

SBORNÍK NÁRODNÍHO MUZEA V PRAZE

ACTA MUSEI NATIONALIS PRAGAE

Volumen XXX B (1974), No: 3

REDAKTOR JIŘÍ ČEJKA

MÁRIA DROBNÁ

Chair of Anthropology, Comenius University, Bratislava

PARIETAL AND DORSAL HAIR WHORL IN THE EGYPTIAN NUBIANS

TEMENNÝ A CHRÁTOVÝ VLASOVÝ VÍR U EGYPTSKÝCH NÚBIJCOV

Autorka vyšetrila počas II. spojenej československo-arabskej expedície do Núbie 774 núbijských detí (436 chlapcov a 338 dievčat). Išlo najmä o príslušníkov etnickej skupiny Fedidža a arabsky hovoriacich Núbijcov.

Autorka studovala výskyt temenného vlasového víru, ktorý patrí medzi najlepšie preskúmané vlasové útvary, a to jak z hľadiska frekvencie a variability, ako i dedičnosti, a chrbátový vlasový vír, ktorému naopak nebola v minulosti venovaná takmer žiadna pozornosť.

Výsledky ukazujú, že výskyt a variabilita týchto znakov u sledovanej populácie sa nelíši od výsledkov získaných od príslušníkov iných plemien a žijúcich na iných kontinentoch. Autorka preto uzatvára, že obidva sledované znaky, ktoré sú typicky hominídne, musia byť z hľadiska genetického ľudskému druhu dávno pred vznikom rás za-fixované, keďže nejevia takmer žiadné etnické rozdiely.

The subject of this contribution does not seem to be much in keeping with the character of the symposium on ethnic anthropology, though these are characters which seem to be of general hominoid nature. However, it may be correct to mention this problem here, because the results of our examinations were gained on the Nubians, who are the central point of our discussions at this symposium. It is also of importance that this feature has not yet been studied on the Nubian population.

The arrangement of hair-cover, that is the arrangement of hair directions and whorls on the body, is one of the markedly polymorphic characters of man. This arrangement is constant and does not change in the course of the individual's life. Because the hair cover of the man, when

compared with other mammals, is very much reduced, comparatively slight attention has been given to this morphological character in the past. It is true that in 1837 ESCHRICHT made some fundamental observations on the direction of hair on human body, but in the course of time there have been examined only some isolated characters, mainly the head hair whorl and hair cover of the central finger phalanges, it means characters that are often used in the establishment of disputed paternity. The study of the arrangement of hair cover is of great importance from the viewpoint of comparative anatomy, anthropology and population genetics. Because we do not know at present much about the frequency of the arrangement of hair cover and still less about the heredity problems connected with this phenomenon, the aim of this paper would be the extension of our knowledge about the natural variability of man.

In the present contribution I would like to say something about the head hair whorl, which is relatively best known and examined of all hair characters in various populations, and about the dorsal hair whorl, to which relatively little attention has been given. For this reason we examined all in all 774 Nubian children. Of this number 436 were boys and 338 were girls. The examinations were conducted in the course of the second Czechoslovak-Arab Expedition to Nubia. Because the examinations were concentrated upon villages inhabited by the ethnic groups of the Fadidja and the Arabic-speaking Nubians, the present paper does not include any material on the Kenuz.

Parietal hair whorl

The parietal hair whorl is, as already mentioned, one of the best examined hair characters, both from the viewpoint of frequency and variability and the heredity. On the other hand, we must always bear in mind that the opinions of various scholars on this phenomenon differ considerably.

In Table 1 the reader will find a survey of the published examinations of this phenomenon, including the results gained by the Czechoslovak-Arab Expedition to Nubia.

In the examined material we evaluated the direction of the hair whorl, its location and frequency. Only the results gained from the examination of boys will be, however, discussed. The reason is that the hair-dress of the girls is very complicated and does not permit the evaluation of the hair whorl in the majority of cases.

In Table 2 the reader will find the frequency of the individual types of head hair whorl in both groups of the Nubian boys examined. The results show that in the majority of Nubians, similar to other populations, we find on the head only one hair whorl. As far as the direction of the whorl is concerned, there predominate clockwise whorls. This finding is also in keeping with the observations of other populations irrespective of the ethnic character. The highest frequency has been observed with hair whorls located to the right and directed clockwise (43%).

Differences from the material gained in the examination of Europeans may be observed in a much lower number of double whorls, and also in

a very high number of cases of unascertainable whorls (about 20%). In European boys, on the other hand, the whorl can be ascertained in 100 % of cases. This fact must be explained by the Negroid curly hair in a definite number of the Nubians.

Dorsal hair whorl

In 1927 WOOD-JONES drew attention to the fact that about 20 % of fetuses in Malaya had on the back a hair whorl. The direction of this dorsal hair stream was in the majority of cases cranio-caudal. In some individuals we may find a sudden change of direction in some section of this hair cover. At the place where the ascending and descending hair streams meet we find a convergent hair whorl, which occurs not only in the population of Malaya, but also in some other populations. The values are about 15 to 25 %, and the majority of authors report about 20 %, like WOOD-JONES.

The frequency of dorsal hair whorl in the Nubians who were examined by the Czechoslovak-Arab Expedition is much lower, especially in the group of Arabic-speaking Nubians (boys — 10,0%; girls — 8,09%). In the group of the Fadidja the frequency of this dorsal hair whorl is at the lower frequency limit of other populations (about 16%). The difference between these two ethnic groups is not, however, statistically significant. The relatively low frequency values of this dorsal hair whorl may be ascribed to the generally meagre hair cover of the Nubians and thus to the difficulties in ascertaining this feature.

As far as the location of the dorsal hair whorl is concerned it appears from Th 2 to L 3. In girls we may observed a slight shift in cranial direction, in boys a shift in the caudal direction, which corresponds with examinations carried out in other ethnic groups. There also predominate hair whorls of anticlockwise direction (about 80% of the total number) over clockwise whorls, which is also in keeping with observations of other authors.

In conclusion we may say that both characters examined are of hominoid character and must have been established, from the viewpoint of the genus *Homo*, long before the appearance of races, because they do not show today almost any ethnic differences.

REFERENCES

1. BEIGUELMAN, B. (1964): A survey on genetical and anthropological traits among Japanese immigrants in Brazil. *Z. Morph. Anthrop.* **55**, 46—59.
2. BERNSTEIN, F. (1925): Quantitative Rassenanalyse auf Grund von statistischen Beobachtungen über den Drehsinn des Kopfhairwirbels. *Sitzber. P. Akad. Wissenschaft. — Physik. Math. K.*, 71—85.
3. BHALLA, V. and KAUL, S. S. (1968): Occipital hair whorl as a racial criterion. *Am. Jour. Phys. Anthropol.* **29**, 99—104.
4. BISWAS, P. C. (1950): Study of the whorls on head hair in Tehri Rajputs. *East Anthropol.* **IV**, 2/104.

5. DOKLÁDAL, M. (1954): Pigmentace a krevní skupiny Hlučíňanů. (Pigmentation and Blood Groups in the Population of Hlučín.) Spisy Přírodovědecké fakulty MU v Brně, No. 353.
6. DROBNÁ, M. (1966): Neskolko novych svedenij o temennom vichre u čelověka. Voprosy antropologii. Vyp. 23, 94—98.
7. DROBNÁ, M., SCHMIDT, H. and VALŠÍK J. A. ((1971): Die Behaarung und seine Variabilität bei den Bewohneren von Moeciu de Sus. *Annuaire Roumain d'Anthropologie* (in print).
8. ESCHRICHT, D. F. (1837): Ueber die Richtung der Haare am menschlichen Körper. Müller's Archiv für Anat. Phys. Jhr. 1837, 37—62.
9. LAUTERBACH, C. E. and KNIGHT, J. B. (1927): Variation in Whorl of the Head Hair. *J. Hered.* **18**, 107—115.
10. LORENCOVÁ, A. (1958): Několik poznámek k výskytu vlasových vírů ve kštici člověka (Some Remarks to the Frequency of Hair Whorls in Man). *Spisy PFMU I*, **5**, m. 10, no. 397.
11. MAVALWALA, J. D. (1958): A note on the whorl in the head hair of the Parsis. *J. Univ. of Saugar* **7**, 1—16.
12. RIDE, L. T. (1935): Anthropological Studies among North American Indians of British Columbia. *Caduceus, Univ. Hong-Kong* **14**, 205—216, (quoted by Salzano 1961)
13. ROUTIL, R. (1939): Ein Beitrag zum Erbstudium des menschlichen Haarkleides. *Z. Rassenk.* **9**, 48—57.
14. SALZANO, F. M. (1961): Studies on the Caingang Indians II. Morphological Characteristics. *Z. Morph. Anthrop.* **51**, 356—371.
15. SCHWARZBURG, W. (1927): Statistische Untersuchungen über den menschlichen Scheitelwirbel und seine Vererbung. *Z. Morph. Anthrop.* **26**, 195—224.
16. SPUHLER, J. N. (1951): Some genetic variations in American Indians. In: Laughlin W. S. (Editor) *The Physical Anthropology of the American Indian*. The Viking Fund Inc., Edwards Bros. Inc., Ann Arbor. (quoted by Salzano 1961).
17. TAKEYA, S. (1933): Ueber den Haarwirbel am Chinesenkopf. *J. Orient. Med.* **13**, 5—43. (quoted by Salzano 1961).
18. TILLNER, I. (1956): Doppelwirbel am Haarscheitel. *Anthrop. Anz.*, **20**, (2), 164—168.
19. WOOD-JONES, F. (1927): The middorsal Hair Whorl of Man. *Amer. J. Phys. Anthrop.* **11**, 89—95.
20. YAMURA, A. (1940): On some hereditary characters in the Japanese race, including the Tyosenese (Coreans). *Jap. J. Genet.* **16**, (1), 1—9 (quoted by Salzano 1961).

Table 1. Parietal hair whorl in different populations

Population	Simple whorl			Multiple whorl	
	+ %	- %	total %	%	author
Europe					
Germans	75,77	19,26	95,03	4,97	Bernstein 1925
Germans	70,86	8—24	94,2	5,8	Routil 1939
Germans	—	—	97,95	2,05	Tillner 1956
Czechs	87,6	11,2	98,8	1,2	Dokládal 1954
Czechs	80,54	15,69	96,23	3,77	Lorencová 1958
Slovaks	79,69	16,61	96,30	3,69	Drobná 1966
Rumanians	—	14,92	—	—	Schwarzburg 1927
Rumanians	77,24	12,69	89,93	8,95	Drobná and others in print 1971
America					
Amer. whites	76,60	18,10	94,70	4,90	Lauterbach, Knight 1927
Indians USA	—	29,07	—	—	Spuhler 1951
Indians USA	—	29,28	—	—	Ride 1935
Indians Brazil	—	18,71	—	—	Salzano 1961
Japanese Brazil	56,47	35,61	92,08	4,32	Beiuelman 1964
Asia					
Rajputs	74,50	18,20	92,70	7,30	Biswas 1950
Parsis	72,54	14,50	87,15	3,85	Mavalwala 1958
Pandits	67,07	26,22	93,29	6,71	Bhalla, Kaul 1968
Japanese	—	36,54	—	—	Yamaura 1940
Chinese	—	35,62	—	—	Takeya 1933
Africa					
Nubian Arabs	77,88	19,35	97,23	2,76	Drobná 1972
Nubians - Fadidja	77,97	19,49	97,46	2,54	Drobná 1972

+ hair whorls in clockwise direction

- hair whorls in anticlockwise direction

Table 2. Parietal hair whorl types in Nubian boys

Location and number of whorls		Fadidja			Nubian Arabs			%F - %A	t
		n	%	m	n	%	m		
simple	Mid-line +	19	16,10	3,38	42	19,35	2,68	-3,25	0,75
	—	6	5,08	2,02	8	3,69	1,29	1,39	0,58
	Dx. +	50	42,37	4,54	95	43,78	3,36	-1,41	0,25
	—	11	9,32	2,67	21	9,68	2,01	-0,36	0,11
	Sin. +	23	19,49	3,64	32	14,74	2,40	4,75	1,09
	—	6	5,08	2,02	13	5,99	1,61	-0,91	0,35
double	s.— d.+	1	0,85	0,84	3	1,38	0,79	-0,53	0,46
	m.— d.+	—	—	—	1	0,46	0,45	—	—
	s.— d.—	2	1,69	1,18	1	0,46	0,45	1,23	0,32
	m.— d.—	—	—	—	1	0,46	0,45	—	—
total of whorls		18	86,76	2,90	217	72,33	2,58	14,43	3,32
whorl unascertained		18	13,23	2,90	83	27,66	2,58	-14,43	3,32
N		136			300				

+ whorl in clockwise direction
 — whorl in anticlockwise direction

SBORNÍK NÁRODNÍHO MUZEA V PRAZE — ACTA MUSEI NATIONALIS PRAGAE

Volumen XXX. B (1974), No 3

Redaktor: Ing. JIŘÍ ČEJKA, CSc.

Cena tohoto čísla 17,— Kčs