Bull. Soc. Roy. Belge Anthrop. Préhist., 83 : 131-136, 1972

DISTRIBUTION OF MID-PHALANGEAL HAIR AMONG RAJ GONDS OF MIRZAPUR (INDIA) *

par

D. TYAGI
Department of Anthropology, Lucknow University, Lucknow

DANFORTH (1921) for the first time, indicated the distribution of hairs on the middle segment of the finger of both hands in man and in other Anthropoids and stressed their significance. Further, the inheritance of this trait in man for the first time was studied by him. In 1922 Danforth and Trotter suggested that the presence of hairs on the middle phalanges are dominant in Mendelian sense, over its absence. Later on BERNSTEIN and BURKS (1942) suggested that a set of five alleles with increasing dominance control the inheritance of hair on the middle phalange of the digit. BOYD (1950) and GARN (1950, 51) have suggested that the distribution of mid phalangeal hair can be a useful trait in population studies.

In India many workers, since then, have conducted surveys in different populations, for this trait. But very little work has been done on the Uttar Pradesh populations. The published work on U. P. populations is those of SRIVASTAVA (1966), TIWARI and BHASIN (1967) and SHUKLA and TYAGI (1967), who have studied the Srivastava (Kayastha) : Garhwal Rajput and Brahmin and Lucknow Sindhi populations respectively.

Considering the scarcity of data in U.P. and the usefulness of the trait in population studies, here, an attempt has been made to study the distribution of mid phalangeal hair among the Raj Gonds of Mirzapur district.

The Gonds are a Proto-australoid tribe who originally inhabited the high lands of Madhya Pradesh. From there, they are supposed

(*) This paper forms a part of the M.A. thesis submitted by Km. Pushpa Singh, to Lucknow University in 1971.

Communication présentée le 28 février 1972.

to have migrated to the neighbouring states of Bihar and other Provinces. Gonds speak 'Gondi', dialect of Dravidian family, but now they have given up their mother tongue and use 'Sadani' dialect of Indio-Aryan family. PRASAD (1961) classified the Gond society into three classes viz., aristocrats, tenants and labourers. The people belonging to first category (aristocratic or ruling class) are called Raj Gonds. The Raj Gonds are endogamous and among them marriages are regulated by clan exogamy. That is to say, a man can not marry a girl belonging to his own clan nor can he marry a girl worshipping the same deity. Monogamy and patrilocal residence is the general rule among them.

327 Raj Gonds (244 males and 83 females) have been examined for the presence and absence of mid phalangeal hair. The observations were made, after cleaning the middle phalanges by spirit, with the help of a high power hand lens. The sample was collected from Muirpur Block of Mirzapur district (U.P.), during November, 1970. Only unrelated persons, between the age of 6 years and 65 years were included in the present sample.

Frequency of mid phalangeal hair among the Raj Gonds is given in Table 1. It is observed that the overall frequency of occurrence of mid phalangeal hair is 63,30 percent. The males show a higher frequency of occurrence than the females. When males and females are statistically tested for homogeneity it is seen that the two sexes among the Raj Gonds are significantly differentiated ($X^2 = 10.83$; 1 d. f. ; $p < .001$) from each other.

TABLE 1

Distribution of mid-phalangeal hair among Raj Gonds

	Sample size	Persons with m.p.h.		Persons without m.p.h.	
		n.	%	n.	%
Male	244	167	68.44	77	31.55
Female	83	40	48.19	43	51.80
Male & Female	327	207	63.30	120	36.69

Table 2 shows the age-wise distribution of mid-phalangeal hair among the Raj Gond males and females separately. The table reveals that the occurrence of hair is least frequent in 6-15 years age group in both the sexes and the most frequent in the 36-45 years

TABLE 2

Age and sex-wise distribution of mid-phalangeal hair among Raj Gonds

Age groups		MALE			FEMALE		
		Total No. obs.	Presence of m.p.h. No.	%	Total No. obs.	Presence of m.p.h. No.	%
1.	6-15	57	23	40.35	10	2	20.00
2.	16-25	46	36	78.26	21	6	28.57
3.	26-35	51	42	82.35	16	14	87.50
4.	36-45	32	27	84.37	21	11	52.38
5.	46-55	29	15	51.71	9	4	44.44
6.	56-65	29	24	82.75	6	3	50.00
All age groups		244	167	68.44	83	40	48.19

and 26-35 years age groups among males and females respectively. When two groups were made on the basis of age (one having the persons below 35 years of age and other above 35 years of age), it was observed that incidence of hair is more frequent in the upper age group than the lower age group, in both sexes.

TABLE 3

Percentile distribution of mid-phalangeal hair on right and left hands separately among Raj Gonds

Digit and Side		Males				Females			
		Absence	Presence			Absence	Presence		
			Scanty	Plenty	Total		Scanty	Plenty	Total
	Right	88.11	11.06	0.82	11.88	91.56	8.43	—	8.43
II	Left	92.21	6.96	0.82	7.78	91.56	8.43	—	8.43
Right + Left		90.16	9.01	0.82	9.83	91.56	8.43	—	8.43
	Right	65.16	23.77	11.06	34.83	75.90	19.27	4.81	24.09
III	Left	69.26	22.54	8.19	30.73	84.33	14.45	1.20	15.65
Right + Left		67.21	23.15	9.63	32.78	80.12	16.86	3.01	19.87
	Right	53.27	28.29	18.44	46.72	65.06	25.30	9.63	34.93
IV	Left	54.91	29.91	15.16	45.08	69.87	25.30	4.81	30.12
Right + Left		54.09	29.09	16.80	45.90	67.46	25.30	7.23	32.53
	Right	81.14	15.16	3.68	18.85	81.92	16.86	1.20	18.07
V	Left	84.01	13.11	2.86	15.98	90.36	8.43	1.20	9.63
Right + Left		82.58	14.13	3.27	17.41	86.14	12.65	1.20	13.85

The digit and side wise distribution in males and females are given in Table 3. The analysis indicates that the highest occurrence of mid-phalangeal hair is on the IVth digit and the least on the IInd digit in both the hands of the two sexes. The presence of mid-phalangeal hair on the different digits is in the order of IV > III > V > II in the two groups i.e., males and females. The bimanual differences for the occurrence of hair on mid-phalanges are insignificant in the present sample, except in the IInd digit of males and the Vth and IIIrd digits of females. On the basis of the number of hairs present, a two fold classification [(i) scanty = less than five hairs present, (ii) plenty = more than five hairs present] has also been attempted. It is seen that the scanty hair group is more common than plenty hair group in both sexes.

TABLE 4

Symmetrical occurrence according to various finger combinations among Raj Gonds

Digit combination on both hands	Males		Females	
	Abs. No.	%	Abs. No.	%
2, 3, 4, 5	2	1.61	—	—
3, 4, 5	13	10.48	1	1.96
4, 5	—	—	1	1.96
3, 4	14	11.29	1	1.96
4	13	10.48	5	9.80
None	77	62.09	43	84.31
Others	5	4.03	—	—
Total	124	99.98	51	99.99

Total Symmetry	Male : 124 50.81 %	Total Asymmetry	Male : 120 49.18 %	
	Female : 51 61.44 %		Female : 32 38.55 %	

The analysis of the symmetrical occurrence of mid-phalangeal hair according to various finger combinations indicates that the trait is most frequent in the combination of the digits III, IV among males and only in the IV digit among females (cf. table 4). On the other hand, the combination of IV, V in males and II, III, IV, V and others in females do not show any occurrence at all. The symmetrical and asymmetrical conditions of the distribution of mid phalangeal hair is also given in table 4. It is noticed that the symme-

trical conditions are more common than asymmetrical conditions in both males and females. However, the females show a higher frequency of symmetrical condition than their male counterparts, while in asymmetry males outnumber the same of the females.

However, no comparison could be made, due to the lack of published material (to the best of author's knowlege) for this trait on U.P. tribal population.

Acknowledgements

The writer wishes to express his gratitude to Dr. K. S. Mathur, Head of Anthropology Department, Lucknow University for providing necessary facilities and permission to use the data. I am thankful to Dr. D. K. Bhattacharya, Department of Anthropology of Delhi University and Dr. B. R. K. Shukla, Department of Anthropology of Lucknow University for their suggestions. My thanks are also due to Km. Pushpa Singh.

REFERENCES

BERNSTEIN, M. M. and BURKS, B. S.
1942 The incidence and mendelian transmission of mid digital hair in man.
J. Hered., **33**: 45-53.

BOYD, W. C.
1950 Genetics and Races of Man.
Little Brown and Co., Boston.

DANFORTH, C. H.
1921 Distribution of hairs on the digits in man.
Am. J. phys. Anthrop., **4**: 189-204.

GARN, S. M.
1950 Types and distribution of the hair in man.
Ann. N. Y. Acad. Sci., **53** (3): 498-507.

GARN, S. M.
1951 The use of middle phalangeal hair in population studies.
Am. J. phys. Anthrop., **9**: 325-333.

PRASAD, N.
1961 Land and people of Tribal Bihar.
Bihar Tribal Research Institute, Govt. of Bihar, Ranchi.

SHUKLA, B. R. K. and TYAGI, D.
1967 A study of mid phalangeal hair among the Sindhis of Lucknow (U.P.).
J. Assam. Sc. Soc., **10**: 45-50.

SRIVASTAVA, A. C.
1966 A note on distribution of middle phalangeal hair among the Srivastava (Kayastha) of Lucknow.
The Eastern Anthropologist, **19** : 241-244.
TIWARI, S. C. and BHASIN, M. K.
1967 Distribution of middle phalangeal hair among Garhwali Brahmins and Rajputs.
The Anthropologist, Delhi, **14** : 47-52.

Adresse de l'auteur : D. TYAGY
University of Lucknow
Department of Anthropology
Lucknow. India.