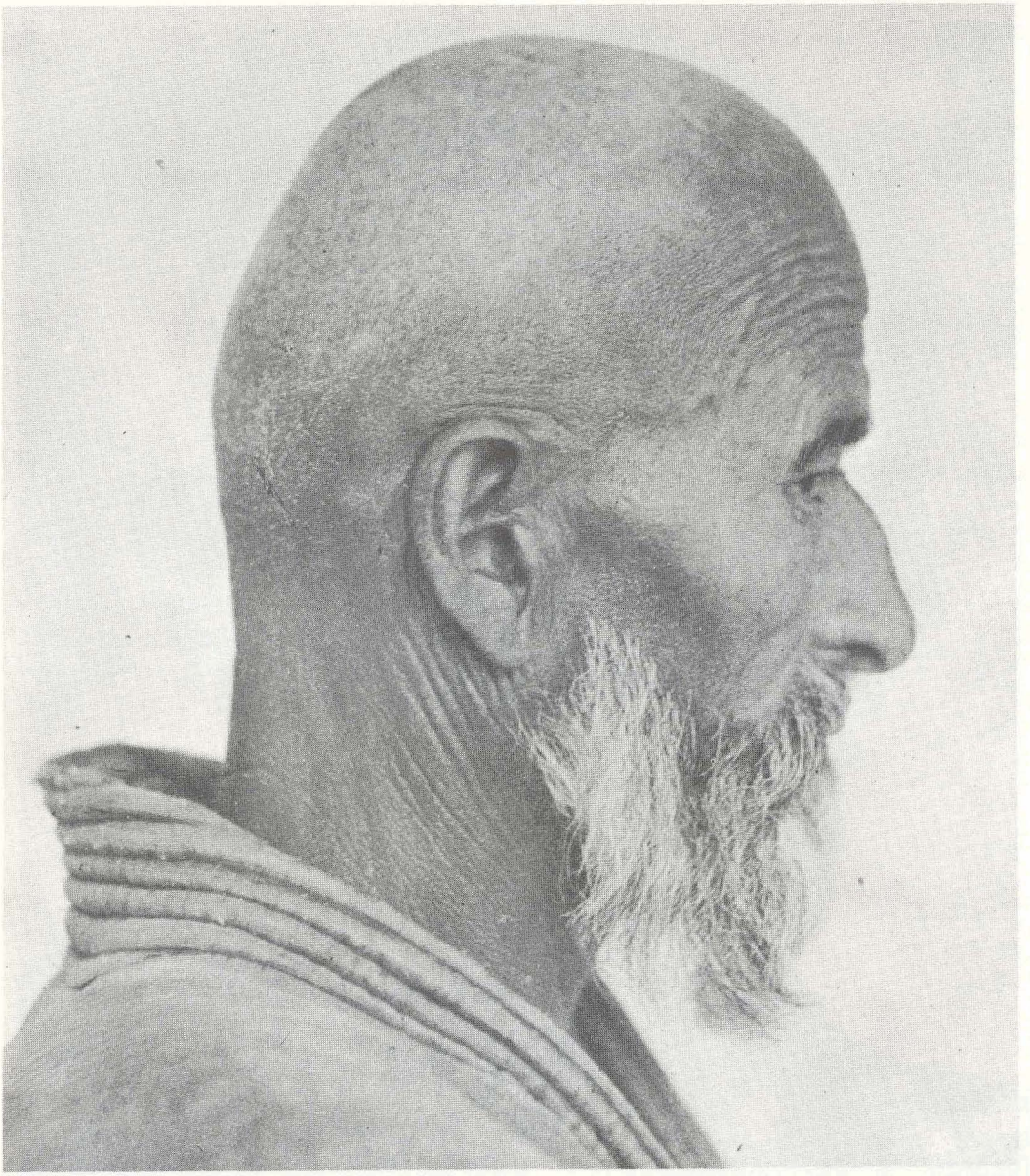

Figure 22: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik of Zakhmatabad kishlak on Zarafshan River. Note: Nasal base and wings are unusually high.

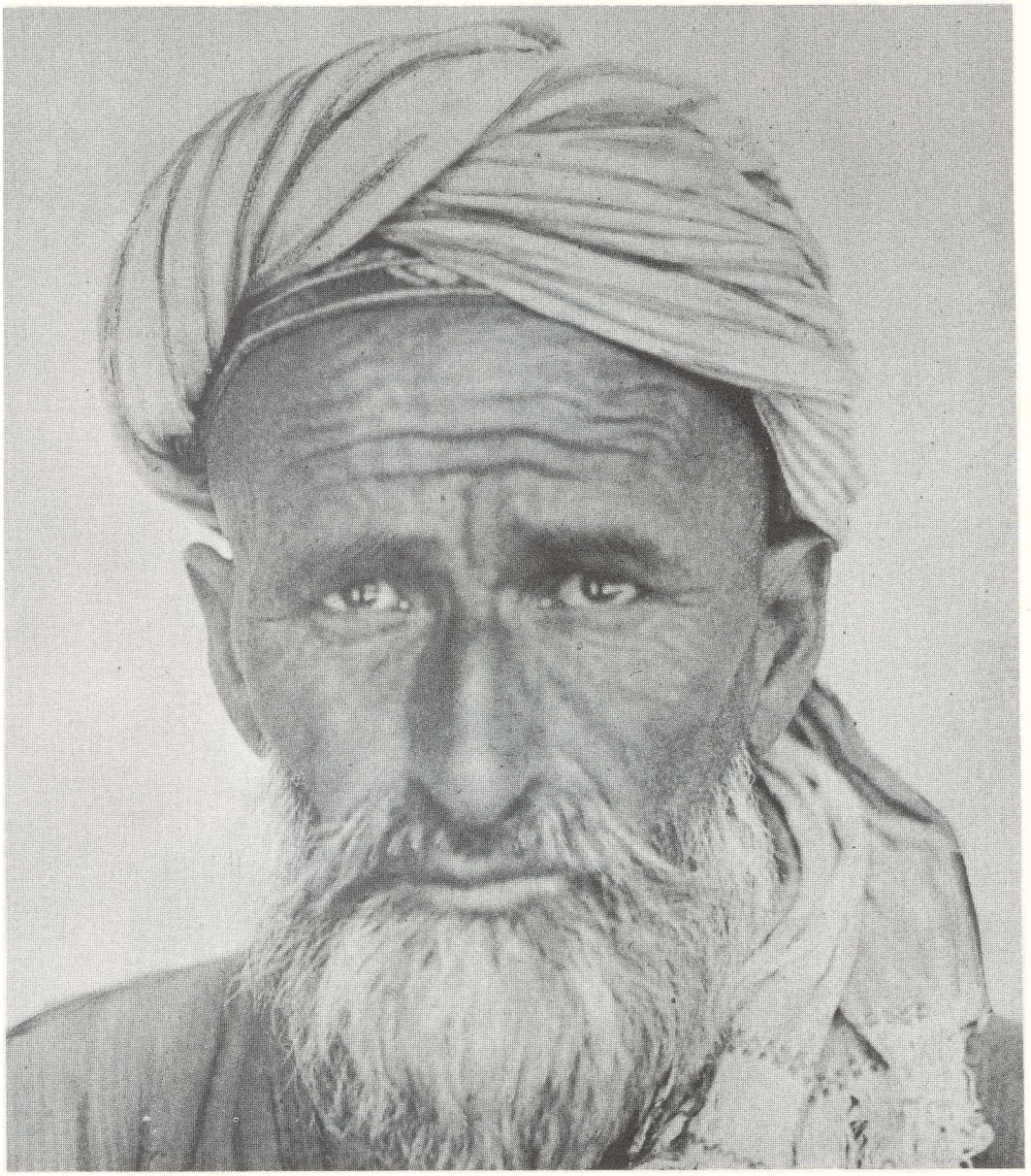

Figure 23: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik of Zakhmatabad kishlak on Zarafshan River. Note: Nasal base and wings are unusually high.

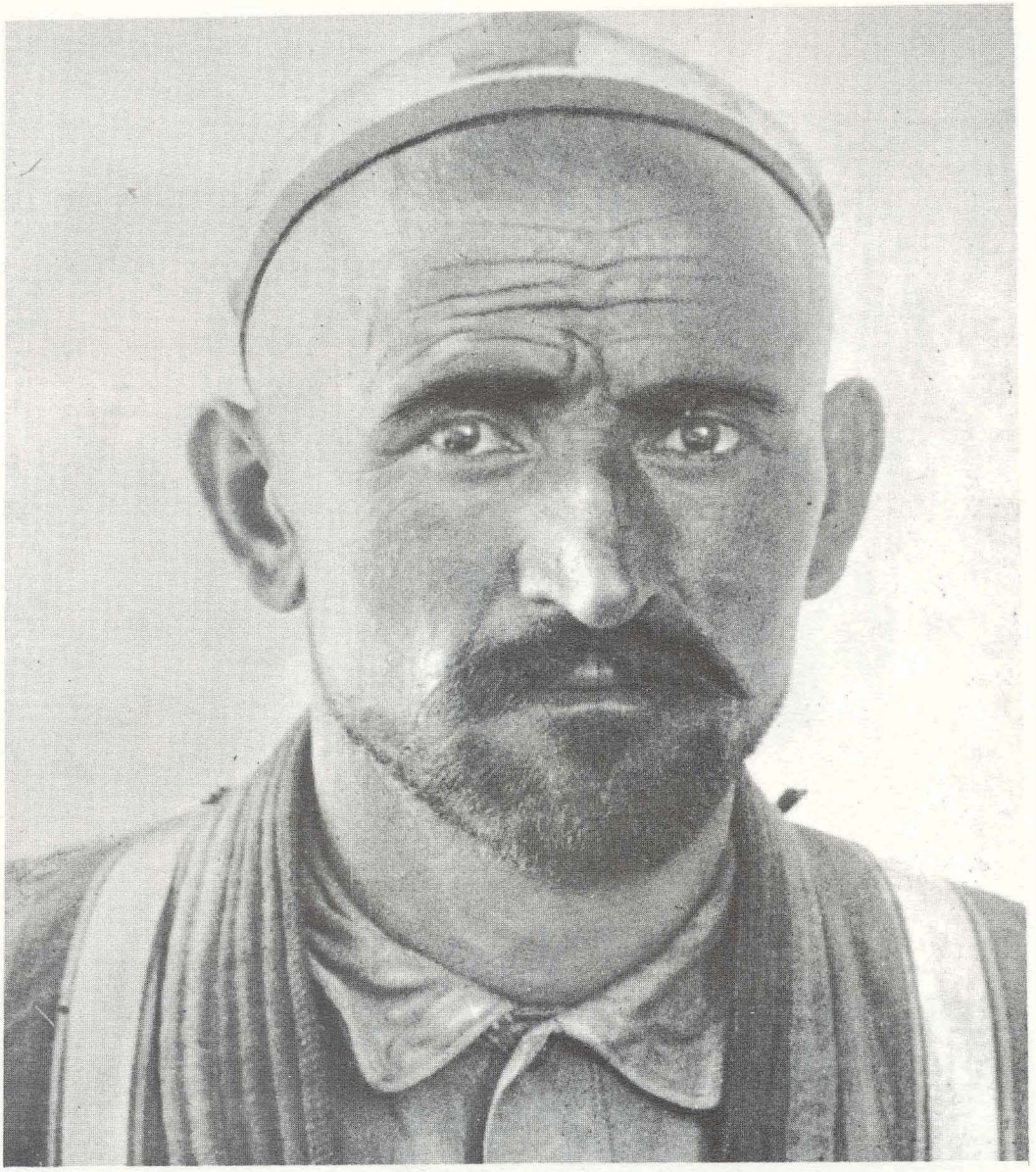

Figure 24: Europeoid type of Central Asiatic Interfluvial Region. Yagnobi from Naumetkan kishlak on Yagnob Darya. Note: Nasal base and wings unusually high.

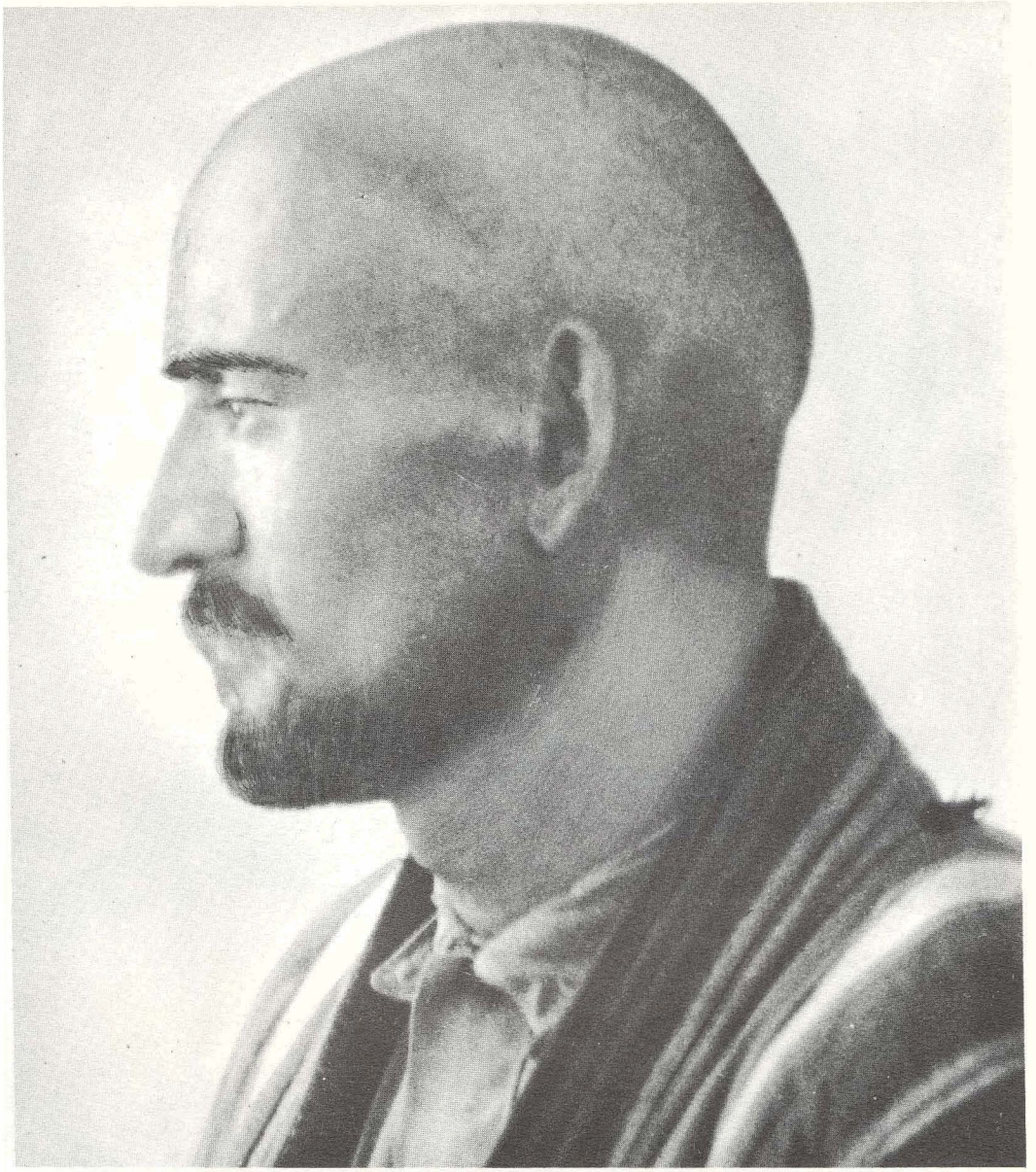

Figure 25: Europeoid type of Central Asiatic Interfluvial Region. Yagnobi from Naumetkan kishlak on Yagnob Darya. Note: Nasal base and wings unusually high.

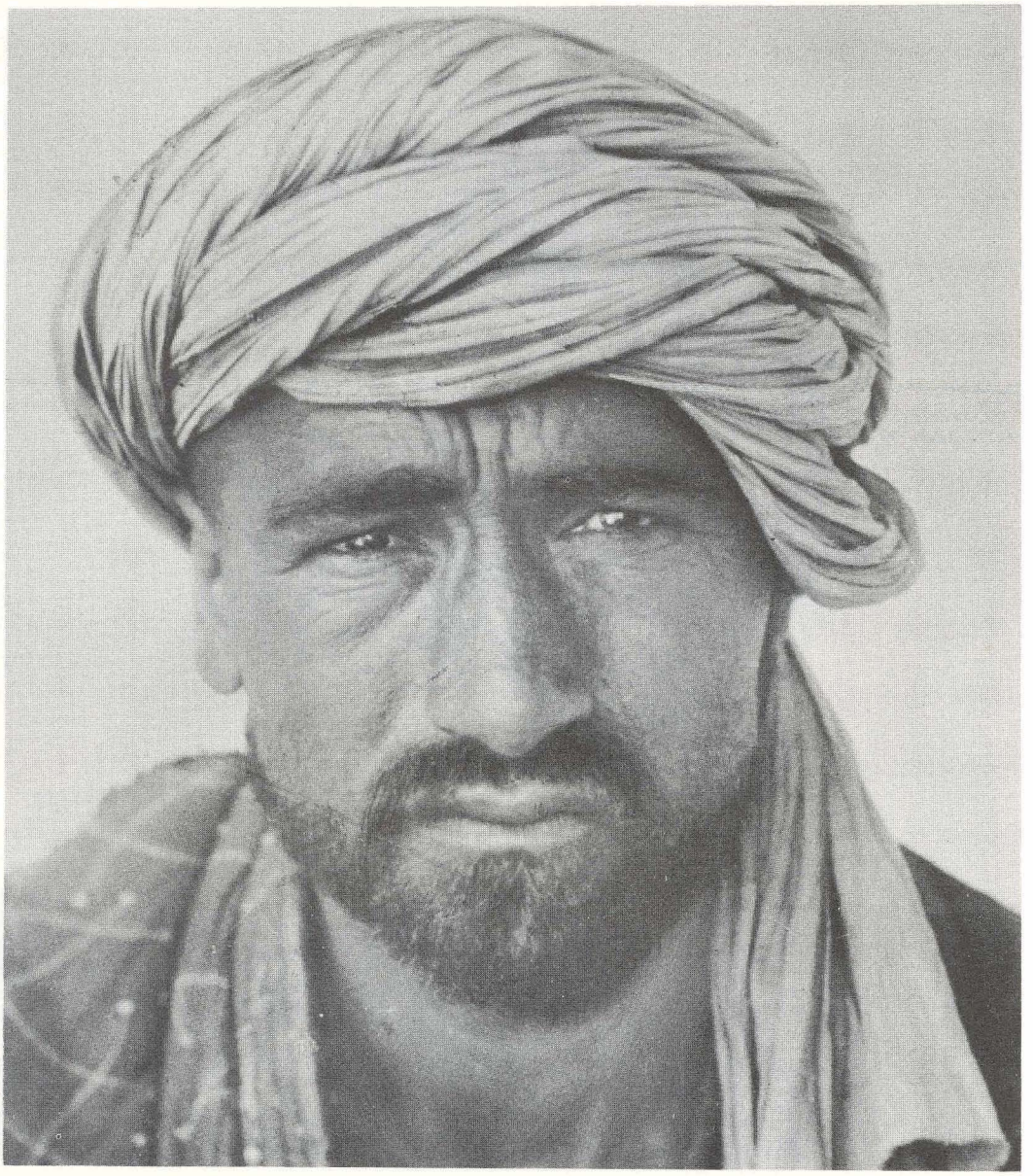

Figure 26: Basic Europeoid type of Central Asiatic Interfluvial Region. Yagnobi from Naumetkan kishlak on Yagnob Darya.

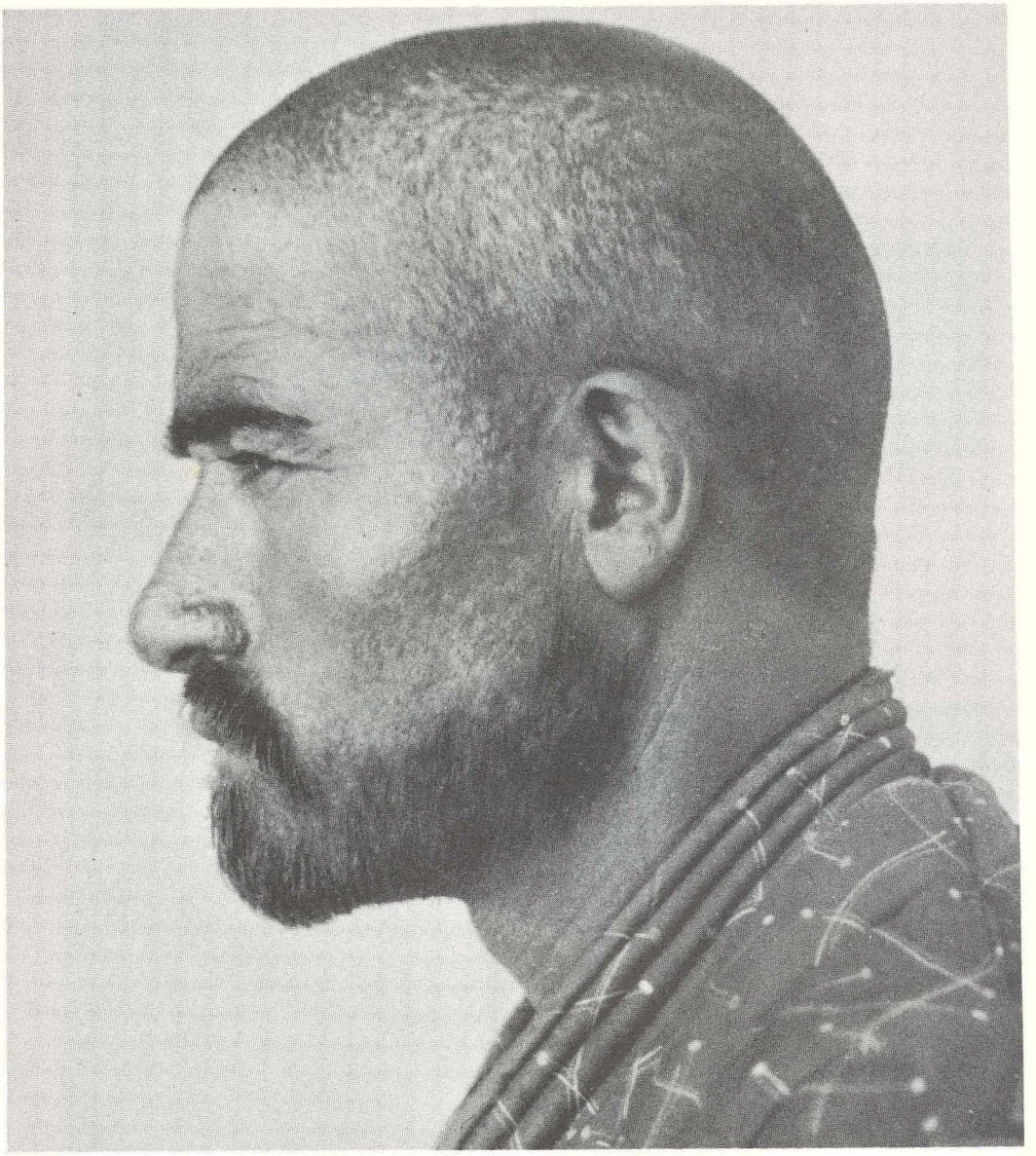

Figure 27: Basic Europeoid type of Central Asiatic Interfluvial Region. Yagnobi from Naumetkan kishlak on Yagnob Darya.

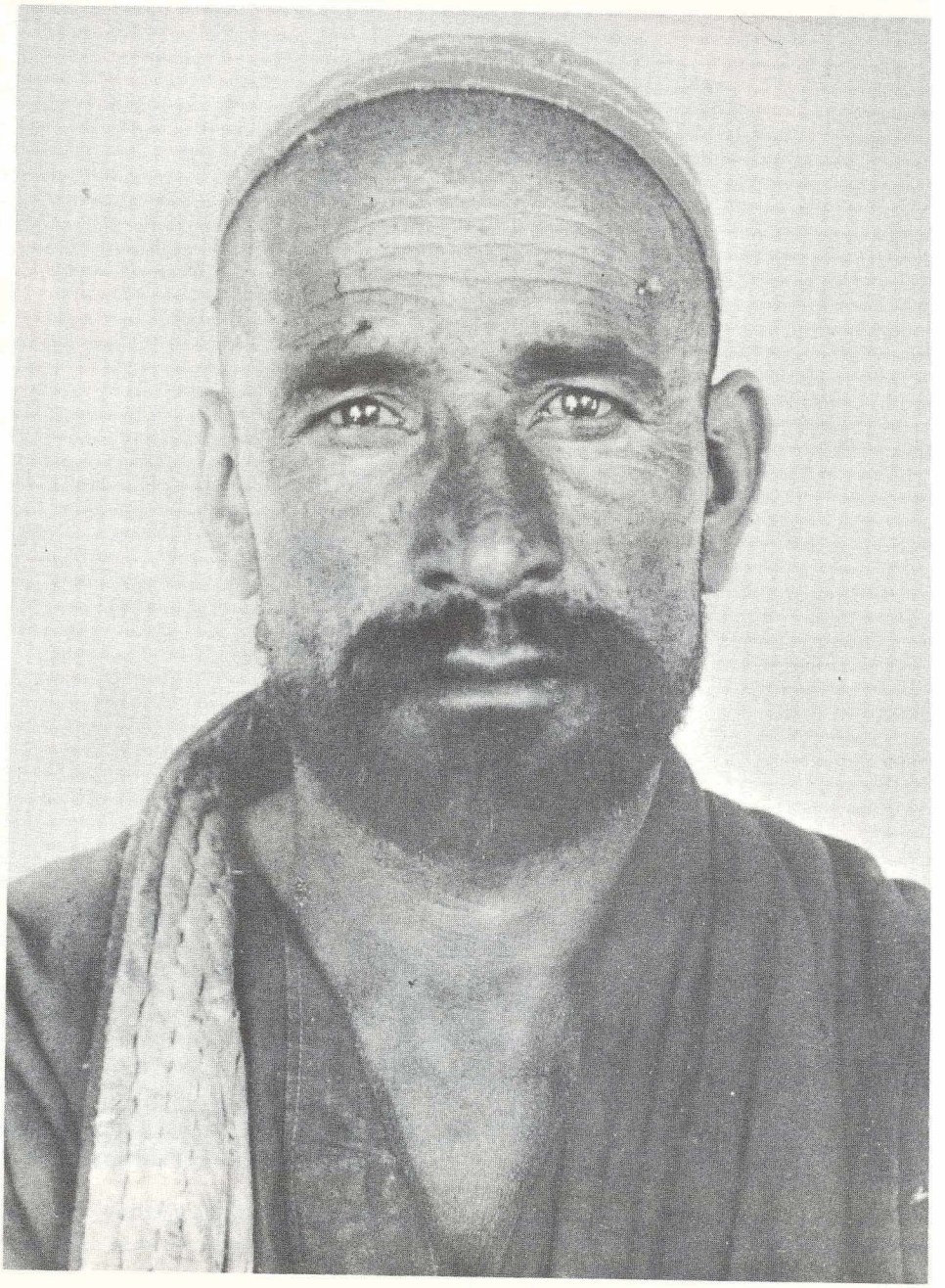

Figure 28: Basic Europeoid type of Central Asiatic Interfluvial Region. Yagnobi from Naumetkan kishlak on Yagnob Darya.

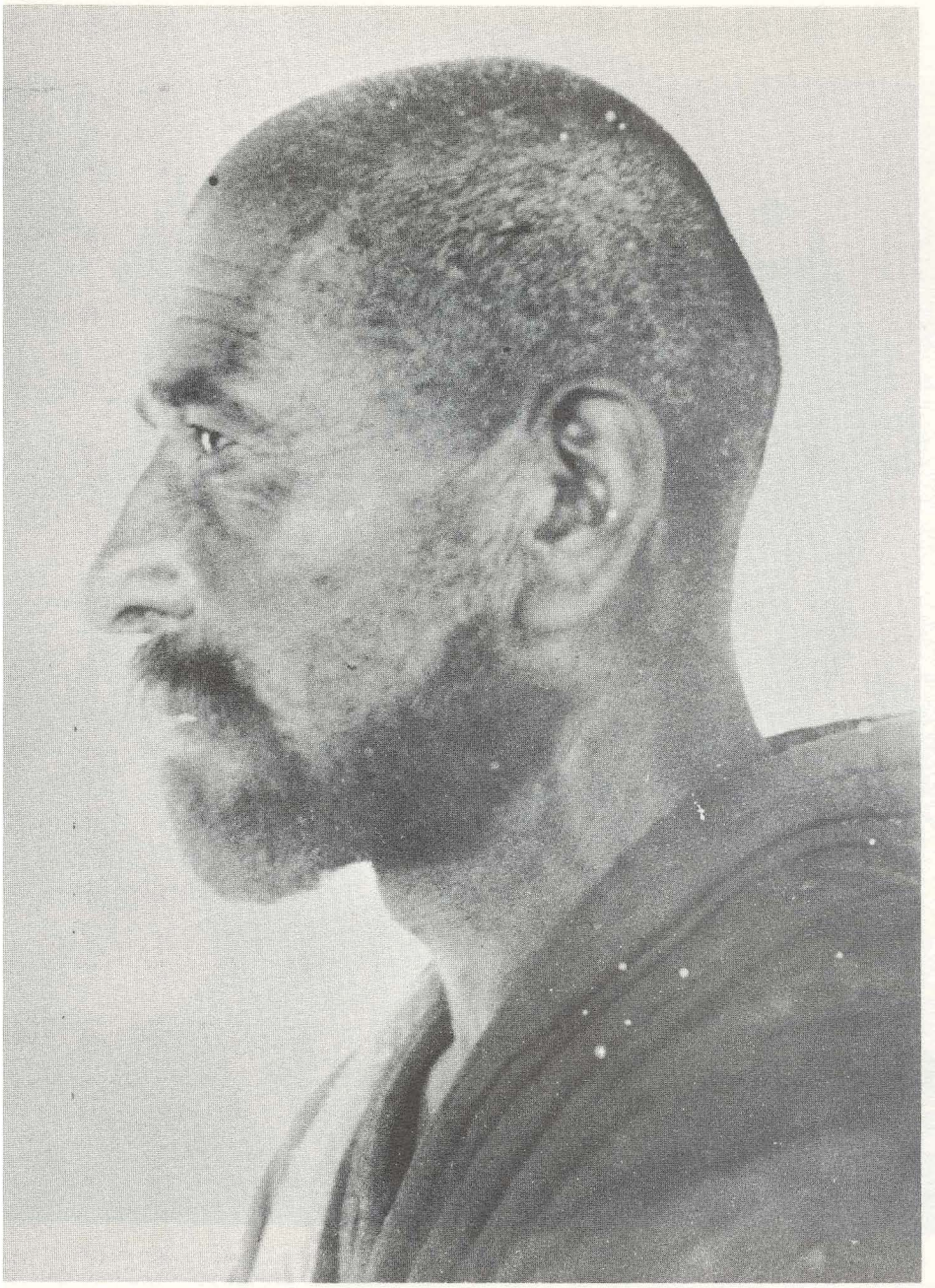

Figure 29: Basic Europeoid type of Central Asiatic Interfluvial Region. Yagnobi from Naumetkan kishlak on Yagnob Darya.

Figure 30: Basic Europeoid type of Central Asiatic Interfluvial Region. Yagnobi from Naumetkan kishlak on Yagnob Darya.

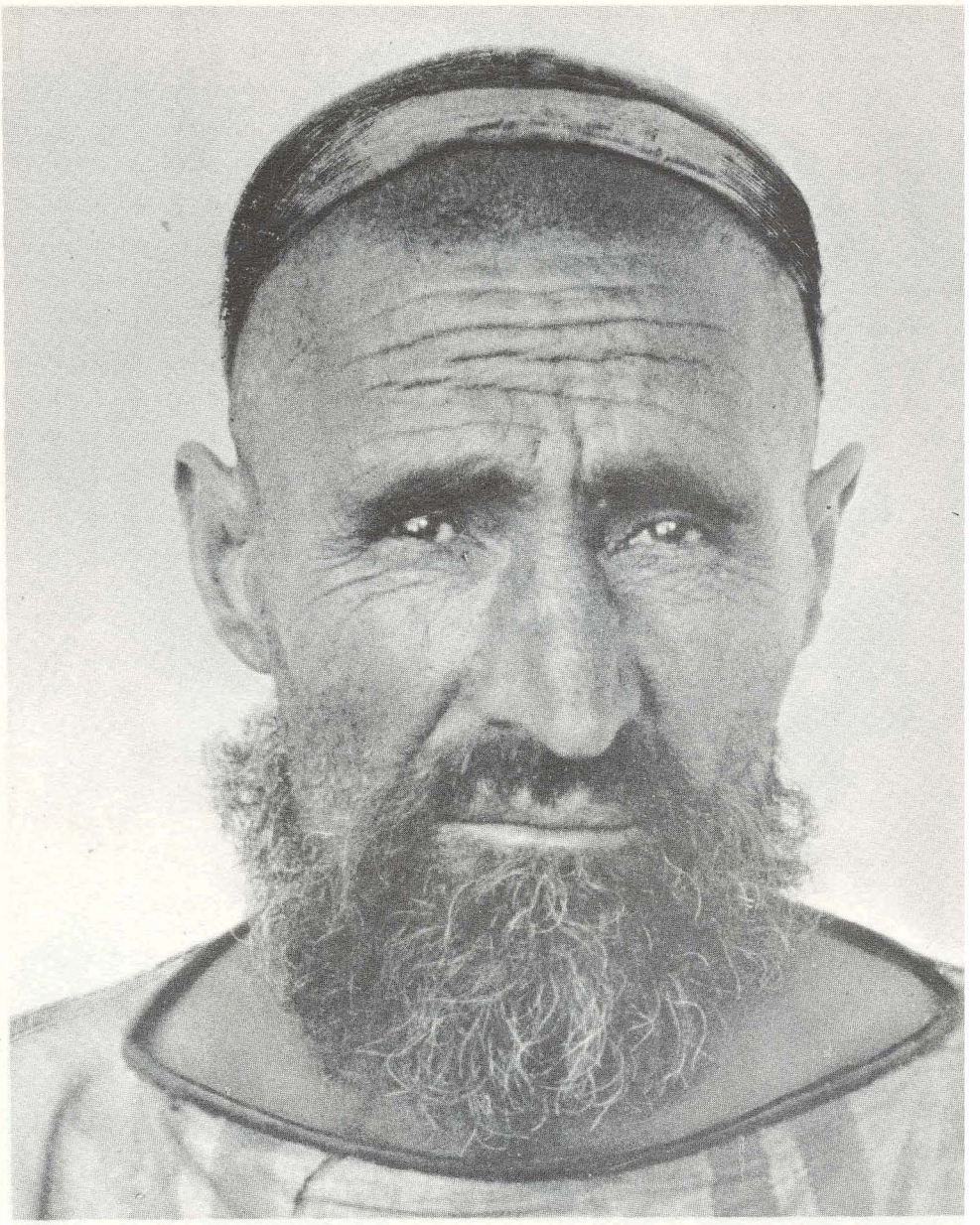

Figure 32: Europeoid type of Central Asiatic Interfluvial Region. Yagnobi from Naumetkan kishlak on Yagnob Darya.

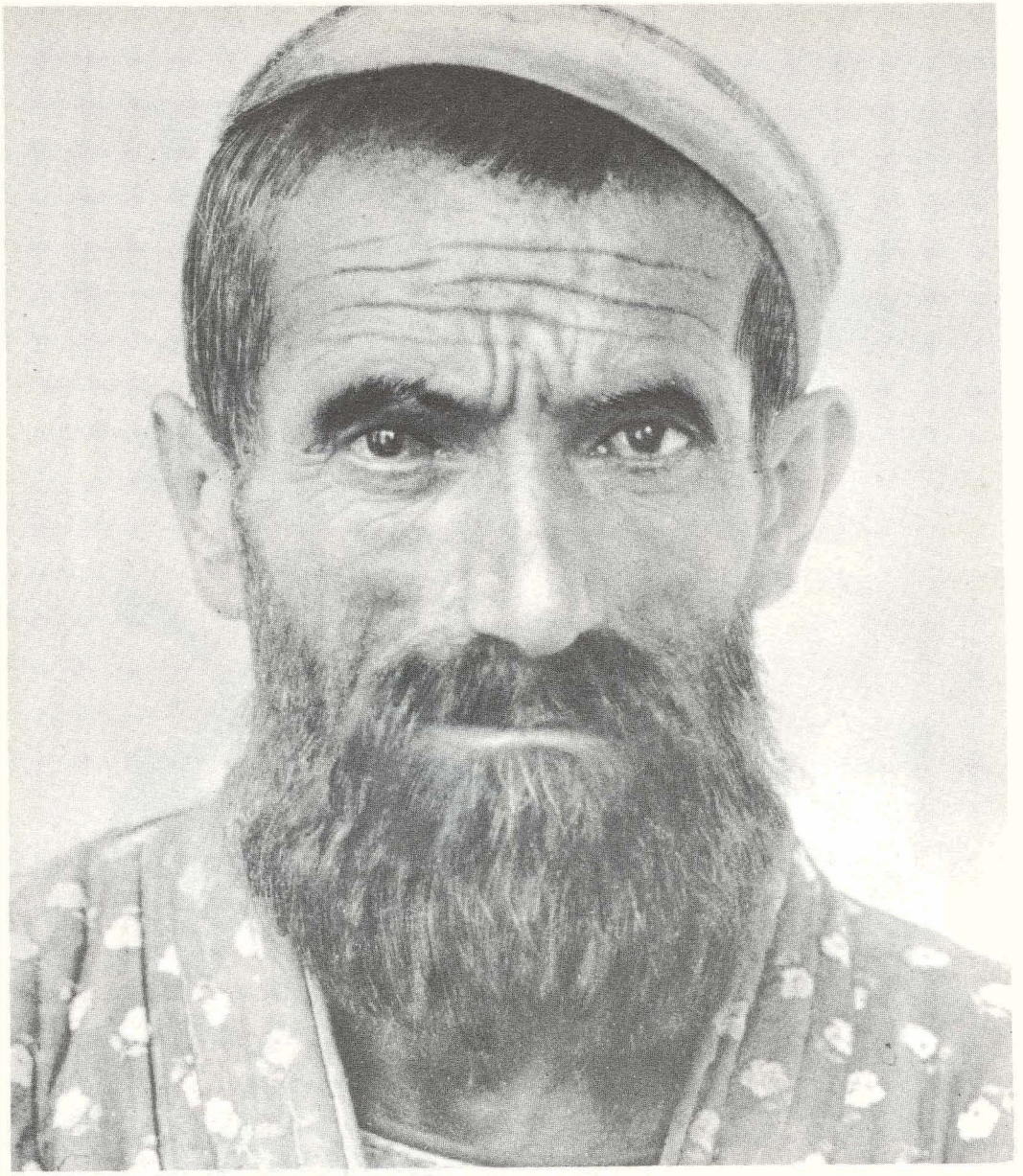

Figure 33: Europeoid type of Central Asiatic Interfluvial Region. Yagnobi from Naumetkan kishlak on Yagnob Darya.

Figure 34: Well-expressed type of Europeoid race of Central Asiatic Interfluvial Region. Yagnobi boys from Naumetkan kishlak on Yagnob Darya.

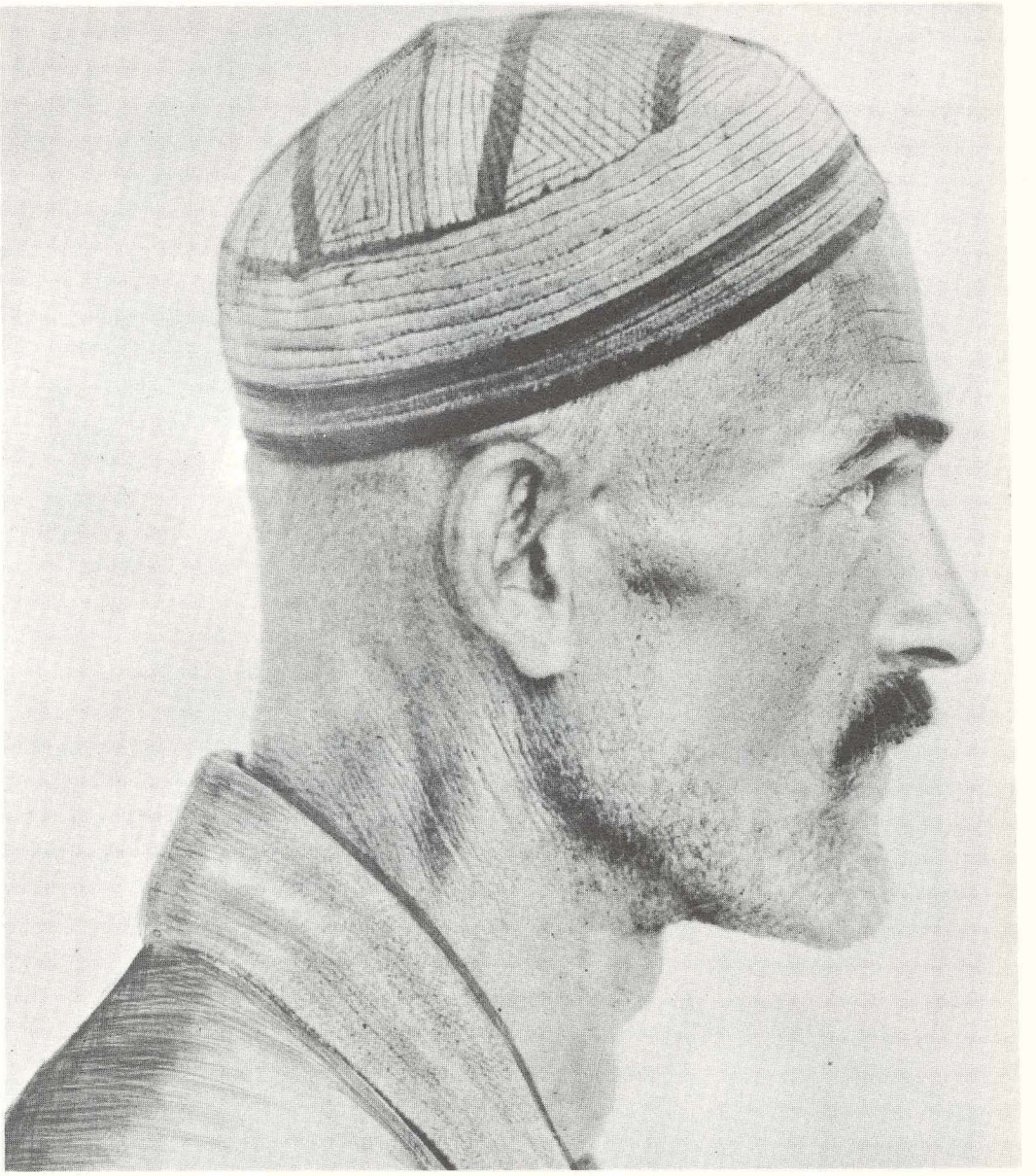

Figure 35: Europeoid type of Central Asiatic Interfluvial Region. Shugnan from Iranian tribes of Western Pamirs.

Figure 37: Europeoid type of Central Asiatic Interfluvial Region. Shugnan from Iranian tribes of Western Pamirs.

Figure 38: Europeoid type of Central Asiatic Interfluvial Region. Shugnan from Iranian tribes of Western Pamirs.

Figure 39: Pamir variant of Europeoid race of Central Asiatic Interfluvial Region. Vakhan from Iranian tribes of Western Pamirs.

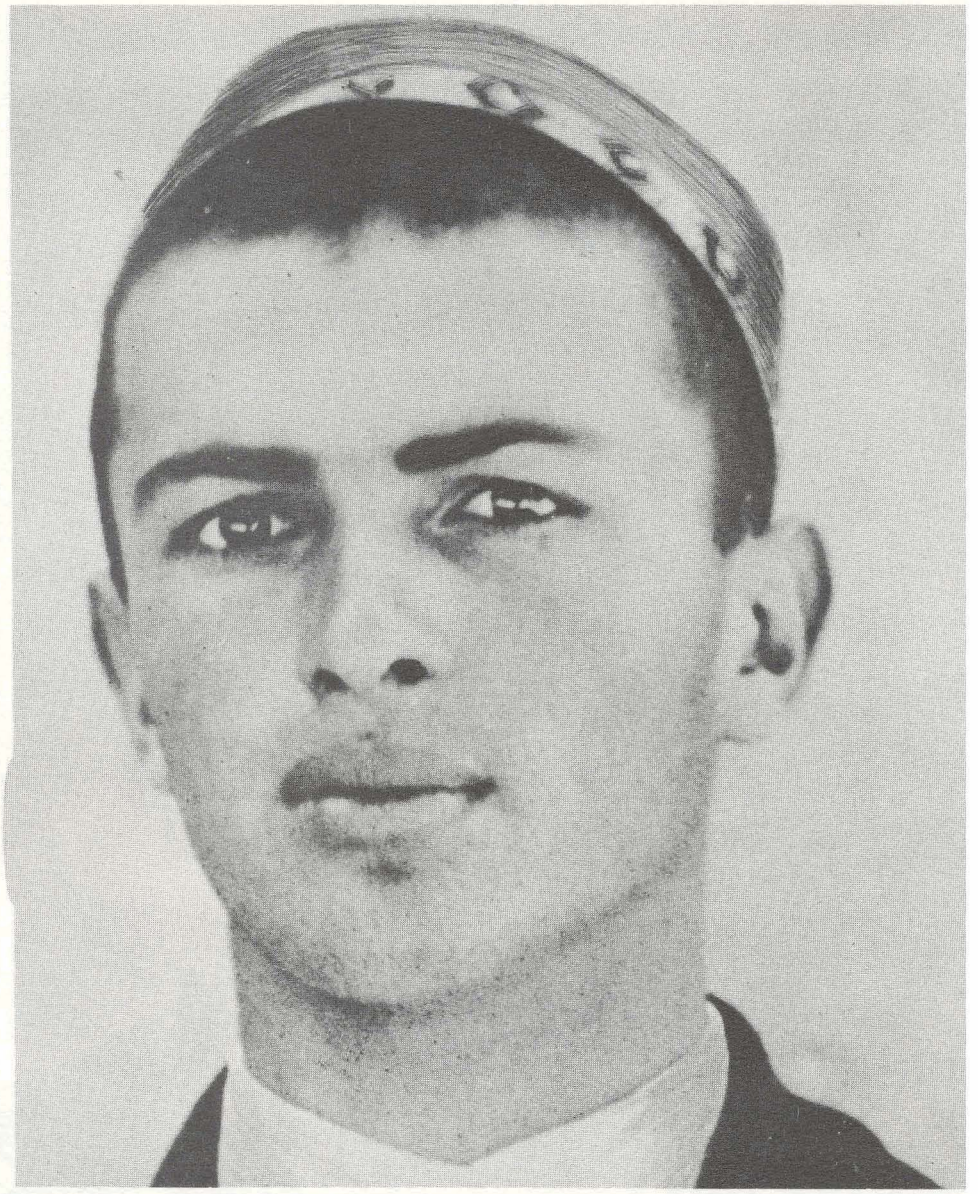

Figure 40: Pamir variant of Europeoid race of Central Asiatic Interfluvial Region. Vakhan from Iranian tribes of Western Pamirs.

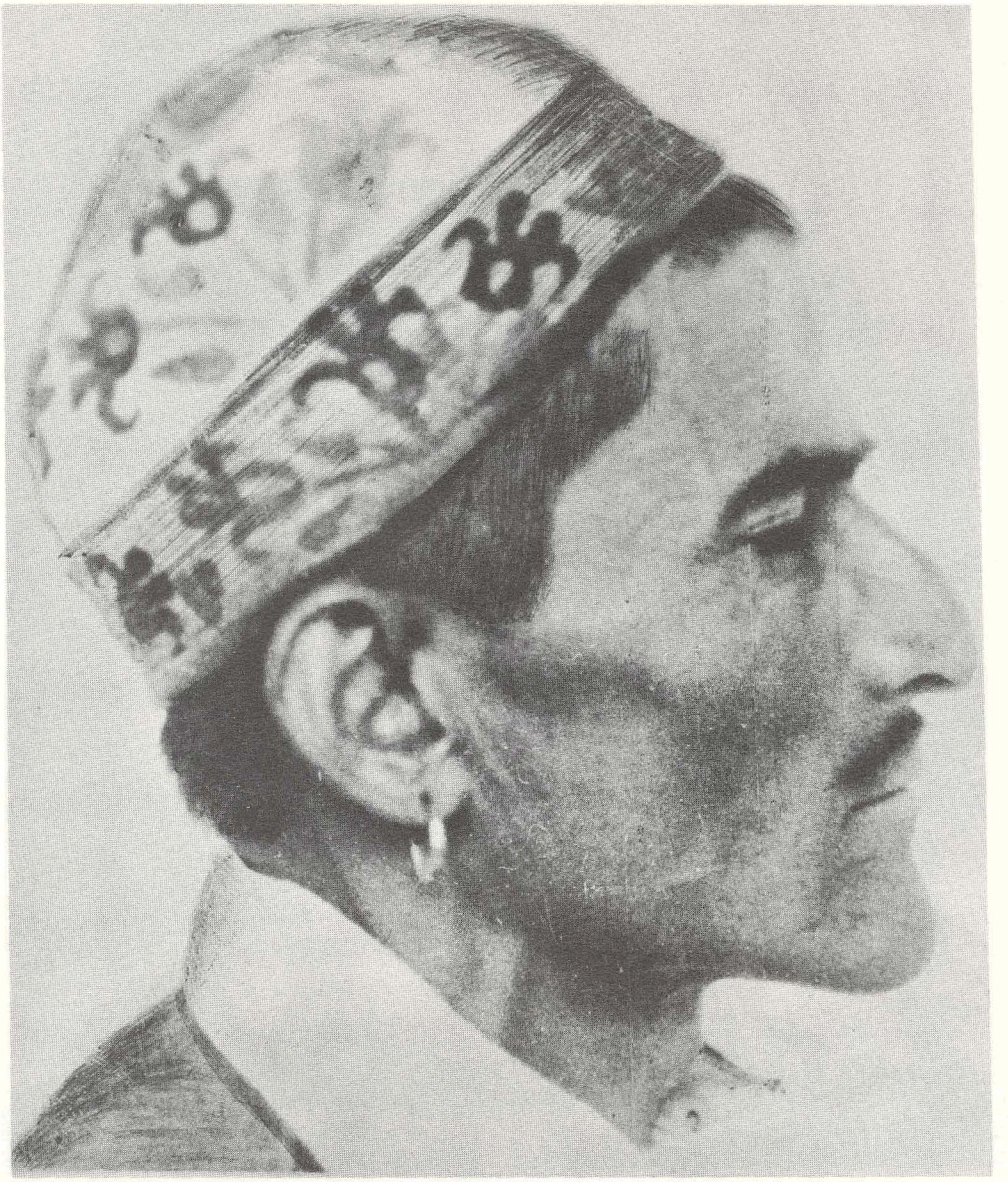

Figure 41: Pamir variant of Europeoid race of Central Asiatic Interfluvial Region. Rushan male from Iranian tribes of Western Pamirs.

Figure 42: Pamir variant of Europeoid race of Central Asiatic Interfluvial Region. Rushan female from Iranian tribes of Western Pamirs.

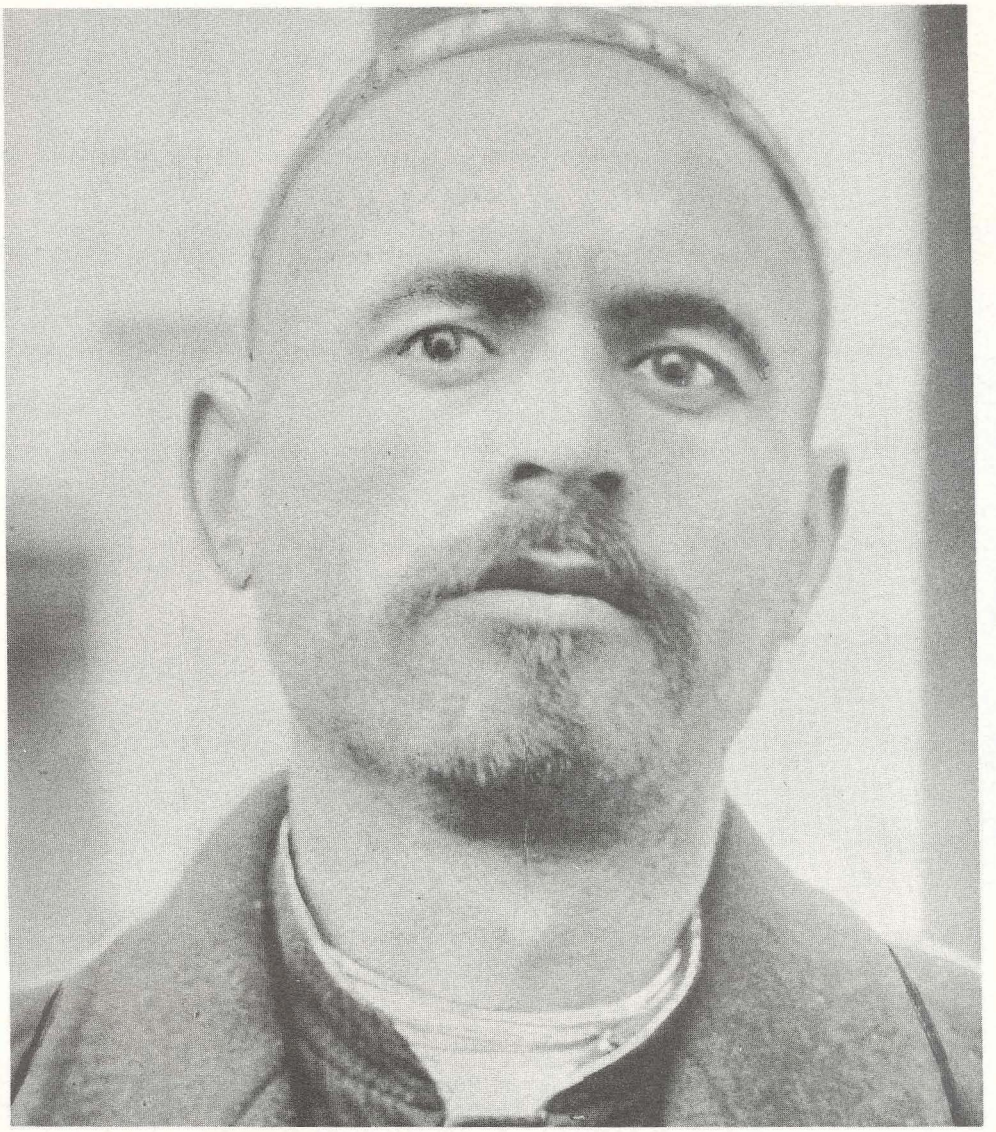

Figure 46: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik from Karategin.

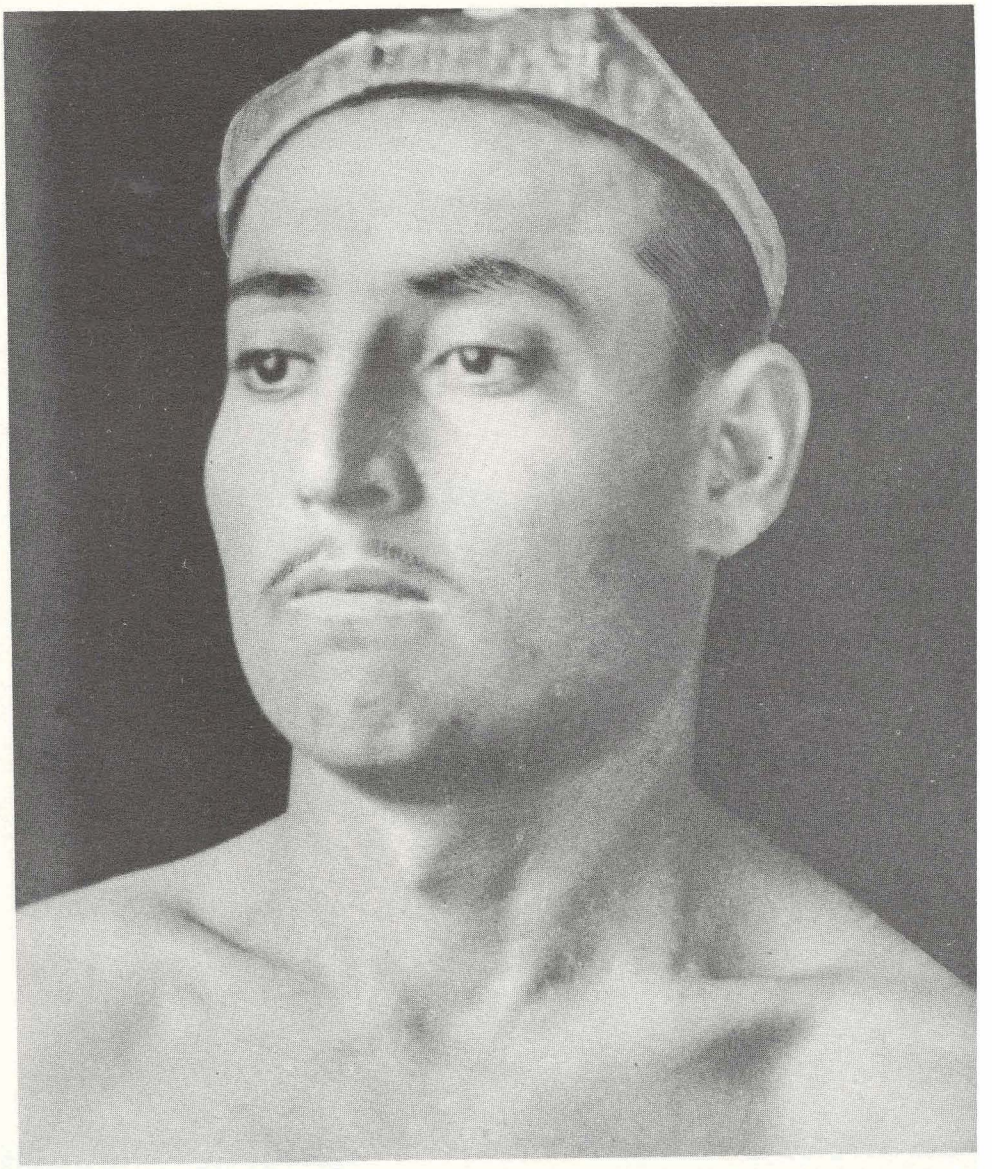

Figure 47: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik from Karategin.

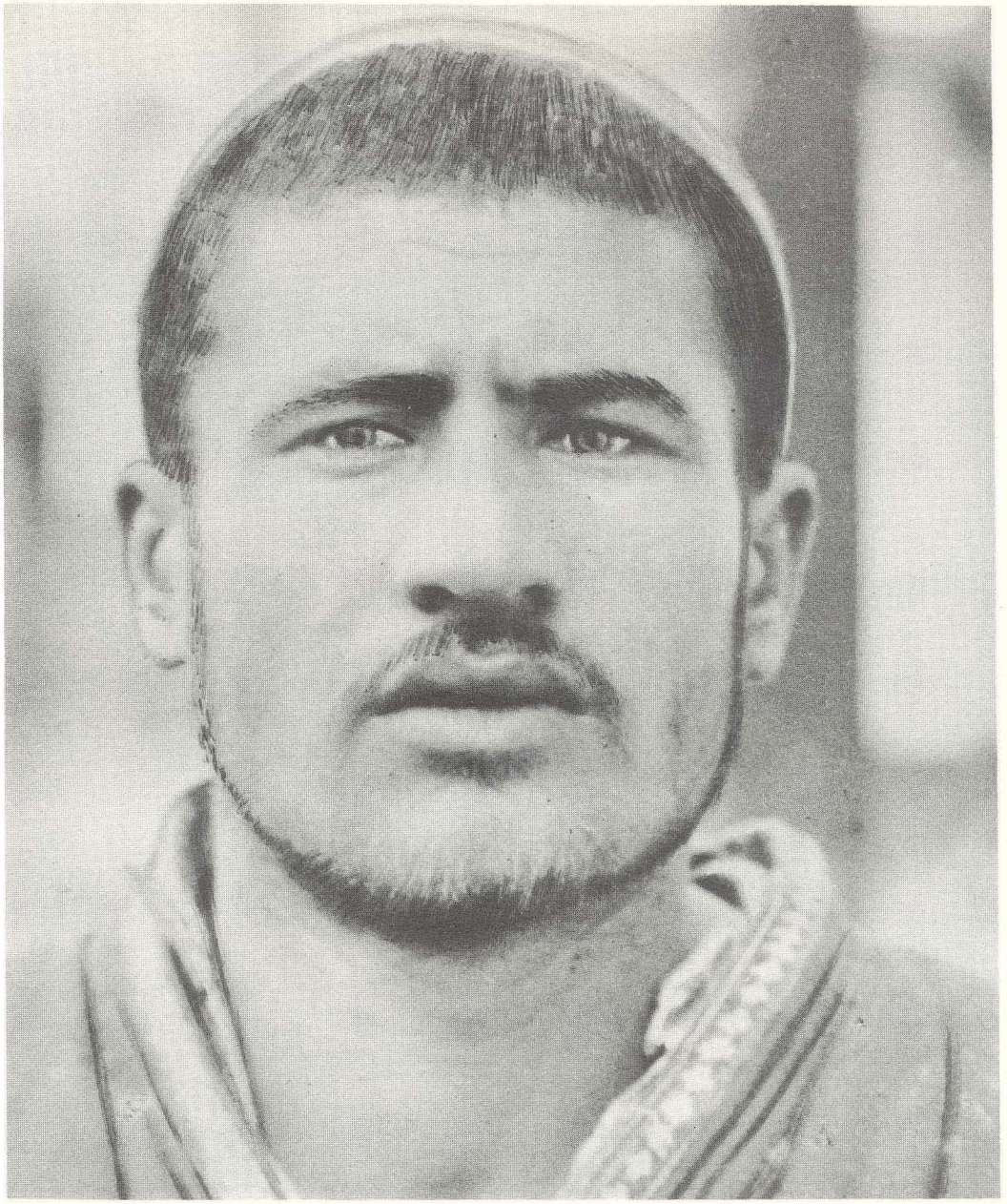

Figure 48: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik from Karategin.

Figure 49: Europeoid type of Central Asiatic Interfluvial Region. Tadzhik from Karategin.

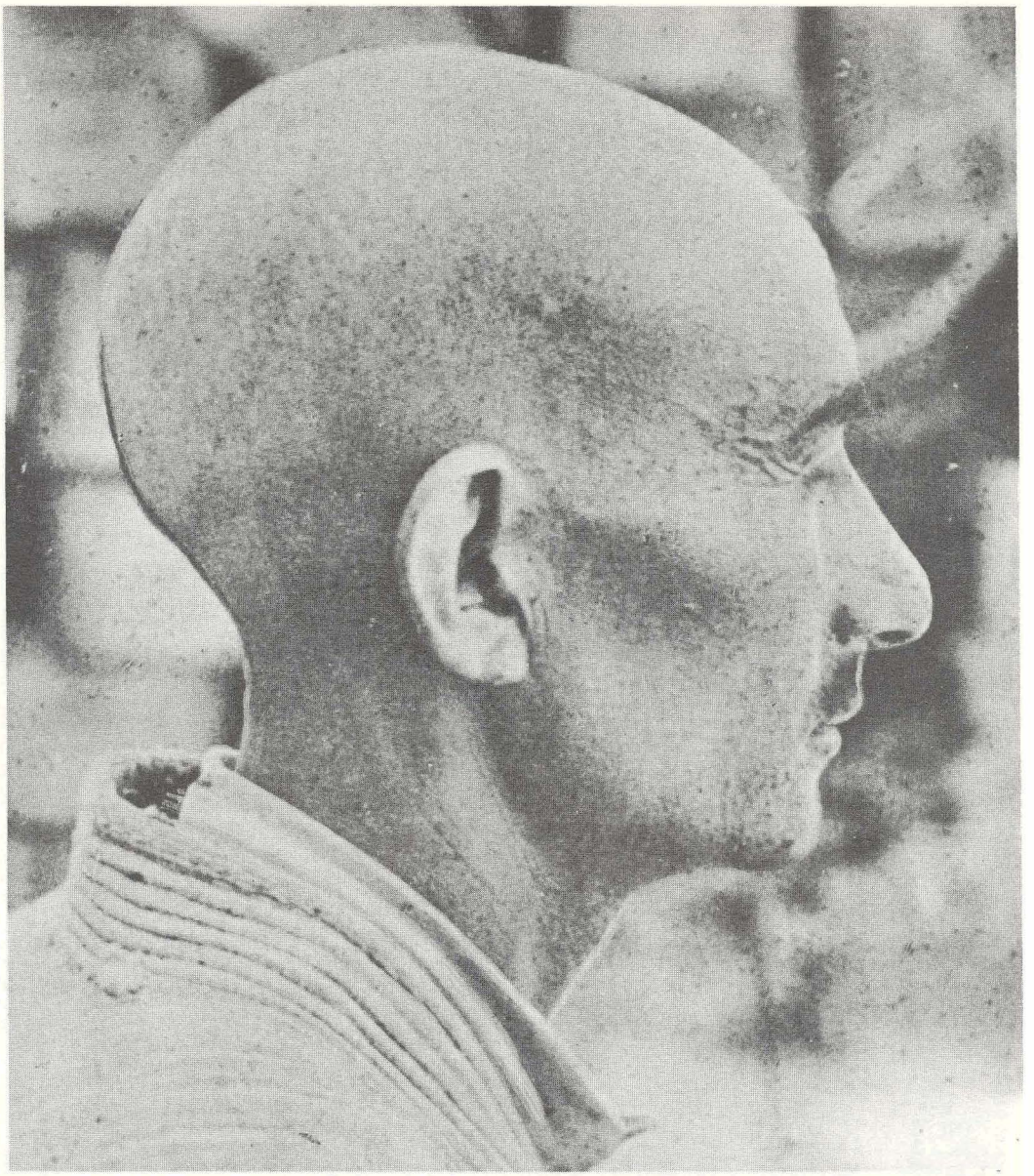

Figure 51: Well-expressed Europeoid Trans-Caspian type. Turkoman of Teke tribe. Note: Dolichocephals with no artificial cranial deformation.

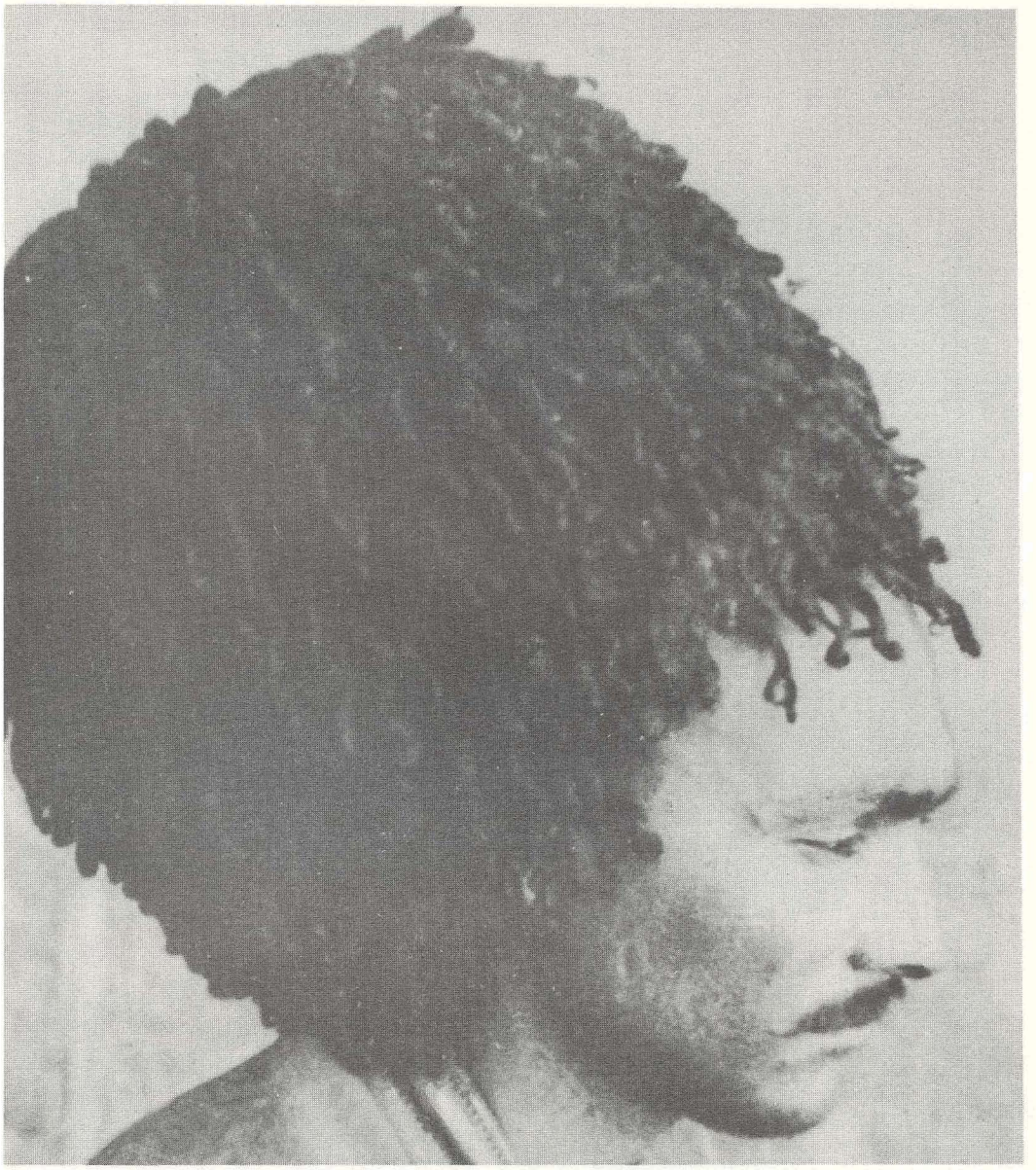

Figure 52: Well-expressed Europeoid Trans-Caspian type. Turkoman of Teke tribe.

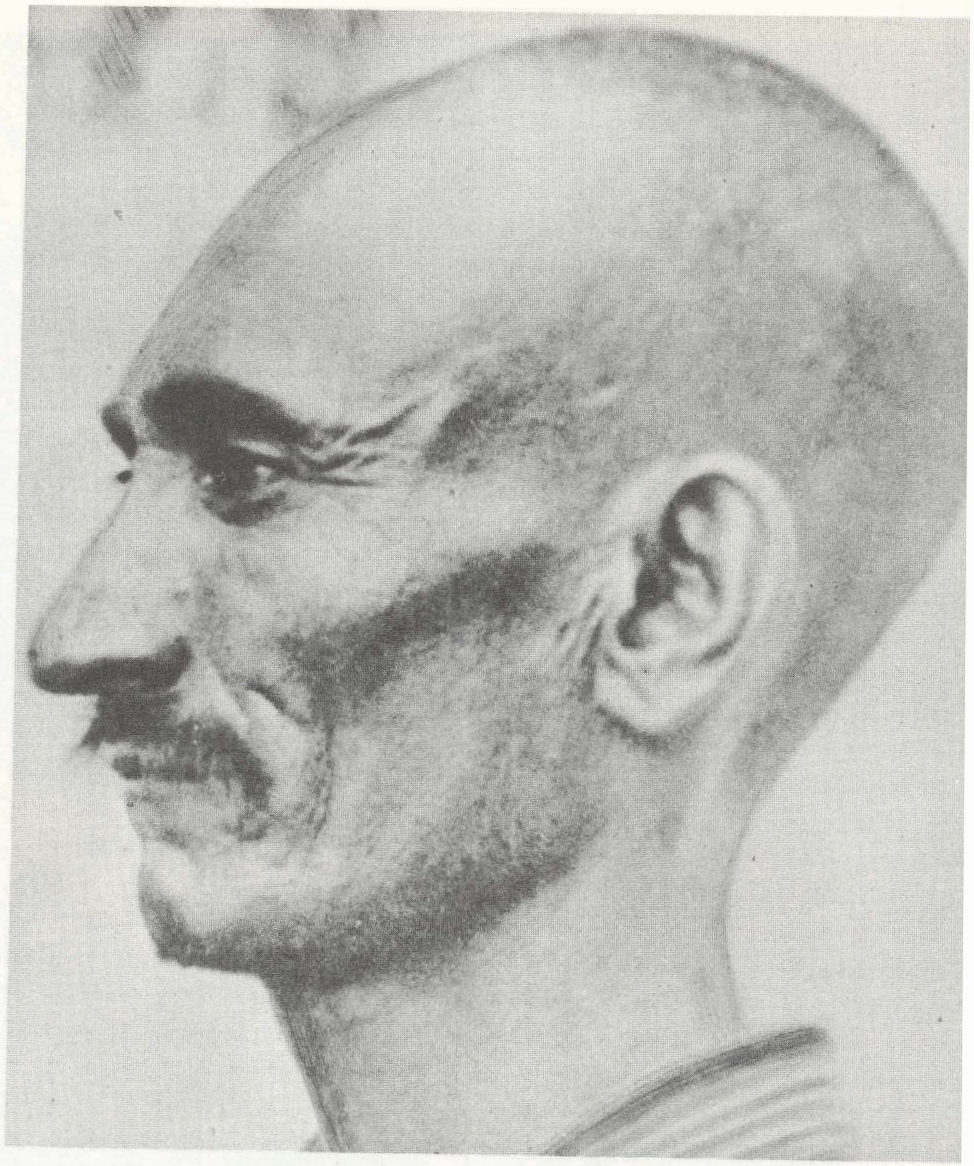

Figure 53: Well-expressed Europeoid Trans-Caspian type. Turkoman of Teke tribe. Note: Hyperdolichocephaly probably resulted from artificial cranial deformation.

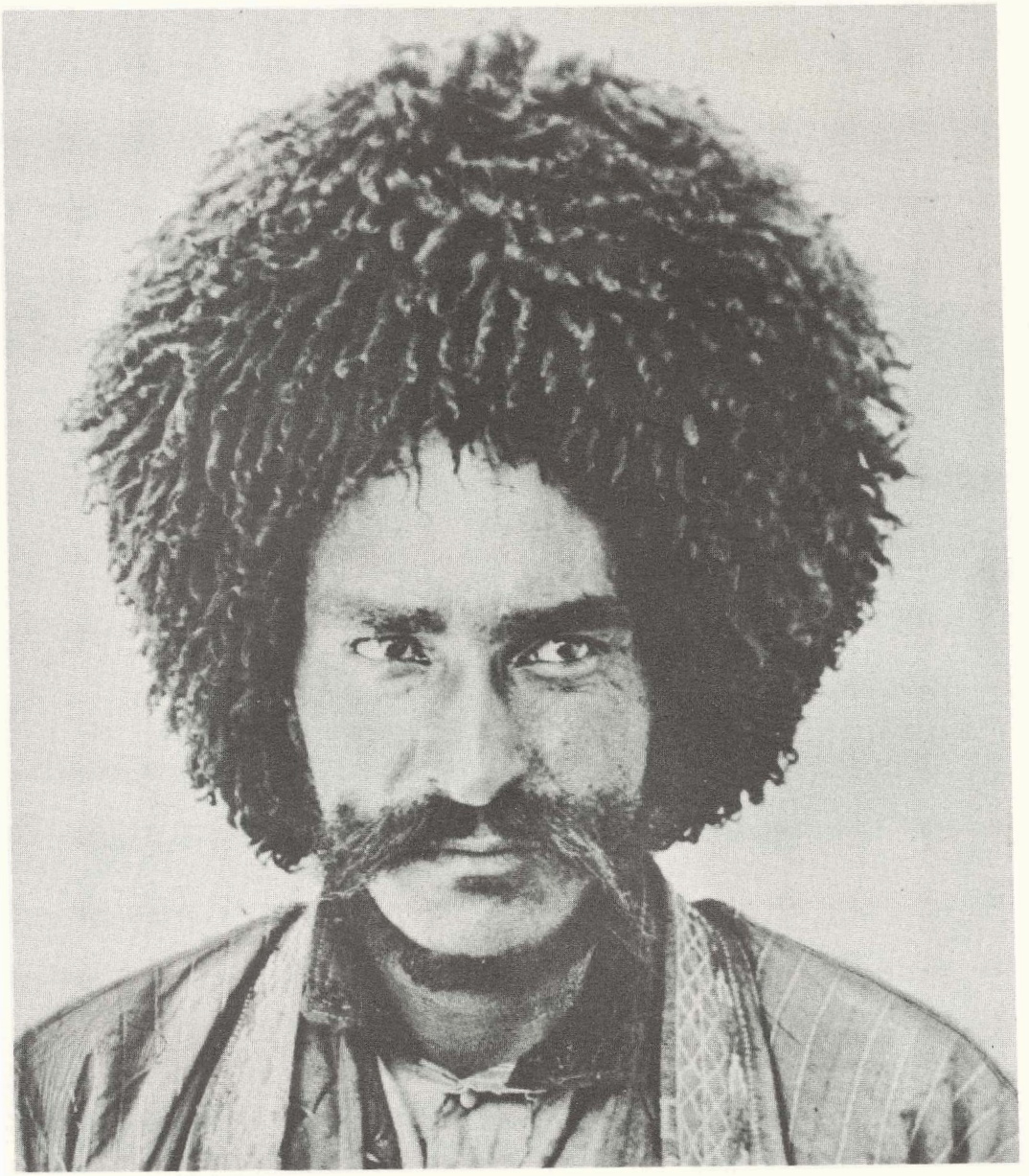

Figure 54: Well-expressed Europeoid Trans-Caspian type. Turkoman of Yomud tribe.
Note: Dolichocephal with no artificial cranial deformation.

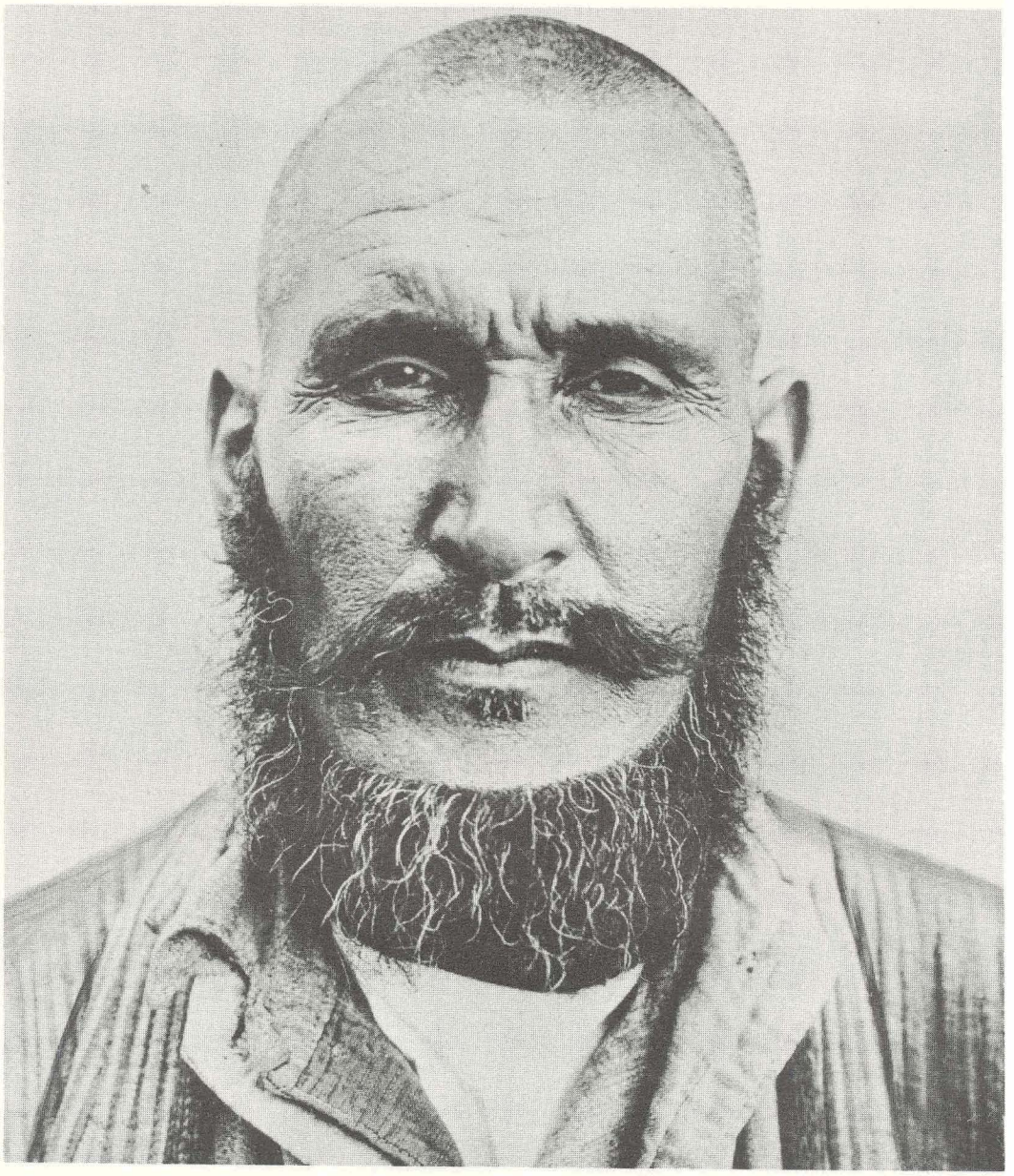

Figure 57: Europeoid type. Mesocephalic Turkoman of Gokleni tribe.

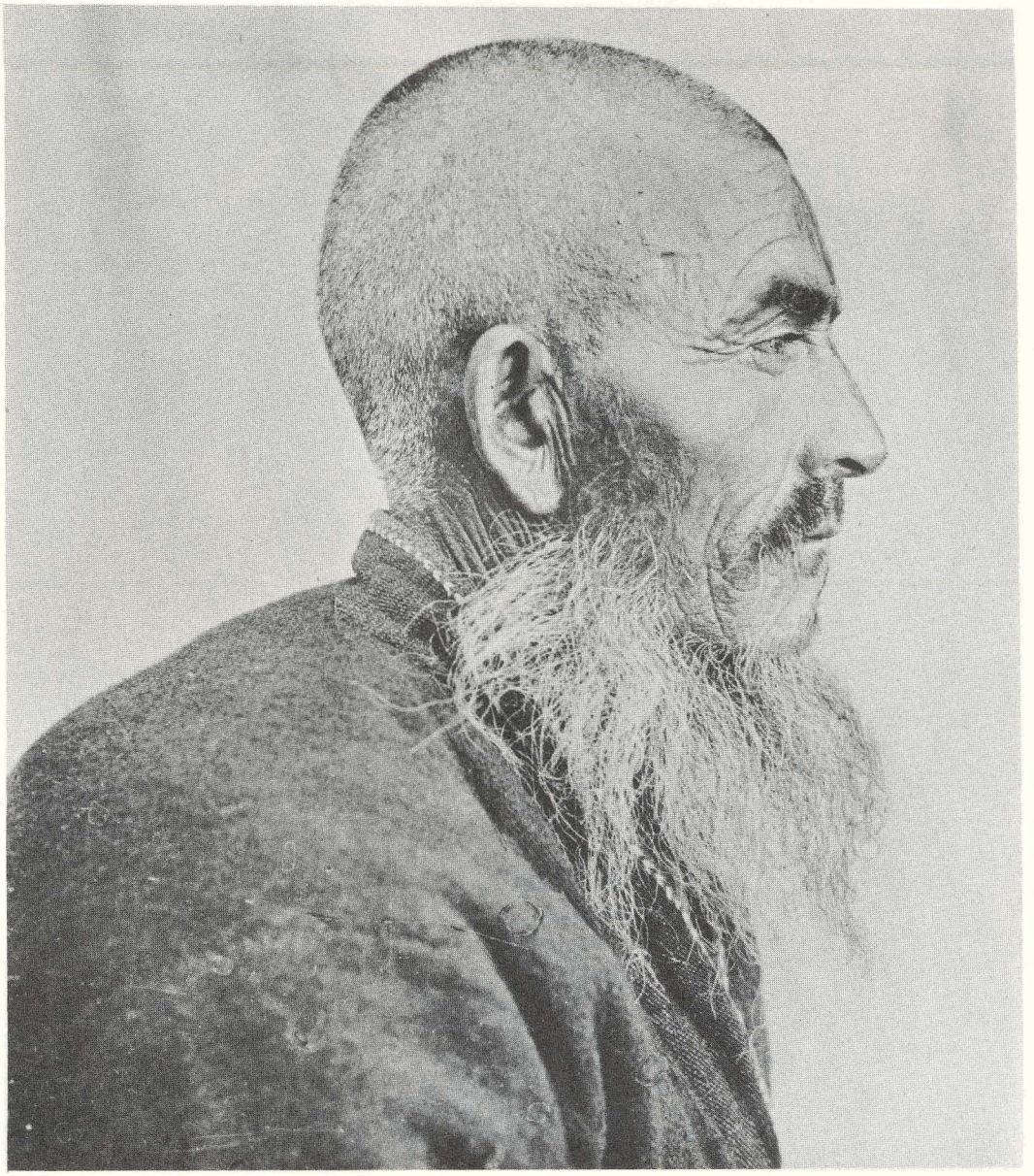

Figure 58: Europeoid type, slightly mongolized, brachycephalic. Turkoman of Gokleni tribe.

Figure 59: Europeoid type, slightly mongolized, brachycephalic. Turkoman of Gokleni tribe.

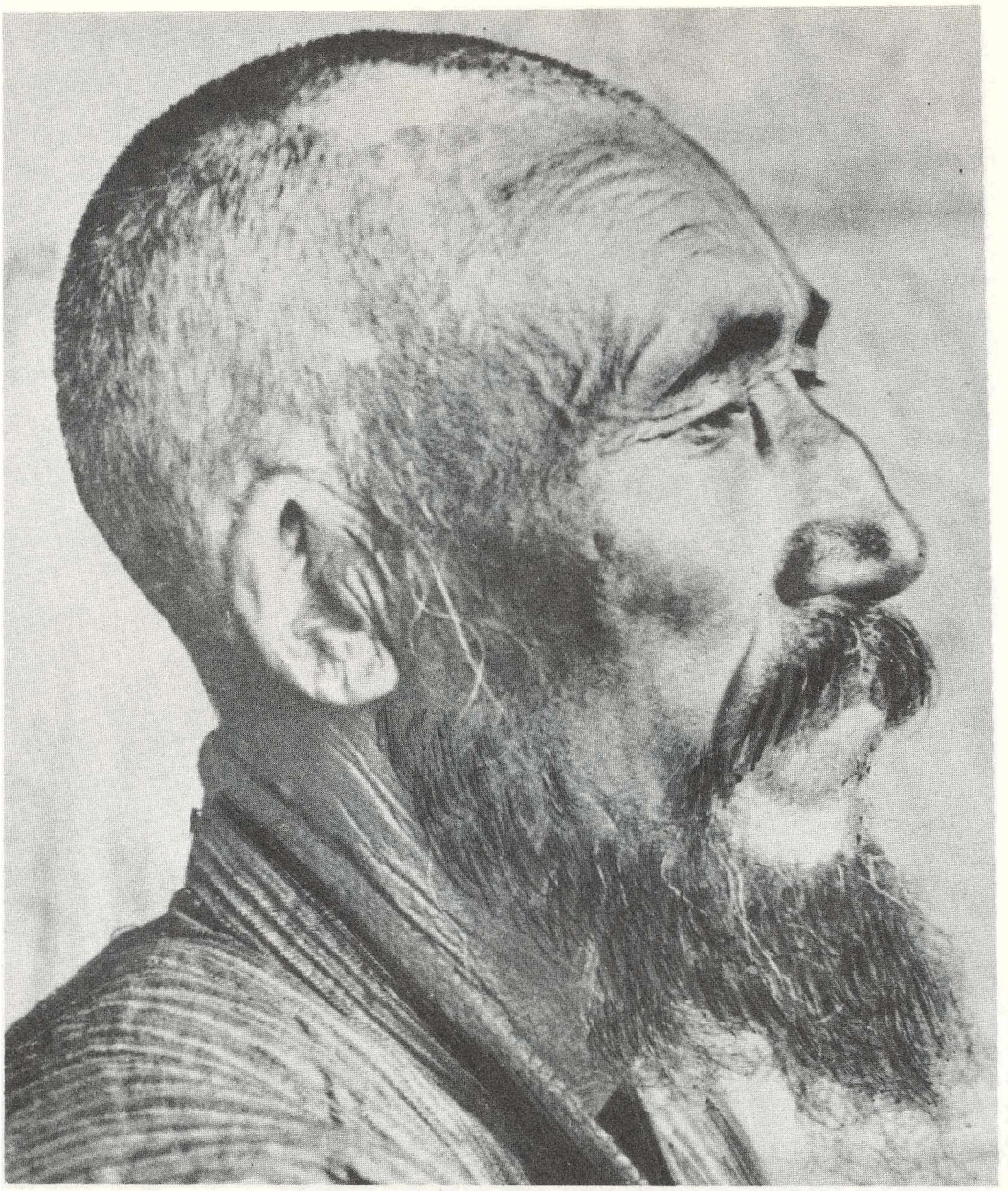

Figure 60: Slightly mongolized Europeoid type. Dolichocephalic Turkoman of Gokleni tribe.

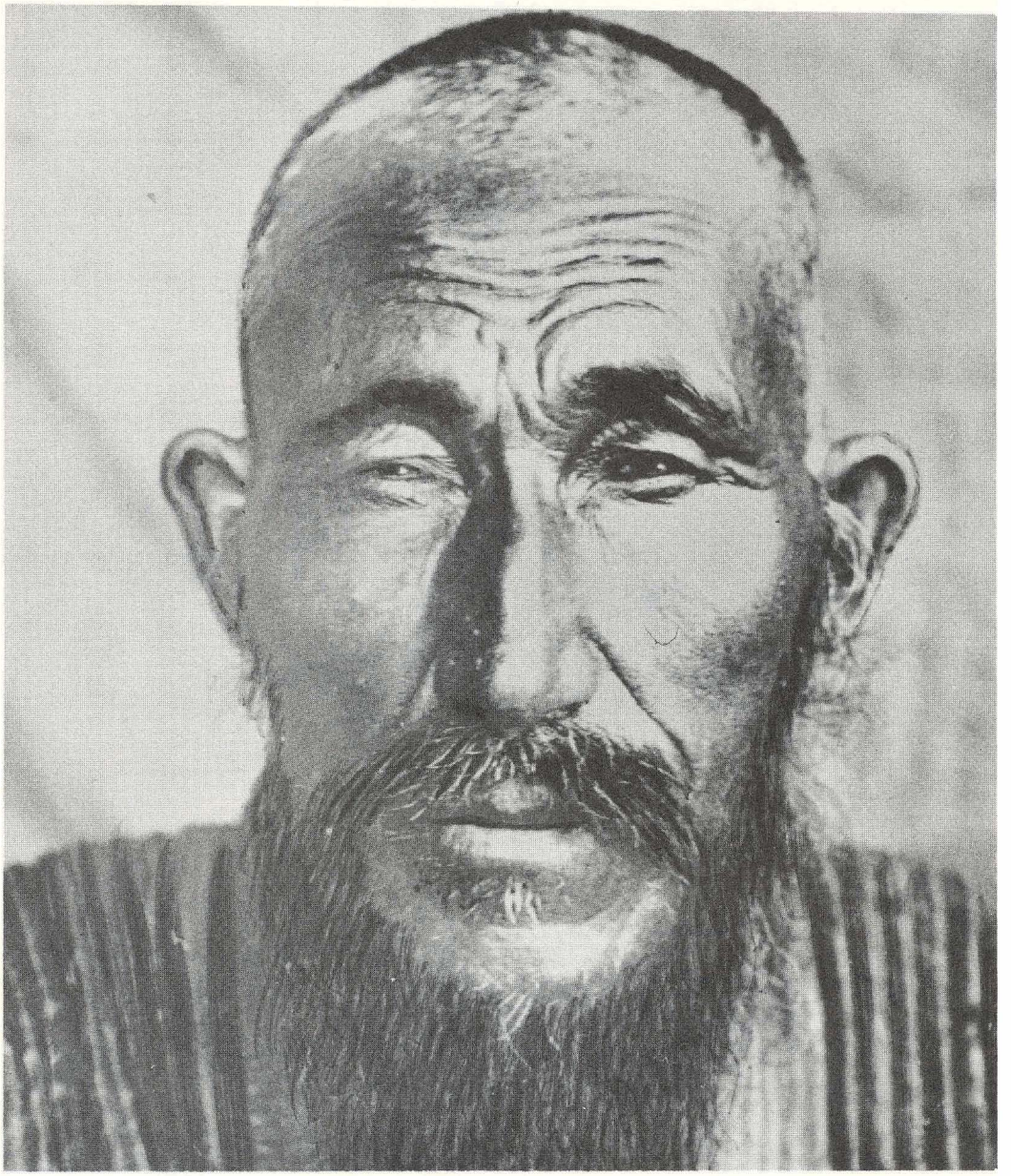

Figure 61: Slightly mongolized Europeoid type. Dolichocephalic Turkoman of Gokleni tribe.

Figure 62: Mongolized type. Turkoman woman of Yomud tribe.

Figure 63: Mongolized type. Turkoman woman of Yomud tribe.

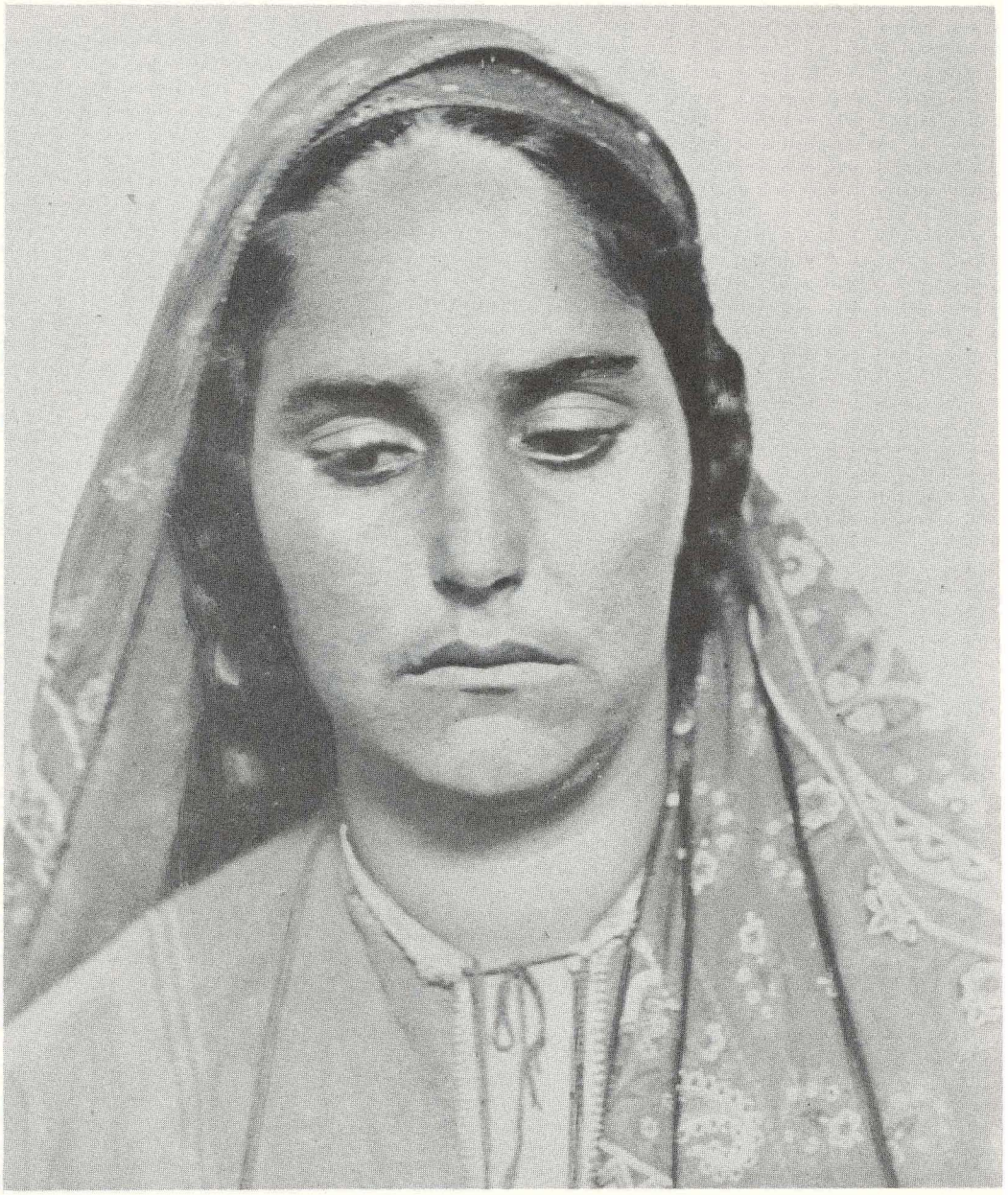

Figure 65: Well-expressed Europeoid Trans-Caspian type. Turkoman woman of Gokleni tribe.

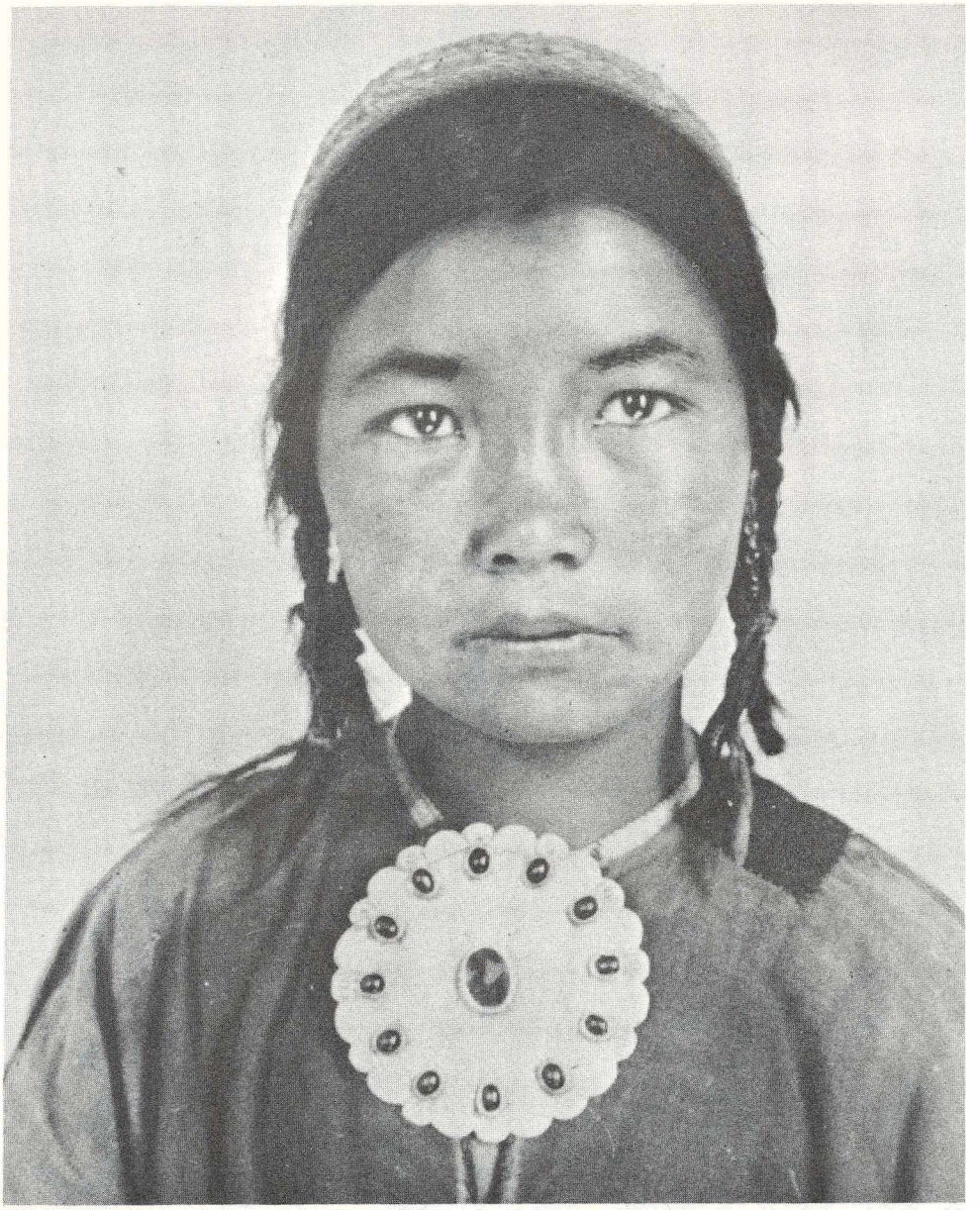

Figure 67: Mongoloid type. Turkoman woman of Gokleni tribe.

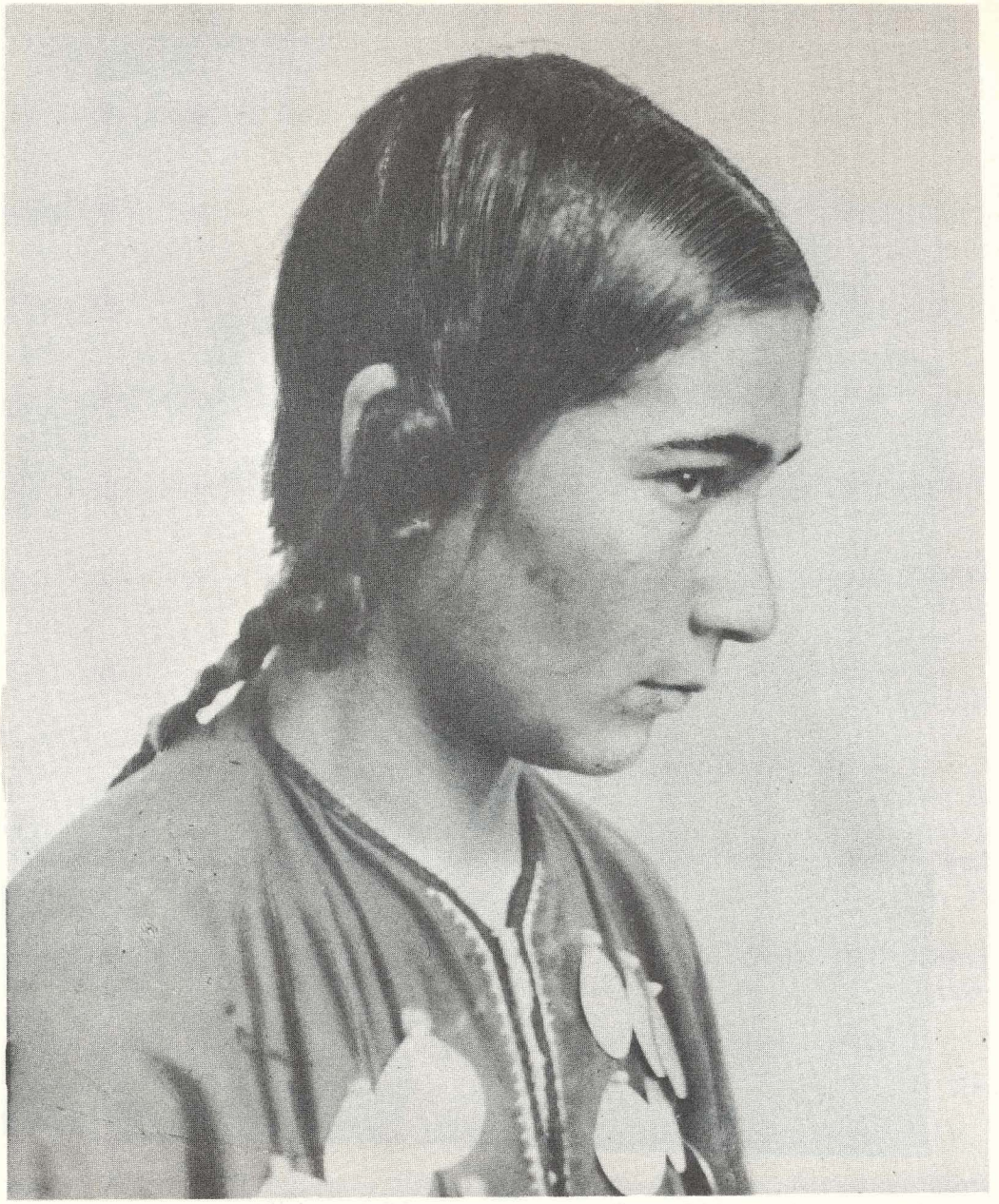

Figure 68: Well-expressed Europeoid Trans-Caspian type. Turkoman woman of Gokleni tribe.

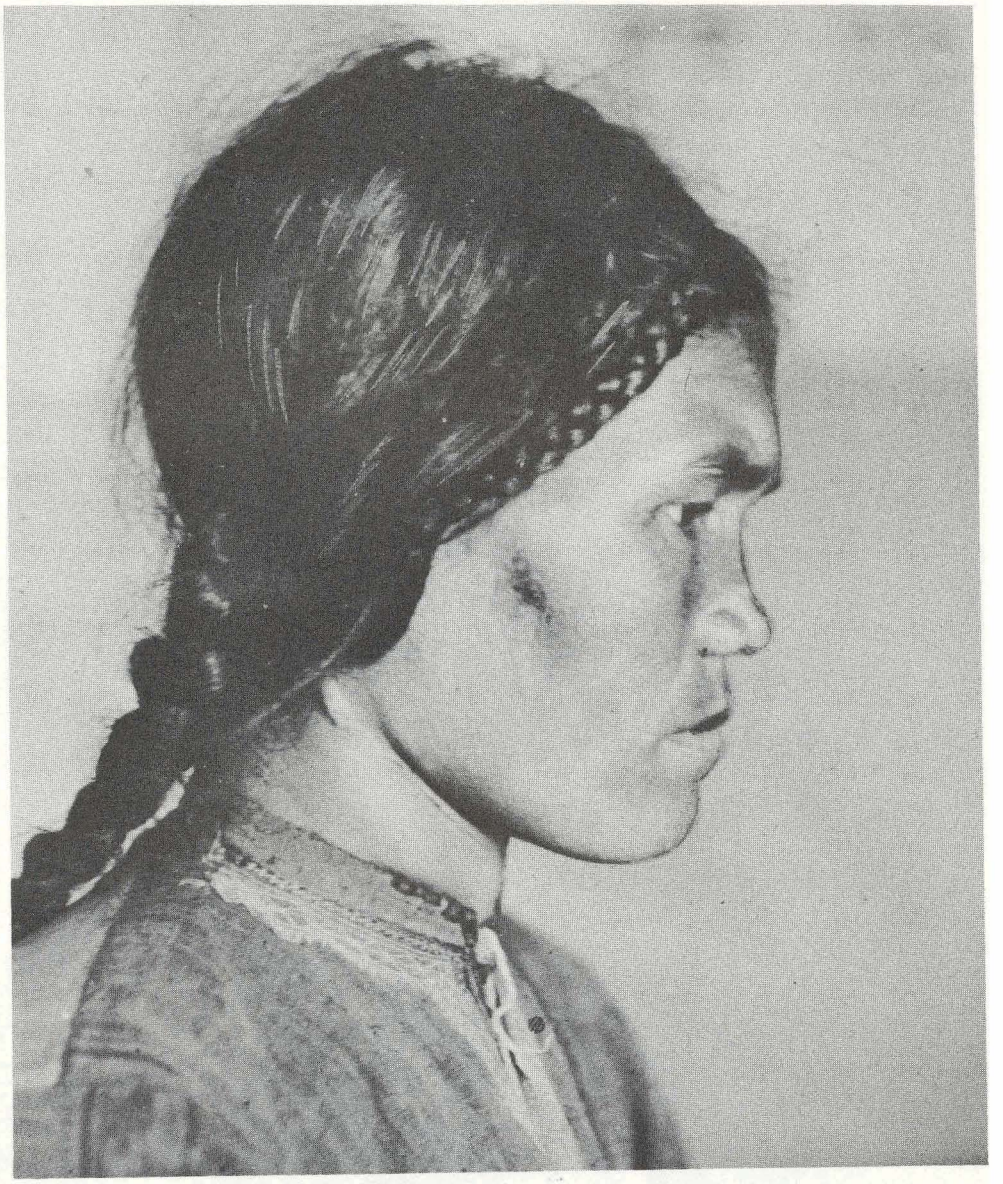

Figure 69: Mongoloid type. Turkoman woman of Gokleni tribe.

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NOTES

Chapter I

1. Anthropological expeditions to Southern Tadzhikistan were conducted by the Institute of History of the Academy of Sciences of the Uzbek SSR and of the Academy of Sciences of the Tadzhik SSR during 1952-53. This chapter was published in an expanded form with 90 tables of qualitative and quantitative characters of tribal and territorial groups in the Transactions [Trudy] of the Academy of Sciences of the Tadzhik SSR. (L.V.O.)

2. Here the Russian form is given because this is the form used in recent U.S. and British atlases, e.g., The Times Atlas. This also conforms to the style adopted by the U.S. Board on Geographic Names and the Permanent Committee on Geographical Names of the Royal Geographical Society for the transliteration of place-names, a style followed consistently for all other listed modern geographical names within the boundaries of the Soviet Union and Afghanistan. Spellings of place-names on the Tadzhik-Afghan borderland come from Sir Percy Sykes, A History of Afghanistan, Vol. 1, p. 150 et seq., London, 1940, where he summarizes the travels since A.D. 629 of Hsuan-tsang, a Buddhist monk. Sir Aurel Stein has identified in his, On Alexander's Track to the Indus, many of the sites visited by this Chinese traveler. These have relevance to p. 20 et seq. in Russian text. In other passages Sykes refers to Chu Wentai, Governor of Turfan, who ruled over an Indo-European population...consented to the departure of Hsuan-tsang and sent him with a strong escort across the Tien Shan to the camp of the Khakan of the Western Turks... Passing through the districts of Karashahr and Kucha, Hsuan-tsang crossed the mighty Tien Shan... To quote, "This mountain of ice...is the most dangerous and its summit rises to the skies. From the beginning of the world the snow has accumulated on it, and has turned into blocks of ice which neither melt in springtime nor in summer... Add to this hurricanes of wind and whirlwinds of snow which attack one constantly." (E.V.P.)

3. Kungrat is correct but note Kungrad is a city near Aral Sea in Kara-Kalpak ASSR. (E.V.P.)

4. Sykes wrote, "Crossing the Oxus by a ferry-boat opposite Termiz [Termez] Hsuan-tsang quitted the main route to India for the purpose of paying his respects to Tardu-Shad, a son of the Khakan, ... The kingdom over which he ruled was Tukhara, later named Tukharistan." See note 2. (E.V.P.)

5. Sykes wrote, "On the shore of the Issyk-Kul, Hsuan-tsang met Tung, the Khakan or Yabgu [leader] of the Western Turks... At this period, the Khakan's hegemony extended southward to the province of Gandhara, while...one of his sons ruled in Balkh and Badakhsan." Shortly after the departure of Hsuan-tsang in the year 630, "Tung was assassinated and the ten tribes of Western Turks broke up into two Khanates, a step which led to their final overthrow by the Emperor Tai-tsung... From Issik-Kul Hsuan travelled south-west towards Shash, the modern Tashkent. Thence, crossing the Kizil Kum (or Red Sand) Desert, he reached Samarkand... Its ruler, who bore the Turkish title of Tarkhan, was the vassal of the Western Turks, to whom he was also connected by marriage. The population, language and culture were East Iranian..." (E.V.P.). See note 2.

6. In 1927 Oshanin found a small Turkic-speaking group of the Mitan tribe in another district near Kermine. Nadzhimov discovered Tadzhiks of the "Chagatai" tribe in the Surkhan Darya Oblast. There he also investigated the "Tyurk" ("Turki") tribe. (L.V.O.)

3. "Komedai," cf. Pauly's Real-Encyclopädie, Suppl. Bd. IV (1924) col. 976-78. (E.V.P.)

4. "Maes, Titianus" (Ptolem. Geogr. I:II, 7) cf. Pauly's Real-Encyclopädie, Suppl. Bd. VI (1935), col. 235-36; "Marinos," Pauly's Real-Encyclopädie, Bd. XIV (1930), col. 1767-1796. (E.V.P.)

Chapter V

1. In 1951, 1955 and 1956 anthropological expeditions were conducted in Turkmenia under the sponsorship of the Institute of History of AN, Uzbek SSR. The plan of work and the itinerary were coördinated with the Southern Turkmenia Archaeological Joint Expedition (IUTAKE). This chapter appears in expanded form in IUTAKE publications. [Trudy IUzno-turkmenskoi arkheologicheskoi kompleksnoi ekspeditsii, T. IX, Akademiia Nauk Turkmenskoi SSR, pp. 11-101, Ashkhabad, 1959.]

2. In the Institute of Anthropology, University of Florence, Dr. Claudia Massari showed me 6 crania excavated by Dr. Raphael Pumpelly at Anau. At my request Dr. Massari sent me some anthropometric data on this small series. These notes have been placed on Microfilm 5983, pp. 52-53 in the American Documentation Institute, c/o Photoduplication Service, Library of Congress, where a copy may be purchased. (H.F.)

3. Geoktepinsky raion is correct transliteration and follows style used by U.S. Board on Geographic Names. In other sources Geok-Tepe is used. (H.F.)

4. Meshkhed is correct and not to be confused with Meshed, northeastern Iran. (E.V.P.)

5. The occipital portions of Uzbek crania exhibit frequently a flattened part located asymmetrically. This is the result of keeping infants in a wooden cradle (beshik). As a rule the infant lies with its face toward the source of light. As a result, a flattened area forms on the left or on the right side. (L.V.O.)

6. The term "Saki" is not infrequently used as a synonym to designate all Scythian tribes. (L.V.O.)

7. From Rawlinson's translation. (E.V.P.)

8. Yakut ibn Abd Allah, al-Hamawi (fl. 1179-1229).

9. Abu Ishak al-Farisi al-Istakhri of Persepolis (fl. circa 952).

10. 'Ali ibn Husain or Ali b. Husayn of Baghdad or Abul Hasan Ali ibn Husain ibn Ali, al-Mas'udi, who died about 956.

11. Oshanin distinguishes between Ghuzes and Oghuzes as being in different periods. See note 14.

12. In this paragraph these are Arabic names which should not be retransliterated from the Russian. (E.V.P.)

13. Abu Abdallah Muhammad ibn Muhammad al Sharif al-Idrisi (fl. 1100-1166). Library of Congress uses Al-Edrisi.

14. Oshanin uses both terms, Oghuzes and Ghuzes; it is my impression that the terms are not fully interchangeable--that he consistently uses Oghuzes as a more generic term, also the term Ghuzes for the easternmost group of the Oghuzes, as it was called by the Arab authors about the tenth century. I have tried to follow Oshanin's original usage. (E.V.P.). The Encyclopaedia Britannica gives the following information: "Seljuks. They were the princely family of the Kabaks, who were a section of the group of tribes called Ghuzz (Oghuz)... The Kara-Kitais... pushed the Ghuzz tribes...into Persia and Afghanistan..." Article on the Turks in Vol. 22, p. 264 d. In Index: "Oghuz (tribes) see Ghuzz." See also article on Petchenegs or Patzinaks. "About 860 the Khasars and Ghuz combined and drove them west...their old territory was now occupied by the Ghuz... The great westward raid of the Ghuz in 1064 passed clean through their territory, and many Petchenegs were then probably slain or absorbed by the Ghuz" (Vol. 17, p. 640 d).

15. At that time the Basmachi were nationalistic guerillas opposing the Soviet regime.

16. Han Shu, 96 a, 17. (E.V.P.)

17. Hou Han Shu, 118, 12. (E.V.P.)

18. Sometimes Be Shi, the Annals of the Northern Dynasties compiled by Li Yen-Shou in the seventeenth century. (E.V.P.)

19. See note 14.

20. More correctly Al-Mas'udi, Abul Hasan Ali ibn Hussain ibn Ali who died circa 956. See note 10.

21. Aleksandr Andreevich Spitsyn (1858-1931).

22. IUurii Vladimirovich Gautier (1873-1943).

23. Severyane, Vyatichi and Krivichi were Slavic tribes ancestral to Russians and Ukrainians. (E.V.P.)

24. For data on the Osetes and Alans see Henry Field, Contributions to the Anthropology of the Caucasus, Peabody Museum Papers, Vol. XLVIII, No. 1, 1953. See also Eric John Dingwall, Artificial cranial deformation: a contribution to the study of ethnic mutilations, London, 1931.

25. The bandage is placed in such a manner that it may cause an artificial elongation of the calvarium. However, some Turkoman tribes (Gokleni of the Sumbar Valley) do not apply bandages on the heads of newborn infants at all, and they exhibit, nevertheless, a pronounced dolichocephaly (C.I. 75.8). The Yomuds of Kazandzhik merely place a kerchief on the head of the newborn tying it slightly, which cannot change the shape of the cranium. In spite of that the Yomuds, as well as other Turkoman tribes, are dolichocephalic (C.I. 76.0). In chapter IV are given a number of other considerations which indicate that the dolichocephaly of the Turkomans is a racial characteristic, i.e., inborn (L.V.O.). For another example of similar artificial cranial deformation see the Yezidis of northern Iraq in Henry Field, The Anthropology of Iraq, Part II, No. 1. The Northern Jazira, Peabody Museum Papers, Vol. XLVI, No. 1, 1951. (H.F.)

26. See also Charles Darwin, Descent of Man and Selection in Relation to Sex, Academy of Sciences of the USSR, pp. 623-25, Moscow, 1953.

27. According to Webster's Geographical Dictionary, 1960, Sea of Azov or Azof (Russ. Azovskoe More; anc. Palus Maeotis), length 200 miles.

28. This quotation from Hippocrates is not convincingly translated into Russian and has been retranslated into English. For this reason the reader is referred to a standard English translation of the original Greek text. (E.V.P.)

29. According to Professor A.C. Andrews, University of Miami, the correct term is gynaicocratetoi, meaning "persons or men ruled by women."

30. Gynecocracy or gynarchy.