NOTES OF THE VERTEX WHORL OF THE CHINESE AND TWO OTHER RACIAL GROUPS IN KWEICHOW

By, J, K. Woo

In 1927 W. Schwarzburg[1] published a paper on a study of the vertex whorl of the Whites. So far as the Oriental people are concerned, no similar studies have appeared with the only exception of a short report by Takeya[2] on the vertex whorl of the northern Chinese. In order to throw some light on this subject, a more comprehensive study based on materials of different races seems to be needed. In the present paper a part of the materials collected in Kweichow last fall is persented. The direction and form of the vertex whorl of the hair are observed and its distances from the vertex[3] of the head as well as from the median transverse arch are measured. More than one thousand Chinese and a half-thousand Chung-chia (仲家) and Pa-miao (㑩苗) in Kweichow were studied in the hope of finding whether the character in question has any racial variation. Most of the Chinese were school boys and college students, but the Chung-chia and Pa-miao were found in the villages scattered in Anshun Hsien and P'uting Hsien of Kweichow. For comparative purposes, similar observations were recently made on 397 Chinese in Nanchi Hsien of Szechuan with the same method.

A brief description of the method which we used to determine the position and direction of the whorl is given below;

---

1. Schwarzburg, W., "Statistische Unterschungen ueber den menschlishen Scheitelwirbel und seine vererbung," *Zeitschrift fuer Morphologie und Anthropologie* XXVI, 195-224, 1927.

2. Takeya, S., "Ueber den Haarwirbel am Chinesenkopf," *Journal of Oriental Medicine* XVIII, 5, 43, 1933.

3. Vertex is defined to be the highest median point on the head, when orientated on the Frankfort Horizontal.

Draw a protractor scale on a semi-circular transparent paper with an extending piece on each side of the median transverse diameter. On the radiating lines of this paper was marked a series of scales in half-centimeters. Then fix the center of the scales on the vertex of the head and make the mid-line of the two extending pieces on the ear-rods of both sides. The center of the whorl can be easily located through the paper and the degree of the angle is recorded from the right base line of this semi-circular paper scale. The direction of the whorl is noted to be clockwise when the whorl turns out from left to right, and counter-clockwies when it turns out in a contrary way.

The Kweichow Chinese series consists of 1383 individuals, of which 887 cases have a clockwise whorl and 603, a counter-clockwise one. With regard to the number of the whorl on the head, out of the total number, 1277 cases are found to be single, 103 double, and 4 multiple. The position of the whorl for this series is also various. 900 cases are found on the right side of the head, 512 on the left, and 52 in the median line. It should be noted, however, that most of the whorls are frequently situated on the parietal bones of the head. Only one case is found on the forehead, and none on the occiput.

In the majority of cases, the whorls lie posteriorly on the right side of the head. The mean angle of the whorl is 80°.84, if the scale starts from the median transverse line on the right side. From the figures shown in the following table, we see that the distance from the vertex of the head to the center of the whorl is, as anticipated, gradually increasing when the age is progressing. It is obvious that the distance depends mainly on the age of the subjects examined.

Age (yrs)	4—6	7—9	10—12	13—15	16—18
Distance(cm.)[1]	2.90 (124)	3.00 (516)	3.34 (656)	3.80 (314)	4.12 (19)
Angle [1]	87°.26(124)	87°.18(516)	80°.98(656)	83°.83(314)	83°.95(19)

The percentage distributions of the direction and form of the vertex whorl for the two Chinese series are quite similar. When a comparison is made

1. The figures are the pooled means of the two Chinese series.

between the results of our Chinese series and those of Takeya's northern Chinese series, we find that the percentages of the clockwies and the 'single' whorl in the former are much lower, but the percentage of the whorl in the median line in our series, on the other hand, is cosiderably higher (see Table I). As the samples represented are drawn from two widely separated parts of the country, this may be presumably accounted for by the factor of regional differentiation.

As to the two non-Chinese groups examined by us, viz., Chung-chia and Pa-miao, the first group includes 295 individuals and the second, 166. The percentages of the characters for these two groups (see Table II) are found in a similar order, although the percentage of the whorl on the left side in the Pa-miao series is somewhat higher than that in the Chung-chia series. The difference, however, is not very conspicuous.

It would be more interesting if a comparison is made in this respect between the Chinese series and the two other groups. We find that the percentages of the clockwise and the 'single' whorl for the Chung-Chia and pa-miao series are higher than those for all the Chinese studied. This seems to indicate that the direction and the number of the vertex whorl of the hair exhibit a marked difference between different groups of peoples examined. We believe that this feature may be considered as one of the racial characters. A comprehensive study on a large number of racial groups, both Chinese and other races, will clear up this problem.

Table I. Percentages of the Vertex Whorl of Chinese

Series	Number of Cases	Direction		Number of Whorl			Position			
		Clockwise	Counter-clockwise	Single	Double	Multiple	Right	Left	Median	Vertex
Chinese (Kweichow)	1385	59.33	40.67	92.27	7.44	0.29	60.20	36.25	3.48	0.07
Chinese (Szechuan)	337	60.20	39.80	93.73	5.90	0.27	62.22	33.75	3.78	0.25
Chinese (North China)	2910	64.4	35.6	89.2	10.0	0.6	61.4	38.2	0.3	

Table II. Percentages of the Vertex Whorl of Chung-chia and Pa-miao

Series	Number of Cases	Direction		Number of Whorl			Position			
		Clockwise	Counter-clockwise	Single	Double	Multiple	Right	Left	Median	Vertex
Chung-chia	295	66.78	33.22	96.13	3.87	——	65.76	32.54	1.02	0.68
Pa-miao	136	67.92	32.08	96.08	3.92	——	56.60	41.51	0.94	0.94