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Dermatoglyphics of Central Asian Peoples

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The territory of Central Asia is among those zones typified by the most intensive racial intermingling on a pan-ecumenic scale. This area is peopled by two large racial groups between which exist binding links and cross similarities visible in specific groups of the population.

In accordance with L. V. Oshanin's classification (1), which is generally accepted in Soviet anthropology, Kazakhs and Kirgizians living mainly to the north of the Syr Darya River represent a southern Siberian Mongoloid subrace. The Uzbeks and the Tadzhiks distributed within the mid Syr Darya River and Amu Darya mid-basins are a Europoid race of the mid-Asian, midriver area (broadfaced brachycephalics). Turks living to the south of the Amu Darya represent a Europoid trans-Caspian race (dolichocephalics close to the Indo-Mediterranean type) (2).

Among the Tadzhiks, Turks, and especially the Uzbeks, a certain portion of the Mongoloid component is noted, the magnitude of which varies greatly among individual groups of the peoples indicated.

Elaborating the relationships among the basic peoples of Central Asia in the light of dermatoglyphics is of interest.

The data presented here are the first to be gathered by randomized selection from each people, including representatives of the various local groups thereof.

Data concerning Kazakh dermatoglyphics (gathered by G. P. Debets) are taken from T. D. Gladkova's publication (3). Data concerning the Tadzhiks, Uzbeks, Kirgizians, and Turks were compiled and evaluated by this author in a report dated 1953.

Quantitatively, the observations were composed as follows: Kazakhs--65 ♂, Kirgizians--100 ♂, Uzbeks--100 ♂, Turks--100 ♂, and Tadzhiks--100 ♂. Throughout, where the tables show no quantitative data concerning the selection, this quantity is to be assumed as in conformance with that listed above.

Digital Patterns (Tables 1-2)

The nondeltoid pattern is encountered seldom (2.5--4.2%).

The unideltoid pattern: the type of frequency distribution among the fingers of Uzbeks is similar to that for Turks (V>III>I>II>IV), and that of the Kirgizians with the Tadzhiks (V>III>II>I>IV). Kazakhs possess a relatively unique distribution type V>II>III>I>IV.

L^I was encountered in the people studied at a rate of 2.7-5.2%. The highest occurrence of the L^U configuration is observed in Tadzhiks (50%); for the other groups studied, this configuration was seen to involve between 42-46%. The maximal occurrence of the L^I + L^U configurations was observed in the Tadzhiks (59%), and the minimum in Kazakhs (45%).

The bideltoid pattern: it should be mentioned here that pocket loops where the internal delta is well defined have been classed with whorls in these determinations.

The Kirgizians have a unique frequency distribution of the type IV>I>III>II>V; the remaining peoples studied are of the type IV>I>II>III>V.

Maximal occurrence of the bideltoid pattern was found in Kazakhs (52%); the minimum was observed in the Tadzhiks (3%), and the remaining groups displayed an occurrence of 46-49%. The deltaic index is distributed on an analogous order of magnitude.

Main Palmar Lines (Tables 3-4)

Main Line A. On the left, right, and both hands of both the Kirgizians and the Uzbeks, main line A most often ends within the 3rd area, for Turks and Tadzhiks on the 5' area; for Kazakhs main line A ends mostly on the left hand in area 3 and on the right in area 5' and on both together in area 3.

In all the peoples studied an ulnoproximal type predominates (area 3 + 4), where the minimal percent thereof is observed in Tadzhiks and Turks (51-52%), and the highest in Kazakhs and Kirgizians (66-80%). Correspondingly, a distal type (5' + 5'' + ...) is most often

observed among Tadzhiks and Turks (48%) and least often among Kirgizians and Kazakhs (12-21%). In both instances, the Uzbeks occupy a clearly intermediary position between the Mongoloid and Europoid groups studied.

Main Line B. On the left hand of Kazakhs, main line B ends most often on area 5', and for the rest of the groups on area 5''. On the right hand for all groups concerned, this line ends most often in area 7, except, say, for the Uzbeks who display equal occurrences for termination in areas 5'' and 7. On both hands together for the Uzbeks and Tadzhiks, the maximum termination occurrence was in area 5'', for Kazakhs in area 7, and for Kirgizians and Turks--equal occurrences in areas 5'' and 7.

Greatest incidence of main line B determination on higher areas (areas 7 + 8 + 9), the Tadzhiks and Turks (42-48%) are clearly distinguished from the Kazakhs, Uzbeks, and Kirgizians (33-37%).

Main Line C. On the left hand of all the people studied, main line C most often terminates in area 7; on the right and on both hands together, for Kirgizians--area 7, and for the remaining groups--area 9.

Frequency of relatively higher main line C termination (areas 9 + 10 + 11) was 22-25% for the Kirgizians and Kazakhs and 36-40% for the remaining groups. The frequency of absence and reduction of this main line ranges from 17 to 30%. The line is seen to be abbreviated more often in Kirgizians and Kazakhs than in Tadzhiks and Turks.

Main Line D. On the left hand of all groups, termination is observed most frequently in area 9; on the right hand for Kirgizians main line D terminates most frequently in area 9, while for the remaining groups--in area 11. On both hands together for Kirgizians and Uzbeks, the line most often terminates in area 9, and for the remaining people--in area 11.

Relatively low (areas 7 + 8 + X + 0) termination of this line is most prevalent in Kazakhs and Kirgizians (21-23%) relative to the remaining groups (15-50%). Accordingly, the prior groups reveal less relatively low termination (areas 11 + 12 + 13) involving 29-34% in comparison to the Tadzhiks and Turks where 40-42% are

involved; the Uzbeks here occupy an intermediary position relative to the other groups (37%).

The data fall into two clearly divided groups relative to the Cummin's index. Turks and Tadzhiks are typified by relatively higher A and D lines (8.9-9.0), while the same lines are positioned relatively lower in Kirgizians and Kazakhs (7.7-8.1); the Uzbeks are intermediary between the two groups (8.3) approaching most closely the latter.

Other Peculiarities of Palmar Dermatoglyphics

Axial Triradii (Table 5). Among Kazakhs and Kirgizians, the proximal triradius is encountered more often (14-17%) than among Turks and Tadzhiks (6.7-6.9%). Uzbeks occupy an intermediary position (7.4%)--close to that of the Tadzhiks.

Additional Interdigital Triradii (Table 6). When the triradii "a" and "d" are present, additional triradii are most often found among Turks and Tadzhiks (24-25%) than among Kirgizians and Kazakhs (9-12%). The Uzbeks display data close to that of the prior (21%).

True Palmar Patterns (Table 7). Hypothenar. The range of variations is not large--from 25% for the Kazakhs to 33% for the Uzbeks. The incidence of such patterns among the Turks, Tadzhiks and Kirgizians is 28-29%.

Thenar I. The maximum incidence of such patterns is observed among the Kirgizians (17%)--the minimum among Kazakhs (6%); the incidence of such patterns among Uzbeks, Tadzhiks and Turks is 13-15%.

II. Here, the Turks and Tadzhiks (10-11%) are clearly distinguished from the Kirgizians and Kazakhs; they display the lowest incidence of such patterns (3-4%). The Uzbeks are characterized by a median quantity of such patterns (7%).

III. Turks, Tadzhiks, and Uzbeks show a large quantity of such patterns (29-30%) in comparison to Kirgizians and Kazakhs (22-26%).

IV. Variation of the quantity of patterns is not great. Among Turks and Tadzhiks such patterns are observed less often (46%) than among the remaining peoples (50-54%). The average incidence of such patterns on all five palmar areas together varies within rather narrow limits: from 23% for Kazakhs to 27% for Uzbeks. Generally, Tadzhiks, Turks, and Uzbeks are typified by somewhat greater incidence of such patterns relative to the Kirgizians and Kazakhs.

Manual Type (Table 6). The structure of the hand was evaluated according to a three-point system for persons from 20 to 45 years of age where the hand proportions were most stable. This explains the reduced number of observations among the Kirgizians and Turks.

The Kirgizians possess the most elongated hands, while the Tadzhiks possess the widest. The impression was gained that as the Mongoloid tendency subsides, the hand becomes wider. Unfortunately, data to back up this conjecture is not available in the literature.

In presenting the results of this analysis, along with unquestioned similarities among the Central Asian peoples studied in the light of dermatoglyphic signs (the percent of patterns on the hypothenar and IV interdigital areas, quantity of A + T, L^x, and the type of pattern distribution among the fingers of both hands, etc.) considerable divergences exist among them in the majority of patterns. These divergences follow a specific course and are more clearly seen in a table representing cross similarities of the groups studied involving thirty dermatoglyphic signs with certain signs not included in the tables therein.

Space does not permit inclusion of such a large table in the text, thus we are limited to a short discussion of its content.

Turks and Tadzhiks show extremely close similarities in 27 of the 30 dermatoglyphic signs.

The Kazakhs and Kirgizians show similarities one to the other in 17 of the 30 signs.

Both instances comprise the maximal similarity between the groups as revealed by our data. Each of the peoples of these two groups is related by similarities with peoples of the other group by a maximum

of 9 (Kazakhs-Turks, Kazakhs-Tadzhiks) and a minimum of 5 signs (Kirgizians-Tadzhiks) of 30.

The Uzbeks are linked by similarities to the Tadzhiks and Turks in 12 to 13 of the signs and with the Kirgizians and Kazakhs in 9 to 10 of the signs. Moreover, they occupy a clearly intermediary position between both groups of peoples in 7 of the signs and cannot be judged as being close to one or the other.

Consequently, the data presented is naturally divided into two groups corresponding to the racial characteristics of the peoples studied: 1) Kazakhs and Kirgizians; 2) Turks and Tadzhiks. Relative to the Kazakhs and Kirgizians, the Turks and Tadzhiks display a relatively higher termination of the main palmar lines, a higher incidence of interdigital additional triradii, a relatively higher situation of axial triradii, and a greater quantity of patterns on the interdigital areas (except for IV).

According to the dermatoglyphic signs, the Uzbeks occupy an intermediary position between the two main groups of peoples; they do, however, more closely approach the Tadzhiks and Turks than the Kirgizians and Kazakhs, though this predominance is extremely slight. In general they may be characterized as a "transition" group between the two groups of peoples.

So far as a more detailed interrelationship within the respective racial groups is concerned, analysis of Tables 1 through 6 and a table of cross similarities lead to the following conclusions.

Kirgizians are typified by more strongly pronounced Mongoloid features than the Kazakhs. This fact is born out in data from anthropological studies of both these peoples.

Analogously, the Tadzhiks reveal basically more Europoid combinations of dermatoglyphic signs than the Turks, which fact, apparently, bears witness to the relatively lesser Mongoloid component entering into the make-up of the contemporary Tadzhiks.

On the basis of this, the minimal affinity between Kirgizians and Tadzhiks becomes clear. These two peoples possess the most pronounced features of their corresponding racial groups.

The accord seen between the results of dermatoglyphic and somatologic data on the basic peoples of Central Asia affirms the conviction that dermatoglyphics can serve as a sufficiently accurate indicator of populational racial make-up.

References

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2. V. V. Ginzburg, *Antropologicheskiy sostav naseleniya Sredney Azii i Kazakhstana* —ob. "Narody Sredney Azii i Kazakhstana", T. I, M., 1962.
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Table 1

Distribution of Frequency of Occurrence of
Patterns on Both Hands (in %)

Ethnic Group	Unideltoid Pattern					Bideltoid Pattern				
	I	II	III	IV	V	I	II	III	IV	V
Kazakhs.....	32,1	42,3	57,1	39,4	63,7	65,6	51,2	41,5	62,1	34,5
Kirgizians....	41,0	51,5	54,5	32,0	77,0	59,0	41,0	42,0	67,5	22,0
Uzbeks.....	38,5	33,5	54,0	29,0	69,0	58,0	47,5	43,0	68,5	31,0
Turks.....	42,5	42,0	54,0	34,5	73,0	56,0	48,0	41,0	63,0	26,0
Tadzhiks.....	53,5	57,0	71,5	33,5	80,5	46,5	32,5	24,5	66,0	19,5

Table 2

Frequency of Pattern Type on All Ten
Fingers Together (in %)

Ethnic Group	A + T	L ^r	L ^u	L ^r + L ^u	W	D ₁₀
Kazakhs.....	2,7	2,7	42,4	45,1	52,2	14,95
Kirgizians....	2,5	5,2	46,0	51,2	46,3	14,38
Uzbeks.....	3,1	2,7	41,8	47,5	49,4	14,63
Turks.....	4,2	2,9	46,3	47,2	46,6	14,24
Tadzhiks.....	3,0	2,8	56,4	59,2	37,8	13,48

Table 4

Types of Main Palmar Line Termina (in %)

Ethnic Group	Line D Types			Line A Types			Cummin's Index
	$\frac{1}{(7+8+x+0)}$	$\frac{2}{(9+10)}$	$\frac{3}{(11+12+13)}$	$\frac{1}{(1+2)}$	$\frac{2}{(3+4)}$	$\frac{3}{(5+5'+6)}$	
Kazakhs...	21,0	45,0	34,1	10,8	68,3	20,9	8,06
Kirgizians	23,0	47,8	29,2	4,0	81,5	11,5	7,70
Uzbeks....	16,0	47,0	37,0	4,5	63,0	32,5	8,33
Turks.....	15,5	44,5	40,0	—	52,0	48,0	8,92
Tadzhiks..	14,5	43,5	42,0	2,0	50,5	47,5	8,95

Table 5

Incidence of Axial Carpal Triradii (in %)

Ethnic Group	t	t'	t''	u'	u''	t't'	u'u''	0+?
Kazakhs.....	84,4	12,0	0,6	1,1	0,5	—	—	—
Kirgizians.....	86,5	11,0	—	2,5	—	—	—	—
Uzbeks.....	74,0	13,0	1,5	7,0	3,0	0,5	—	1,0
Turks.....	68,5	17,0	1,0	8,0	4,5	0,5	0,5	—
Tadzhiks.....	66,5	14,0	2,0	12,0	5,0	—	0,5	—

Table 6

Incidence of Additional Interdigital Triradii (in %)

Ethnic Group	Left hand	Right hand	Both hands
Kazakhs.....	14,1	10,6	12,3
Kirgizians.....	19,0	7,0	8,5
Uzbeks.....	21,0	21,0	21,0
Turks.....	22,0	25,0	23,5
Tadzhiks.....	25,0	23,0	24,5

Table 7

Incidence of Patterns on the Palmar Mounts (in %)

Ethnic Group	Hy	Th/I	II	III	IV	Average for the five mounts
Kazakhs.....	24,6	8,4	4,2	25,7	51,0	23,0
Kirgizians.....	27,5	17,0	3,0	21,5	54,0	24,6
Uzbeks.....	32,5	13,0	7,0	30,0	50,0	26,5
Turks.....	28,5	14,5	10,0	31,0	47,5	26,3
Tadzhiks.....	28,5	13,0	10,5	28,5	47,5	25,6

Table 8

Manual Type

Ethnic Group	No. of obs.	I (nar-row)	II (me-dium)	III (wide)	median point
Kirgizians.....	78	18,0	42,3	39,7	2,23
Uzbeks.....	100	13,0	36,0	51,0	2,38
Turks.....	65	10,8	38,5	50,7	2,40
Tadzhiks.....	100	20,0	43,0	47,0	2,47