

## CHAPTER II

### PHYSICAL CHARACTERS OF THE CHINESE GROUPS.

§§6-18. *Absolute measurements.* §19. *Generalizations concerning the absolute measurements.* §§20-29. *Relative measurements (Indices).*  
 §30. *Some notes on the descriptive characters.* §31. *Conclusions.*

#### § 6. Stature.

The stature of the Chinese varies from 1507 mm. to 1874 mm. The arithmetical mean, which I shall designate M or MM, of the stature is 1665. 7 mm. The following curve of dispersion taken with differential units of 10 mm. gives the graphic expression of variation of stature.

FIGURE 1. *See Page 13.*

TABLE I.

Stature Cms.	N	%	Stature Cms.	N	%	Stature Cms.	N	%
150	1	0.25	163	39	9.95	176	12	3.06
151	1	0.25	164	28	7.14	177	3	0.77
152	1	0.25	165	22	5.61	178	4	1.02
153	2	0.51	166	26	6.63	179	2	0.51
154	3	0.77	167	26	6.63	180	4	1.02
155	5	1.29	168	20	5.10	181	3	0.77
156	7	1.78	169	16	4.08	182	...	...
157	8	2.04	170	19	4.85	183	4	1.02
158	7	1.78	171	19	4.85	184	...	...
159	8	2.04	172	16	4.08	185	...	...
160	19	4.85	173	8	2.04	186	...	...
161	16	4.08	174	7	1.78	187	1	0.25
162	28	7.14	175	7	1.78	...	392	100.00

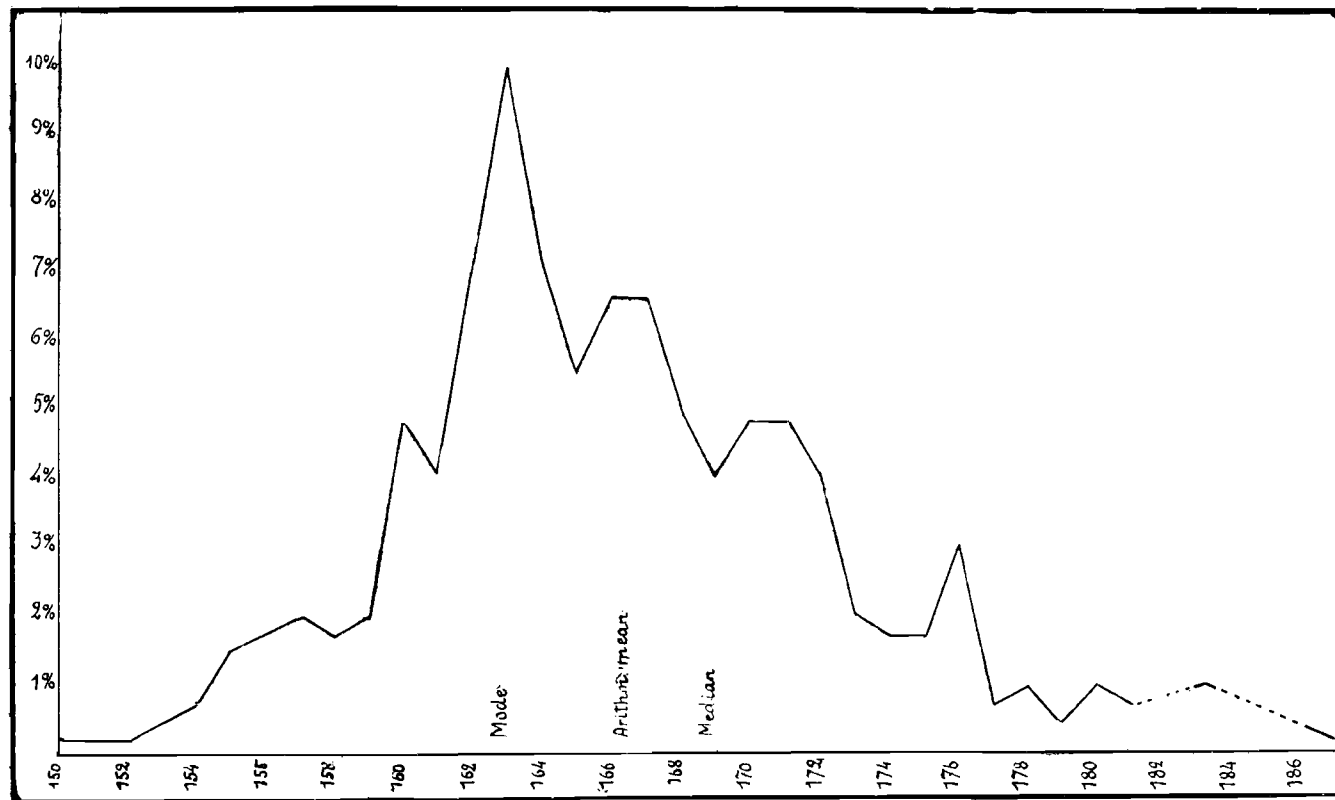
Thus the mode i.e. the largest number of cases in a range, falling on the range of 1630 mm. which is 375 mm. lower than M. It might be concluded that in the present series this stature is more common and the high M is due to a number of tall men, having a stature over 1750 mm.

The standard deviation, which characterizes the dispersion:  $\sigma = 61.44$  and coefficient of variation  $V = 3.67$ .<sup>1</sup>

1. Some anthropologists suppose the standard deviation and coefficient of variation to be characteristics of the degree of the amalgamation. This must be so theoretically, but up to the present time the variations of the standard deviations and coefficients of variation of the amalgamated and pure populations are not known. Therefore I shall abstain from further deductions as to the meaning of these data, awaiting opportunity for special investigation into the matter.

FIGURE I.  
STATURE.  
(In centimeters.)

Percentage of Dispersion.



The variation of MM of the stature for the different series,—the Chinese of Shantung, Chihli and Manchuria, as well as the Manchus and Koreans, which I took for comparison,—is as follows :

TABLE II.

Groups	N	Max.	Min.	M	$\sigma$	V	$E_m$
Chinese of Shantung ...	185	1838	1537	1665.5	59.58	3.58	$\pm 3.00$
Chinese of Chihli ...	114	1874	1565	1678.9	63.16	3.76	$\pm 3.84$
Chinese of Manchuria ...	95	1815	1518	1640.4	59.37	3.60	$\pm 4.15$
Total Chinese ...	394	1874	1507	1655.7	61.44	3.67	$\pm 2.55$
Manchus ...	81	1718	1513	1637.9	51.64	3.11	$\pm 4.47$
Koreans ...	142	1752	1509	1628.8	47.71	2.93	$\pm 5.39$

*Note on the Table II.*

In this table N means the number of cases ; Max. and Min.—the extreme variations observed in these series ; M—the arithmetical mean ;  $\sigma$ —the standard deviation ; V—the coefficient of variation ;  $E_m$ —the probable error of M.

In this table it might be seen that M of the stature of the Chinese of Manchuria is lower than MM of the other Chinese groups: it lies between M of the Total Chinese and MM of the Manchus and Koreans. Whence it might be supposed that this phenomenon is due to the influence of the Manchus and Koreans over northern Chinese group. Their stature is always higher than that of other ethnical group of this part of Asia, which can be seen in the table below:

TABLE III.

Groups	M	$\sigma$	V
Mongols ... ..	1630	...	...
Tungus of Uralga ...	1620	59.36	3.660
Tungus of Barguzin ...	1591	53.72	3.376
Dahurs ... ..	1643	...	...

*Note on the Table III.*

The group of Mongols is not the Mongols Proper, but the northern branch, who live in Transbaikal and are known as Buriats. The anthropological data concerning this Mongol group I have taken from a study of Dr. Talko—Hryniewicz.

## §7. Length of the Arm.

TABLE IV.

Groups	N	Max.	Min.	M
Chinese of Shantung ...	181	844	661	730.6
Chinese of Chihli ...	111	826	621	730.0
Chinese of Manchuria ...	92	808	641	724.8
Total Chinese ...	386	844	621	728.7
Manchus ...	76	822	622	706.7
Koreans ...	137	805	645	715.4

*Note on the Table IV.*

NN, in comparison with Table II, vary because some measurements I must exclude or do not take. I have excluded all which I could not read exactly and I have not measured the persons who have physical infirmities; I have also omitted some measurements, because of the technical difficulties, as for example very cold room where I was obliged to operate and so on.

This table indicates almost the same type of variations of MM as in the preceding table II, but among the Koreans the arm is relatively longer than among the Manchus. This is clearly exhibited in the table of the relative length of the arm. The variations of MM of the length of the arm among the Chinese groups are quite insignificant.

## §8. Length of the Upperarm, Forearm and Hand.

TABLE V.

Groups	Upperarm				Forearm				Hand			
	N	Max.	Min.	M	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ..	181	395	269	310.6	182	262	192	236.8	181	221	169	189.5
Chinese of Chihli ...	108	349	275	307.4	104	266	196	236.2	104	253	151	186.5
Chinese of Manchuria..	87	345	266	308.2	87	267	197	235.2	87	227	158	183.5
Total Chinese ...	376	395	266	309.1	373	267	192	236.1	372	253	151	187.3
Manchus ...	75	366	254	294.4	75	288	185	231.0	75	222	158	181.4
Koreans ...	129	345	269	300.6	129	283	195	231.2	129	219	115	183.6

In this table may be seen the same type of variations of MM as in the preceding tables with the exception of MM of the upperarm which slightly differs from it. However, the differences or MM are in all the cases insignificant.

## §9. Length of the Leg and Thigh and Height of the Knee-joint.

TABLE VI.

Groups	Leg				Thigh				Height of knee joint			
	N	Max.	Min.	M	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung..	185	970	760	854.0	184	474	313	390.3	184	540	394	463.9
Chinese of Chihli ..	112	980	777	862.0	112	484	327	389.3	112	541	417	471.6
Chinese of Manchuria..	94	942	747	842.9	94	449	303	383.1	94	548	393	459.4
Total Chinese ..	391	980	747	853.6	390	484	303	388.3	390	548	393	465.1
Manchus ..	55	916	783	832.0	54	432	333	374.7	54	507	410	456.3
Koreans ..	141	905	741	819.5	141	436	317	378.8	140	495	367	440.5

The differences of MM among the groups are very accentuated in the length of the leg and height of the knee-joint, whence it might be deduced that the length of the leg is due to the variations of the lower part of the leg. Furthermore, the height of the foot does not vary because of the anatomical construction of the leg, and the variations of the height of the knee-joint can be explained by the variability of the tibia. It is quite evident that the variations of MM have the same regularity as in Table II.

Thus in almost all the cases the length of the limbs correlates with the stature. From this standpoint the Chinese groups, the Manchus and the Koreans do not essentially differ. The further tables of the relative measurements will give the evidence of this.

## §10. Length of the Trunk.

TABLE VII.

Groups	N	Max.	Min	M
Chinese of Shantung ...	178	652	488	563.5
Chinese of Chihli ...	110	631	510	572.9
Chinese of Manchuria ...	92	650	498	571.7
Total Chinese ...	380	652	488	568.2
Manchus ...	47	591	467	547.3
Koreans ...	140	625	485	553.5

The regularity of the variations of MM in the groups which was observed in the preceding exposition cannot be discovered for the length of the trunk. MM of the Chinese of Chihli and Manchuria are "opposite," relatively to M of Total Chinese, to M of Chinese of Shantung and to MM of the Manchus and Koreans. At the same time they are much lower than M of Total Chinese. From Table II it is seen that MM of the stature of the same groups have another set of relations, but the variations of MM of the trunk, though more significant than those of the stature, show a variation in inverse order.

*Conclusion.* MM of the limbs correlates with the stature, the length of the leg is the principal cause of the variation of MM of the stature. The length of the trunk does not correlate with the stature,

# §11. Length and Height of the Head.

TABLE VIII.

Groups	Length				Height			
	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ...	185	205	172	188.27	180	156	116	134.10
Chinese of Chihli ...	113	200	168	186.90	113	154	121	135.44
Chinese of Manchuria ...	96	203	163	183.57	94	149	120	133.64
Total Chinese ...	333	205	163	186.73	337	156	116	134.38
Manchus ...	81	194	170	181.94	76	153	119	132.64
Koreans ...	141	200	165	183.93	137	152	118	134.50

This table shows the differences of MM of the head-length to be very great. M of the head-length for Total Chinese is lower than M of Shantung Chinese but it is very close to M of Chihli Chinese and is higher than MM of the Manchus and Koreans.

M of Koreans is very close to M of Manchurian Chinese who, perhaps, were influenced by Koreans. The head-length correlates with the stature and the other measurements already listed excepting those of the trunk.

Among other ethnical groups of this part of Asia MM of the head-length vary considerably. For example, the Tungus of Barguzin, the abbreviation for the Tungus of Barguzin and Nerchinsk Districts of the Transbaikalian Governments ( $M=194.18$ ), the Tungus of the Yakutsk Government ( $M=192$ ,—by Mr. J. J. Mainoff) have heads longer than the Chinese, but the Mongols (Buriats by Dr. Talko-Hryniewicz,  $M=187$ ) and the Mongolized Tungus of Uralga ( $M=186.05$ ) have about the same head-length as the Chinese.

The differences of MM of the height of the head among the Chinese show correlation between the height of the head and the stature but the Koreans exhibit some peculiar characteristics, their M of the height of the head is relatively greater than in the other groups. As regards the correlation of these measurements in general, the evidence concerning other ethnical groups proves that the height of the head sometimes can characterize an anthropological type. For example, the Mongols have very low head ( $M=127$ ) and influence the Tungus of Uralga ( $M=134.6$ ).<sup>1</sup> At the same time the Tungus of Barguzin in spite of their small stature ( $M=1598.4$ ) have about the same height of the head as the Chinese ( $M=134.50$ ). The Dahurs have the head relatively lower ( $M=133.20$ ) than the Chinese.

1. A group of these Tungus has the height of the head still lower ( $M=126.9$ ).

## §12. Maximum Breadth of the Head.

TABLE IX.

Groups	N	Max.	Min.	M
Chinese of Shantung ... ..	184	162	135	147.68
Chinese of Chihli ... ..	113	161	138	149.21
Chinese of Manchuria ... ..	96	170	137	153.71
Total Chinese ... ..	393	170	135	149.55
Manchus ... ..	80	161	143	151.31
Koreans ... ..	141	166	143	153.72

This table shows the same regularity of the variations of MM of head-breadth, but in an inverse order. In this measurement the Chinese of Manchuria are very close to the Koreans. It is interesting also to note that the Mongols ( $M=160$ ) and the Mongolized Tungus ( $M=157.58$ ), as well as the Tungus of Barguzin ( $M=158.14$ ) have broad heads similar to the Chinese of Manchuria. Hence might be supposed an influence of these groups over the northern Chinese. Though M of the head-breadth of the Manchus is lower than M of the Chinese of Manchuria the form of the head of the Manchus is the same, but the Manchus differ from this group of the Chinese by the smaller size of their heads in general. This gives some right to suppose that the Manchus are always very close to the other groups of this region. The Dahurs have the head-breadth ( $M=149.86$ ) about the same as the Chinese of Chihli, but the form of the head is closer to that of Manchus.

## §13. Maximum Interzygomatic Breadth and Minimum Frontal Breadth.

TABLE X.

Groups	Interzygomatic				Frontal			
	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ... ..	184	153	125	140.77	184	119	95	104.81
Chinese of Chihli ... ..	113	155	126	140.13	114	119	92	104.49
Chinese of Manchuria ... ..	96	155	130	142.14	96	116	96	105.79
Total Chinese ... ..	393	155	125	141.09	394	119	92	104.96
Manchus ... ..	79	150	131	140.28	80	118	97	105.35
Koreans ... ..	141	157	130	143.76	141	120	95	106.30

The same regularity of the variations of MM can be observed in this table. This is quite natural, because these diameters must correlate with the head-breadth; but the variations are always less significant than in the case of the breadth of the head. The variations of MM of the frontal diameter are more insignificant than those of the

interzygomatic breadth. These diameters are more developed among the Chinese of Manchuria, which can be explained by the influence of their neighbours—the Koreans. But the Manchus have M lower than the Chinese of Manchuria; they have generally a head of smaller size. Other ethnical groups of this part of Asia have diameters higher than the Chinese. The Mongols ( $M=153$ ), the Tungus of Urulga ( $M=146.8$ ), the Tungus of Barguzin ( $M=147.72$ ) have MM of interzygomatic breadth higher than the Koreans.<sup>1</sup> But the Dahurs are quite close ( $M=140.01$ ) to the Manchus. MM of the frontal diameter show the same type of variations (the Mongols— $M=112$ ; the Tungus of Urulga,— $M=108.4$ ; the Tungus of Barguzin,— $M=105.77$ ; the Dahurs,— $M=105.24$ ). Thus MM of these diameters of the Chinese of Manchuria relatively to the Chinese of China Proper are higher. This is to be explained by the influence of the Koreans and other ethnical groups of this part of Asia.

#### §14. Gonial Breadth.

TABLE XI.

Groups	N	Max.	Min.	M
Chinese of Shantung ...	185	125	94	109.28
Chinese of Chihli ...	114	125	96	109.18
Chinese of Manchuria ...	96	122	95	109.56
Total Chinese ...	395	125	94	109.32
Manchus ...	80	130	97	110.47
Koreans ...	140	128	99	112.48

Here the insignificant variation of MM does not give any materials for comparison. MM of the gonial breadth of other ethnical groups exceed MM of the Chinese (the Tungus of Urulga— $M=112.3$ ; the Tungus of Barguzin— $M=111.18$ ; the Dahurs— $M=110.53$ ; and the Mongols— $M=118$ .).

#### §15. Physiognomical and Anatomical Length of the Face and Height of the Forehead.

TABLE XII.

Groups	Physiognomical L.				Anatomical L.				Height of Forehead			
	N	Max.	Min.	M	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ...	184	215	169	191.64	184	134	98	117.72	183	93	59	47.07
Chinese of Chihli ...	112	212	173	192.76	113	135	105	117.78	112	88	58	76.09
Chinese of Manchuria ...	96	219	176	191.41	96	132	106	117.85	96	90	58	73.68
Total Chinese ...	392	219	169	191.90	393	135	98	117.77	391	93	58	74.30
Manchus ...	79	202	170	188.29	80	132	104	117.67	80	82	56	70.17
Koreans ...	141	219	174	194.67	141	136	103	117.16	141	92	62	77.51

1. It is interesting to note that the half-bred (Tungus and Russians) have the interzygomatic diameter ( $M=141.5$ ) and the frontal diameter ( $M=103.3$ ) lower than the pure Tungus.



In this table may be observed very insignificant variations of MM of the physiognomical length of the face and no variations of MM of the anatomical length of the face, but very accentuated variations of the height of the forehead, correlating with the variations of the physiognomical length of the face, whence it may be concluded that the differences of the length of the face are due to the difference in the development of the foremost part of the crania. The influence of the Manchus over the Chinese of Manchuria, it seems to me, is higher than that of the Koreans. The following table will show the comparative materials for other ethnical groups.

TABLE XIII.

Groups	Physion. L.	Anatom. L.	Forehead
Tungus of Urulga ...	187.7	120.8	66.9
Tungus of Barguzin ...	189.05	116.44	72.61
Dahurs ... ..	193.37	118.06	75.45
Mongols ... ..	192.	...	...

From this table and Table XII it can be shown that the Tungus influenced the Manchus and these on the other hand influenced the Chinese, because MM of the Chinese of Manchuria are lower than MM of other Chinese groups. It is interesting to note that M of the Mongols is about the same as M of Chinese of Chihli, but lower than M of the Koreans.

#### §16. Length and Breadth of the Nose.

TABLE XIV.

Groups	Length				Breadth			
	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ...	183	50	34	41.57	185	47	29	37.12
Chinese of Chihli ...	113	51	36	41.73	113	42	32	37.31
Chinese of Manchuria ...	96	51	34	42.39	95	44	31	37.02
Total Chinese ... ..	391	51	34	41.81	393	47	29	37.14
Manchus ... ..	81	53	37	45.38	81	45	33	37.86
Koreans ... ..	141	54	31	40.79	141	43	31	37.33

This table shows the same type of variations of MM, but MM do not vary greatly. It might be noted that the Koreans have M of the length of the nose lower than the Chinese groups and the Manchus' M is higher than the highest M of the Chinese. The variations of MM of the breadth of the nose are quite insignificant. The table of the nasal index will better illustrate this character, therefore I shall now abstain from further deductions. The measurements taken with other ethnic group are as follows :

Groups	Length	Breadth
Tungus of Urulga ...	48.89	39.06
Tungus of Barguzin ...	45.50	39.29
Dahurs ... ..	42.65	36.04

## §17. Length and Breadth of the Ear.

TABLE XV.

Groups	Length				Breadth			
	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ...	183	72	52	63.73	183	39	27	32.52
Chinese of Chihli ...	113	76	52	64.66	113	38	27	32.50
Chinese of Manchuria ...	96	78	54	63.64	96	40	28	32.74
Total Chinese ... ..	392	78	52	63.98	392	40	27	32.55
Manchus ... ..	81	77	54	64.95	81	40	25	33.15
Koreans ... ..	141	76	50	63.97	141	36	26	30.74

Very insignificant variations of MM do not permit of any reliable conclusions. Besides my own data there is no evidence for other ethnic groups, but the Dahurs, who have M of the length of the ear ( $M=66.76$ ) higher than that of Chinese groups and M of the breadth of the ear very close ( $M=32.92$ ) to M of the Chinese.

## §18. External and Internal Interocular Breadth and Ocular Length.

TABLE XVI.

Groups	Extern. interoc. Br.				Intern. interoc. Br.				Ocular L.			
	N	Max.	Min.	M	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ..	184	108	85	95.27	184	40	27	34.29	185	35.0	25.0	30.49
Chinese of Chihli ...	113	106	80	96.13	113	41	27	34.29	113	36.5	25.5	30.92
Chinese of Manchuria.	95	104	87	96.09	95	40	26	33.61	95	36.5	28.5	31.24
Total Chinese ... ..	392	108	80	95.70	392	41	26	34.12	393	39.5	25.0	30.79
Manchus ... ..	81	106	80	93.46	81	41	28	34.10	81	35.0	25.0	29.68
Koreans ... ..	142	105	82	95.29	142	43	28	33.94	142	34.5	27.0	30.67

This table shows certain peculiarities for the Chinese of Manchuria. They have MM of the external breadth and ocular length a little higher than those of other Chinese groups while the internal breadth is lower. This correlates with M of interzygomatic breadth and the narrow nose of this group. Other ethnic groups of this area show very broad variations as follows :

TABLE XVII.

Groups	Extern. interoc.	Intern. interoc.	Ocular
Tungus of Urulga ...	92.8	34.0	29.27
Tungus of Barguzin ...	99.38	36.95	31.09
Dahurs ... ..	91.43	32.78	29.33

## §19. Generalizations Concerning the Absolute Measurements.

From the preceding exposition the following conclusions may be deduced.

1. The variations (the limits of the maximums and minimums) of the measurements among the Chinese generally are more significant than among the Koreans and Manchus. The coefficient of variation of the Chinese is higher than that of Manchus and Koreans. It would appear, therefore, that the Chinese are not homogeneous and that the Koreans are more homogeneous than Manchus.

2. The stature and head-breadth correlate with all other measurements except those of the nose and ear and the length of the face.

3. The Chinese of Manchuria on the basis of MM are closer to the Manchus and Koreans than to the other Chinese groups while MM of the Manchus in many cases are very close to MM of other ethnical groups of this area.

## RELATIVE MEASUREMENTS.

## §20. Length of the Arm.

TABLE XVIII.

Groups	N	Max.	Min.	M
Chinese of Shantung ...	181	49.01	39.06	43.83
Chinese of Chihli ...	111	48.26	39.69	43.52
Chinese of Manchuria ...	92	49.54	39.37	43.86
Total Chinese ... ..	384	49.54	39.06	43.75
Manchus ... ..	75	49.53	39.34	43.28
Koreans ... ..	134	48.43	40.47	43.94

This table shows such insignificant variations of MM that I have been led to appreciate relative homogeneity between the Chinese and other groups on the basis of the relative length of the arm. In fact, in the preceding subdivision of the present chapter, I drew conclusions based on the probable correlation of these measurements with stature.

This table confirms exactly those conclusions. However, this character, in comparison with other ethnical groups of this area, shows some difference of MM, as may be seen from the following data. The Mongols have M of the relative length of the arm higher— $M=47.39$  and other groups as follows: the Tungus of Urulga— $M=45.38$ , the Tungus of Barguzin— $M=44.59$  and the Dahurs— $M=43.75$ . Thus no Mongolian influence over the Chinese, Manchus or Korean can be observed from these data. In my study on the Anthropology of Nomad Tungus of Urulga I came to the conclusion that this group is influenced by the Mongols, who are characterized by a very high M of the relative length of the arm. Therefore, I concluded that the original length of the arm of the Tungus must be less than that of the Nomad Tungus of Urulga. This supposition has been confirmed by the later data,—the measurements of the Tungus of Barguzin.

## §21. Length of the Upperarm, Forearm and Hand.

TABLE XIX.

Groups	Upperarm				Forearm				Hand			
	N	Max.	Min.	M	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ..	181	48.64	39.41	42.29	181	35.22	26.48	32.42	181	29.50	22.68	25.33
Chinese of Chihli ...	108	45.56	37.53	42.0	104	34.10	28.89	32.35	104	30.63	23.02	25.48
Chinese of Manchuria.	87	44.82	38.96	42.39	87	35.32	29.14	32.42	87	28.96	22.90	25.31
Total Chinese ...	376	48.64	37.53	42.26	372	35.32	26.48	32.37	372	30.63	22.88	25.37
Manchus ...	75	46.35	38.42	41.62	75	37.73	27.87	32.68	75	29.92	22.80	25.75
Koreans ...	129	44.44	38.74	42.01	129	35.01	28.99	32.31	129	28.66	22.90	25.67

This table shows some new data confirming the above supposition on the correlation of these measurements with the stature. It is interesting to note that Manchus have M of the upperarm a little lower than MM of the forearm and hand in comparison with MM of the Chinese. This phenomenon can be explained by the Tungus influence, as is seen in the table below :

Groups	Relat. length of upperarm
Mongols ... ..	43.59
Tungus of U    ga ...	41.74
Tungus of Barguzin ...	41.49
Dahurs ... ..	41.82

The length of the upper arm of the Chinese is higher than that of Manchus and lower than that of Mongols.

## §22. Length of the Leg and Trunk.

TABLE XX.

Groups	Leg				Trunk			
	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ...	185	57.87	46.68	51.30	178	38.47	28.62	33.86
Chinese of Chihli ...	112	55.51	47.73	51.36	110	37.55	29.88	34.11
Chinese of Manchuria ...	94	54.45	47.50	50.96	92	38.09	28.98	34.65
Total Chinese ...	391	57.87	46.68	51.24	380	38.47	28.62	34.12
Manchus ...	54	56.24	49.16	51.58	47	36.55	28.86	33.84
Koreans ...	141	53.41	46.16	50.30	140	37.77	29.94	33.98

This table shows very insignificant variations of MM. I have no data for comparison but the Dahurs, who have M of the leg ( $M=52.11$ ) higher than the Chinese and M of trunk lower ( $M=32.99$ ). Because of the lack of data I shall refrain from further generalizations.

Thus the Table XVIII, XIX and XX do not show any new facts which can disturb the preceding conclusions concerning the general type of the variations of MM for different groups and measurements. It might be noted that the relative measurements do not exhibit significant variations (the limits of the maximums and minimums); that MM are relatively stable, whence it may be supposed that the anthropological types, composing the ethnical groups of the present study, do not differ one from other in regard to these measurements; and that the non-Chinese groups,—the Mongols and Tungus,—differ essentially from the Chinese, Manchus and Koreans. Therefore, these measurements serve in a limited way as a method of differentiation of anthropological types.

## §23. Cephalic Index.

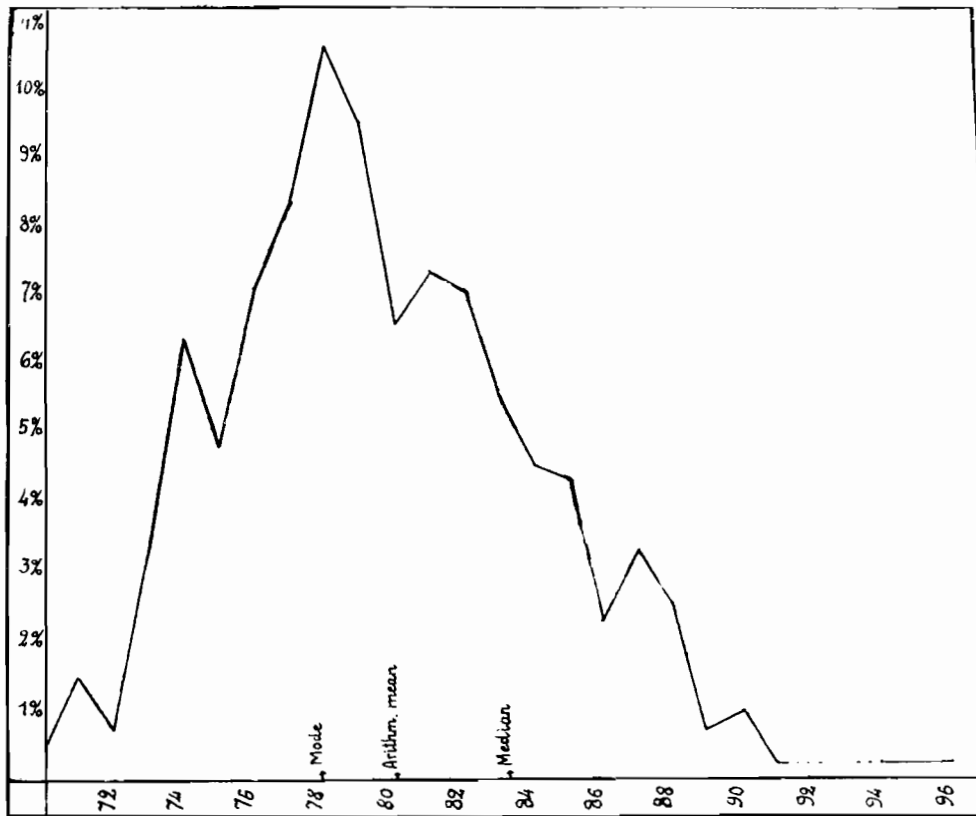
TABLE XXI.

Ceph. Index	N	%	Ceph. Index	N	%
70	2	0.51	84	18	4.59
71	6	1.53	85	17	4.34
72	3	0.77	86	9	2.30
73	13	3.32	87	13	3.32
74	25	6.38	88	10	2.55
75	19	4.85	89	3	0.77
76	28	7.14	90	4	1.02
77	33	8.42	91	1	0.25
78	42	10.71	92	...	...
79	38	9.69	93	...	...
80	26	6.63	94	1	0.25
81	29	7.40	95	1	0.25
82	28	7.14	96	1	0.25
83	22	5.61	...	392	100.00

The individual variations of the cephalic index are within the limits from 70.44 to 96.43. M of the cephalic index of Total Chinese = 80.17. The following curve of the dispersion, taken with difference of one degree, gives a graphical expression of the variations of the cephalic index.

FIGURE II.  
CEPHALIC INDEX.

Percentage of Dispersion.



The maximum of the cases falls on the range of 78 which is 2 degrees lower than M. The group of individuals who have low cephalic index in the present series is more significant, whence the incidental character of the group with high cephalic index can be deduced. The standard deviation,  $\sigma=4.507$ , and the coefficient of variation,  $V=5.604$ , are higher than in the case of the stature ( $V=3.67$ ).

The variations of MM of the cephalic index will be as follows:

TABLE XXII.

Groups	N	Max.	Min.	M	$\sigma$	V
Chinese of Shantung ...	184	89.53	70.44	78.51	3.744	4.768
Chinese of Chihli...	113	91.07	71.13	79.92	3.742	4.682
Chinese of Manchuria ...	96	96.43	73.98	83.64	4.489	5.366
Total Chinese ...	393	96.43	70.44	80.17	4.507	5.604
Manchus ..	80	89.94	76.12	83.52	2.652	3.056
Koreans ...	141	93.10	74.48	83.69	4.154	4.963

This table shows very great differences of MM between the Chinese of China proper, the Chinese of Manchuria and the Manchus and Koreans. The high cephalic index of the Chinese of Manchuria can be explained by the influence of their neighbours—the Manchus and Koreans. Taking into consideration the individual variations of the cephalic index among the Koreans, i.e., from 74.40 to 93.10, and of the Manchus, i.e., from 76.12 to 89.94 and of the Chinese of Manchuria, i.e. from 73.98 to 96.43, I consider the influence of the Koreans to be probably greater than that of the Manchus. Some hint as to the amalgamated character of the Chinese of Manchuria can be seen from the standard deviation and the coefficient of variation of this Chinese group. This latter group has the highest standard deviation, which influenced the numerical value of the standard deviation of Total Chinese series. Further, the large variations of the individual cephalic indices among the Chinese of Shantung and Chihli show that these groups are not homogeneous at all. In the following exposition this supposition will be supported by other proofs,

The cephalic index of other ethnical groups of the area under consideration is very instructive and is as follow:

TABLE XXIII.

Groups	M	$\sigma$	V
Tungus of Urulga ...	84.93	3.925	4.621
Tungus of Barguzin ...	81.10	2.576	3.176
Mongols (Buriats) ...	85.66	...	...
Dahurs ...	81.41	...	...

The above table needs to be supplemented by further data. Some Mongols, as for example the Buriats of the Irkutsk Government, have a cephalic index higher than the Mongols measured by Dr. Talko-Hryniewicz. The Mongols of Mongolia Proper have

a cephalic index a little lower, but their neighbours, the Kirghiz, by their M are very close to the Mongols of Dr. Talko-Hryniewicz. The Gilyaks have M of the cephalic index about the same as the Tungus of Urulga.<sup>1</sup> Some Tungus groups have a cephalic index lower than the Tungus of Barguzin, for example, the Tungus of the Yakutsk Government and of the region of the Amur River.

Thus in this part of Asia all forms of the head are to be found. The cephalic index of different ethnical groups varies from 78 (M of the Chinese of Shantung) to 88 (M of the Buriats of Irkutsk Government). By the side of the real brachicephals can be observed moderate dolichocephals,—for example, the Koreans and Chinese of Shantung. It seems to me that no regularity can be observed in the distribution of the cephalic index in the latter this part of Asia. Moderate brachicephaly alternates with moderate dolichocephaly, and alternates with super-brachicephaly. Therefore I think that a use of the pure geographical method cannot discover the real meaning of such characteristics among Asiatics.

## §24. Indices of the Height of the Head on the Length and on the Breadth of the Head.

TABLE XXIV.

Groups	Height ÷ Length				Height ÷ Breadth			
	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ...	180	83.89	62.50	71.17	180	100.00	77.56	90.82
Chinese of Chihli ...	112	84.15	65.41	72.53	112	102.74	81.17	90.81
Chinese of Manchuria ...	94	82.25	65.76	72.93	94	98.01	75.93	87.16
Total Chinese ...	386	84.15	62.50	72.41	386	102.74	75.93	89.92
Manchus ...	76	83.15	63.33	72.86	76	98.71	78.48	87.43
Koreans ...	137	82.86	65.75	73.16	137	97.95	77.36	87.67

In this table can be observed insignificant variations of MM of the first index and more significant variations of MM of the second, which are always less variable than MM of the cephalic index. The explanation of this phenomenon is as follows: as already shown, the absolute measurements in general correlate with the stature, particularly, the height of the head correlates with the stature. At the same time, as I have shown, the variations of MM of the cephalic index are due to the variations of the anthropological types which are included in Chinese. Thus, on the one hand, the influence of the stature on the height of the head and, on the other hand, the influence of the anthropological types combine in these indices and confuse the results. The more significant variability of the second index is due to the more variable head-breadth (See §13). Nevertheless, from the above mentioned causes, the type of variations of MM is the same as in the preceding cases. The peculiar character of the Chinese of Manchuria may be explained by the influence of the Manchus and Koreans.

1. According to the data of Mr. L. J. Sternberg.



a cephalic index a little lower, but their neighbours, the Kirghiz, by their M are very close to the Mongols of Dr. Talko-Hryniewicz. The Gilyaks have M of the cephalic index about the same as the Tungus of Urulga.<sup>1</sup> Some Tungus groups have a cephalic index lower than the Tungus of Barguzin, for example, the Tungus of the Yakutsk Government and of the region of the Amur River.

Thus in this part of Asia all forms of the head are to be found. The cephalic index of different ethnical groups varies from 78 (M of the Chinese of Shantung) to 88 (M of the Buriats of Irkutsk Government). By the side of the real brachicephals can be observed moderate dolichocephals,—for example, the Koreans and Chinese of Shantung. It seems to me that no regularity can be observed in the distribution of the cephalic index in the latter this part of Asia. Moderate brachicephaly alternates with moderate dolichocephaly, and alternates with super-brachicephaly. Therefore I think that a use of the pure geographical method cannot discover the real meaning of such characteristics among Asiatics.

#### §24. Indices of the Height of the Head on the Length and on the Breadth of the Head.

TABLE XXIV.

Groups	Height ÷ Length				Height ÷ Breadth			
	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ...	180	83.89	62.50	71.17	180	100.00	77.56	90.82
Chinese of Chihli ...	112	84.15	65.41	72.53	112	102.74	81.17	90.81
Chinese of Manchuria ...	94	82.25	65.76	72.93	94	98.01	75.93	87.16
Total Chinese ...	386	84.15	62.50	72.41	386	102.74	75.93	89.92
Manchus ...	76	83.15	63.33	72.86	76	98.71	78.48	87.43
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1. According to the data of Mr. L. J. Sternberg.

The evidence of other ethnical groups, as it might be seen from Table XXV, support the above supposition.

TABLE XXV.

Groups	Height ÷ Length	Height ÷ Breadth
Tungus of Urulga ...	72.59	85.19
Tungus of Barguzin ...	69.77	85.51
Mongols (Buriats) ...	67.91	79.38
Dahurs ... ..	72.37	88.73

It is very significant that the Tungus differ characteristically from other ethnical groups by their relatively long head. Therefore, it might be supposed that the variations of MM of the Chinese, Manchus and Koreans are due to the non-Tungus influence and probably to some aboriginals of Manchuria.

## §25. Frontal Index.

FIGURE III. See Page 29.

TABLE XXVI.

Frontal Index	N	%	Frontal Index	N	%	Frontal Index	N	%
50	2	0.51	64	15	3.86	78	10	2.57
51	...	...	65	10	2.57	79	10	2.57
52	...	...	66	19	4.88	80	15	3.86
53	1	0.26	67	24	6.17	81	8	2.06
54	4	1.03	68	17	4.37	82	2	0.51
55	2	0.51	69	17	4.37	83	4	1.03
56	2	0.51	70	25	6.43	84	6	1.54
57	1	0.26	71	20	5.14	85	1	0.26
58	6	1.54	72	29	7.49	86	2	0.51
59	7	1.80	73	29	7.49	87	2	0.51
60	6	1.54	74	16	4.12	88	1	0.26
61	8	2.06	75	19	4.88	Total	387	100.00
62	17	4.37	76	14	3.60			
63	8	2.06	77	10	2.57			

FIGURE III.  
FRONTAL INDEX

Percentage of Dispersion.

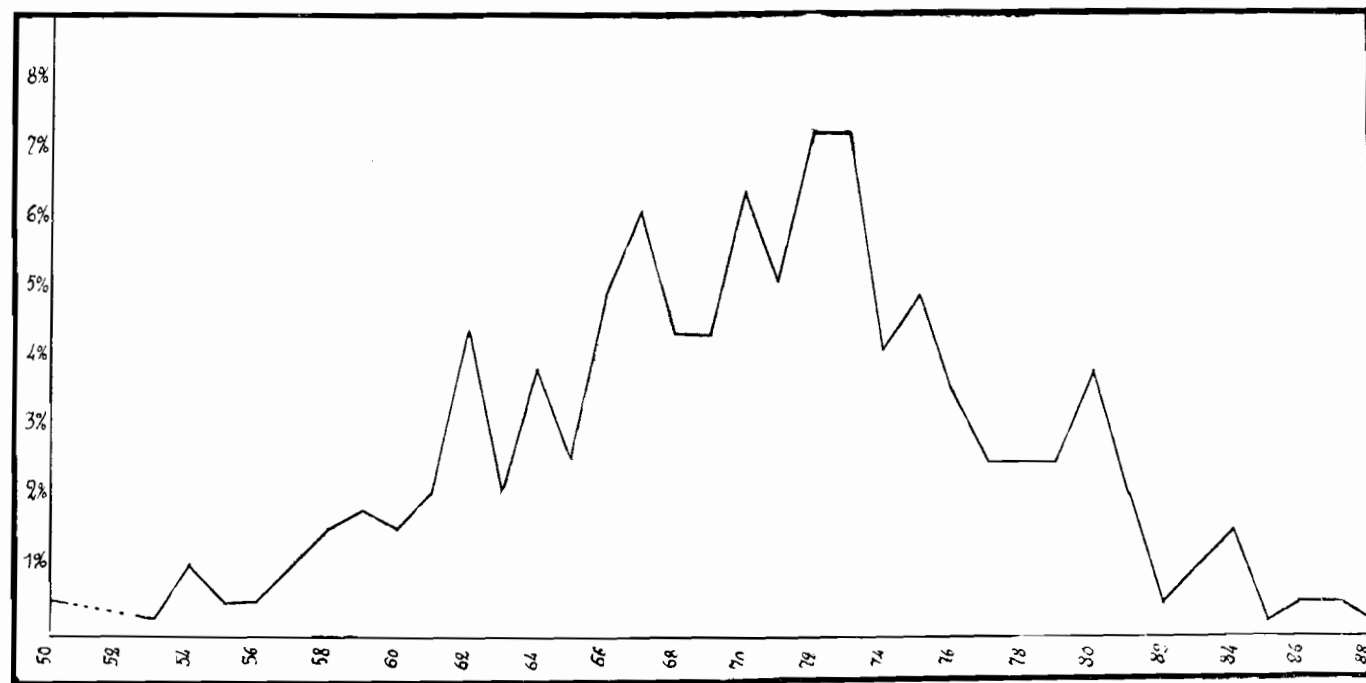


TABLE XXVII.

Groups	N	Max.	Min.	M	$\sigma$	V
Chinese of Shantung ...	183	88.12	54.13	70.77	6.855	9.686
Chinese of Chihli ...	113	87.12	50.91	71.97	6.295	8.747
Chinese Manchuria ...	96	84.90	53.57	69.78	7.110	10.189
Total Chinese ...	392	88.12	50.91	70.62	6.948	9.83
Koreans ...	77	82.83	50.90	67.08	6.556	9.742
Manchus ...	140	91.67	57.41	72.87	6.742	9.252

This table shows that the standard deviations are very high, M of the Chinese of Manchuria is lower than that of other Chinese groups and it is closer to M of the Manchus. In §15 I have noted that the high M of the height of the forehead is characteristic of the Chinese of Chihli; in the present table it may be seen that this group has the highest M of the frontal index, which can be correlated with the height of the head, as can be seen from the Table XXVIII.

TABLE XXVIII.

Groups	Height Head	Height Forehead	Frontal Index
Chinese of Shantung ...	134.10	74.07	70.77
Chinese of Chihli ...	135.44	76.09	71.97
Chinese of Manchuria ...	133.64	73.68	69.78
Total Chinese ...	134.38	74.30	70.62
Manchus ...	132.64	70.17	67.08

The evidences from other ethnical groups of this area show some distinguishing characteristics of the Dahurs (M=79.43) and an explanation at the same time of the very low M of the Manchus which suggest the influence of the Tungus (the Tungus of Barguzin, M=68.11; the Tungus of Uralga, M=61.80).

## §26. Facial Indices (Physiognomical and Anatomical).

TABLE XXIX.

Groups	Physiognomical				Anatomical			
	N	Max.	Min.	M	N	Max.	Min.	M
Chinese of Shantung ...	182	84.21	62.33	73.45	183	97.04	71.72	83.99
Chinese of Chihli ...	111	83.80	54.45	73.01	111	97.67	73.29	83.78
Chinese of Manchuria ...	96	86.11	63.79	74.16	96	95.56	70.47	82.96
Total Chinese ...	389	86.11	54.45	73.55	390	97.67	70.47	83.67
Manchus ...	78	84.71	66.83	74.57	79	95.56	74.31	83.87
Koreans ...	140	83.76	67.16	73.96	140	94.20	69.48	81.55

Though these indices do not show the significant differences of MM, nevertheless they do distinguish the particular character of the Chinese of Manchuria. This particularity may be explained by the influence of the Manchus and Koreans. In general the variations of MM of the facial indices do not show great differences.

The comparison with the characteristics of other ethnical groups do not furnish any useful data for the present study.

TABLE XXX.

Groups	Physiognomical	Anatomical
Tungus of Urulga ...	78.19	83.07
Tungus of Barguzin ...	78.77	78.90
Dahurs ... ..	72.40	84.38

In this table must be noted some peculiar character of the Dahurs who differ from other groups, also the peculiarity of the Tungus of Barguzin, who have the faces relatively more round but a low cephalic index.<sup>1</sup>

## §27. Gonial Index.

TABLE XXXI.

Groups	N	Max.	Min.	M
Chinese of Shantung ...	184	85.82	64.83	77.87
Chinese of Chihli ...	113	88.03	68.57	77.54
Chinese of Manchuria ...	95	86.92	67.38	77.13
Total Chinese ... ..	393	88.03	64.83	77.59
Manchus ... ..	80	88.65	68.80	78.66
Koreans ... ..	139	88.32	67.57	78.10

This table shows very insignificant variations of MM among the Chinese groups. Therefore the gonial index cannot taken as the characteristic for differentiation of the anthropological elements composing the Chinese.

Among other ethnical groups MM of this index are more variable: M is relatively low among the Tungus of Barguzin (M=75.41) and high among the Dahurs (M=78.92). The Tungus of Urulga (M=76.71) and Mongols (M=77.12) show intermediate characters of this index. In my study on the Anthropology of the Tungus of Barguzin I have concluded that the low gonial index is characteristic for these Tungus.

1. Some anthropologists presume a correlation between the cephalic index and the facial index, but it does not follow from these data. This character is peculiar to the skulls of Cro-Magnon type; it was also observed among the Eskimos, Chukchis and so on.

## § 28. Nasal Index.

TABLE XXXII.

Groups	N	Max.	Min.	M	$\sigma$	V
Chinese of Shantung ...	183	118.18	69.05	89.86	10.263	11.421
Chinese of Chihli ...	113	110.80	70.83	90.02	9.191	12.005
Chinese of Manchuria ...	96	110.00	65.96	87.98	9.787	11.124
Total Chinese ...	392	118.18	65.96	89.45	8.860	9.91
Manchus ...	81	102.63	62.92	83.02	8.12	9.79
Koreans ...	141	125.81	64.00	92.49	11.63	12.57

This table is interesting solely because of the very high deviation connected with the excessive variability of this index. The regularity of the variations of MM of different groups is also sufficiently marked. The amplitude of the individual variations of nasal index lies approximately within the extreme limits of variation observed up to the present time among all known ethnical groups.

TABLE XXXIII.

Nasal Index	N	N <sup>1</sup>	%
65	1	2	0.51
66	1		
67	...	...	...
68	...	...	...
69	1	3	0.77
70	2		
71	1	6	1.53
72	5		
73	8	11	2.81
74	3		
75	8	22	5.61
76	14		
77	7	14	3.57
78	7		
79	17	24	6.12
80	7		
81	8	24	6.12
82	16		
83	9	24	6.12
84	15		
85	19	41	10.46
86	22		
87	16	31	7.91
88	15		
89	4	28	7.14
90	24		
Carried Forward			

1. Two ranges together.

Nasal Index	N	N	%
<i>Brought Forward</i>			
91	5	29	7.40
92	24		
93	9	15	3.83
94	6		
95	16	17	4.34
96	1		
97	21	21	5.36
98	...		
99	...	30	7.65
100	30		
101	...	19	4.85
102	19		
103	...	1	0.25
104	1		
105	15	15	3.83
106	...		
107	1	6	1.53
108	3		
109	1	4	1.04
110	3		
111	1	1	0.25
112	...		
113	2	2	0.51
114	...		
115	...	...	...
116	...		
117	1	2	0.51
118	1		
	392	392	100.00

FIGURE IV. See Page 34.

The peculiar character of the curve is due not only to the variability of this index, but also to the arithmetical results of calculation of these indices. In fact, the division of the breadth of the nose between 29 and 47 mm on the length between 34 and 51 mm does not give the index of 98, 99, 101, 103 and so on.

Some nasal indices pass beyond the limits of variation known up to the present time. The variability of these indices among the Manchus is much more moderate. The standard deviations and coefficients of variation are higher than in any other measurements. This evidence leads me to suppose that the present population of this area is composed of different types (from the point of view of nasal index) some of which are close to the limits of the possible variations of this measurement. At the same time it might be supposed that the type having very high nasal index is characteristically particular for the Koreans and Chinese of Shantung. Furthermore, the variations of MM differ greatly among the groups. The differences between MM of the Manchus and Koreans is 9.42 and MM of the Chinese groups lie within these limits.

MM of the nasal index of other ethnical groups of this area show some interesting distinctions, as seen from the Table XXXIV.

FIGURE IV.  
NASAL INDEX.

(One range—two units).

Percentage of Dispersion.

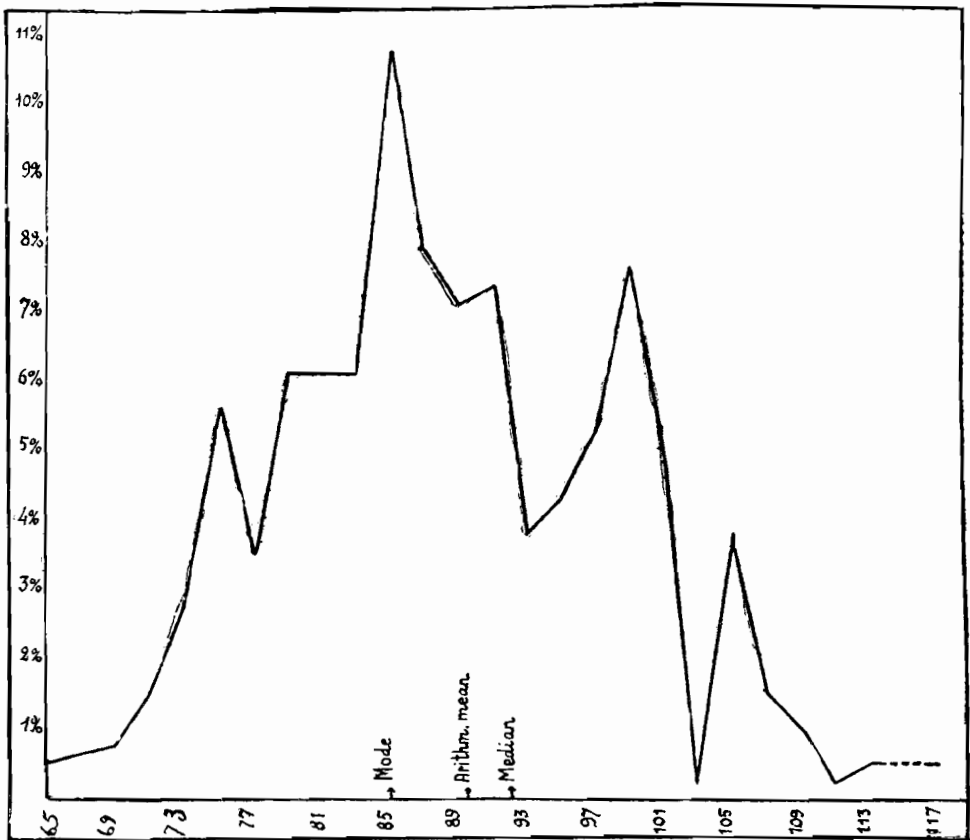




TABLE XXXIV.

Groups	Max.	Min.	M	$\sigma$	V
Tungus of Ugulga ...	90.70	64.00	79.32	6.96	8.77
Tungus of Barguzin ...	104.65	71.15	86.70	9.13	10.54
Dahurs ... ..	111.43	68.75	85.31	...	...

MM of these groups are lower than MM of the Chinese, but the variability of this measurement among the Tungus of Barguzin is as high as among the Chinese. Some evidences concerning the Mongols, who have relatively low nasal index, can explain the M of the nasal index of the Tungus of Ugulga (Mongolized Tungus) and their relatively low Maximum (90.70), whereas M of the Koreans higher still (92.49). From this it may be concluded that the influence of the type with characteristically high nasal index over the Tungus is weak and practically absent over the Tungus of Ugulga.

### §29. Auricular Index.

TABLE XXXV.

Groups	N	Max.	Min.	M
Chinese of Shantung ...	183	60.00	41.43	51.02
Chinese of Chihli ...	113	61.67	41.43	50.34
Chinese of Manchuria ...	96	61.90	42.31	51.64
Total Chinese ... ..	392	61.90	41.43	50.97
Manchus ... ..	81	61.67	39.73	51.32
Koreans ... ..	141	62.50	37.84	48.26

In this table MM show very insignificant differences. M of the Chinese of Manchuria is the highest and very close to M of the Manchus. The lack of evidence from other groups but the Dahurs ( $M=50.15$ ) prevents comparison. The comparative amplitude of individual variations of this index among the Koreans is worthy of note.

### §30. Some Notes on the Colour of the Skin, Eyes, and Hair and Some Other Physical Peculiarities.

I did not need to note the colour of the eyes among the Chinese and Koreans because of the relative homogeneity. The eyes are always dark except for a few cases that indicated Tungus influence. Registration of the colour of hair was practically impossible because the Chinese generally shave the face and very often the head also. In the cases when observation was possible I have noted some cases of light colour of the beard and dark colour of the hair, while black hair is, it seems to me, more characteristic for Chinese and Koreans. As regards the colour of skin, I could not classify it because I had no scale at the time of my investigations. Some remarks which I shall give below, are based on subjects not measured, but my observations during the measurements do

not differ from the observations made later with the scale of skin colour.<sup>1</sup> The colour of skin on the body is generally lighter than that of the face and parts of body influenced by the air and sunlight. The natural colour is very often changed, because of the use of opium and morphine turning the skin to a yellowish and greenish shade. The general opinion on the yellow colour of the "yellow race" I cannot confirm by my personal observations. The colour of the skin varies from light brown, just like the skin colour of the population of Southern Europe, to light pinkish so characteristic for the population of Siberia as well as for the "white race" of Northern Europe. Light colour is not so common among the working people but the rich people of Peking, Mukden and so on are so characteristically "white," that the assertion of the "yellow race" must be rejected. More than that, light brown skin colour is not observable among the Tungus, who are classified as of the "yellow race." The skin colour of the Korean is generally lighter than that of the Chinese.

The Chinese have no hair on the body and have very poor beards, though they have peculiar veneration for them. The Koreans have commonly beards of moderate development and sometimes the breast, arm and legs are also covered with long hair. It seems to me, that this peculiarity is more common among the Northern Koreans.<sup>2</sup> The colour of the hair of the Chinese of Manchuria is not so black; this might be explained by the influence of the Manchus among whom brown hair is very common. This phenomenon can be explained by the influence of the Tungus. Black hair can very seldom be observed among the Tungus. Among them, however, light brown and gray eyes are very common.

TABLE XXXVI.

Groups	Mong. eye	Absence of ear-lap	Forms of the nose				Tuberculus		Pentagonal form of scull.
			Straight	Aquiline	Concave	Flat <sup>3</sup>	Darwin.	Satyr.	
	%	%	%	%	%	%	N	N	N
Chinese of Shantung ...	11	37	40	21	39	30	1	...	3
Chinese of Chihli ...	21	33	29	33	38	34	2	...	2
Chinese of Manchuria...	16	30	34	36	30	34	...	..	3
Manchus ..	18	16	43	27	30	22	...	...	...
Koreans <sup>4</sup> ...	2	28	...	...	...	...	...	...	9

Considering this table to be clear enough I will abstain from unnecessary description of it. It must be noted that absence of the ear-lap is evidently more characteristic for the Chinese. The so called "Mongolian eye" (I have noted only very developed cases) is not characteristic for the Koreans, but it is more common among the Chinese of Chihli. This phenomenon is quite understandable because of the close vicinity of the

1. Scale of skin colour Prof. Luschan's made by Wanger.
2. This is characteristic for the Aino of the Sakhalien and Yezo Islands, also for some Gilyaks of the Amurland and Sahalien Island.
3. The percentage is taken from all forms of the nose (straight, aquiline and concave).
4. The forms of the nose and tuberculi are not registered.

Mongols. The tuberculi Darwinii and Satyri are very rare. There must be also noted the very interesting pentagonal form of the skull. This form was observed among the Gilyaks, Eskimos and prehistoric skulls of Cro-Magnon type, also among the Mongols, living in the vicinity of Lake Baikal. This form is more common among the Koreans than among the Chinese. I have not yet measured the Chinese from Southern China, but I can say that this form is very common among the Chinese seen in Shanghai, meanwhile this form is exceptional in Northern China, only 2%. I think that the observation of this form and the study of the geographical distribution of it in Asia may be very fruitful for further deductions. There is another peculiarity, which can be especially noted. In the series of the Chinese that have been measured I have observed two cases of very peculiar prominence of the os occipitalis. Such a development of this prominence seemed to me to be of traumatic origin and I have not measured these individuals. My observations on the Southern Chinese in Shanghai have shown that among these populations this is a very characteristic and common peculiarity, which, I think can be connected with some anthropological group, probably of non-Chinese origin.

### §31. Conclusions.

From the examination of the present chapter the following generalizations might be drawn.

1. The general conclusions concerning the absolute measurements can be applied to the relative measurements.
2. All relative measurements of the limbs and trunk show very moderate variability of MM and limited amplitude of the individual data.
3. The greatest part of the indices shows more intense variations of MM and large amplitude of the variations of the individual measurements.
4. The Koreans show that they are an amalgamated group. The influence of different anthropological types over the Chinese studied varies in different degree according to the general characteristics of these groups. Some influence of the local population over the Chinese of Manchuria can be discovered. At the same time the ethnical groups of Manchuria and their neighbours in Mongolia and Siberia are not homogenous, for they are amalgamated as are the Chinese themselves.

In the following chapters I shall try to discern some conclusion as to components of this amalgamated population ; to show their present distribution on the territory ; and to indicate the probable connection with certain ethnoses of this part of Asia. Further conclusions of the preceding exposition I shall give in the following chapters.

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1. The Koreans do not shave their heads, and this form could not be observed so easily, as among the Chinese, who shave the head, so that the observation of the head forms on the Chinese is very easy.