Note on the physical anthropology of the PAMIRS and AMU-DARIA BASIN

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NOTE ON THE PHYSICAL ANTHROPOLOGY OF THE PAMIRS AND AMU-DARIA BASIN.

[With Plates IX–XIII.]

By T. A. Joyce.

The physical measurements, on which the following note is based were collected by Sir M. Aurel Stein on his third archæological expedition to Central Asia in 1915. They constitute an extremely valuable supplement to the series which he obtained on his second expedition, in 1906–08, in the Eastern Pamirs and Chinese Turkestan. Sir Aurel allowed me the privilege of examining the data obtained on this earlier expedition, and the result was a paper, published in vol. xlii of the *Journal of the Royal Anthropological Institute* (1912), entitled "Notes on the Physical Anthropology of Chinese Turkestan and the Pamirs." This paper was subsequently reprinted, with additional tables, as an appendix to *Serindia* (Oxford University Press, 1921), by permission of the Council of the Royal Anthropological Institute.

As implied above, the following note is supplementary to that just mentioned. The measurements recorded by Sir Aurel on his last journey not only shed fresh light on the physical characters of the Wakhi and Kirghiz, but carry his survey westward, to the secluded valleys on the right bank of the Amu-Daria and to the regions of Karateghin and Bokhara; further, they include important information concerning the populations of the terminal waters of the Helmand River, Seistani and Sayad, and also the neighbouring Biloch.

Method.

The measurements and other observations recorded, and the method which I have employed in dealing with them, are precisely the same as I have described in detail in my previous paper. I will, therefore, content myself with this reference in order to save space. But I should like to add that the "Differential Index," which I employed in the previous calculations, has again proved to be of very great value, though, I admit, the labour involved in its calculation for so many tribal groups is almost prohibitive.

The People.

Sir Aurel obtained measurements of the following groups:—

(1) Kirghiz; pastoral nomads of the Pamirs; of Mongolo-Turki stock.

(2) Uzbeg; another Turki-speaking pastoral people, the latest invaders of the Samarkand-Bokhara tract.

(3) Tajik; of Persian speech, in the valleys and oases of Bokhara territory.

(4) Karateghin; migrants of, presumably, Tajik stock from the lower valleys towards the Oxus, who are gradually pressing back the semi-nomadic, semi-agricultural tribes of Turki stock in the upper valley of the Kizil-Su (Surkhab), the latter being probably allied to the Uzbeg.

(5) Darwazi and (6) Vanji; a Sunni people, who now speak the Persian of the Tajik, occupying the region between the Karateghin and the great northern bend of the Amu-Daria.

(7) Yazghulami, (8) Roshani, (9) Shignani and (10) Ishkashmi; the Iranian-speaking populations of the secluded valleys running eastward from the right bank of the Amu-Daria above its great northern bend.

(11) Wakhi of Wakhan, on the south bank of the Amu-Daria east of the Ishkashmi, who speak a dialect allied to that of the Shignani and Roshani.

(12) Seistani and (13) Sayad in the terminal basin of the Helmand River. The Seistani are obviously compounded of very mixed elements; but the Sayad are a shy, primitive tribe of fishers and hunters, whose mode of life and exclusiveness rather suggest that they represent the remains of a submerged aboriginal population.

(14) Biloch; military levies from Baluchistan.

The few historic and linguistic notes given above are added merely as a matter of supplementary interest. In the subsequent discussion attention has been focussed on the physical characters of the various groups, and evidence of connection derived from other sources has been practically neglected.

Head-Length. (Table I.)

As regards this absolute, the Seistani show the longest heads (average, 186·24), followed closely by the Sayad (185·55), Tajik (185·19) and Biloch (184·83).

At the other end of the scale stand the Ishkashmi (174·71), separated by an appreciable interval from the Wakhi (176·74), Yazghulami (178·90), Shignani (179·22) and Uzbeg (179·22). In the middle fall the peoples of Roshan, Darwaz and Karateghin, and also the Kirghiz. In the respect of head-length, therefore, the populations lying along the Amu-Daria tend to approximate, while the Tajik of Bokhara stand with the peoples of Seistan and its immediate region.

Head-Breadth. (Table I.)

In head-breadth, as might be expected, the Kirghiz lead (154·59), but the Tajik follow closely (154·06), with the Wakhi (153·50) and Uzbeg (153·44). In head-length the Tajik approximated to the Seistan group (Seistani, Sayad, and Biloch), but in this case the latter stand right at the other end of the scale. The Biloch show the lowest figure for head-breadth, (141·97); next come the Seistani (142·35), the Sayad (143·18), and, rather unexpectedly, the Darwazi (145·54). The rest of the

peoples, being those who occupy the valleys running from the Amu-Daria, show averages which stand extraordinarily close; no less than eight falling between 150·00 and 148·45.

Cephalic Index. (Table I.)

The Seistani, Biloch and Sayad form the most dolichocephalic group (76·50, 76·81, and 77·21 respectively), separated by a perceptible gap from the Darwazi, whose index (79·88) is the next lowest. Most brachycephalic are the Wakhi (86·89), Uzbeg (86·19), and Ishkashmi (85·71). The rest, including the Tajik of Bokhara, fall between 79·88 (Darwazi) and 84·04 (Kirghiz).

The head-measurements, therefore, appear to indicate that the Seistani-Sayad-Biloch constitute a group at one end of the series, while the Wakhi and Ishkashmi, the Turki Uzbeg, and the more mongoloid Kirghiz stand together at the other end. In between, the peoples of the Amu-Daria and its valleys do not differ greatly among themselves; while the Tajik of Bokhara, tending first to one extreme and then to the other in their absolutes, fall fairly near the centre in their index.

Nasal-Length. (Table II.)

The averages for nose-length show a grouping which is interesting as compared with head-measurements. The extremes are, Seistani (50·31) and Uzbeg (44·44). And since the Sayad (49·35) and Biloch (49·00) fall near the Seistani; while the Kirghiz (45·02) fall near the Uzbeg; opposition between the Seistan-Biloch group and the Mongolo-Turki group is maintained. But the Wakhi (49·78) and Ishkashmi (49·38), who in head-measurements approximated to the Kirghiz and Uzbeg, now appear grouped with the Seistani-Sayad. The rest fall between 48·62 (Shignani) and 46·00 (Yazghulami) with the exception of the Vanji, who, on this occasion, take a position between the Uzbeg and Kirghiz with an average of 44·74.

Nasal-Breadth. (Table II.)

This measurement produces results which are rather confusing. The Vanji who, in nose-length stood between the Uzbeg and Kirghiz at the bottom of the scale now show the lowest nasal-breadth (25·04). And, though the Uzbeg are not far off (26·56), the Kirghiz show by far the highest figure (34·20), separated by some distance from the Tajik (31·43), who are followed by the Ishkashmi and Wakhi (29·35 and 28·41) respectively. Of the rest the Seistani-Biloch group maintain their connection, falling together in the middle of the rest. The Darwazi and Yazghulami are towards the lower end of the scale, next to the Vanji, with averages of 26·08 and 25·80 respectively.

Nasal Index. (Table II.)

As might be expected from the short analysis of the absolute nasal-breadths, the nasal indices also are rather confusing. Moreover, they are the less useful, because in every case the standard deviations are high. The Kirghiz are by far the

most platyrrhine (77·14), the Tajik of Bokhara following at a long distance with an average index of 66·54, and the Vanji, also at some distance (60·87). The Seistani are the most leptorrhine (54·48). The rest fall between, the Biloch and Sayad (57·54 and 57·68) standing together just below the Uzbeg (59·96).

The nasal-measurements show, therefore, that though the Wakhi and Ishkashmi approximate in head-measurements to the Kirghiz and Uzbeg, they are considerably more leptorrhine than the former; moreover that, in nasal-breadth, a considerable difference exists between the Kirghiz and Uzbeg. The Seistani-Sayad-Biloch combination is not disturbed, while the Wakhi still show affinities with the Ishkashmi, the Darwazi with the Vanji, and the Amu-Daria peoples with each other. The position of the Tajik is still uncertain.

Bizygomatic-Breadth. (Table III.)

The Ishkashmi and Wakhi exhibit the narrowest faces (122·50 and 122·84, respectively) followed by the Tajik (124·37). At the other end of the scale are the Sayad (135·39) Uzbeg (135·33) and Karateghin (134·27). The Wakhi-Ishkashmi, therefore, as in nasal absolutes, show strong differentiation from the Uzbeg, but the Sayad stand with the latter and not with the former. The Sayad, Seistani (132·30), and Biloch (130·63) show a more strained relationship than in any of the measurements yet considered. The Darwazi and Vanji (131·88 and 133·74) fall on either side of the Seistani.

Facial-Length. (Table III.)

This absolute shows a different grouping. The Shignani (118·11), Seistani (117·65), and Wakhi (117·25) provide the *maxima*; the Yazghulami (110·05), Darwazi (113·28), and Uzbeg (113·89) the *minima*. In respect of this measurement the Ishkashmi (114·79) stand rather aloof from the Wakhi, and the relationship between the Seistani, Sayad (116·73), and Biloch (114·43) is still rather attenuated. Again the Tajik approximate to the Wakhi (116·75), and the Kirghiz (116·89) exhibit considerable differentiation from the Uzbeg.

Total Facial Index. (Table III.)

A consideration of the averages of this index restores certain connections which seemed to be endangered by the absolutes. At the leptoprosopic end of the scale are the Wakhi (95·68), Shignani (94·20), Tajik and Ishkashmi (both 94·03). Most euryprosopic are the Yazghulami (84·03) followed by the Uzbeg (84·47). At this end of the scale stand the Darwazi and Vanji near together (86·28 and 86·69); while the Sayad, Biloch, and Seistani (86·29, 87·64 and 89·26 respectively) fall far nearer together than in the case of their absolute measurements.

On the whole the total facial-measurements and index do not give results which are in contradiction to those already discussed. A slight weakening in the Seistani-Sayad-Biloch combination is evident, while the difference between the Kirghiz and

Uzbeg is emphasized. At the same time the connection of the Tajik with the Wakhi-Ishkashmi-Shignani is reinforced.

Upper Facial-Length. (Table IV.)

This measurement does not produce results very far removed from those of the total facial-length, though the order in series is not the same. In total facial-length the *maxima* were provided by the Shignani, Seistani, and Wakhi, in that order. In the measurement under consideration we have, at this end of the scale, Seistani (74·73), Sayad (73·03), and Wakhi (72·73), the Shignani having fallen to 72·12, below the Biloch (72·20). At the other end, we have still the Uzbeg (68·20) and Yazghulami (68·35), but the Darwazi have receded towards the centre with an average of 71·56. The Tajik (72·06) remain grouped with the longer-faced peoples.

Upper Facial Index. (Table IV.)

As regards this index, again the Wakhi (59·57), Ishkashmi (58·50), Tajik (57·56), and Shignani (57·39) constitute the most leptoprosopic group. The Uzbeg (50·30), Yazghulami (52·08), and Vanji (52·83) the most euryprosopic. This reverses the position of the Darwazi (54·30) and Vanji respectively. The differences which appear are obviously due to the comparative development of the lower mandible, a question which is at present quite obscure; but it is obvious that this comparative development is not so great as to produce a vast difference in the summation of facial proportions. To take an instance:—It has already been shown that the connection established between the Seistani, Sayad, and Biloch as regards head- and nose-measurements, is to some extent, weakened by a consideration of the total facial-measurements. The upper facial-measurements show a similar weakening, not in the same proportion, but in the same direction.

——	Seistani.	Biloch.	Sayad.
Total Facial Index	89·26	87·64	86·29
Upper Facial Index	56·55	55·31	53·96

The upper facial-measurements and index show, therefore, approximately the same results as the total facials.

Head-Circumference. (Table IV.)

The Ishkashmi are distinguished by the lowest absolute (539·71), and are followed at a little distance, by the Wakhi (546·78), Yazghulami (547·50), and Shignani (549·63). The Kirghiz show the highest figure (560·98), while the Tajik (559·75) and Seistani (557·78) are not far off. The last-named take a position rather remote

from the Sayad (551·24) and Biloch (552·46), who are at the low end of the scale. The Darwazi (553·86) and Vanji (552·61) fall close together near the centre.

This absolute in not of primary importance, owing to the fact that the standard deviation is invariably extremely high.

Stature. (Table V.)

Statures do not vary very greatly. The extremes are the Uzbeg (169·78) and Darwazi (160·68). Next to the Uzbeg the tallest peoples are the Seistani (168·51), Shignani (168·40), Biloch (167·89), and Tajik (167·56). At the other end of the scale, with the Darwazi, are the Vanji 163·74), Karateghin (163·96), Ishkashmi (164·32), and Sayad (164·55). In stature, therefore, the Seistani and Biloch stand close together, with the Sayad at a distance, whereas in the matter of head-circumference the Sayad and Biloch stand close together, with the Seistani at a distance.

Span. (Table V.)

The greatest span-measurement is contributed by the Seistani (176·35), who are followed by the Shignani (174·53), Uzbeg (173·67), Biloch (173·51), Tajik (172·44), and Sayad (172·33). The other extreme is represented by the Darwazi (165·88), with the Kirghiz (168·31), Ishkashmi (168·41), and Yazghulami (168·50) standing in that order, immediately above them. The divergence between the Khirghiz and Uzbeg is in this case pronounced.

Stature-Span Index. (Table V.)

The highest index is shown by the Sayad (104·78), followed by the Seistani (104·70); the lowest by the Kirghiz (101·59). The variation, therefore, is not great, and the grouping of the remaining peoples, falling between extremes so short a distance apart, cannot be held to have any great significance.

It is worth while noting that, in the consideration of these absolutes and indices, the name of one people has remained practically unmentioned, viz., the Roshani. Of these dwellers in a secluded valley, Sir Aurel Stein measured no less than 58 individuals, and their averages may therefore be taken as representing with some degree of accuracy their physical characteristics. The reason that they have played no part in the discussion lies, of course, in the fact that in every case their average lies at or near the centre of the scale. The inference is that they probably represent the main element of the bulk of the peoples under consideration in its purest form. It might be suggested that their invariable intermediate position affords evidence that they are a *mélange* of many elements. Against this point of view there are two arguments. The first is based on the secluded character of their habitat; the second, on the fact that, were they a mixed people, then, on

Mendelian principles, it would be more natural that they should appear among the extremes in respect of one or more characters.

The Differential Index ($\Sigma\Delta$). (Tables VI and VII.)

The intermediate position of the Roshani, to which allusion has been made in the last paragraph, suggests that they may constitute a good starting-point in a consideration of the various differential indices. In fact, it is at once evident from the tables (vi and vii) that they show an intimate relationship with far more of the other tribal groups than any of the rest; and, further, that in only one case, that of the Seistani, does their $\Sigma\Delta$ fall above 8 (8·44), their next highest $\Sigma\Delta$ (relating to the Sayad) being as low as 6·59.

The relationship of the Roshani, as expressed in terms of the $\Sigma\Delta$ appear as follows :—

Karateghin	3·46
Shignani	3·83
Vanji	4·19
Yazghulami	4·86
Darwazi	4·91
Ishkashmi	4·91
Tajik	5·26
Uzbeg	6·01
Wakhi	6·08

None of these $\Sigma\Delta$ contain a Δ which reaches 1·00, and I am assuming, therefore, that some degree of relationship may be predicated between the Roshani and the tribal groups in question.

Now two of the $\Sigma\Delta$ fall below 4·00, and therefore indicate that the relationship is very close; the indices in question relate to the Karateghin and Shignani. But the $\Sigma\Delta$ expressing the relationship of the Karateghin to the Shignani is comparatively high, amounting to 5·31; and, when the Δ which compose it are examined, it is seen that the figures for Bizygomatic Breadth and Total Facial Index are in each case over ·90, and suggest that the superior Euryprosopism of the Karateghin almost constitutes an essential difference. Now the divergence in facial proportions exhibited by the Karateghin and Shignani, lying respectively to the north-west and south of the Roshani, with whom they both appear to be far more intimately connected than with each other, immediately suggests that a comparison of each with the other peoples related to the Roshani may produce results of value. In this comparison I omit, for the moment, the Uzbeg and the Tajik; in doing so I freely admit that I am making an anticipation, but I think the main argument will be a little less obscure if the factors are reduced as far as possible.

First as regards the Karateghin. Their relationships, apart from the Roshani and Shignani, as expressed in $\Sigma\Delta$, are as follows (figures in italics indicate that the $\Sigma\Delta$ includes a Δ above 1·00) :—

Vanji	2·68
Darwazi	4·07
Yazghulami	4·48
Wakhi	*7·35*
Ishkashmi	*7·43*

The close connection of the Karateghin with, especially, the Vanji, and also the Darwazi and Yazghulami, is evident; while their pronounced differentiation from the Wakhi and Ishkashmi is based in the main on their greater Euryprosopism.

Second as regards the Shignani :—

Wakhi	3·82
Ishkashmi	4·87
Darwazi	*7·21*
Yazghulami	*7·43*
Vanji	*7·69*

The figures, therefore, make it clear that the Roshani are the connecting link between two groups, one to the north-west, distinguished by comparative Euryprosopism, the other to the south, distinguished by comparative Leptoprosopism. These groups are :—*Euryprosopic*, Karateghin, Vanji, Darwazi, Yazghulami (in increasing degree of Euryprosopism according to index); and *Leptoprosopic*, Ishkashmi, Shignani and Wakhi (in increasing degree of Leptoprosopism).

It is interesting, in connection with the facial measurements, to consider the nasal absolutes and indices of these two groups. Taking the Roshani as the standard, and tabulating the sums of the three Δ (for nasal-length, nasal-breadth and nasal index) which express their relationship to the rest, we have the following result :—

Roshani

Shignani	·71	Karateghin	·71
Ishkashmi	·85	Darwazi	·90
Wakhi	·99	Yazghulami	·99
		Vanji	1·39

Now if we examine the figures which express the relationship of the Wakhi to the Vanji in this particular (these two tribes being the most divergent from the Roshani in each group), we find that the sum of the Δ for the nasal-measurements and index amounts to 2·42, a very high total. This suggests that the progressive divergence of the two groups in respect of facial-measurements, is accompanied by a progressive divergence in nasal-measurements.

In previous examinations of the physical characters of Central Asiatic peoples, I have always found the absolute measurements for nasal-breadth of some significance, in fact of greater significance than the nasal index, owing to the invariably high figure attained by the standard deviation of the latter.

Now the nasal-breadths of the tribal groups immediately under consideration are as follows :—

Ishkashmi	29·35
Wakhi	28·41
Roshani	27·88
Shignani	27·37
Karateghin	26·73
Darwazi	26·08
Yazghulami	25·80
Vanji	25·04

It is at once apparent that the evidence derived from a consideration of nasal-breadth supports that supplied by the facial-measurements. It is true that the Shignani fall on the " wrong " side of the Roshani, but the main grouping is not disturbed. The important fact is that the figures show that the tendency towards euryprosopism is combined with slender nostrils, and *vice versa*. I should like to suggest here that an index expressing the proportion of nasal-breadth to bizygomatic-breadth might be extremely useful in the elucidation of the racial affinities of Central Asiatic tribes. That, however, is by the way, the main fact is that, in this particular group of peoples, breadth of face appears to be correlated with narrowness of nose and *vice versa*.

To take another point of view; if we examine the various Δ (of nasal-length, breadth, and index respectively) which express the relationship of the Roshani to the other tribes immediately under consideration, we find that the main factor which differentiates the Wakhi-Ishkashmi-Shignani from the Roshani is a greater nasal-length, while the main feature which differentiates the Karateghin-Darwazi-Yazghulami-Vanji from the Roshani is a lesser nasal-breadth.

Below are the nasal Δ indicating the difference between the Roshani and the other tribal groups under consideration.

——	Vanji.	Yazghu-lami.	Darwazi.	Kara-teghin.	Shignani.	Ishkashmi.	Wakhi.
N.L.... ...	·42	·17	·08	·09	·34	·47	·59
N.B. ...	·88	·49	·47	·31	·12	·36	·14
N.I.... ...	·09	·33	·35	·31	·25	·02	·26
	1·39	·99	·90	·71	·71	·85	·99

All, as far as index is concerned, display greater leptorrhinity than the Roshani, except the Vanji and Ishkashmi. Ishkashmi noses are both longer and broader than Roshani noses; while Vanji noses are both shorter and narrower; in each case the index is more platyrrhine than that of the Roshani. The marked differentiation between the two groups is well illustrated by comparing the nasal Δ expressing the relation between the Wakhi and Vanji, who, in respect of nasal characters stand furthest from the Roshani in their respective groups. The figures are:—

N.L.	1·09
N.B.	·97
N.I.	·36
	2·42

The figures for stature give similar results. The Darwazi, Vanji, and Karateghin are the three shortest peoples measured. The Shignani and Wakhi are both taller than the Roshani. The Ishkashmi, it is true are, unexpectedly, shorter than the Yazghulami, who are themselves slightly shorter than the Roshani. The position of the Ishkashmi alone disturbs the otherwise perfect correspondence which the figures for stature show with those for face- and nose-measurements.

Cephalic index, again, shows similar results. The Wakhi, Ishkashmi, and Shignani are more brachycephalic than the Roshani; the Darwazi, Vanji, Karateghin, and Yazghulami are more dolichocephalic.

If the ΣΔ which relate the various members of each group one to the other be examined, it will be seen that the Karateghin, Vanji, Darwazi, and Yazghulami are interrelated by ΣΔ which never reach 5·00. The same is true of the Shignani, Wakhi, and Ishkashmi. This is a pretty certain indication of the comparative homogeneity of each group.

On the other hand, omitting for the moment the Karateghin, the ΣΔ expressing the relationship between any one member of one group with any one member of another never falls as low as 7·00, and frequently rises to over 9·00. Moreover, in no case does the ΣΔ fail to contain a Δ amounting to 1·00 or over.

The Karateghin alone show a ΣΔ which brings them into relationship with the other group, viz. with the Shignani. The figure 5·31 is rather high, but it contains no Δ of 1·00 or over (though the Δ for facial-breadth reaches ·91), but their other ΣΔ relate them far more closely with the Vanji, Darwazi, and Yazghulami.

It would appear, therefore, that we have on each side of the Roshani, two groups of interrelated peoples distinguished by the following characteristics (the terms are, of course, used relatively):—

1. To the north and north-west, the Yazghulami, Vanji, Darwazi, and Karateghin; relatively dolichocephalic, narrow-nosed, euryprosopic and short-statured.

2. To the south and south-east, the Shignani, Ishkashmi, and Wakhi ; relatively brachycephalic, long-nosed, leptoprosopic and tall-statured.

Now if the affinities of the Uzbeg so far as they are displayed in terms of $\Sigma\Delta$ be examined, it will be seen that the people standing nearest to them are the Vanji (index 5·42), followed by the Yazghulami (5·61), Roshani (6·01), Karateghin (6·17), Darwazi (*7·83*), and Shignani (*8·00*). The Uzbeg are taller than any of the Vanji-Yazghulami-Karateghin-Darwazi group, and more brachycephalic ; in fact, as regards the Darwazi, the difference in head-breadth and index is marked. But the principal features which differentiate the Uzbeg from the Shignani-Ishkashmi-Wakhi group are their greater euryprosopism, and their shorter noses.

It is clear from the figures that the Uzbeg stand comparatively close to the former group, but are strongly differentiated from the latter. Further, that the respects in which they differ most are face- and nose-dimensions. The Uzbeg, in fact, exhibit in the extreme that combination of breadth of face and narrowness of nose which is one of the chief points of difference between the north-western group and the south-eastern. The inference is that the *Homo Alpinus* type characteristic of the Pamirs, has, towards the north and west, undergone modification owing to contact with that branch of the Mongolo-Turki family of which the Uzbeg are members.

The Tajik next call for consideration, and it is extremely interesting to note that they stand equally closely related to the Shignani on the one hand and to the Kirghiz on the other. Their affinities, expressed in terms of $\Sigma\Delta$ are as follows :—

Shignani	4·75
Kirghiz	4·85
Roshani	5·62
Wakhi	*6·79*
Ishkashmi	*7·18*
Karateghin	*7·19*

The figures suggest in the first instance, that the Tajik appear to be more closely akin to the Shignani-Roshani-Wakhi group than to the Karateghin-Vanji-Darwazi. It will be found also, on examination, that the Tajik in respect of nasal-breadth and nasal index, stand between the Shignani (and their relations) and the Kirghiz, who are far more platyrrhine. This intermediate position, it is true, does not hold good for all characters, but a general survey of the evidence seems to indicate that the Tajik are basically *Homo Alpinus*, but have been modified by contact with the broad-nosed Mongolian as exemplified in the Kirghiz.

As for the Kirghiz themselves, it is only with the Tajik that they display any close degree of relationship.

Beside their $\Sigma\Delta$ for this people, they show only one under 7·00, and that relates to the Roshani. The figure is 6·00, but the Δ for nasal-breadth and nasal index

amount to 1·43 and 1·24 respectively, and indicate a significant degree of relative platyrrhinity on the part of the Kirghiz.

It is interesting to note the very high figure of the ΣΔ expressing the relation of the Kirghiz to the Uzbeg, both peoples being usually classed as Mongolo-Turki. It amounts to no less than 8·63. The cause lies, in the main, in the great difference between the nasal proportions of the two. While both are short-nosed, the Kirghiz are very broad-nosed, and the Uzbeg are very narrow-nosed. The figures are :—

——	Kirghiz.	Uzbeg.	Δ.
N.L.	45·02	44·44	·18
N.B.	34·20	26·56	1·74
N.I.	77·14	59·96	1·23

This appears to constitute an essential difference, and it is further interesting to consider the total facial-measurements. The latter are :—

——	Kirghiz.	Uzbeg.	Δ.
Biz.	131·36	135·33	·44
F.L.	116·89	113·89	·34
F.I.	89·43	84·47	·53

While the difference is not so great that it can be considered essential, the figures show that the Uzbeg have broader and shorter faces than the Kirghiz, and are more euryprosopic. Thus the Uzbeg combine relative leptorrhinity with relative euryprosopism, and the Kirghiz relative platyrrhinity with relative leptoprosopism. It will be remembered that the Karateghin-Darwazi-Vanji-Yazghulami group showed a tendency to differ from the Shignani-Ishkashmi-Wakhi group in the same manner, though not in the same degree. This tendency for narrowness of nostril to be linked with breadth of face, which I have noticed before, suggests that an index composed of these two absolutes might be useful in determining the affinities at any rate of Asiatic peoples.

Three peoples yet remain to be discussed, the Seistani, Sayad, and Biloch inhabiting the region about the terminal waters of the Helmand River, and separated by a comparatively wide geographical area from the peoples hitherto under examination. The ΣΔ show at once that they are obviously very closely connected. They are as follows :—

Sayad-Biloch	2·92
Sayad-Seistani	4·17
Seistani-Biloch	4·78

It is true that the $\Sigma\Delta$ for the Seistani and Biloch includes a Δ amounting to over 1·00; but this relates to span-measurement, a character which seems to be of comparatively little significance among these peoples. In the present case, considering the very close correspondence in all other respects which prevails between the measurements of Seistani and Biloch respectively, it need not be taken to indicate a radical difference.

A survey of the measurements of this group immediately reveals one significant fact; of all the peoples measured, they have the longest[1] and narrowest heads, and the most dolichocephalic indices.

This fact differentiates them in very marked degree from the Roshani-Shignani-Iskhashmi-Wakhi group, who are definitely brachycephalic. Moreover their bizygomatic-breadth is greater, and their facial indices lower, than the tribes constituting this group, so that they are also definitely more euryprosopic. On the other hand, their nasal dimensions and indices fall astride those of the group above mentioned.

When we compare them with the Karateghin-Vanji-Darwazi group we find that both in head-length, head-breadth and cephalic index they are more dolichocephalic—often to a degree which may be assumed to be significant. Further, that their noses are markedly longer and markedly broader. But, as regards nasal-index, the results are extremely interesting. The table below gives the absolutes and indices seriated in diminishing sequence :—

N.L.		N.B.		N.I.	
Seistani	50·31	Sayad	28·26	Vanji	60·87
Sayad	49·35	Biloch	28·11	Sayad	57·68
Biloch	49·00	Seistani	27·36	Biloch	57·54
Darwazi	47·24	Karateghin	26·73	Karateghin	56·87
Karateghin	47·19	Darwazi	26·08	Darwazi	55·86
Vanji	44·74	Vanji	25·04	Seistani	54·48

Usually it is the nasal-breadth which is the more potent factor in determining the index, and is, as I have found before, a more significant feature than either length or index in a consideration of Asiatic peoples. In this case, as regards index, the Sayad and Biloch fall together, it is true, on the platyrrhine side of the Karateghin and Darwazi; but the Seistani, who ought, to be true to their group, to stand on the platyrrhine side, appear as the most leptorrhine; while the Vanji, conversely, appear as the most platyrrhine, although their nasal-breadth is by far the least. This result is due to the great length of the Seistani nose, and the extreme shortness of the Vanji nose. But it must be remembered that in these respects both Seistani and Vanji are true to their respective groups.

[1] As a matter of fact the Tajik show a slightly higher mean for head-length than the Biloch, but rank below both the Sayad and Seistani.

Apart, therefore, from a superior degree of dolichocephaly, the group under consideration differs from the Karateghin-Darwazi-Vanji group in having both longer and broader noses.

As regards facial-breadth and index, however, there is not a great difference between the two, and the individual figures bridge one another.

In summarizing I shall allude to the Roshani-Shignani-Ishkashmi-Wakhi group as group A, to the Karateghin-Darwazi-Vanji-Yazghulami group as group B,[1] and to the Seistani-Sayad-Biloch group as group C.

Group C, therefore, exhibits a degree of dolichocephaly which, both in absolutes and index, differentiates it fundamentally from group A and significally from group B. In nasal features it approximates to group A, but differs strongly from group B. In facial features it approximates to group B, but differs from group A. In two points, therefore, as a group, it lies nearer group B than group A. In dealing with this group, to save space, I have given only the results derived from an examination of the $\Sigma\Delta$ and of the various Δ which compose them. The $\Sigma\Delta$ will be found in Table VII.

It will be well, here, to anticipate what remarks I may have to make on the subject of "Descriptive characters" in order to call attention to another feature which differentiates this group very strongly from either group A or group B. The members of group C are the only people (with the exception of the Kirghiz) who show any tendency to skin-pigmentation. While other groups show 100 per cent. of members described as "White-rosy," the Seistani, Sayad, and Biloch show a major percentage of individuals described as "Brownish-white." The figures are as follows:—Seistani 64 per cent., Sayad 71 per cent., Biloch 86 per cent.

These figures are highly significant, not only as marking off this group very clearly from the others, but as suggesting the possible presence of an Indo-Afghan strain. As mentioned above, the Kirghiz alone of the other peoples under consideration show a tendency towards pigmentation; but the number of brownish-white individuals amounts only to 7 per cent., while a consideration of the $\Sigma\Delta$ produces results which practically preclude any relationship between them and group C.

In order to provide some comparison between the measurements taken by Sir Aurel Stein upon this journey, and those obtained on his previous expedition (see *Serindia*, vol. III, and *Journal of the Royal Anthropological Institute*, vol. xlii, 1912), I have calculated the differential indices for all of the former with five selected groups of the latter, viz. 19 Wakhi, 22 Chitrali, 28 Mastuji, 18 Kaffirs and 38 Kirghiz. To take the Kirghiz first. This group of 38 individuals shows little or no relationship to any of the peoples measured on the last expedition, the $\Sigma\Delta$ ranging from 10·92

[1] I have omitted, so far, any allusion to the Yazghulami in my comparison of the Seistani and their congeners with the group to which they belong, because, as their various $\Sigma\Delta$ show, they differ so widely as to be negligible.

(Karateghin) to 20·27 (Seistani). I am omitting the group of 54 Kirghiz measured on the last journey, but in regard to these, the $\Sigma\Delta$ amounts to 9·52. This is a most remarkable fact, and seems to imply that the two groups of Kirghiz have little in common save the name. On an examination of the factors which compose the $\Sigma\Delta$, it is seen that no less than three amount to more than 1·00, viz. those for bizygomatic-breadth, facial index and upper facial index, indicating that the Kirghiz measured on the previous journey were far more euryprosopic than those encountered on the last expedition. Further, they are noticeably broader-headed and more brachycephalic; their noses are also longer and broader, though the indices of the two groups fall close together, and show them to be the most platyrrhine of all the peoples measured by Sir Aurel Stein.

Now, since the group first measured constitutes the extreme, not only in platyrrhinity, but also in brachycephaly and euryprosopism, it is a fair inference that the group measured last has been influenced by contact with Alpine or Iranian stock. Hence its comparatively close affinity with the Tajik and, to a less degree, with the Roshani. Now it is clear that the Alpine stock is distinguished by relatively broad nostrils, so an admixture of this element would not disturb the nasal proportion so much as the facial and cranial.

Another interesting point is that this extreme platyrrhinity of the first group of Kirghiz, supported by the only slightly less platyrrhinity of the second group, when compared with the nasal-measurements and index of the Uzbeg, reinforces very strongly the view that there are two definitely divergent Mongolo-Turki stocks in central Asia. One very broad-nosed and relatively very platyrrhine; the other very narrow-nosed and, though also relatively short-nosed, comparatively leptorrhine.

On his previous journey, Sir Aurel Stein also took measurements of a small group of Wakhi, 19 in all, on the Taklamakan slope. I shall refer to them as Wakhi (1). On the present journey he secured measurements of no less than 54 further in the hills. These I shall mention as Wakhi (2). Now the first series was small, and we are brought up against the question of random sampling, but nevertheless the difference between the two groups is very marked. The differential index amounts to no less than 8·99, and contains two Δ over 1·00, viz. those for nasal-breadth and nasal index, Wakhi (1) being broader-nosed and more platyrrhine than Wakhi (2). Further, Wakhi (1) are broader in face, more euryprosopic than Wakhi (2). Now in all these respects Wakhi (1) hold an intermediate position between Wakhi (2) and the peoples on the edge of the Taklamakan desert whom, in my previous survey, I regarded as the nucleus of what I termed the "Desert Group"; the inhabitants of Korla, Turfan, Khotan, and the Charklik. In that survey, I regarded Wakhi (1) as an extension of the desert group into the Pamirs, modified by contact with what I called the "Pamir Group," of which the nucleus was the Sarikoli, Mastuji and Pakhpo. I think that my point of view was wrong. The measurements of the group Wakhi (2) show that the Wakhi as a whole, with the Shignani, Ishkashmi and

[redacted]

of the Kirghiz, which, after all, is comparatively slight, must be due to another cause. Referring to the Kirghiz measured on the previous expedition, we find that the tendency is far stronger, and is shared to some extent by members of the Taklamakan desert population who are also broad-nosed. This tendency to pigmentation, therefore, is probably natural to the broad-nosed variety of Mongolo-Turki peoples, and has been acquired from them, though in lesser degree, by the desert population.

The Seistani-Sayad-Biloch combination, however, show a far higher percentage, which is probably due to a strong Indo-Persian or Indo-Afghan strain.

Eye-colour.—Three categories; dark, medium, and light (including blue). The tribes of which the bulk of the population may be classed as dark-eyed are the following:—

	Per cent.
Biloch	97
Seistani	90
Uzbeg	90
Vanji	74
Sayad	65

None of these include a single light-eyed individual. The eye-colour, therefore, of the Biloch-Seistani-Sayad combination agrees with the skin-colour. To continue:—

	Per cent.
Roshani	61
Darwazi	60

Both of these tribes include light-eyed individuals, and it is necessary to consider the percentages of the "medium" and "light" categories before deciding on the relative position of the two. The figures are:—

	Medium. Per cent.	Light. Per cent.
Roshani	25	14
Darwazi	32	8

It is clear that the Darwazi are on the whole more consistently dark-eyed than the Roshani.

That concludes the series of peoples of whom more than 50 per cent. of individuals are definitely dark-eyed. It includes the whole of the Seistani-Sayad-Biloch group; the Uzbeg; two of the Vanji-Darwazi-Karateghin-Yazghulami group; and one of the Roshani-Shignani-Ishkashmi-Wakhi group. The high percentage of dark eyes among the Roshani being rather countered by a percentage of light-eyed individuals which, as will appear later, is relatively very high.

If we take the next highest percentage of dark eyes, we have :—

	Per cent.
Karateghin	44
Kirghiz	41
Yazghulami	40

Of these the Karateghin show only 4 per cent. of light-eyed individuals, and the Yazghulami none at all. The Vanji-Darwazi-Karateghin-Yazghulami group is, therefore, complete and, although it is overlapped by the Roshani of the Pamir group, yet the relatively high percentage of light eyes among the last serves to differentiate them.

To consider, now, eye-colour from the reverse point of view. It will save time if I give the results in the order of the combined percentages of "light" and "medium" analysed in subsidiary columns :—

——	Light and Medium.	Medium.	Light.
	Per cent.	Per cent.	Per cent.
Tajik	88	63	25
Ishkashmi	72	49	23
Wakhi	72	70	2
Shignani	63	56	7
Kirghiz	60	54	6
Yazghulami	60	60	0
Karateghin	56	52	4
Darwazi	40	32	8
Roshani	39	25	14

The first column of this table shows that the Tajik are the lightest-eyed, followed by the Ishkashmi, Wakhi and Shignani. And although the Roshani fall so low in the combined scale, yet they include a percentage of light-eyed individuals (as the last column proves) twice as high as the Shignani, who in this column follow next in the scale.

This table again supports the view that the particular group of Kirghiz measured on this expedition have been much modified by contact with the Pamir group, and helps to explain the similarity which their measurements show to those of the Tajik.

Hair-colour.—In the whole series only one individual is described as "black-haired," viz. a Biloch. I shall, therefore, consider only three categories:—dark-brown, light-brown, and fair.

Seven peoples, then show 100 per cent. of individuals as dark-brown. They are:—Biloch, Seistani, Sayad, Karateghin, Darwazi, Yazghulami and, rather surprisingly, Tajik. These are followed by—

Kirghiz..	..	98 per cent. (2 per cent. "fair.")
Vanji ..	..	96 ,, ,, (4 ,, ,,)

In each case the "fair" percentage is represented by a single individual. The grouping supports that suggested by measurements, skin-colour and eye-colour at least as far as the Biloch-Sayad-Seistani and the Darwazi, etc., are concerned, the former being more heavily pigmented than the latter. Again the Tajik fall near the Kirghiz, though it is rather surprising to find the former showing 100 of dark-brown hair combined with 25 per cent. of light eyes.

It is clear, therefore, that the Pamir group must fall together. The percentages are as follows:—

—	D.B.	L.B.	F.
	Per cent.	Per cent.	Per cent.
Shignani	92	3	5
Roshani	91	2	7
Wakhi	89	7	4
Ishkashmi	85	3	12

I omit any consideration of the Uzbeg. Only ten were observed, one of whom was "fair." This single individual would, therefore, amount to 10 per cent., almost certainly a perfectly false proportion for this people.

Hair-growth.—Three categories: abundant, medium and scanty. The most striking feature of this table is that, for once, the Tajik and Kirghiz appear as the extremes; the Tajik showing 100 per cent. of individuals with "abundant" hair-development, and the Kirghiz 78 per cent. with "scanty." Omitting the Uzbeg, and regarding the "scanty" end of the scale, the Kirghiz are followed by the Biloch, Seistani, and Sayad, with percentages of 29, 22, and 18 respectively. These three peoples also, apart from the Kirghiz, show by far the lowest percentages in the "abundant" class and their unity as a group is thus maintained.

The other groups straddle one another, their order in terms of "scanty," "medium" and "abundant" being as follows :—

Scanty.	Per cent.	*Medium.*	Per cent.	*Abundant.*	Per cent.
Roshani ..	16	Wakhi ..	21	Yazghulami	95
Shignani ..	15	Karateghin ..	15	Darwazi ..	88
Darwazi ..	8	Ishkashmi ..	9	Ishkashmi ..	
Yazghulami..	5	Vanji ..		Vanji ..	87
Karateghin ..	4	Roshani ..	7	Karateghin ..	81
Vanji ..		Shignani ..		Roshani ..	78
Wakhi ..		Darwazi ..	4	Shignani ..	
Ishkashmi ..	3	Yazghulami...	0	Wakhi ..	75

These figures are not very easy to assess ; but I think they show that, on the whole, the hair-development of the Karateghin-Darwazi-Vanji-Yazghulami group is superior to that of the Pamir group. At least they prove that, whereas the Darwazi group (for short), stood between the Pamir group and the Seistani group (for short) in the question of pigmentation yet, in hair-development, the Darwazi group are closely connected with the Pamir group and take a position more remote from the Seistani group than the latter. Hair-development tends to be a very persistent character, and is, therefore, highly significant. The inference, therefore, is that the pigmentation of the Darwazi group is not due to any affinity with the Seistani group, but, as the measurements indicate, to contact with the Uzbeg, who, in spite of the small number observed, appear to be predominantly dark-eyed and dark-haired.

N.B.—In the subjoined tables the indices are symbolized as follows :—

M. = mean.	E.M. = probable error of M.
σ = standard deviation.	Eσ = probable error of σ.
C. = coefficient of variability.	E.C. = probable error of C.

(For detailed explanation, see *Journ. Roy. Anth. Inst.*, xlii, p. 451.)

TABLE I.

	Head-length.							Head-breadth.						Cephalic Index.			
	No.	M.	E.M.	σ	Eσ.	C.	E.C.	M.	E.M.	σ	Eσ.	C.	E.C.	M.	E.M.	σ	Eσ.
1. Kirghiz	54	184·00	0·63	6·86	0·44	3·73	0·24	154·59	0·64	6·92	0·45	4·48	0·29	84·04	0·41	4·48	0·29
2. Uzbeg...	9	179·22	1·22	5·45	0·87	3·04	0·48	153·44	1·02	4·55	0·72	2·97	0·47	86·91	0·90	4·21	0·64
3. Tajik	16	185·19	0·73	4·35	0·52	2·35	0·28	154·06	0·72	4·25	0·51	2·76	0·33	83·14	0·35	2·07	0·25
4. Karateghin	26	180·85	0·92	6·94	0·65	3·84	0·36	148·46	0·72	5·42	0·51	3·65	0·34	82·37	0·50	3·81	0·36
5. Darwazi	24	182·58	0·82	5·95	0·58	3·26	0·32	145·54	0·69	5·00	0·49	3·44	0·33	79·88	0·45	3·30	0·32
6. Vanji	23	181·43	0·74	5·24	0·52	2·89	0·29	149·35	1·01	7·22	0·72	4·83	0·48	82·41	0·71	5·05	0·50
7. Yazghulami	20	178·90	0·81	5·39	0·58	3·01	0·32	148·45	0·99	6·54	0·70	4·41	0·47	83·03	0·61	4·07	0·43
8. Roshani	58	180·59	0·56	6·31	0·40	3·49	0·22	149·97	0·49	5·58	0·35	3·72	0·23	83·27	0·34	3·79	0·24
9. Shignani	40	179·22	0·73	6·62	0·50	3·70	0·28	150·00	0·63	5·89	0·44	3·93	0·30	83·78	0·41	3·85	0·29
10. Ishkashmi	34	174·71	0·68	5·91	0·48	3·38	0·28	149·21	0·48	4·19	0·34	2·81	0·23	85·71	0·41	3·54	0·29
11. Wakhi	54	176·74	0·52	5·63	0·37	3·13	0·20	153·50	0·47	5·12	0·33	3·34	0·22	86·89	0·33	3·58	0·23
12. Seistani	37	186·24	0·76	6·81	0·53	3·67	0·29	142·35	0·43	3·84	0·30	2·69	0·20	76·50	0·28	2·55	0·20
13. Sayad	33	185·55	0·69	5·83	0·48	3·14	0·26	143·18	0·55	4·62	0·39	3·23	0·27	77·21	0·30	2·58	0·21
14. Biloch	35	184·83	0·62	5·50	0·44	2·98	0·24	141·97	0·50	4·51	0·35	3·11	0·25	76·81	0·29	2·53	0·20

TABLE II.

	Nasal-length.							Nasal-breadth.						Nasal Index.			
	No.	M.	E.M.	σ	Eσ.	C.	E.C.	M.	E.M.	σ	Eσ.	C.	E.C.	M.	E.M.	σ	Eσ.
1. Kirghiz	55	45·02	0·37	4·18	0·26	9·15	0·59	34·20	0·31	3·41	0·22	9·97	0·63	77·14	1·05	11·50	0·74
2. Uzbeg...	9	44·44	0·41	1·84	0·29	4·14	0·66	26·56	0·62	2·75	0·44	10·35	1·65	59·96	1·79	7·95	1·26
3. Tajik	14	47·50	0·52	2·91	0·37	6·13	0·78	31·43	0·41	2·29	0·29	7·29	0·93	66·54*	1·36	7·55	0·96
4. Karateghin	26	47·19	0·35	2·62	0·25	5·55	0·52	26·73	0·31	2·31	0·22	8·64	0·81	56·87	0·83	6·24	0·58
5. Darwazi	25	47·24	0·59	4·41	0·41	9·34	1·06	26·08	0·34	2·50	0·24	9·59	1·09	55·86	1·19	8·80	0·84
6. Vanji	23	44·74	0·42	2·99	0·30	6·68	0·66	25·04	0·34	2·41	0·24	9·62	0·96	60·87	0·99	7·05	0·70
7. Yazghulami	20	46·00	0·38	2·49	0·27	5·41	0·58	25·80	0·47	3·12	0·33	12·09	1·29	56·31	1·18	7·84	0·84
8. Roshani	58	46·76	0·33	3·77	0·24	8·06	0·50	27·88	0·25	2·86	0·18	10·26	0·64	59·98	0·68	7·67	0·47
9. Shignani	40	48·62	0·42	3·93	0·30	8·08	0·61	27·37	0·33	3·13	0·24	11·44	0·86	56·89	1·01	9·43	0·71
10. Ishkashmi	34	49·38	0·47	4·04	0·33	8·18	0·67	29·35	0·35	2·99	0·24	10·19	0·83	60·17	0·97	8·42	0·69
11. Wakhi	54	49·78	0·32	3·52	0·23	7·07	0·46	28·41	0·23	2·53	0·16	8·91	0·58	57·36	0·60	6·57	0·43
12. Seistani	36	50·31	0·33	2·91	0·23	5·78	0·46	27·36	0·27	2·47	0·20	9·03	0·71	54·48	0·58	5·12	0·41
13. Sayad	34	49·35	0·38	3·26	0·27	6·59	0·54	28·26	0·29	2·51	0·21	8·88	0·73	57·68	0·78	6·72	0·55
14. Biloch	35	49·00	0·37	3·28	0·26	6·69	0·54	28·11	0·28	2·45	0·20	8·72	0·70	57·54	0·60	5·30	0·43

* 14 indices only.

Table III.

	Facial-length.							Bizygomatic-breadth.						Total Facial Index.			
	No.	M.	E.M.	σ	E σ.	C.	E.C.	M.	E.M.	σ	Eσ.	C.	E.C.	M.	E.M.	σ	Eσ.
1. Kirghiz	55	116·89	0·60	6·57	0·42	5·61	0·36	131·36	0·71	7·77	0·50	5·91	0·38	89·43	0·67	7·41	0·48
2. Uzbeg...	9	113·89	1·34	5·95	0·95	5·22	0·83	135·33	1·05	4·67	0·74	3·45	0·55	84·47	1·23	5·76	0·87
3. Tajik	16	116·75	1·41	8·36	1·00	7·16	0·85	124·37	1·11	6·59	0·79	5·30	0·63	94·03	1·20	7·09	0·84
4. Karateghin	26	115·81	0·72	5·43	0·51	4·69	0·30	134·27	0·90	6·78	0·63	5·04	0·47	86·71	0·75	5·64	0·53
5. Darwazi	25	113·28	0·81	6·03	0·58	5·32	0·51	131·88	0·92	6·85	0·65	5·19	0·50	86·28	0·56	4·16	0·40
6. Vanji	23	115·87	0·92	6·52	0·65	5·63	0·56	133·74	0·71	5·05	0·50	3·78	0·38	86·69	0·66	4·68	0·47
7. Yazghulami	20	110·05	0·91	6·03	0·64	5·48	0·58	131·20	0·81	5·34	0·57	4·07	0·43	84·03	0·80	5·28	0·56
8. Roshani	58	114·17	0·55	6·21	0·39	4·88	0·31	127·12	0·66	7·43	0·47	5·84	0·37	90·30	0·52	5·84	0·37
9. Shignani	38	118·11	0·71	6·52	0·50	5·52	0·43	125·58	0·73	6·68	0·52	5·32	0·41	94·20	0·63	5·74	0·44
10. Ishkashmi	34	114·79	0·83	7·15	0·58	6·23	0·51	122·50	0·48	4·14	0·34	3·38	0·28	94·03	0·74	6·38	0·52
11. Wakhi	55	117·25	0·54	5·95	0·38	5·07	0·33	122·84	0·53	5·79	0·37	4·71	0·30	95·68	0·60	6·62	0·43
12. Seistani	37	117·65	0·60	5·38	0·42	4·57	0·36	132·30	0·50	4·54	0·36	3·43	0·27	89·26	0·55	4·96	0·39
13. Sayad	33	116·73	1·24	10·52	0·87	9·01	0·75	135·39	0·63	5·32	0·44	3·93	0·33	86·29	0·92	8·01	0·67
14. Biloch	35	114·43	0·76	6·65	0·54	5·81	0·47	130·63	0·51	4·45	0·36	3·41	0·27	87·64	0·60	5·27	0·42

TABLE IV.

	Upper Facial-length.							Upper Facial Index.				Head Circumference.					
	No.	M.	E.M.	σ	Eσ.	C.	E.C.	M.	E.M.	σ	Eσ.	M.	E.M.	σ	Eσ.	C.	E.C.
1. Kirghiz	55	72·04	0·42	4·60	0·30	6·39	0·41	55·10	0·43	4·76	0·31	561·0	1·34	14·70	0·95	2·62	0·17
2. Uzbeg	10	68·20	0·79	3·68	0·56	5·40	0·81	50·90	0·77	3·60	0·54	555·2	2·05	9·14	1·45	1·65	0·26
3. Tajik	16	72·06	0·97	5·77	0·69	8·01	0·95	57·56	0·85	5·06	0·60	559·8	2·00	11·85	1·41	2·12	0·25
4. Karateghin ...	26	72·42	0·43	4·76	0·31	6·57	0·61	54·04	0·54	4·08	0·38	554·8	1·88	13·92	1·33	2·51	0·23
5. Darwazi	25	71·56	0·65	4·82	0·46	6·73	0·64	54·30	0·41	3·02	0·29	552·7	1·83	13·60	1·30	2·46	0·23
6. Vanji	23	70·61	0·48	3·41	0·34	4·83	0·48	52·83	0·35	2·50	0·25	552·6	1·60	11·40	1·13	2·06	0·20
7. Yazghulami ...	20	68·35	0·63	4·15	0·44	6·07	0·65	52·08	0·56	3·74	0·40	547·5	1·61	10·68	1·14	1·95	0·21
8. Roshani	57	69·96	0·34	3·78	0·24	5·40	0·34	55·14	0·32	3·63	0·23	553·4	1·12	12·51	0·79	2·26	0·14
9. Shignani	40	72·12	0·49	4·61	0·35	6·40	0·48	57·39*	0·39	3·55	0·27	549·6	1·03	16·15	0·84	2·94	0·22
10. Ishkashmi ...	34	71·41	0·50	4·32	0·35	6·05	0·49	58·50	0·44	3·77	0·31	539·7	1·42	12·25	1·00	2·27	0·19
11. Wakhi	55	72·73	0·39	4·34	0·28	5·97	0·38	59·57	0·42	4·65	0·30	546·8	1·19	13·14	0·84	2·43	0·16
12. Seistani	37	74·73	0·39	3·50	0·27	4·68	0·37	56·55	0·36	3·22	0·25	557·8	1·52	13·90	1·09	2·50	0·20
13. Sayad	33	73·03	0·70	5·94	0·49	8·13	0·68	53·96	0·58	4·90	0·41	551·2	1·65	14·01	1·16	2·54	0·21
14. Biloch	35	72·20	0·49	4·29	0·35	5·94	0·48	55·31	0·38	3·33	0·27	552·5	1·70	14·93	1·20	2·52	0·20

* 38 indices only.

TABLE V.

	Stature.							Span.						Stature Span Index.			
	No.	M.	E.M.	σ	Eσ.	C.	E.C.	M.	E.M.	σ	Eσ.	C.	E.C.	M.	E.M.	σ	Eσ.
1. Kirghiz	55	165·74	0·48	5·26	0·34	3·17	0·20	168·31	0·57	6·26	0·40	3·72	0·24	101·59	0·23	2·52	0·16
2. Uzbeg	9	169·78	1·32	5·89	0·94	3·47	0·55	173·67	1·09	4·88	0·77	2·81	0·45	102·46	0·44	1·97	0·31
3. Tajik	16	167·56	0·86	5·11	0·61	3·05	0·36	172·44	1·16	6·86	0·82	3·98	0·47	102·84	0·48	2·85	0·36
4. Karateghin ...	26	163·96	0·84	6·38	0·60	3·88	0·36	169·50	0·74	5·56	0·52	3·28	0·31	103·38	0·33	2·51	0·23
5. Darwazi	14	160·68	0·96	7·12	0·68	4·43	0·41	165·88	1·26	9·36	0·89	5·64	0·54	103·21	0·49	3·61	0·34
6. Vanji	23	163·74	0·72	5·13	0·51	3·13	0·31	170·00	0·85	6·09	0·61	3·58	0·36	103·74	0·36	2·59	0·26
7. Yazghulami ...	20	165·10	0·59	3·94	0·42	2·39	0·26	168·50	0·82	5·42	0·59	3·22	0·34	102·07	0·29	1·94	0·21
8. Roshani	58	165·26	0·49	5·59	0·35	3·32	0·21	170·67	0·62	6·94	0·44	4·07	0·25	103·06	0·46	5·30	0·33
9. Shignani	40	168·40	0·68	6·36	0·48	3·18	0·24	174·53	0·75	6·99	0·53	4·01	0·30	103·48	0·24	2·27	0·16
10. Ishkashmi	34	164·32	0·52	4·47	0·37	2·73	0·22	168·41	0·43	3·84	0·31	2·28	0·19	102·54	0·36	3·12	0·26
11. Wakhi	55	165·69	0·56	6·17	0·40	3·72	0·24	169·78	0·72	7·89	0·51	4·65	0·30	102·39	0·54	5·90	0·38
12. Seistani	25	168·51	0·56	5·08	0·40	3·01	0·24	176·35	0·59	5·36	0·42	3·04	0·24	104·70	0·21	1·91	0·15
13. Sayad	33	164·55	0·67	5·73	0·48	3·48	0·29	172·33	0·70	5·96	0·50	3·46	0·29	104·78	0·38	3·21	0·27
14. Biloch	35	167·89	0·57	5·00	0·40	2·90	0·23	173·51	0·69	6·07	0·49	3·62	0·29	103·40	0·16	1·37	0·11

TABLE VI.

	Kirghiz (2).	Uzbeg.	Tajik.	Karateghin.	Darwazi.	Vanji.	Yazghulami.	Roshani.	Shignani.	Ishkashmi.	Wakhi (2).	Seistani.	Sayad.	Biloch.	Kafir.	Wakhi (1).	Mastuji.	Chitrali.
Uzbeg	*8·63*																	
Tajik	4·85	*9·94*																
Karateghin	*7·19*	6·17	*8·64*															
Darwazi	*8·29*	*7·83*	*11·70*	4·07														
Vanji	*7·37*	5·42	*9·09*	2·68	3·95													
Yazghulami	*8·41*	5·61	*10·01*	4·48	4·94	4·73												
Roshani	*6·00*	6·01	5·26	3·46	4·91	4·19	4·86											
Shignani	*8·31*	*8·00*	4·75	5·31	*7·21*	*7·69*	*7·43*	3·83										
Ishkashmi	*8·94*	*9·75*	*7·18*	*7·43*	*9·09*	*9·73*	*8·45*	4·91	4·87									
Wakhi (2)	*8·22*	*9·61*	*6·79*	*7·35*	*9·65*	*9·31*	*8·78*	6·08	3·82	3·12								
Seistani	*9·86*	*12·52*	*8·90*	*7·79*	7·31	*9·77*	*11·73*	*8·44*	*7·07*	*12·74*	*10·91*							
Sayad	*9·49*	*9·49*	*9·60*	*4·61*	4·90	*6·77*	*8·16*	*6·59*	*7·35*	*11·67*	*10·13*	4·17						
Biloch	*8·36*	*10·02*	*9·02*	*5·95*	5·05	7·30	*8·55*	*6·00*	*6·22*	*10·21*	*9·58*	*4·78*	2·92					
Kafir	*8·79*	*13·68*	*8·16*	*11·72*	*11·06*	*12·58*	*12·25*	*8·52*	*10·37*	*11·18*	*11·94*	*12·71*	*10·58*	*10·06*				
Wakhi (1)	*4·48*	*9·78*	6·05	*9·52*	*10·20*	*9·59*	*9·86*	*6·57*	*8·71*	*9·13*	*8·99*	*12·93*	*9·25*	*10·27*	*8·99*			
Mastuji	*5·70*	*11·20*	5·61	*9·17*	*9·17*	*9·70*	*9·54*	*6·70*	*8·06*	*8·92*	*10·17*	*12·43*	*10·47*	*10·10*	4·18	*5·76*		
Chitrali	*7·35*	*11·07*	4·56	*9·18*	*9·46*	*10·11*	*10·44*	*6·45*	*6·56*	*7·35*	*7·54*	*9·74*	*8·98*	*8·49*	*5·92*	*6·76*	4·84	
Kirghiz (1)	*9·52*	*11·98*	*13·56*	*10·92*	*16·30*	*13·50*	*13·94*	*13·13*	*15·68*	*16·14*	*15·23*	*20·27*	*16·51*	*17·90*	*15·72*	*9·89*	*12·39*	*15·22*

Note.—Figures in italics indicate that the Σ Δ includes at least one Δ amounting to 1·00 or over.

TABLE VII.

—	Σ Δ under 3.	Σ Δ under 4.	Σ Δ under 5.	Σ Δ under 6.	Σ Δ under 7.
Kirghiz (2) ...			Tajik, *Wakhi (1)*.	*Vanji, Mastuji.*	*Roshani.*
Uzbeg				Vanji, Yazghulami.	Roshani, Karateghin.
Tajik			Shignani, Kirghiz (2), Chitrali.	Roshani, Mastuji.	*Wakhi (2), Wakhi (1).*
Karateghin ...	Vanji.	Roshani.	Yazghulami, *Sayad*, Darwazi.	Shignani, *Biloch.*	Uzbeg.
Darwazi ...		Vanji.	Roshani, Yazghulami, Karateghin, Sayad.	Biloch.	
Vanji	Karateghin.	Darwazi.	Roshani, Yazghulami.	Uzbeg, *Kirghiz (2).*	*Sayad.*
Yazghulami ...			Roshani, Vanji, Karateghin, Darwazi.	Uzbeg.	
Roshani ...		Shignani, Karateghin.	Vanji, Yazghulami, Ishkashmi, Darwazi.	Tajik.	Wakhi (2), Uzbeg. *Sayad, Biloch, Kirghiz (2), Wakhi (1), Chitrali, Mastuji.*
Shignani ...		Wakhi (2), Roshani.	Ishkashmi, Tajik.	Karateghin.	*Biloch, Chitrali.*
Ishkashmi ...		Wakhi (2).	Shignani, Roshani.		
Wakhi (2) ...		Shignani, Ishkashmi.			Roshani, *Tajik.*
Seistani ...			Sayad, *Biloch.*		
Sayad	Biloch.		Seistani, Darwazi, *Karateghin.*		*Roshani, Vanji.*
Biloch	Sayad.		*Seistani.*	Darwazi, *Karateghin.*	*Shignani, Roshani.*
Kafir			Mastuji.	*Chitrali.*	
Wakhi (1) ...			*Kirghiz (2).*	Mastuji.	Tajik, *Roshani, Chitrali.*
Mastuji ...			Chitrali, Kafir.	Tajik (1), *Kirghiz (2).*	*Roshani.*
Chitrali ...			Tajik, Mastuji.	*Kafir.*	*Shignani, Roshani, Wakhi (1).*
Kirghiz (1) ...					

Note.—Names in italics indicate that the Σ Δ comprises at least one Δ amounting to 1·00 or over.

FIG. 1.—KIRGHIZ.

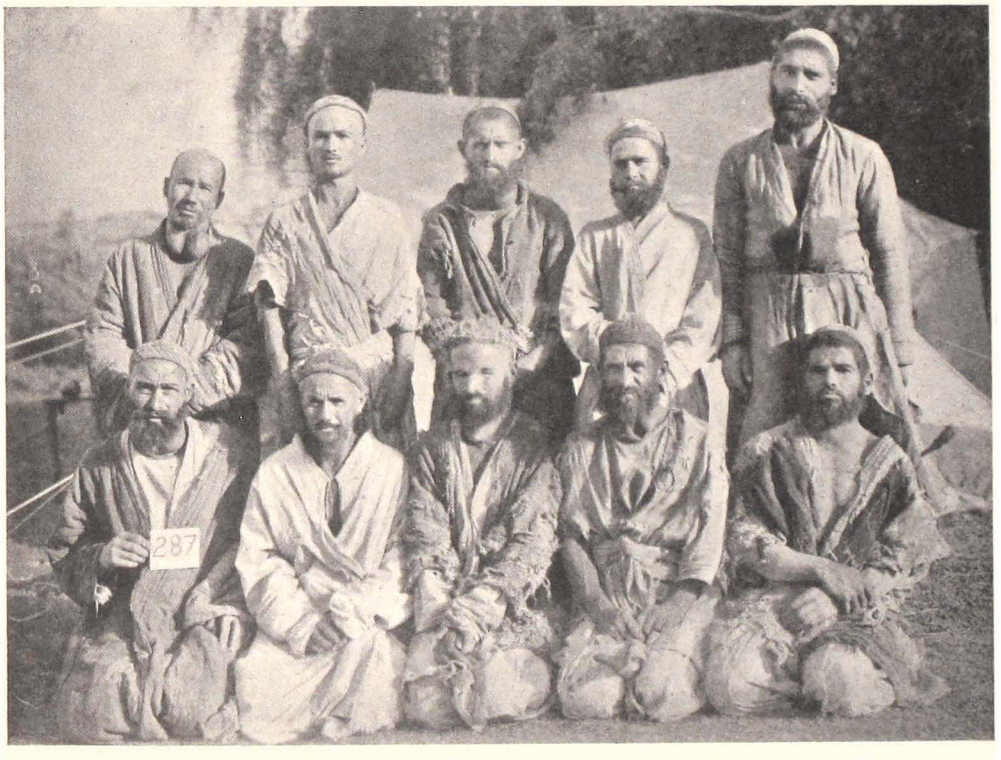

FIG. 2.—DARWAZĪ.

FIG. 1.—YAZGHULAMI.

FIG. 2.—ROSHANI. TASHKURGHAN.

FIG. 1.—ISHKASHMI.

FIG. 2.—WAKHI.

FIG. 1.—SEISTANI.

FIG. 2.—SAYAD OF SEISTAN.

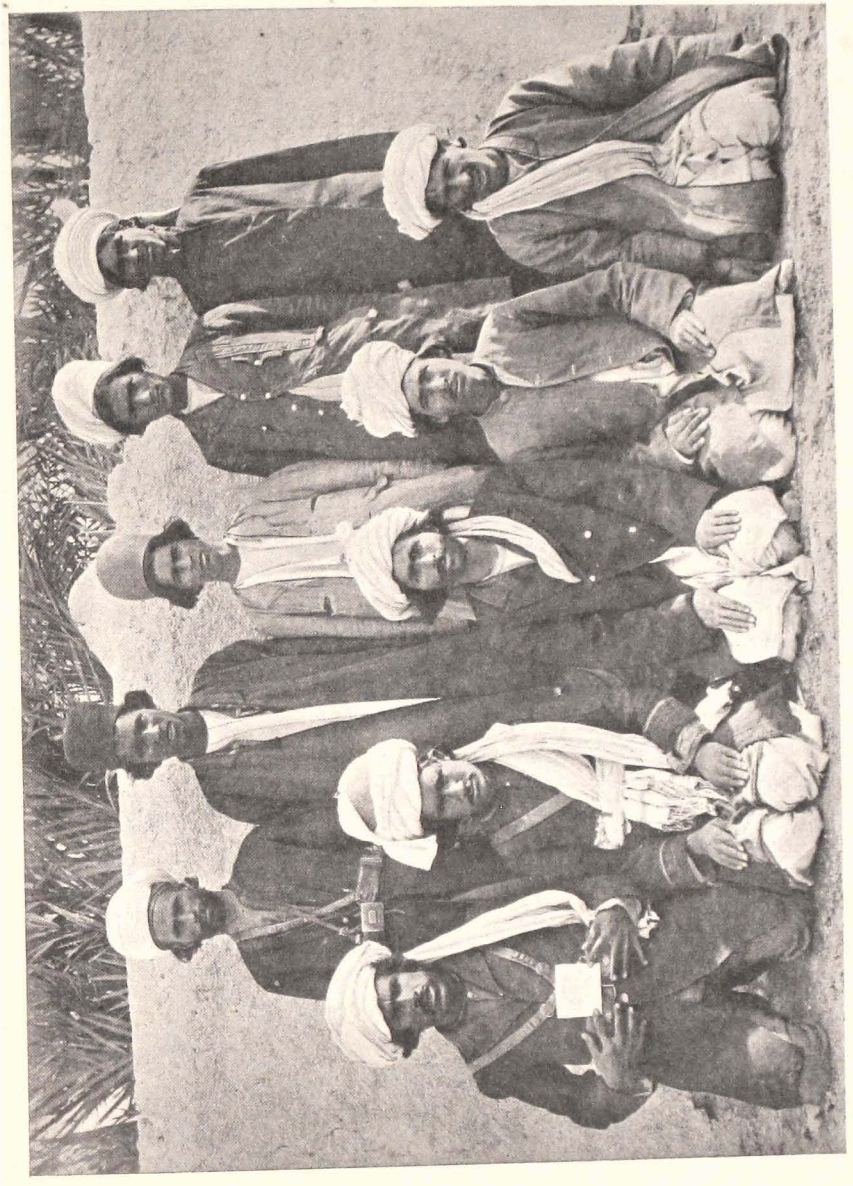

FIG. 1.—BALUCH (LEVIES).

TABLE VIII.

—	No.	Eye-colour. Per cent.			Hair-colour. Per cent.			Hair, amount. Per cent.		
		D.	M.	L.	D.B.	L.B.	F.	A.B.	M.	Sc.
Kirghiz	54	41	54	6	98	0	2	7	15	78
Uzbeg	10	90	10	0	90	0	10	60	10	30
Tajik	16	13	63	25	100	0	0	100	0	0
Karateghin	27	44	52	4	100	0	0	81	15	4
Darwazi	25	60	32	8	100	0	0	88	4	8
Vanji	23	74	26	0	96	0	4	87	9	4
Yazghulami	20	40	60	0	100	0	0	95	0	5
Roshani	59	61	25	14	91	2	7	78	7	16
Shignani	41	37	56	7	92	3	5	78	7	15
Ishkashmi	35	29	49	23	85	3	12	88	9	3
Wakhi	56	29	70	2	89	7	4	75	21	4
Seistani...	39	90	10	0	100	0	0	59	19	22
Sayad	34	65	35	0	100	0	0	56	26	18
Biloch	35	97	3	0	97[1]	0	0	51	20	29

[1] 3 per cent. (one individual) described as " black-haired."