CHAPTER III

COMPARISON OF THE CHINESE GROUPS BY THE METHOD OF THE INTESERIAL DIFFERENCES.

§32. *Description of the method.*

I. ABSOLUTE MEASUREMENTS. §33. *Graphic expression of the interserial differences.* §34. *Coefficients of interserial differences related to MM of Total Chinese.* §35. *Differences between the groups.* §36. *General deductions from the preceding exposition.*

II. RELATIVE MEASUREMENTS. §37. *Graphic expression of the differences.* §38. *Coefficients related to MM of Total Chinese.* §39. *Differences between the groups.* §40. *General conclusions.*

In the preceding chapter I gave a summary description of the different characteristics of the series and I concluded that the Chinese are not homogeneous. The Chinese of Manchuria in many characteristics are very close in their MM to these of the anthropological environment. In the present chapter I shall analyse the significance of the differences of MM and the relations between the groups.

§32. Description of the Method.

I have applied for this purpose the method of interserial differences that consists of the following calculation. I have worked out the relative values of the differences between MM of all measurements and groups according to the following formula:

$\delta = \frac{M_1 - M_2}{L} .100$, where δ is a relative difference expressed in percent; M_1 and M_2 are the arithmetical means of some measurement of the groups taken in comparison; L is the difference between the Maximum and Minimum of this measurement among the Chinese, i.e., Max.—Min. = L. I prefer to take the relative differences, because the absolute differences in some measurements may be very great and in others very insignificant, as for example, the stature and length of the ear.[1] All these data I put into a graph (See Figure V.) On this drawing the Maximums of all measurements lie in the upper part of the drawing and the Minimums in the lower, but the lines corresponding to Maximums and Minimums are not drawn. The middle line corresponds to MM of all measurements, relatively to which I put on the graph the points corresponding to the differences percent and join them with straight lines. Thus on the graph every group is represented by a crooked line, sometimes above the middle line of MM, some, times below it.[2] The absolute and relative measurement are recorded to two charts.

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1. Dr. Molison, Dr. Fischer (Die Rehoboter Bastard. Iena 1913.) and Prof. Czekanowsky take the absolute measurements.

2. If the differences between MM and medians are not very great the data can be put on the graph relative to the medians of all measurements. In the present case the differences between MM and medians are very high, as may be seen from Table XXXVI and Appendix Table IV. Therefore the relative position of the crooked lines would be confused, if I arranged them relative to the medians taken as a basis.

Finally I have calculated the coefficients of interserial differences according the formula: $\Delta = \frac{1}{N}\sum_{1}^{n}\delta$. Where Δ is coefficient, N is number of measurements and $\sum_{1}^{n}\delta$ is the sum of deviations of differences of MM of the measurements (from 1 to n). Thus the coefficient of interserial differences characterizes the degree of differences between two series represented by MM. The Tables of the Coefficients were arranged to show the relationship of groups.

I. ABSOLUTE MEASUREMENTS.

FIGURE V. *See Page 40.*

§33. Graphic Expression of the Differences.

On Figure V can be observed the disposition of the crooked lines representing the Chinese of Shantung, Chihli and Manchuria and the Manchus. The points corresponding to the relative places of MM of the Koreans are marked only by small circles and not joined together. At a glance it may be seen that the Shantung line is very close[1] to the middle line corresponding to Total Chinese series. Two of its deviations, namely the cases of the head-breadth and head-length are due to high M of the Chinese of Manchuria, in the first case, and to low M of the same group in the second one. The Chihli line is not so close to the middle line and its deviations in the case of stature, length of the leg and nterzygomatic breadth are due to the significant deviations of the line of the Chinese of Manchuria. Such a position of the line relative to the line of Total Chinese is natural, because these series compose the Total Chinese.

In most cases the line of Shantung is closer to the line of Chihli than to that of Manchuria. This last is generally opposed to that of other Chinese groups. In fact, in 21 measurements out of 25, it is opposed, and in four measurements only, namely, the breadth of the nose, the length of the upperarm, the length of the trunk and the external interocular breadth, the line of Manchuria lies between the lines of Shantung and Chihli and is closer to middle line. Hence it might be supposed that this group is composed of some anthropological elements different from the Chinese of China Proper.

How can we explain this phenomenon? The line of the Manchus furnishes some explanation. In fact, the line of the Chinese of Manchuria seems to be traversed above and below by the line of the Manchus. In 17 measurements the line of the Manchus is separated from the Chinese lines by the line of the Chinese of Manchuria and in 5 instances only it is opposed to this line, viz, the length of the ear, breadth of the nose, interzygomatic breadth, length of the trunk and external interocular breadth. However, some explanation of these variations I have given in the preceding chapter.

In order to show the influence of the Manchus over the Chinese of Manchuria I have shaded the distance between the lines of these groups and between the other two groups. It is clear that the Chinese field in the greatest number of cases is separated from the other field.

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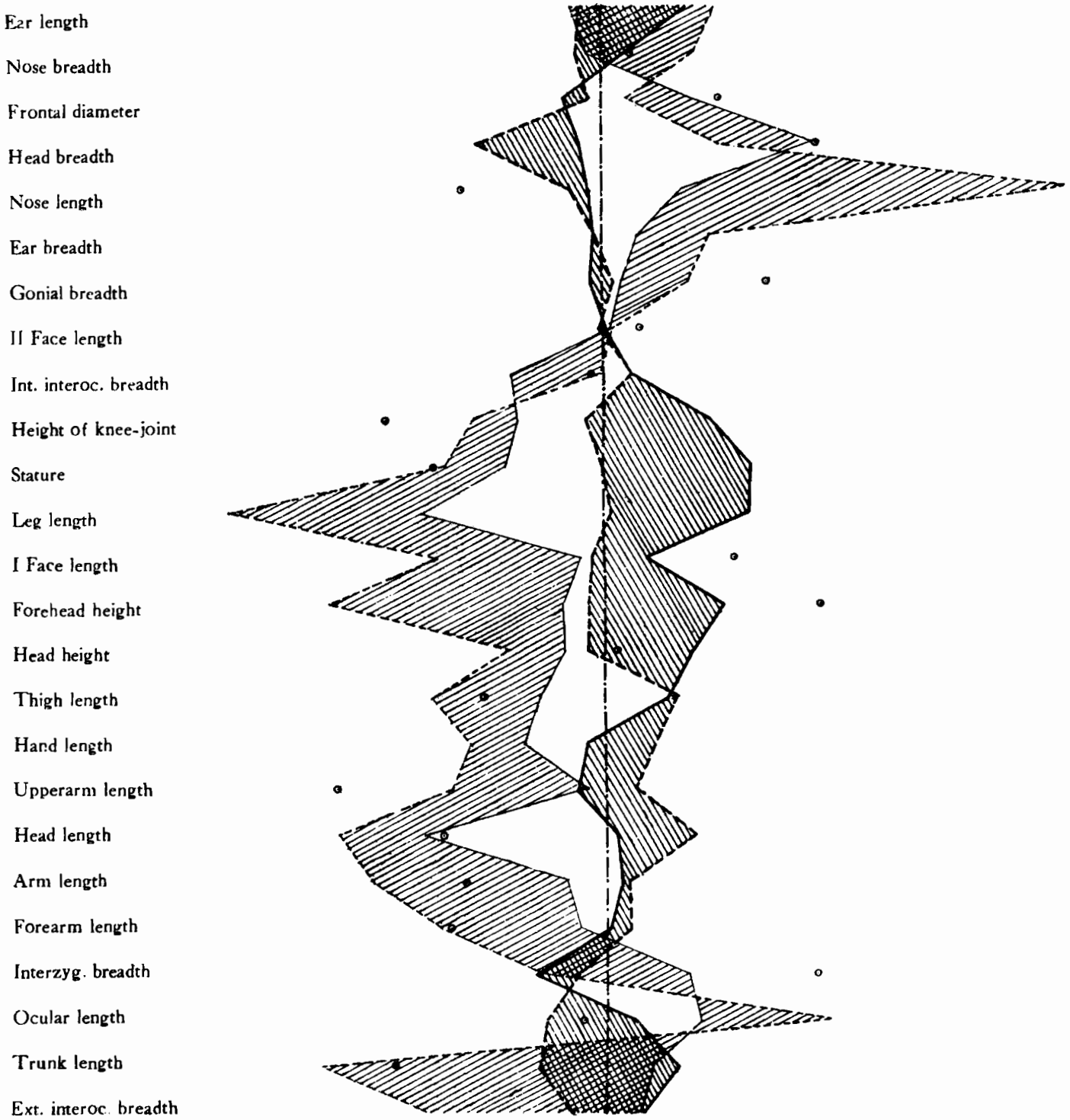
1. This phenomenon can be explained, of course, by that fact that the series of the Chinese of hantung included in the series of Total Chinese is more numerous than other series.

FIGURE V.

ABSOLUTE MEASUREMENTS.

———	Chinese of Chihli.	— — — —	Manchus.
- - - -	Chinese of Shantung.	o o	Koreans.
———	Chinese of Manchuria.	—· —	Total Chinese.

Note. One millimeter = 0.16% of relative deviation.



It might also be noted that in many cases the Koreans are very close to the line of the Chinese of Manchuria and the deviations from it can be easily explained by Korean influence. Though the line (imaginary) of the Koreans in some cases crosses the Chinese and Manchurian fields, it is always closer to the Chinese of Manchuria than to the lines of the Chinese of China Proper.

Thus, the lines of the Chinese of China Proper lie at different distances from the middle line, though the Shantung line is closer. They are therefore more characteristic of the present Total Chinese series. The Chihli line is closer to the Shantung line and middle line. The line of the Chinese of Manchuria is opposed to the lines of the Chinese of China Proper. This might be explained by the influence of the Manchus and Koreans over the Chinese of Manchuria.

§34. Coefficients of Interserial Differences Related to MM of Total Chinese.

TABLE XXXVII.

Measurement	Chinese of				Mn	K	μ	Max.	Min.	L	100/L
	Total	S	C	Cm							
1. Length of ear	− 3.94	− 0.97	− 2.64	− 1.31	+ 3.75	− 0.04	65	78	52	26	3.861
2. Breadth of nose ...	− 4.78	− 0.11	+ 0.94	− 0.67	+ 4.00	+ 1.06	38	47	29	18	5.555
3. Frontal diameter ...	− 2.02	− 0.56	− 1.74	+ 3.07	+ 1.05	+ 4.96	105.5	119	92	27	3.704
4. Head-breadth	− 8.43	− 5.34	− 0.97	+ 9.03	+ 5.03	+ 9.06	152.5	170	135	35	2.857
5. Length of nose	− 4.12	− 1.41	− 0.59	+ 3.41	+ 20.11	− 6.00	42.5	51	34	17	5.882
6. Breadth of ear ...	− 7.34	− 0.33	− 0.39	+ 1.47	+ 4.63	− 13.98	33.5	40	27	13	7.722
7. Gonial breadth ...	− 0.58	+ 0.39	− 0.45	+ 0.77	+ 3.71	+ 6.97	195.5	125	94	31	3.226
8. Anat. L. of face ...	+ 3.43	− 0.14	+ 0.03	+ 0.22	− 0.27	− 1.65	116.5	135	98	37	2.703
9. Int. interoc. breadth	+ 4.14	+ 1.24	+ 1.24	+ 3.97	− 0.13	− 0.53	35.5	41	26	15	6.666
10. Height of knee-joint	− 3.48	− 0.77	+ 3.55	− 3.68	− 5.68	− 9.42	470.5	548	393	155	0.645
11. Stature	− 6.76	− 0.05	+ 6.32	− 4.17	− 6.76	− 7.33	1690.5	1874	1507	367	0.272
12. Length of leg	− 7.44	+ 0.30	+ 6.32	− 8.05	− 16.24	− 25.64	863.5	980	747	133	0.752
13. Phys. L. of face ...	− 4.20	− 0.52	+ 1.72	− 0.98	− 7.22	+ 5.54	194	219	169	50	2.000
14. Height of forehead...	− 3.43	− 0.66	+ 5.11	− 1.77	− 11.80	+ 9.17	75.5	93	58	35	2.857
15. Height of head	− 4.05	− 0.70	+ 2.65	− 1.85	− 4.25	+ 0.30	136	156	116	40	2.500
16. Length of thigh. ...	− 2.77	+ 1.10	+ 0.55	− 2.77	− 7.51	− 5.24	393.5	484	303	181	0.552
17. Length of hand. ...	− 14.41	+ 2.16	− 0.78	− 3.72	− 5.78	− 3.62	202	253	151	102	0.980
18. Length of upperarm.	− 16.58	+ 1.16	− 1.32	− 0.70	− 6.59	− 11.40	330.5	395	266	129	0.775
19. Head-length	+ 6.50	+ 3.67	+ 0.40	− 7.52	− 11.40	− 6.67	184	205	163	42	2.381
20. Length of arm... ...	− 1.70	+ 0.85	+ 0.58	− 1.75	− 9.86	− 5.96	732.5	844	621	223	0.448
21. Length of forearm ...	+ 8.94	+ 0.95	− 0.14	− 1.22	− 6.91	− 6.62	229.5	267	192	75	1.354
22. Interz. breadth	+ 3.63	− 1.07	− 3.20	+ 3.50	− 2.70	+ 8.90	140	155	125	30	3.333
23. Ocular length	+ 0.59	− 2.61	+ 1.13	+ 3.91	+ 9.66	− 1.04	30.75	36.5	25	11.5	8.700
24. Length of trunk. ...	− 1.10	− 2.87	+ 2.87	+ 2.13	− 12.75	− 9.03	570	652	488	164	0.610
25. Ext. interoc. breadth	+ 5.95	− 1.50	+ 1.50	+ 1.37	− 7.84	− 1.44	94	108	80	28	3.500
All positive deviations		11.82	37.69	28.88	51.94	45.69					
All negative deviations...		19.61	9.44	44.13	123.69	115.61					
All deviations...		31.33	47.13	73.01	175.63	161.57					
Coefficients		1.253	1.885	2.920	7.025	6.463					

Note on the Table.

The deviations of column I are worked out by subtraction of M from μ. The deviations of II, III, IV, V and VI columns are calculated relatively to MM.

Abbreviations: S—Shantung, C—Chihli, Cm—Chinese of Manchuria, Mn—Manchus, K—Koreans; μ—median; Max. and Min.—Maximum and Minimum; L=Max.—Min.

The table of differences and coefficients gives exact expression to the relations that were observed in the preceding §33. In this table the differences are worked out as the differences of MM of all groups from MM of Total Chinese series. The numerical expression of these differences represented by the coefficients confirms the above deductions. The coefficients placed in the order of their increase show the degree of connection which exists between the groups. The closest to MM of Total Chinese is the groups of Shantung ($\Delta = 1.253$); thereafter the group of Chihli ($\Delta = 1.885$) and the group of Chinese of Manchuria ($\Delta = 2.920$). The Koreans ($\Delta = 6.463$) and the Manchus ($\Delta = 7.025$) have significantly high coefficients.

§35. Differences Between the Groups.

The most striking evidence of the degree of differences is furnished by the table below :

TABLE XXXVIII.

Measurements	Chinese of Shantung				Chinese of Chihli			Chin. of Man.		Manchus
	C	Cm	Mn	K	Cm	Mn	K	Mn	K	K
1. Length of ear	+ 3.61	− 0.34	+ 3.72	− 0.93	+ 3.95	+ 1.11	− 2.68	+ 5.06	+ 1.27	− 3.79
2. Breadth of nose ...	+ 1.05	− 0.56	+ 4.11	+ 1.17	− 1.61	+ 3.06	+ 0.08	+ 4.67	+ 1.73	− 2.94
3. Frontal diameter ...	− 1.18	+ 3.63	+ 1.61	+ 5.52	− 4.87	+ 2.79	+ 6.70	− 2.02	+ 1.89	+ 3.91
4. Head-breadth	+ 4.37	+ 14.37	+ 10.37	+ 14.40	+ 10.00	+ 6.00	+ 10.03	− 4.00	+ 0.03	+ 4.03
5. Length of nose ...	+ 0.82	+ 4.82	+ 21.52	− 4.59	+ 4.00	+ 20.70	− 5.41	+ 16.70	− 26.19	− 26.11
6. Breadth of ear ...	− 0.06	+ 1.80	+ 4.96	− 14.31	+ 1.86	+ 5.02	− 14.37	+ 3.16	− 15.45	− 18.61
7. Gonial breadth ...	− 0.84	+ 0.38	+ 3.32	+ 6.58	+ 1.22	− 4.16	+ 7.42	+ 2.94	+ 6.20	+ 3.28
8. Anat. length of face.	+ 0.17	+ 0.36	− 0.13	− 1.51	+ 0.19	− 0.30	− 1.68	− 0.49	− 1.87	1.38
9. Int. interoc. breadth	0.00	− 5.21	− 1.37	− 1.77	− 5.21	− 1.37	− 1.77	+ 3.84	+ 3.44	− 6.40
10. Height of kneejoint..	+ 4.32	− 2.91	− 4.91	− 8.65	− 7.23	− 9.23	− 12.97	− 2.00	− 5.74	− 3.74
11. Stature	+ 6.37	− 4.12	− 6.71	− 7.12	− 10.49	− 13.08	− 13.65	− 2.59	− 3.16	− 0.57
12. Length of leg	+ 6.02	− 8.35	− 16.54	− 25.94	− 14.37	− 22.56	− 31.96	− 8.19	− 17.59	− 9.40
13. Phys. length of face.	+ 2.24	− 0.46	− 6.70	+ 6.06	− 2.70	− 8.94	+ 3.82	− 6.24	+ 6.52	+ 12.76
14. Height of forehead..	+ 5.77	− 1.11	− 11.14	+ 9.83	− 6.88	− 16.91	+ 4.06	− 10.03	+ 7.40	+ 20.97
15. Height of head. ...	+ 3.35	− 1.15	− 3.55	+ 1.00	− 4.50	− 6.90	− 2.35	− 2.40	+ 2.15	+ 4.55
16. Length of thigh ...	− 0.55	− 3.87	− 8.61	− 6.34	− 3.32	− 8.04	− 5.79	− 4.74	− 2.47	+ 2.27
17. Length of hand. ...	− 2.94	− 5.88	− 7.94	− 5.78	− 2.94	− 5.00	− 2.84	− 2.06	− 0.10	− 2.16
18. Length of upperarm	− 2.48	− 1.86	− 7.75	− 12.56	+ 0.62	− 5.27	− 10.08	− 5.89	− 10.70	− 4.81
19. Head-length	− 3.27	− 11.19	− 15.07	− 10.34	− 7.92	− 11.80	− 7.07	− 3.88	+ 0.85	+ 4.73
20. Length of arm.. ...	− 0.27	− 2.60	− 10.71	− 6.81	− 2.33	− 10.44	− 6.56	− 8.11	− 4.21	+ 3.90
21. Length of forearm ...	− 0.87	− 2.17	− 7.86	− 7.57	− 1.36	− 7.05	− 6.76	− 5.69	+ 5.40	+ 0.29
22. Interzyg. breadth ...	− 2.13	+ 4.57	− 1.63	+ 9.97	+ 6.70	+ 0.50	+ 12.10	− 6.20	+ 5.40	+ 11.60
23. Ocular length... ...	+ 3.94	+ 6.52	+ 12.27	+ 1.57	+ 2.78	+ 8.53	− 2.17	+ 5.75	− 4.95	+ 10.70
24. Length of trunk ...	+ 5.74	+ 5.00	− 9.88	− 6.16	− 0.74	− 15.62	− 11.90	− 14.88	− 11.16	+ 3.72
25. Ext. interoc. breadth	+ 3.00	+ 2.87	− 6.34	+ 0.06	− 0.13	− 9.34	− 2.94	− 9.21	− 2.81	+ 6.40
All Posit. deviations ...	50.57	44.32	61.88	57.09	36.13	51.87	44.21	42.12	36.98	84.57
All negat. deviations ...	14.53	51.78	126.84	119.45	71.73	151.84	142.95	98.62	88.10	88.45
All deviations	65.10	96.10	188.72	176.54	107.86	203.71	187.16	140.74	125.08	151.84
Coefficients	2.604	3.844	7.549	7.062	4.306	8.148	7.486	5.630	5.003	6.921

Note on the Table.

For example, M of the length of the ear of the Chinese of Shantung differs from M of the Chinese of Manchuria by −0.34. For abbreviations see Table XXXVI.

1. Coefficients Related to MM of the Chinese of Shantung.

In this table can be seen the preponderance of the negative differences for the Chinese of Manchuria, Manchus and Koreans as well as the positive preponderance for the Chinese of Chihli. Per cent the positive deviations will be as follows: the Chinese of Chihli—78%, the Chinese of Manchuria—46%, the Manchus—33%, the Koreans—32%. These figures illustrate the conclusion of the preceding chapter, where I have formulated the proposition that the proportions of the physical characters of the Manchus are generally smaller. This generalization can be now at this point applied to the Koreans and Chinese of Manchuria.

The coefficients of interserial differences have the same type of variations as was observed in Table XXXVII, but the differences are a little higher. The lowest difference is between the Chinese of Shantung and Chihli groups ($\Delta = 2.604$), next to which one gets the coefficient of differences between the Chinese of Shantung and of Manchuria ($\Delta = 3.844$). At the same time the coefficients of differences of the Manchus and Koreans ($\Delta = 7.062$) are two times higher than that of the Chinese groups.

2. Coefficient Related to MM of the Chinese of Chihli.

In these columns it may be observed that the coefficients are generally higher than in the preceding. The Chinese of Chihli are more differentiated from other groups than the Chinese of Shantung. The highest coefficient belongs to the Manchus ($\Delta = 8.148$). The Koreans are likewise significantly differentiated from the Chinese of Chihli ($\Delta = 7.486$). It is clear that the positive deviations are smaller than in the preceding case, i.e. the Chinese of Shantung—22%, the Chinese of Manchuria—34%, the Manchus—25% and the Koreans—24%. Also, the preponderance of the positive deviations is characteristic for the Chinese of Chihli.

3. Coefficients Related to MM of the Chinese of Manchuria.

In the preceding cases the preponderance of the negative deviations was seen to be significant. In this table the Chinese of Manchuria occupy the middle place, as follows: negative deviations of the Chinese of Shantung—54%, of Chihli—66%, of the Manchus—30%, of the Koreans—29%.

It is very characteristic that this group is by its coefficients very close to the Manchus and Koreans and it occupies an intermediate position among other groups. This is clear from the following comparison;

Coefficient of differences of Chinese of Shantung—3.844.
,, ,, ,, ,, ,, ,, Chihli—4.306.
,, ,, ,, ,, ,, ,, Manchus—5.630.
,, ,, ,, ,, ,, ,, Koreans —5.003.

Hence it might be seen that the Chinese of Manchuria are closer to the Chinese of China Proper than the other ethnical groups of this area, but at the same time the Chinese of Manchuria are always closer to their neighbours than are other Chinese groups.

4. Coefficients Related to MM of the Manchus.

In the preceding the coefficients were related to the Chinese groups. It remains now to show only the coefficients of differences between the Manchus and Koreans.

This coefficient is much higher than for the Chinese of Manchuria, whence it might be supposed that the Koreans are closer to the Chinese of Manchuria than to the Manchus. There is no preponderance of either the negative or positive deviations.

§36. General Deductions from the Preceding Exposition.

TABLE XXXIX.

Coefficients of Interserial Differences.

	M	S	C	Cm	Mn	K
M	0	1.253	1.885	2.920	7.025	6.463
S	1.253	0	2.604	3.844	7.549	7.062
C	1.885	2.604	0	4.306	8.148	7.486
Cm	2.920	3.844	4.306	0	5.630	5.003
Mn	7.025	7.549	8.148	5.630	0	6.920
K	6.463	7.062	7.486	5.003	6.920	0

Abbreviations: M—Total Chinese; S—Shantung group; C—Chihli group; Cm—Chinese of Manchuria; Mn—Manchus; K—Koreans.

The following deductions can be drawn from the preceding §: as to absolute measurements,—

I. The Chinese are not homogeneous and must be divided into two main groups: the Chinese of China Proper and the Chinese of Manchuria.

2. The Chinese of Manchuria are probably influenced by the Manchus and Koreans, from whom they do not differ so significantly as from other Chinese groups.

3. The differences between the Chinese of Manchuria and the Koreans is less than that between the Chinese of Manchuria and the Manchus.

4. The difference between the Koreans and other Chinese groups is almost equal to the difference between the Koreans and Manchus.

5. The Chinese of China Proper show some variations among themselves and differ from the Manchus more significantly than from the Koreans.

II. RELATIVE MEASUREMENTS.

FIGURE VI. *See Page 45.*

§37. Graphic Expression of the Differences.

On this figure the crooked lines represent the same groups as in the Figure V. At a glance it can be seen that the disposition of the lines shows the same regularity as in the case of the absolute measurements.

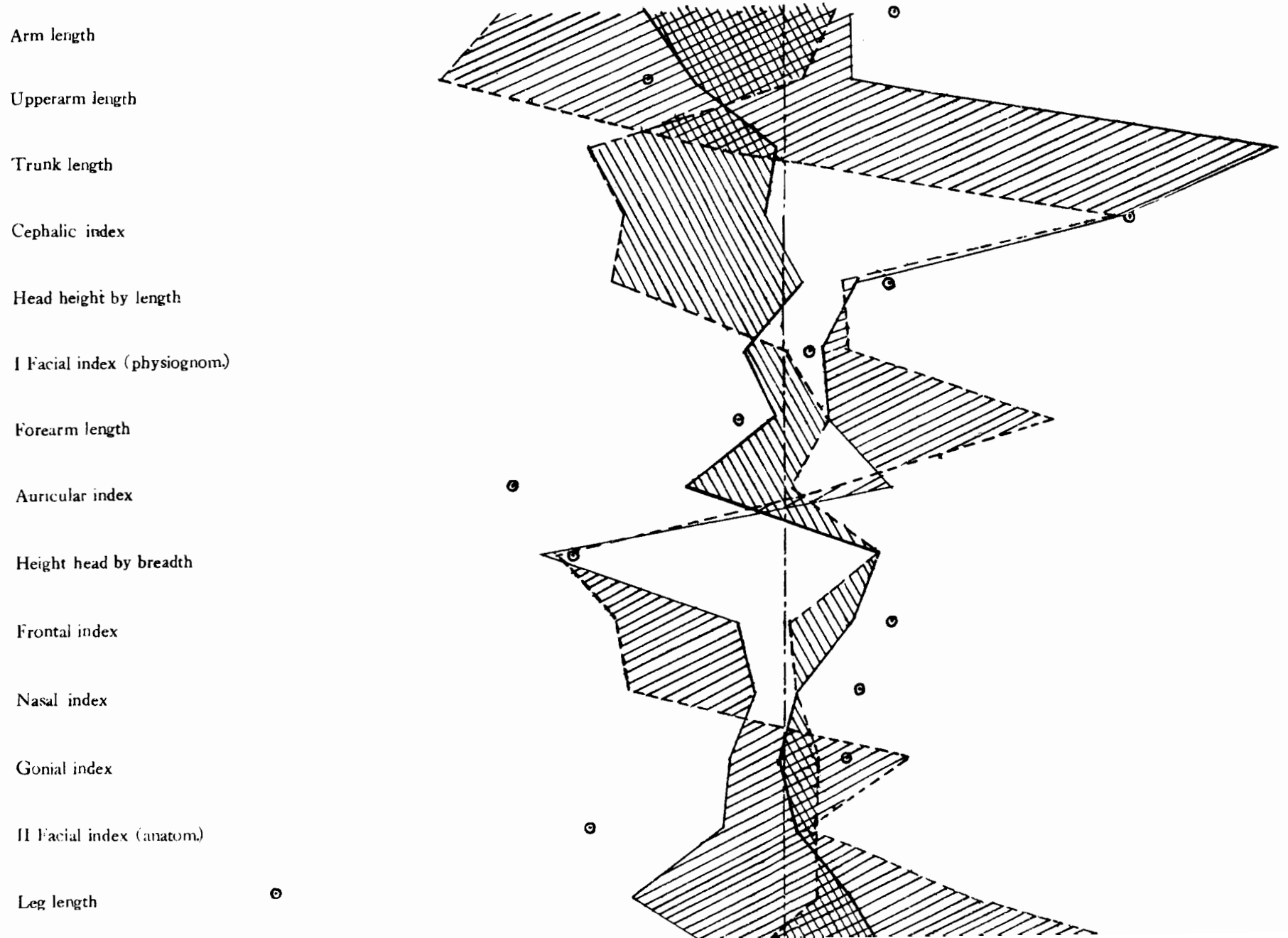
The crooked line of Chihli in this case is closer to the middle line of Total Chinese. In the Figure V the line of Shantung is closer to the middle line, but the distances between them are more significant. The deviations in the case of the relative length of the trunk, cephalic index, relative height of the head on head-length and head-breadth are due to the deviations of the line of the Chinese of Manchuria. To the same cause are due the deviations of the line of the Chinese of Chihli in the cases of the auricular index and relative

FIGURE VI.

RELATIVE MEASUREMENTS.

———	Chinese of Chihli.	— — — —	Manchus.
- - - -	Chinese of Shantung.	o o	Koreans.
———	Chinese of Manchuaia.	—· —·	Total Chinese.

Note. One millimeter = 0.25% of relative deviation.



height of the head on the head-length and head-breadth. In the great number of cases the line of Shantung is closer to the line of Chihli than to that of the Chinese of Manchuria. Also the line of Chihli is closer to the line of Shantung than to that of the Chinese of Manchuria.

The line of Shantung in 10 cases is opposed to the line of the Chinese of Manchuria and the line of Chihli is in 13 cases opposed to it. In all the cases the line of the Chinese of Manchuria is opposed to one of the lines of China Proper groups, whence may be drawn the same conclusion as in §32, namely, that the group of the Chinese of Manchuria is composed of other anthropological elements than is the case with the Chinese of China Proper.

The explanation of this phenomenon can be illustrated by the disposition on the field of the lines of the Manchus and Koreans (the last one is not drawn and the relative places of MM are marked by circles). In fact, the line of the Chinese of Manchuria only in four cases out of 15 is opposed to the line of the Manchus (and Koreans): in 2 cases the disposition of it can be easily explained by the influence of their neighbours. Some original characters are shown by the Chinese of Manchuria in the relative length of the upperarm and trunk, also the gonial index, which are relatively higher than those of other groups. The differences between MM of the Chinese of Shantung and Manchuria in the case of the length of the upperarm and of the hand are very insignificant and do not go over 0.90 The relative length of the trunk shows some peculiar character among the Chinese of Manchuria, which can be explained by the influence of the Koreans, who have a very short leg. As regards the gonial index, it must be remembered that the absolute gonial breadth does not very significantly among the groups, but the interzygomatic breadth correlating with the head-breadth,as was stated before, was probably influenced by the Koreans and Manchus. Therefore the gonial index shows the above-mentioned peculiarity among the Chinese of Manchuria.

The lines of Chinese groups thus lie at different distances relative the middle line of MM of Total Chinese series. The Chihli line is closer to this than others; so this group must be considereda s more characteristic for the Chinese of this area. The lines of Shantung and Chihli together are opposed to the line of the Chinese of Manchuria. This phenomenon can be explained by the influence of the Manchus and Koreans over this Chinese group. Thus the above conclusions do not differ significantly from those of §33.

§38. Coefficients Related to MM of Total Chinese Series.

The conclusions of the preceding section can be confirmed by these data (See Table XL page 47). If the coefficients are placed in the order of their increase there may be seen the degree of connection between the groups. The closest to Total Chinese are the Chinese of Chihli with their low coefficient of differences ($\Delta=1.421$), next are the Chinese of Shantung ($\Delta=1.679$) and Chinese of Manchuria, the coefficient of which ($\Delta=3.621$) is a little higher than in the case of the absolute measurements, but the coefficients of the Manchus ($\Delta=5.365$) and Koreans ($\Delta=5.052$) are lower.

I shall omit the comparison of the posidive and negative deviations because these differences are related to the relative measurements. For example the positive deviation of the physiognomical facial index correlates, of course, with the negative deviations of the anatomical facial index and so on.

TABLE XL.

Indices	Chinese				Mn	K	μ	Max.	Min.	L	100/L
	Total	S	C	Cm							
1. Length of arm ...	− 5.25	+0.76	−2.19	+ 1.05	− 4.48	+ 1.81	44.30	49.54	39.06	10.48	9.542
2. Length of upperarm.	− 7.38	+0.27	−1.53	+ 1.17	− 5.76	− 2.25	43.08	48.64	37.53	11.11	9.000
3. Length of trunk ...	+ 5.89	−2.94	−0.10	+ 7.38	− 2.84	− 1.42	33.54	38.47	28.62	9.85	10.152
4. Cephalic	−12.56	−6.39	−0.92	+13.35	+12.89	+13.54	83.43	96.43	70.44	25.99	3.848
5. I height head	− 4.20	−5.73	+0.55	+ 2.40	+ 2.08	+ 3.46	73.32	84.15	62.50	21.65	4.619
6. Phys. facial	+10.33	− 0.32	−1.71	+ 1.93	+ 3.22	+ 1.30	70.28	86.11	54.45	31.66	3.159
7. Length of forearm...	+16.63	+0.56	−0.12	+ 0.56	+ 3.51	− 0.68	30.90	35.32	26.48	8.84	11.312
8. Auricular	− 3.37	+0.24	−3.08	+ 3.27	+ 1.71	− 8.55	51.66	61.90	41.43	20.47	4.885
9. II height head... ...	+ 2.20	+3.36	+3.32	−10.29	− 9.10	− 8.77	89.33	102.74	75.93	26.81	3.730
10. Frontal	+ 2.98	+0.40	+3.63	− 2.26	− 9.41	+ 6.05	69.51	88.11	50.91	37.21	2.687
11. Nasal...	− 5.02	+0.79	+1.09	− 2.82	−12.31	+ 5.82	92.07	118.18	65.96	52.22	1.915
12. Gonial	+ 4.50	+1.21	−0.22	− 1.98	+ 4.61	+ 2.20	76.43	83.03	64.83	23.20	4.310
13. Anat. facial	− 1.47	+1.18	+0.40	− 2.61	+ 0.74	− 7.79	84.07	97.67	70.47	27.20	3.678
14. Length of leg	− 9.20	+0.54	+1.07	− 2.50	+ 3.04	− 8.57	52.72	57.87	46.68	11.19	8.928
15. Length of hand. ...	+16.10	− 0.50	+1.38	− 0.75	+ 4.78	+ 3.77	26.55	30.63	22.68	7.95	12.578
All posit. deviations.		9.31	11.44	31.11	36.58	37.95					
All negat. deviations		15.88	9.87	23.21	43.90	37.83					
All deviations...		25.19	21.31	54.32	80.48	75.78					
Coefficients		1.679	1.421	3.621	5.365	5.052					

§39. Differences Between the Groups.

TABLE XLI.

Indices	Chinese of Shantung				Chinese of Chihli			Chin. of Man.		Manchus
	C	Cm	Mn	K	Cm	Mn	K	Mn	K	K
1. Length of arm ...	−2.95	+ 0.29	− 5.24	+ 1.05	+ 3.24	− 2.29	+ 0.76	− 5.53	+ 0.76	+ 6.29
2. Length of upperarm.	−1.80	+ 0.90	− 6.03	− 2.52	+ 2.70	− 4.23	− 0.72	− 7.93	− 3.41	+ 3.51
3. Length of trunk ...	+2.84	+10.32	+ 0.10	+ 1.52	+ 7.48	− 2.74	− 1.32	−10.22	− 8.80	+ 1.42
4. Cephalic	+5.47	+19.74	+19.28	+19.93	+14.27	+13.81	+14.46	− 0.46	+ 0.19	+ 0.65
5. I height head	+6.28	+ 8.13	+ 7.81	+ 9.19	+ 1.85	+ 1.53	+ 2.91	− 0.32	+ 1.06	+ 1.38
6. Phys. facial	−1.39	+ 2.25	+ 3.54	+ 1.62	+ 3.64	+ 4.93	+ 3.01	+ 1.22	− 0.63	− 1.92
7. Length of forearm...	−0.68	0.00	+ 2.96	− 1.24	+ 0.68	+ 3.63	− 0.56	+ 2.96	− 1.24	− 4.19
8. Auricular	−3.32	+ 3.03	+ 1.47	− 8.59	+ 6.35	+ 4.79	− 5.27	− 1.56	−11.62	−10.06
9. II height head ...	−0.04	−13.65	−12.46	−12.13	−13.61	−12.42	−12.09	+ 1.19	+ 1.52	+ 0.33
10. Frontal	+3.23	− 2.66	− 9.81	+ 5.65	− 5.89	−13.04	+ 2.42	− 7.15	+ 8.31	+15.46
11. Nasal	+0.30	− 3.61	−13 10	+ 5.03	− 3.91	−13.40	+ 4.73	− 9.49	+ 8.64	+18.13
12. Gonial	−1.43	− 3.19	+ 3.40	+ 0.99	− 1.76	+ 4.83	+ 2.42	+ 6.59	+ 4.18	− 2.41
13. Anat. facial	−0.78	− 3.79	− 0.44	− 8.97	− 3.01	− 0.34	− 8.19	+ 3.35	− 5.18	− 8.53
14. Length of leg... ...	+0.53	− 3.04	+ 2.50	− 9.11	− 3.57	+ 1.97	− 9.64	+ 5.54	+ 6.07	−11.61
15. Length of hand ...	+1.88	− 0.25	+ 5.28	+ 4.27	− 2.13	+ 3.40	+ 2.39	− 5.53	+ 4.52	− 1.01
All posit. deviat.	20.53	44.66	47.08	49.25	40.21	39.23	33.10	20.85	29.18	47.17
All negat. deviat.	12.39	30.19	46.34	42.56	33.88	48.12	37.79	48.19	36.95	39.73
All deviations	32.92	74.85	93.42	91.81	74.09	87.35	70.89	69.04	66.13	86.90
Coefficient	2.195	4.990	6.228	6.121	4.939	5.813	4.724	4.603	4.409	5.793

Abbreviations: I height head—the relative height of the head to length of the head.
II height head—the relative height of the head to breadth of the head.

The coefficient of differences between the Shantung group ($\Delta = 2.195$) is lower than that in the case of the absolute measurements ($\Delta = 2.601$). But the coefficient of differences between the Shantung group and Chinese of Manchuria ($\Delta = 4.990$) is higher than that in the case of the absolute measurement ($\Delta = 3.844$). The difference between the Chinese of Shantung and the Manchus and between them and the Koreans is higher than the difference between the Chinese groups; but it is not so accentuated as in the case of the absolute measurements.

The differences between the Chinese of Chihli and the other groups show some peculiarity. The coefficient of differences between this group and the Koreans ($\Delta = 4.724$) is lower than the coefficient of difference between this group and the Chinese of Manchuria ($\Delta = 4.939$). Also the coefficient of differences between the Chinese of Manchuria and Koreans ($\Delta = 4.409$) is lower than that between the Chinese of Manchuria and other Chinese groups.

It is very significant that the coefficient of differences between the Manchus and Koreans, on the one hand, and between the Manchus and Chinese of Chihli, on the other hand, are almost equal but much lower than in the case of the absolute measurements.

The above description of the interserial relations may better be seen from the Table below :

TABLE XLII.

	M	S	C	Cm	Mn	K
M	...	1.679	1.421	3.621	5.365	5.052
S	1.679	...	2.195	4.990	6.228	6.121
C	1.421	2.195	...	4.939	5.813	4.724
Cm	3.621	4.990	4.939	...	4.603	4.409
Mn	5.365	6.228	5.813	4.603	...	5.793
K	5.052	6.121	4.724	4.409	5.793	...

From this table and summary exposition there may be drawn deductions absolutely similar to those of §36. Thus the relative measurements show the same type of variations as the absolute measurements.

§40. General Conclusions.

On the basis of the conclusions in the preceding section I have calculated the coefficients of interserial differences for absolute and relative measurements together, as is shown in the following Table :

TABLE XLIII.

	M	S	C	Cm	Mn	K
M	...	1.413	1.711	3.183	6.403	5.757
S	1.413	...	2.450	4.274	7.053	6.709
C	1.711	2.450	...	4.549	7.276	6.451
Cm	3.183	4.276	4.549	...	5.249	4.780
Mn	6.403	7.053	7.276	5.249	...	6.498
K	5.757	6.709	6.451	4.780	6.498	...

In this table it is seen that :

(1) The coefficients of the Chinese of China Proper are always very low relatively to other ethnical groups ;

(2) The Chinese of Manchuria differ from other Chinese groups as well as from the Manchus and Koreans ;

(3) The Manchus are closer to the Chinese of Manchuria than to the Koreans ;

(4) The Chinese of China Proper, though they show some differences among themselves, can be considered as an anthropological group differentiated from the Manchus and Koreans.

Taking into considerations these deductions I suppose that the Koreans and Manchus have influenced the Chinese of Manchuria ; the influence of the Koreans over the Manchus can be considered as insignificant, and the direct influence of the Manchus and Koreans over the Chinese of China Proper as almost nil. Of course, the degree of the influence cannot be stated with precision.

The migrations of the original anthropological elements located now more or less extensively over this territory and their amalagamation characterize both the present and the past time. In chapter II it was shown that in regard to several characteristics the Chinese of China Proper cannot be considered as a homogeneous group ; and the coefficient of differences together with the standard deviations (and the coefficients of variation) show that this population is highly amalgamated : even so, they differ from the populations of Manchuria and Korea.