

The Analysis of Palmar Main Lines and Transversality of Mohammedans of Rajasthan

Harkishin Kumbnani

Introduction

During his visit to Baran (Rajasthan) in the month of April 1960, the Author had an opportunity of collecting the bilateral palmar dermatoglyphic material on the Mohammedans of Rajasthan from the Anjuman Muslim School.

Material and Methods

Ethnically the Mohammedans belong to the Mediterranean class, since their physical features are in conformity with the widely prevalent Mediterranean type in India, as described by Guha (Racial elements in the population) generally having average stature, lighter skin, prominent supraorbital ridges, long face and sunken nasal root. In the formation of nasal bridge they are rather unique, in the sense that they show a long convex bridge giving an appearance of a hook. Among Mohammedans two sects are found, namely Shia and Sunni. In this paper only the people of Sunni Sect will be considered.

The present series consists of 50 males and 50 females whose palmar prints are utilised in this paper to access the alignment of the palmar main lines with the help of conventionally accepted methods, as described by Cummins and Midlo (1943, p. 84-109).

Analysis

The analysis shows that there are 41 different main line formulae in the whole series and the percentage of dissimilarity is 20.5%. Females exceed in the number of formulae and show 32, while males exhibit only 26; hence the degree of dissimilarity is higher in the females (32.0%) than in the males (26.0%). Taking into consideration the right & left separately, it is observed that the left shows in all the columns more variability than the right. Hence, the degree of dissimilarity in the right of males is 30%, as compared to 38% in the right of females; while it is 38% in the left of males and 46% in the left of females. Females in general are more variable than males.

Tab. I. The Total No. of Different Main Line Formulae in the Mohammedan Series of 50 males & 50 females

		Males		Females		M+F	
		Right	Left	Right	Left	Right	Left
1.	11.11.9.5	1	—	3	—	4	—
2.	11.10.8.5	—	—	1	—	1	—
3.	11. 9.7.5	18	2	9	6	27	8
4.	11. 9.7.4	—	—	1	—	1	—
5.	11. 9.7.3	6	5	4	3	10	8
6.	11. 9.7.3	—	—	—	2	—	2
7.	11. 7.7.5	—	1	1	—	1	1
8.	11. 7.7.3	1	7	1	2	2	9
9.	11. 7.7.1	—	2	—	—	—	2
10.	11.X.7.5	—	—	—	1	—	1
11.	11.X.7.3	—	1	—	1	—	2
12.	11. 0.7.5	1	—	2	1	3	1
13.	11. 0.7.3	—	1	—	1	—	2
14.	11.oido.5	—	—	2	—	2	—
15.	10. 9.7.4	—	—	—	1	—	1
16.	10. 9.7.3	—	2	—	—	—	2
17.	10. 9.6.5	1	—	—	—	1	—
18.	10. 9.6.3	2	1	—	—	2	1
19.	10. 7.6.3	—	—	1	1	1	1
20.	9. 9.5.5	3	—	2	1	5	1
21.	9. 9.5.4	1	—	—	—	1	—
22.	9. 9.5.3	—	5	2	5	2	10
23.	9. 9.5.1	—	1	—	—	—	1
24.	9. 7.5.5	1	1	4	—	5	1
25.	9. 7.5.4	1	—	—	—	1	—
26.	9. 7.5.3	3	6	8	4	11	10
27.	9. 7.5.1	—	3	—	2	—	5
28.	9. 7.3.3	—	—	—	1	—	1
29.	9.X.5.3	—	—	—	1	—	1
30.	9.X.5.1	—	—	—	1	—	1
31.	9. 0.5.5	—	—	—	1	—	1
32.	9. 0.5.4	—	—	1	—	1	—
33.	8. 6.5.5	—	—	1	—	1	—
34.	8. 6.5.3	2	—	1	1	3	1
35.	7. 5.5.5	2	1	1	—	3	1
36.	7. 5.5.4	—	1	—	—	—	1
37.	7. 5.5.3	7	7	5	10	12	17
38.	7. 5.5.1	—	1	—	2	—	3
39.	7. 5.4.3	—	2	—	—	—	2
40.	7. 5.3.3	—	—	—	1	—	1
41.	oido.5.4	—	—	—	1	—	1
Total		50	50	50	50	100	100

Number of Diff. Formulae	15	19	19	23	23	32
(a) for individual Palm	30.0%	38.0%	38.0%	46.0%	23%	32.0%
(b) for both the Palms	26	32	41			
	26%	32%	20.5%			

Here the percentage figures represent the occurrences of dissimilarity as based on main line formulae.

This table shows the percentile frequencies of three principal main line formulae, as observed in the Mohammedan series. This table also reveals some remarkable features, i.e.

1. The whole Mohammedan series follows the pattern $a > c > b$. The males exhibit the same pattern $a > c > b$, while the females show it to be $a > b = c$.

2. The rights of the whole series exhibit the order of preponderance $a > b > c$. Only the rights of females follow this pattern, while in the rights of males it is $a > c > b$.

Tab. II. Percentile Frequencies of three Principal Main Line Formulae in Mohammedan Series of 50 males & 50 females

		Males			Females			M+F		
		R	L	R+L	R	L	R+L	R	L	R+L
(a)	11. 9.7.—	48.0	14.0	31.0	28.0	22.0	25.0	38.0	18.0	28.0
(b)	9. 7.5.—	10.0	20.0	15.0	24.0	12.0	18.0	17.0	16.0	16.5
(c)	7. 5.5.—	18.0	20.0	19.0	12.0	24.0	18.0	15.0	22.0	18.5
Allied Conditions										
(d)	11.X.7	0.0	2.0	1.0	0.0	4.0	2.0	0.0	3.0	1.5
(e)	9.X.5	0.0	0.0	0.0	0.0	4.0	2.0	0.0	2.0	1.0
(f)	7.X.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Rest	24.0	44.0	34.0	36.0	34.0	35.0	30.0	39.0	34.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

3. Likewise the order of preponderance in the lefts of entire series is $c > a > b$. Also here only the females follow this pattern, while in the males it is $b = c > a$.

4. The preponderance of (a) in the entire series, in males (right & left) and females (right & left) leads to the conclusion of the alignment of ridges more towards the higher positions. The same applies to the rights of males and females, while the corresponding increase in (c) in the lefts shows the sweep of ridges more towards lower terminations. Hence the value of main line index is expected to be higher in rights than in their corresponding lefts.

5. Allied conditions to the three principal main line formulae have also been listed in the above table as d, e, & f. The presence of formula 11.X.7 is absent in the rights of males and females, while it is only 20% in the lefts of males and 4.0% in the lefts of females. The formula 9.X.5 is totally absent in males, however, its appearance is only of 4.0% in the lefts of females, while the formula 7.X.5 is totally unobserved in the entire series.

Table III shows the percentile frequencies of the three modal types (after Cummins). A critical use of this table and the following one will make us note the con-

siderable increase in the modal type of (b') in all the nine columns. Hence, it can be inferred that most of the formulae which could be included in the three principal main lines have been accommodated in one of the three modal types.

Table IV exhibits the comparison between the three principal main line for-

Tab. III. Percentile Frequencies of the three modal type formulae in the Mohammedan series of 50 males & 50 females

Type	Males			Females			M+F		
	R	L	R+L	R	L	R+L	R	L	R+L
(a') 11	54.0	38.0	46.0	48.0	34.0	41.0	51.0	36.0	43.5
(b') 9	24.0	38.0	31.0	36.0	36.0	36.0	30.0	37.0	33.5
(c') 7	22.0	24.0	23.0	16.0	28.0	22.0	19.0	26.0	22.5
Rest	0.0	0.0	0.0	0.0	2.0	1.0	0.0	1.0	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Tab. IV. Comparative table of the three Principal main line formulae and of the three modal types

	Principal main lines	Modal types
<i>Males</i>		
Right	a>c>b	a'>b'>c'
Left	b=c>a	a'=b'>c'
Right & Left	a>c>b	a'>b'>c'
<i>Females</i>		
Right	a>b>c	a'>b'>c'
Left	c>a>b	b'>a'>c'
Right & Left	a>b=c	a'>b'>c'
<i>Males & Females</i>		
Right	a>b>c	a'>b'>c'
Left	c>a>b	b'>a'>c'
Right & Left	a>c>b	a'>b'>c'

mulae and three modal types. An observation reveals a very high increase in the modal type 9 called (b'). Hence, it can certainly be concluded that most of the main line formulae which could not be included in the three principal main line formulae have been accommodated in this modal type.

Tab. V. Percentile Frequency Distribution of Main-Line-Index in the Mohammedan Series of 50 males & 50 females

	Males			Females			M+F		
	R	L	R+L	R	L	R+L	R	L	R+L
3	0.0	4.0	2.0	0.0	2.0	1.0	0.0	3.0	1.5
4	0.0	2.0	1.0	0.0	0.0	0.0	0.0	1.0	0.5
5	12.0	28.0	20.0	14.0	26.0	20.0	13.0	27.0	20.0
6	0.0	2.0	1.0	4.0	2.0	3.0	2.0	2.0	2.0
7	22.0	26.0	24.0	12.0	28.0	20.0	17.0	27.0	22.0
8	6.0	2.0	4.0	8.0	8.0	8.0	7.0	5.0	6.0
9	22.0	20.0	21.0	20.0	28.0	24.0	21.0	24.0	22.0
10	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	1.0
11	28.0	16.0	22.0	40.0	6.0	23.0	34.0	11.0	22.5
12	8.0	0.0	4.0	0.0	0.0	0.0	4.0	0.0	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
M. with S. E.	8.84±0.21	7.26±0.23	8.05±0.23	8.82±0.21	7.26±0.18	8.04±0.22	8.83±0.21	7.26±0.21	8.04±0.23
S. D. with S. E.	2.17±0.15	2.30±0.16	2.38±0.16	2.19±0.15	1.87±0.13	2.20±0.15	2.18±0.15	2.10±0.14	2.30±0.16
C. V. with S. E.	24.54±1.74	31.68±2.24	29.56±2.09	24.83±1.75	25.75±1.82	27.36±1.93	24.67±1.74	28.92±2.04	28.58±2.02
R/L Ratio		118				118			

Tab. VI. Value of 'T' as Observed on Different Palms in Mohammedan Series

Comparison Between	Value of 'T'	Remarks
1. Rights & Lefts of males (50)	3.599	Non-Significant
2. Rights & Lefts of females (50)	3.714	- Do -
3. Rights of males & rights of Females	0.046	- Do -
4. Lefts of males & Lefts of females	0.000	- Do -
5. Males & Females, both hands combined	0.022	- Do -
6. Rights & Lefts of entire series	3.738	- Do -

Table V shows the frequency distribution of the Main-Line-Index in the Moham-
medan series showing the statistical constants Mean (m), standard deviation (S.D.)
and Coefficient of Variation (C.V.) with their errors right below the table for different
palms in separate columns.

The mean value the M. L. I. for the entire series is 8.045 ± 0.23 and is almost
the same in males and females, being 8.05 ± 0.23 and 8.04 ± 0.22 respectively. The
rights of entire series exhibit it to be 8.83 ± 0.21 , while the rights of males and
females show it to be almost equal, i. e. 8.84 ± 0.21 and 8.82 ± 0.21 respectively. Its
value in the lefts of entire series is 7.26 ± 0.21 , while it is exactly the same in the lefts
of either sexes, being 7.26 ± 0.23 and 7.26 ± 0.18 respectively.

The most interesting and the most remarkable feature of this group is that they
do not show any sex difference. Even when the palms of both sexes are taken sepa-
rately they do not exhibit any difference in this value.

The basic column shows the Right/Left ratio and the figures for either males and
females are 118 each. As already mentioned there exists no difference at all in
this ratio in males and females — a feature of the greatest importance.

Table VI shows the statistically significant bisexual and bimanual difference
existing among males and females. All the values above exhibited show that there
exists no statistically significant difference in all the various comparative com-
binations.

Tab. VII. Comparative Table of Transversality in Different Series

Category	Transversality		
	Males	Females	Author
1. European-American	20.58	16.55	Cummins
2. Germans	21.48	17.26	- do -
3. Jews	19.73	16.13	- do -
4. Kachins	30.25	20.61	Sharma
5. Chinese	20.74	—	King
6. Eskimos (Eastern)	11.85	12.23	Cummins
7. Rwala Bedouins	17.59	—	Shanklin & Cummins
8. Australoids	10.95	6.92	Cummins & Setzler
9. Jaunsari Rajput	28.71	—	Sudha (Unpubs)
10. Garhwali Brahmins	27.66	—	Kumbnani (Unpubs)
11. Gollas	29.49	22.45	Kumbnani
12. Brahmins (Rajasthan)	18.00	27.26	Kumbnani
13. Mohammedan	17.87	17.68	Kumbnani

Table VII shows the value of transversality in the males and females of Mo-
hammedan series, as compared to various other groups. In the males its value is
 17.87% , as compared to 17.68% in the females; therefore, as compared to females,
males show 0.19% more, which is not significant.

Tab. VIII. Percentile Frequencies of Terminations of Palmar-Main Lines in the Mohammedan Series (100)

Line & Endings	Males			Females			M & F		
	R	L	R&L	R	L	R & L	R	L	R & L
Line D									
11	54.0	38.0	46.0	48.0	34.0	41.0	51.0	36.0	43.5
10	6.0	6.0	6.0	2.0	4.0	3.0	4.0	5.0	4.5
9	18.0	32.0	25.0	34.0	32.0	33.0	26.0	32.0	29.0
8	4.0	0.0	2.0	4.0	2.0	3.0	4.0	1.0	2.5
7	18.0	24.0	21.0	12.0	26.0	19.0	15.0	25.0	20.0
0	0.0	0.0	0.0	0.0	2.0	1.0	0.0	1.0	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Line C									
11	2.0	0.0	1.0	6.0	0.0	3.0	4.0	0.0	2.0
10	0.0	0.0	0.0	2.0	2.0	1.0	1.0	0.0	0.5
9	62.0	32.0	47.0	36.0	36.0	36.0	49.0	34.0	41.5
7	12.0	40.0	26.0	30.0	20.0	25.0	21.0	30.0	25.5
6	4.0	0.0	2.0	4.0	2.0	3.0	4.0	1.0	2.5
5	18.0	24.0	21.0	12.0	28.0	20.0	15.0	26.0	20.5
X	0.0	2.0	1.0	0.0	8.0	4.0	0.0	5.0	2.5
0	2.0	2.0	2.0	10.0	6.0	8.0	6.0	4.0	5.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Line B									
9	2.0	0.0	1.0	6.0	0.0	3.0	4.0	0.0	2.0
8	0.0	0.0	0.0	2.0	0.0	1.0	1.0	0.0	0.5
7	52.0	42.0	47.0	36.0	36.0	36.0	44.0	39.0	41.5
6	6.0	2.0	4.0	2.0	2.0	2.0	4.0	2.0	3.0
5	40.0	52.0	46.0	50.0	58.0	54.0	45.0	55.0	50.0
4	0.0	4.0	2.0	0.0	0.0	0.0	0.0	2.0	1.0
3	0.0	0.0	0.0	0.0	4.0	2.0	0.0	2.0	1.0
0	0.0	0.0	0.0	4.0	0.0	2.0	2.0	0.0	1.0
Total	100.0	100.0	100.0	110.0	100.0	100.0	100.0	100.0	100.0
Line A									
5	54.0	10.0	32.0	52.0	20.0	36.0	53.0	15.0	34.0
4	4.0	2.0	3.0	4.0	4.0	4.0	4.0	3.0	3.5
3	42.0	74.0	58.0	44.0	62.0	53.0	43.0	68.0	55.5
1	0.0	14.0	7.0	00.0	14.0	7.0	0.0	14.0	7.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table VIII shows the percentile frequencies of terminations at positions 1-13 and conditions X and O for the four main lines D, C, B & A.

1. Line D mostly terminates at positions 11, 9, & 7 in the whole series, showing the percentile frequencies of 43.5, 29.0 and 20.0 respectively. Its terminations at position 11 in the rights (51.0%) are higher than in the lefts (36.0%); whereas at positions 9 & 7 its terminations are higher in the lefts (32.0% and 25.0, respectively) than in the rights (26.0% and 15.0%, respectively). Even considering the two sexes separately, the terminations at position 11 are higher in males (46.0%) than in females (41.0%). At position 11, the terminations in males are higher in the rights (54.0%) than in the lefts (38.0%). On the other hand, at positions 9 & 7, the terminations in males are higher in the lefts (32.0% and 24.0%, respectively) than in the rights (18.0%, and 18.0% respectively). Terminations at position 6 are equally represented on the rights and lefts of males and show 6.0% in either palms. It is certainly less in females who show it to be 2.0% and 4.0% respectively on their rights and lefts. The terminations at position 8 are of only 4.0% in the rights of males, and they are absent in their lefts; while in the rights and lefts of females its frequency is 4.0% and 2.0%, respectively. Males do not show the absence of this line, while females exhibit it to be only 2.0% in the lefts.

2. The preponderant terminations of line C are at positions 9, 7 & 5, and the percentile frequencies are 41.5, 25.5 and 20.5, respectively. Its terminations at position 9 are higher in right palms (49.0%) than in their corresponding lefts (34.0%), whereas the terminations at positions 7 & 5 have an upper hand in the lefts (30.0% and 26.0%, respectively), as compared to their rights (21.0% and 15.0%, respectively). Considering the sexes separately it is noticed that its terminations at positions 9, 7 & 5 are higher in males (47.0%, 26.0% and 21.0%, respectively), as compared to the females (36.0%, 25.0% and 20.0% respectively). In males its terminations at position 9 are higher in rights (62.0%) than in lefts (32.0%), while the terminations at positions 7 & 5 far exceed in lefts (40.0% and 24.0% respectively), as compared to their rights (12.0% and 18.0% respectively). At position 11, its frequency is of 2.0% in the rights of males, while it is of 6.0% in the rights of females. Males do not show its terminations at position 10, while in females its frequency is of 2.0% on the rights. At position 6 its terminations in males appear on rights only (4.0%), while in females its terminations are higher in the rights (4.0%), as compared to their lefts (2.0%). The abortive nature of this line is higher in females than in males. Its frequency in males in the lefts is only 2.0% as compared to 8.0% on the lefts of females, while the rights of either sexes do not show this phenomenon. Like the abortive nature the total absence of this line is higher in females (8.0%) as compared to males (2.0%). The rights of females show a very high frequency (10.0%) as compared to 2.0% in the rights of males, while the lefts of females far exceed in its frequency (6.0%) as compared to the lefts of males (2.0%).

3. Line B mostly terminates at positions 7 & 5 showing the percentile frequencies of 41.5% & 50.0%, respectively. At position 7, rights have a higher frequency (44.0%) than lefts (39.0%), while the contrary happens for position 5 (lefts: 55.0%;

rights: 45.0%). At position 7, its terminations in males have a higher frequency (47.0%) than in females (36.0%), while at position 5 females show a frequency of 54.0%, as compared to the males frequency of 46.0%.

Considering the sexes separately it is noticed that in males its terminations at position 7 exceed in rights (52.0%) as compared to lefts (42.0%), whereas at position 5 its terminations are most frequent in the lefts (52.0%) than in the rights (40.0%). Females exhibit the equal frequency of 36.0% in either palms concerning its terminations at position 7, whereas its terminations at position 5 — like in males — are more frequent in the lefts (58.0%) than the rights (50.0%). Its terminations at position 9 are comparatively more frequent in the rights of females (6.0%) than in the rights of males (2.0%). It has no terminations as position 6 in the lefts of either sexes. Males do not show its terminations at position 8, while females show it to be of 2.0% and only on rights. Its terminations at position 6 are more frequent on the rights of males (6.0%) than in their lefts (2.0%). Its frequency is 2.0% on either rights and lefts of the females. Its terminations at position 4 are of only 4.0% on the lefts of males, while females do not show its terminations at all. Males do not exhibit its terminations at position 3, while they are of only 4.0% on the rights of females.

4. Line A mostly terminates at positions 5 & 3, showing the percentile frequencies of 34.0% & 55.5%, respectively. The terminations at position 5 are more frequent on the rights (53.0%) than on the lefts (15.0%), while at position 3 the frequencies are 68.0% for the lefts and 43.0% for the rights.

Considering the two sexes separately, it is noticed that the terminations of this line at position 5 have a higher frequency in females (36.0%) than in males (32.0%), while at position 3 males exhibit a higher frequency (58.0%) than females (53.0%). The frequency of position 5 in males is higher on the rights (54.0%) than on the lefts (10.0%); in females, too, rights have a higher frequency (52.0%) than lefts (20.0%). Position 3, however, shows the highest frequency of terminations on the lefts in both sexes: 74.0% on the lefts of males, as compared to 42.0% on their rights, and 62.0% on the lefts of females, as compared to 44.0% on their rights. At position 4 the rights have a higher frequency (4.0%), than the lefts (2.0%) in the case of males, while in the case of females rights and lefts exhibit the same frequency (4.0%). The terminations at position I show the equal frequency of 14.0%, on the lefts only, for both males and females. Both sexes fail to exhibit any termination on rights at this position.

Summary and Conclusions

Following the analysis, observation and tabulation of 200 palm-prints of Mohammedan male and female subjects, the author gives the following tentative conclusions:

1. 41 different main line formulae are observed on the Mohammedan series, 32 for females & 26 for males. Hence, the degree of dissimilarity is higher in females (32%) than in males (26%). Even taking right and left palms separately, it is noticed that either palm in females exhibit a higher number of formulae in females than in males. In males, the rights have a lower degree of dissimilarity (30%) than the lefts (38%), and the same applies to females (rights: 38%; lefts: 46%).

2. The order of preponderance of the three principal main line formulae in the entire series is $a > c > b$. Males are in good agreement with this pattern, while females exhibit the pattern $a > b = c$. The order of preponderance on the rights of entire series is $a > b > c$. The rights of females agree with this pattern, while the rights of males deviate to the pattern $a > c > b$. The lefts of the entire series show the order of preponderance $c > a > b$. Only the lefts of females agree with this pattern, while males show $b = c > a$.

3. The percentile frequencies of modal types, 11, 9 & 7 in males are 46.0, 31.0 & 23.0, respectively. It is the right of males and females which exhibits the highest percentile frequencies of modal type 11 i. e. 54.0 & 48.0, respectively. The modal type 9 is more common on the lefts of males (38.0%) as compared to their rights (24.0%). Females show equal frequencies on the rights and lefts of this type. Modal type 7 is slightly more frequent on the lefts of males (24.0%) than on the rights (22.0%). Likewise females also show the higher frequency of this type (28.0%) on their lefts, as compared to 16.0% on their rights.

4. The mean value of Main Line Index is 8.045 ± 0.23 — the rights exhibit it to be higher (8.83 ± 0.21) than in their lefts (7.26 ± 0.21). The most interesting and worth noting point is that the present Mohammedan series does not exhibit any sex differences, as far as its mean value of M. L. I. is concerned. Males show it to be 8.05 ± 0.23 , and females 8.04 ± 0.22 . The rights of males and females show an almost equal value of 8.84 ± 0.21 and 8.82 ± 0.21 respectively, while the lefts of either males and females show the values of 7.26 ± 0.23 and 7.26 ± 0.18 , respectively.

5. As is observed in the mean value of M.L.I, there exists no sex difference in this value, hence we cannot expect any differences in the right/left ratio of males and females. The right/left ratio in males is 118, and it is the same in females. In other words we can say that there exists almost equal degree of transversality on the right palms of males (17.87%) as well as of females (17.68%).

6. The different value of "T" explains that there is no statistically significant difference either in males and females, nor is there any bimanual difference on the various other combinations as described in the table.

7. The absence of Line D — a rare phenomenon — is noticed in the lefts of females (2.0%). The abortive nature of line C, i. e. condition X, shows a higher

frequency on the lefts of females (8.0%), than on the lefts of males (2.0%). Likewise the absence of this line is more frequent in females (8.0%) than in males (2.0%). The absence of line B is frequent in females only, and on the rights its frequency is of 4.0%. The terminations of line A at position 1 are only present on the lefts of either sexes. Besides, the tendency of terminations of all the lines towards the lower positions is higher on the lefts than on the rights of either sexes, indicating thereby more longitudinality of ridges on the lefts. Hence a low mean value of M.L.I. is observed on the lefts of either sexes.

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Bibliography

1. CUMMINS, H. and MIDLO, C.: 1943. Finger prints, palms and Soles. An Introduction to Dermatoglyphics.
2. — 1955. Dermatoglyphics of Bushmen (South Africa) A.J.P.A., vol. 13, No. 4, p. 699-710.
3. FLEISCHHACKER, V. H.: 1951. Rassenmerkmale des Hautleistensystems auf Fingerbeeren and Handflächen. Z. Für Morphol u. Anthropol. Vol. 43, p. 383-438.
4. KEITH, H. H.: 1924. Racial differences in the papillary line of palms. A.J.P.A., vol. 7.
5. OSCHINSKY, L.: 1955. The racial affinities of Baganda and other Bantu tribes of British East Africa, p. 22.
6. SHARMA, A.: 1956. Dermatoglyphics notes on palmar main lines of Kachins of Sadon Hill tracts-Kachon State (Burma). The Anthropologist, vol. 3, p. 75-87.
7. — 1956. Notes on palm main line index and transversality. Anthropologist, vol. 4.

RIASSUNTO

È stata raccolta una serie di 50 maschi e 50 femmine provenienti dalla Anjuman Muslin School di Baran (Rajasthan) e ne sono state studiate le caratteristiche dermatoglifiche. Le impronte palmari sono state utilizzate per stabilire l'allineamento delle linee palmari prin-

cipali, mediante metodi convenzionali, quali quello di Cummins e Midlo. L'analisi, l'osservazione e la tabulazione di queste 200 impronte palmari hanno permesso di giungere a diverse conclusioni importanti, anche se non ancora sicure.

RÉSUMÉ

L'Auteur a réuni une série de 50 hommes et 50 femmes provenant de la Anjuman Muslin School de Baran (Rajasthan) et en a étudié les caractéristiques dermatoglyphiques. Les empreintes des paumes ont été utilisées pour établir l'allignement des lignes principales des paumes,

moyennant des méthodes conventionnelles, notamment celle de Cummins et Midlo. L'analyse, l'observation et la tabulation de ces 200 empreintes ont permis d'arriver à des conclusions importantes, mais pas encore certaines.

ZUSAMMENFASSUNG

Untersucht wurde eine Serie von 50 Mädchen und 50 Jungen aus der Anjuman Muslin School di Baran (Rajasthan) und insbesondere wurden ihre dermatoglyphischen Merkmale beobachtet. Die Handflächenabdrücke dienten dazu, um mit Hilfe konventioneller Methoden, wie die nach

Cummins und Midlo, die Anordnung der wichtigsten Handflächenlinien zu ersehen. Die Analyse, die Beobachtung und die Tabulation dieser 200 Handflächenabdrücke gestatteten es, zu verschiedenen wichtigen, wenn auch noch nicht gesicherten Schlussfolgerungen zu kommen.