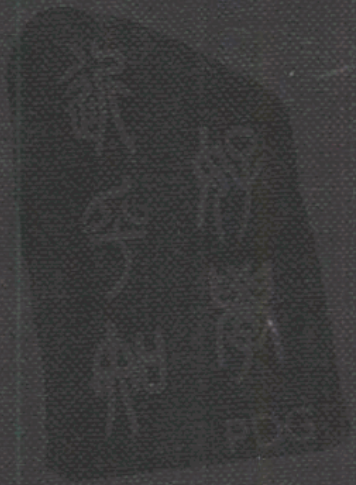
國立中央研究院歷史語言研究所

人類學集刊

第一卷



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An Anthropometric Study of the Chinese Clavicle Based on the Hsiao T'un and Hsiu Chiu Shan Specimens

By T. L. Woo

I. *Introduction.* Among the various bones of the human body, the clavicle, as it connects the upper limb with the trunk, is undoubtedly one of the most interesting for physical anthropology. The available literature concerning it is far less extensive than that concerning the bones of the limbs and the pelvis. Possibly due to the fact that the clavicle is smaller in size and peculiar in form, it has been generally neglected by collectors and investigators.

In the last few decades, studies on a few series of clavicles of different races have been published,[1] but most of these publications are of little value because in them the clavicle is only briefly dealt with in conjunction with other bones and the characters described are few in number. A detailed study of the English clavicle by F. G. Parsons appeared in 1917 in the *Journal of Anatomy*.[2] Besides the direct maximum length and the circumference at the middle, he obtained several linear and angular measurements from drawings of the horizontal and vertical contours for which he constructed types in order to examine the curvature of the bone and other features. As the methods used in orientating the bone and the contour measurements taken on the basis of that orientation are somewhat inadequate, the numerical results arrived at are not of great value for racial comparison. This point is discussed in detail in a later section of the present poper. Metrical data relating to the clavicle of Asiatic races, especially the Chinese, are extremely meagre. The only valuable study of Chinese skeletal remains was made by D. Black.[3] In his paper which appeared in 1925, nine principal bones, including the clavicle, were examined in the case of three series of specimens. Two of these series are of prehistoric date: one is from Sha Kuo

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[1] Anthropological writings on the clavicle up to 1925 are given in the references under "Schultergürtel" in *Lehrbuch der Anthropologie* by R. Martin, Dritter Band, pp. 1605–1608.

[2] F. G. Parsons: "On the Proportions and Characteristics of the Modern English Clavicle." *Journal of Anatomy*, Vol. 51, pp. 71–93, (1917).

[3] D. Black: "The Human Skeletal Remains from the Sha Kuo T'un Cave Deposit in Comparison with those from Yang Shao Tsun and with Recent North China Skeletal Material." *Palaeontologia Sinica*, Series D. Volume I, Fascicle 3, pp. 1–120, (1925).

T'un near Liaoning and the other from Yang Shao Tsun in Honan. The third series is of modern date collected from the North China plain. In the case of the clavicle, the author merely took one direct measurement—the maximum length. In addition to this he made detailed observations on different tubercles of the bone. It was concluded that the general character of clavicular modelling is similar in the Aeneolithic and recent North China series, while in certain morphological characters all these Chinese clavicles display group features which evidently distinguish them from those of non-Asiatic origin.

The present study deals with the clavicle only. The data examined relate to two series of specimens, of both sexes, obtained from two different regions of the country. A considerable number of characters, both metrical and morphological, are used. Several of these were newly devised for the purpose in view. The objects of this study are two-fold, namely: (1) to throw new light on the features of the Chinese clavicle by making comparisons bilaterally, sexually and racially between the available series of the same or different races, and (2) to test the validity of some improved techniques used which may be valuable in the future routine description of the bones of other racial series.

II. *Description of the Material.* Two series of Chinese clavicles obtained from different parts of the country are dealt with in the present study. The sources of the material are:

(1) Hsiao T'un Series. More than 30 complete Chinese skeletons, including the crania, were excavated in 1929–1932 by Dr. Li Chi, the head of the Archæological Section of this Institute, and his colleagues from ancient graves at Hsiao T'un, west of the city of Anyang, Honan. Of these skeletons there are 32 clavicles of both sexes available for measurement. According to the archæological evidence they belong definitely to the people of the Sui-T'ang dynasties (A.D. 581–899), probably of the better class. All the skeletal material recovered at Hsiao T'un has most generously been placed at my disposal for study, a privilege for which I must acknowledge my indebtedness to Professors Fu Ssû-nien and Li Chi. Two separate studies on the crania[1] and humeri[2] of the same series will shortly be published. A full account of the discovery of the Hsiao T'un material is given in the first paper mentioned. The present series consists of 18 right and 14 left clavicles, and among these there are only 13 pairs.

(2) Hsiu Chiu Shan Series. 214 modern Chinese clavicles of either sex, together with the corresponding crania and other parts of the skeleton, were collected in the spring session of 1936 by the writer from numerous unclaimed

[1] T. L. Woo: "A First Study of the Chinese Skull Excavated from Hsiao T'un, Anyang," (ready for publication).

[2] T. L. Woo: "A Study of the Chinese Humerus," (ready for publication).

graves of Hsiu Chiu Shan, north of Hsia Kuan, Nanking. These specimens undoubtedly represent the bones of people of poor class who inhabited the neighbourhood of the city. With the exception of a small number of cases (16.8%) of which the birth places of the occupants of the burials were obtained from the reading of the inscriptions on the tomb-stones, principally representing the natives of provinces of the Yangtze delta, particulars of the origins of the people are unknown. However, the eastern Chinese, the writer believes, are better represented than the people of any other part of the country. Of the total number of specimens, 104 are right bones and the others left. There are only 81 pairs.

In both series, the specimens are nearly all fully adult, as the second centres of ossification for the medial end in a great majority of cases are completely fused. It has generally been recognised by anatomists that the clavicle in males is longer, stouter and more massive than that in females, and that the curvature is also more marked; in males its acromial and sternal ends lie at the same level or the former is the higher, while in females the acromial end is at a lower level than the sternal one. But in actual fact, the variation of characters of the clavicle in both sexes is as large as those for any other part of the skeleton, and the overlapping of the male and female distributions for any character is considerable. An experienced observer will often have great difficulty in sexing the skeleton from the features of the clavicle alone. According to Parsons' experiments[1] on the sexing of the English clavicles of which the sex was previously known, he found that there is an error of 22 per cent., if the sexing of specimens is based on the lengths of the bone only; an error of 16 per cent. on the circumference of the shaft at the middle; an error of 26 per cent. on the size of the inner end calculated from the sum of the height and width of its articular facet. Hence from one-sixth to one-fourth of cases of isolated clavicles will be likely to be incorrectly sexed. Fortunately, the present material mostly consists of complete skeletons. The observer is thus able to examine the characters of the crania, pelves and long bones of the same individuals. As a result of careful sexing, it is found that there are 19♂ and 13♀ bones in the Hsiao T'un series, and 132♂'s and 82♀'s in the Hsiu Chiu Shan series, respectively.

Most of the bones are preserved in a good condition, especially those of the Hsiao T'un series. When considering all the bones together, there are 15 per cent. of cases in which the acromial ends are wholly or in part defective, or worn as a result of exposure. Approximately 5 per cent. are in a similar condition at their sternal ends. These are more frequently found in the Hsiu Chiu Shan specimens. The measurements are taken as far as possible on all the bones.

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[1] F. G. Parsons: *loc. cit.*

III. *Measurements Taken.* The metrical characters recorded fall into three classes, according to the techniques used, viz.: 1. direct measurements, 2. those obtained from the horizontal contour section, and 3. those obtained from the vertical contour section. The definitions of these two sections will be given later.

1. Direct measurements. There are only 8 absolute measurements of the clavicle defined in Martin's *Lehrbuch*.[1] Of these 4 measurements were adopted and taken on the Chinese specimens according to the definitions given. The other four have not been used in the present study on account of the fact that measurements of somewhat similar nature can be more accurately obtained from the drawings of the contours. The measurements are:

(1) Maximum length of the clavicle, the greatest distance from the most lateral point of the acromial end to the most medial point of the sternal end, taken with the osteometric board. The specimen is placed in a horizontal plane with the inner surface in contact with the side wall of the board. In nearly all cases the maximum length of the bone is obtained in this way. A line connecting the two points of contact on the posterior border of the bone is termed the base-line of the clavicle, which is almost parallel to the maximum length. The measurement taken in such a way is practically the same as that given by other authors.

(2) Transverse diameter of the shaft at the middle, a maximum horizontal diameter taken from the anterior edge of the middle of the bone to the posterior edge of it. The points used for the mid-section with regard to the maximum length should be previously marked in pencil.

(3) Sagittal diameter of the shaft at the middle, a maximum diameter taken vertically and at right angle to the previous measurement. Both diameters are taken with small calipers.

(4) Circumference of the shaft at the middle, taken at the same mid-section of the bone with a steel tape.

2. Measurements taken from the horizontal section. Before considering the measurements obtained from the contours it is necessary to understand clearly the method of orientation of the bone employed. Parsons[2] was the first to introduce the technique of drawing both horizontal and vertical contours of the clavicle in connection with English material. According to his method, a small tubercle for the sterno-mastoid muscle, directly above the sternal end, is used for orientation. Failing this he supposes that if the anterior and posterior

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[1] See Martin's *Lehrbuch der Anthropologie*, Zweiter Band, pp. 1005–1006.

[2] F. G. Parsons: *loc. cit.*

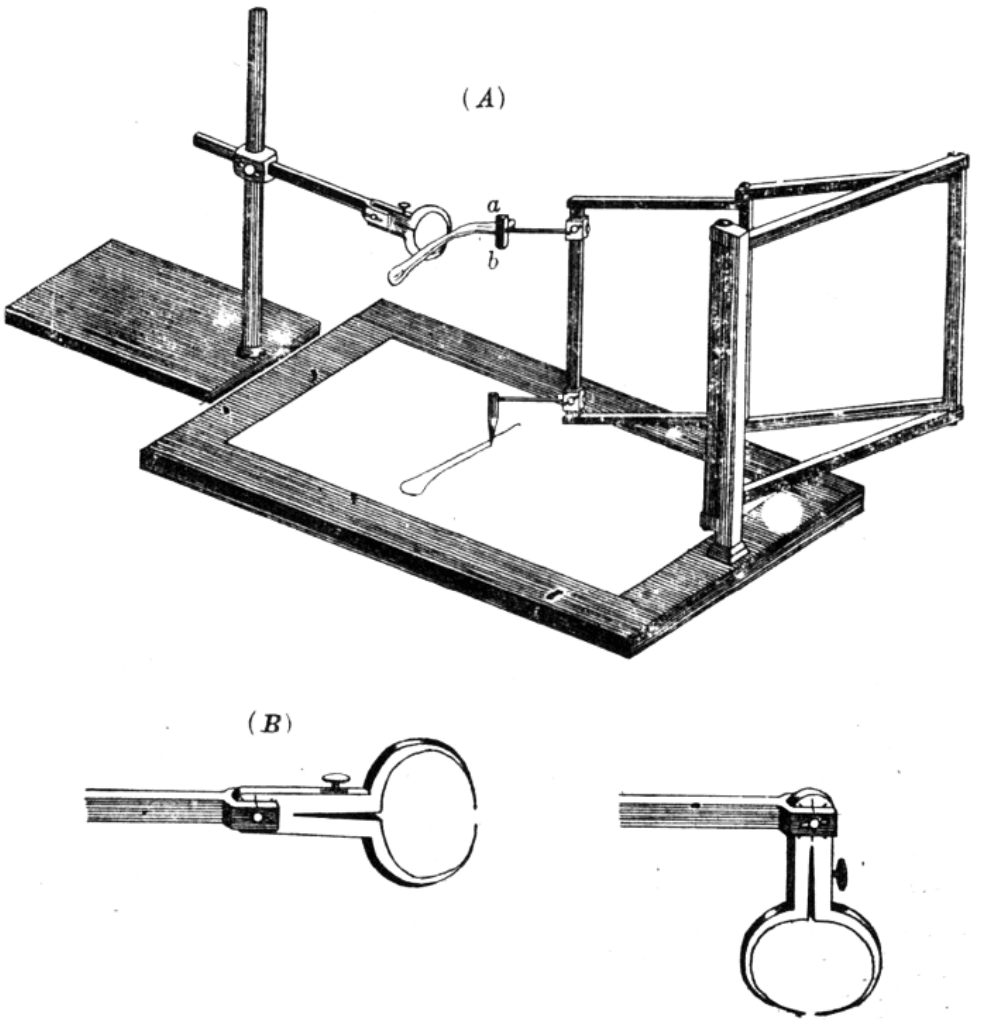
borders of the acromial third of the bone are placed in the same horizontal plane then the bone is orientated very nearly in the living position. It should be noted that any plane must be geometrically determined by three fixed points. It has been found that the tubercle for the sterno-mastoid muscle is very difficult to locate in many cases, or it may be entirely missing. And tubercles of irregular, variable forms are often found on the anterior and posterior borders of the acromial third. For the sake of accuracy, the horizontal plane of the bone adopted in the present investigation is precisely determined by the following three points: (*a*) the mid-point on the superior medial edge of the sternal end, when the bone is hold in a horizontal position as accurate as possible; (*b*) the most projecting point on the anterior border of the bone at a distance of one-fifth of the maximum length (measurement 1) from the acromial extremity, usually located at the sharp edge laterally to the eminence of the deltoid tubercle if it is present; and (*c*) the most projecting point on the posterior border at the same distance. The latter two points are determined in the same horizontal position as mentioned above. When the bone is properly orientated in the plane determined by the above three points and clamped in position, the horizontal outline of the clavicle is then drawn on the paper by a pen of conical form and a prismatic bar which are both attached to the stereograph by Schwarz.[1] The form of this bar and the operation of the whole instrument are shown in Fig. I (A). The bar[2] was specially designed by the writer for the purpose. The vertical bar which has three edges, is about 2 cms. long. In making the drawing the outer or working edge (see the line ab in Fig. I, A), which corresponds exactly to the central perpendicular axis of the pen, is always kept in contact with the bone. In the middle of the surface diametrically opposite to the working edge is attached a horizontal bar which is in turn fixed to the free perpendicular of the stereograph by means of a bracket and a screw. The working edge can thus be readily moved in any direction with the help of the three movable frames of the stereograph. To draw the vertical contour we only need to turn down the handle of the clamp and bring about a rotation through 90° of the clamp that is holding the bone in the horizontal plane (see Fig. I, C). When drawing these contours, the mid-points[3] on the medial and lateral edges of the superior surface of the two clavicular extremities, as well as the conoid tubercle, are marked as points on the paper, and from these several measurements are later taken.

[1] The stereograph used is the one originally designed by Schwarz for drawing the contour of the mandible.

[2] I wish to thank most heartily Dr. G. H. Wang, the Director of the Psychological Institute, Academia Sinica, for help in making this special bar for me in the laboratory of his Institute.

[3] The mid-points on the medial and lateral margins of the bone must be marked on the outline as points on the contour, and the former is practically one of the three points used to determine the horizontal plane.

Fig. I. (A) The Drawing Instrument in Use. (B) The Clamp, Holding the Bone in a Horizontal Position. (C) The Clamp, Holding the Bone in a Vertical Position



It is evident that the drawing of contours with an instrument of this kind is much more convenient than the use of Lucae's or Mollison's dioptograph. The advantages of the revised method are two-fold: (*a*) the plane determined by three definite points can be fixed in any specimen, and (*b*) the two planes are exactly perpendicular to each other.

The form of the clavicle is curved like the letter S: it is convex forwards at its medial part and concave forwards at its lateral part, corresponding to the hollow between the chest and shoulder. The relationship of the chord between the mid-points of the two terminals of the bone to the corresponding arc is important for the purpose of investigating the curvature of the clavicle. If the chord and arc coincide with each other, there is, of course, no curvature. When the arc becomes more convex, both anteriorly and posteriorly, the divergence of the two measurements will be greater. Since the form of the bone presents a double curve, the total chord and its arc must intersect at one point, which divides the whole length into two separate curves, viz. an outer concave and an inner convex curve, viewed anteriorly. The former is bounded by its outer chord and arc, and the latter bounded by its inner chord and arc. The two parts divided in this way indicate the natural state of the curvature of the bone better than any artificial division would.

The following measurements, either linear or angular, are obtained from the horizontal section defined above. Fig. II, (A) shows all the points from which measurements are taken. The definitions are:

(5) Total arc of the clavicle. After the horizontal section has been properly orientated, the mid-points on the medial and lateral edges of the acromial and sternal ends are marked (see *c* and *d* of Fig. II, A). A central broken line from *c* to *d* along the bone is then drawn carefully so that at all points it is midway between the anterior and posterior borders of the bone. The total arc is taken from the point *c*, the terminal of the acromial end, through the central broken line previously marked to the point *d*, the terminal of the sternal end. This can be measured conveniently with a slip of ruled paper.

(6) Outer arc. This arc is measured along the broken line from the point *c* just mentioned to the point of intersection of the entire arc and the chord (*c-d*), i.e. the point *e*.

(7) Inner arc. This is measured along the broken line from the point *e* to the point *d*, the terminal of the sternal end.

(8) Total chord of the clavicle: the distance between the two points *c* and *d*.

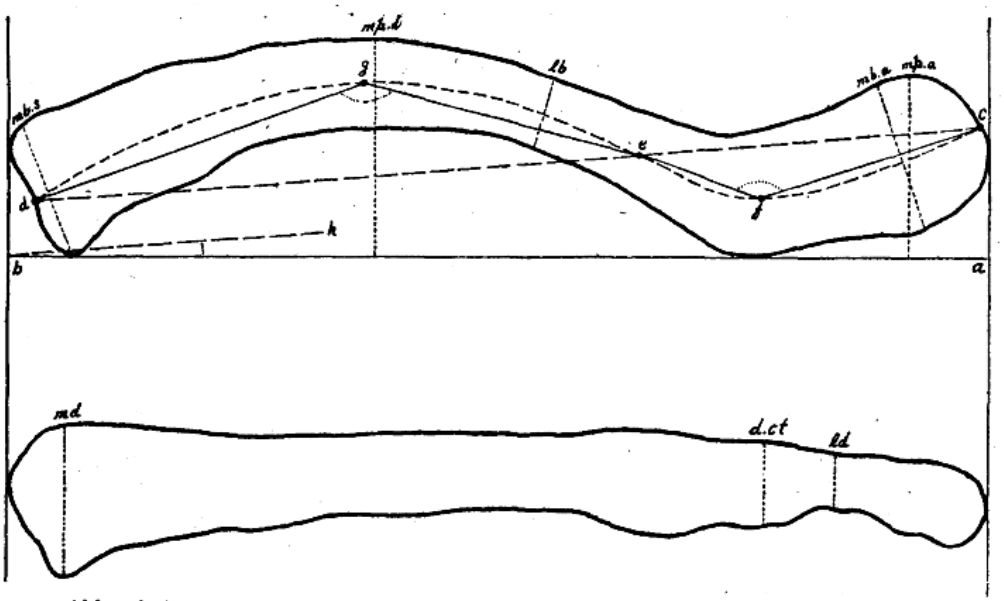
(9) Outer chord: the distance between the points *c* and *e*.

(10) Inner chord: the distance between the points *e* and *d*.

(11) First segment. This chord is taken from *c* to *f*. The last is the point of maximum subtense on the mid- (broken) line of the section from the outer chord (*ec*).

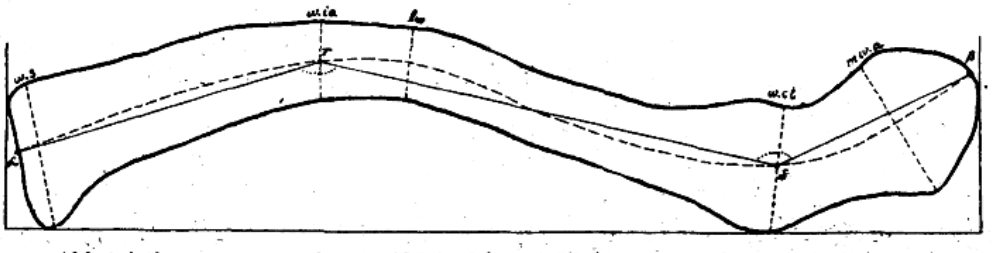
(12) Second segment. This chord is taken from the point *f* to the point of intersection *e*.

Fig. II. The Horizontal (A) and Vertical (B) Sections of the Clavicle, Showing the Positions of Points from Which the Contour Measurements Are Taken



Abbreviations: mp. a, maximum perpendicular of the acromial end; mp. d, maximum subtense of the diaphysis; mb. a, maximum breadth of the acromial end; mb. s, maximum breadth of the sternal end; lb, minimum breadth of the shaft; ld, minimum depth of the acromial end; md, maximum depth of the sternal end; d. ct, depth at the level of the conoid tubercle.

Fig. III. The Horizontal Section of the Clavicle, Showing Contour Measurements Taken by Parsons



Abbreviations: mw. a, maximum width in the acromial third; w. ct, width at the conoid tubercle; lw, least width; w. ia, width at the inner angle, w. s, width at the sternal end; $\beta\delta$ outer segment; $\delta\gamma$, middle segment; γa, inner segment; $\beta\delta\gamma\angle$, outer angle; and $\delta\gamma a\angle$, inner angle. These measurements are the ones defined by Parsons.

(13) Third segment. This is measured from *e* to the point which is the point of maximum subtense from the inner chord (*ed*).

(14) Fourth segment. This is measured from the point *g* to the point *d*, the terminal of the sternal end.

The above four segments are numbered in order from the acromial to the sternal end. Their axial lines are also used for the purpose of finding the angles given below.

(15) Maximum perpendicular of the acromial end. This is a projective 'height' of the acromial end, measured from the most anterior point of this end in the horizontal plane to the base-line of the bone (mp. a in Fig. II, A). It corresponds to one of Martin's direct measurements.

(16) Maximum perpendicular (or subtense) of the diaphysis. This is a projective 'height' taken from the highest point on the upper edge of the convex curve of the diaphysis to the base-line (*mp. d*).

(17) Maximum breadth of the acromial end. This is the maximum breadth of the section of the acromial end taken perpendicular to the first segment *cf* (*mb. a*). Without this limitation, the points where the maximum breadth may be taken as shown by Parsons are somewhat indefinite.[1]

(18) Maximum breadth of the sternal end. This is the maximum breadth at the sternal end, taken in the same way as the last but perpendicular to the fourth segment *dg* (*mb. s*).

(19) Minimum breadth of the shaft. This minimum breadth is taken at the narrowest part of the shaft regardless of where this is (*lb*).

(20) Distance of the position of the minimum breadth. The distance from the mid-point of the minimum breadth to the vertical tangent to the acromial end is taken, so it is parallel to the base-line.

(21) Outer angle. This is measured between the first and second segments. It is the *cfe* ∠ shown in Fig. II, A.

(22) Inner angle. This is similarly measured between the third and fourth segments, viz. *dge*∠.

The method of measuring the angles described here is quite different from Parsons' method. His outer and inner angles relate to three segments, i.e. the $\beta\delta$, $\delta\gamma$, and $\gamma\alpha$ lines in his figure. The framework of his reconstruction of the

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[1] Parsons took the width at 5 places from the horizontal section: (1) maximum width in the acromial third, (2) width at the conoid tubercle, (3) minimum width, (4) width at the inner angle, and (5) width of the sternal end. In the present study only the minimum breadth is taken in the same way. Our first and last widths are not similar to those used by Parsons. His measurements of the second and fourth widths are entirely omitted owing to the fact that both are somewhat vaguely defined by him.

horizontal type contour, especially showing the angular measurements taken, is reproduced here for comparison in Fig. III. According to his method, it is clear that a change in one angle is necessarily correlated with a change in the other. The advantage of the revised method used for taking these angles is that the two are not necessarily correlated, while the apices of the angles (*f* and *g* in Fig. II, A) are the points of maximum subtenses from the corresponding chords. Two individuals of any given race, or two racial groups, might have the same value of one angle while differing quite significantly from each other in the other angle.

(23) Inclination of the entire chord of the clavicle. This is the angle between the entire chord *cd* and the base-line *ab*, measured with a protractor. It may be of value in indicating the relative positions of the terminals of the two ends with regard to the base-line. It is evident that when the two extremities are more bent upwards and downwards the angle in question will be greater.

3. Measurements taken from the vertical section. When drawing the vertical contour it is not necessary to reset the bone. All that need to be done is to turn the handle of the joint downwards through 90 degrees (see Fig. I, C). The anterior border of the bone is now uppermost. The plane thus fixed is exactly perpendicular to the horizontal one. In this plane we take the following four measurements on either side and these are shown in Fig. II, B.

(24) Minimum depth of the acromial end. This minimum projective depth is taken at the acromial end. It usually lies in the range between the terminal of the acromial extremity and the level of the conoid tubercle. The form of the acromial end in the vertical section, unlike that of the horizontal one, is usually concave both on the anterior and posterior borders. For this reason the measurement of the minimum depth is chosen (*ld*).

(25) Maximum depth of the sternal end. This projective depth is taken wherever it appears at the sternal end (*md*).

(26) Depth at the level of the conoid tubercle. This projective depth is taken from the central point of the conoid tubercle to the opposite edge of the section. The point of the conoid tubercle should be previously marked in pencil (*d. ct*).

(27) The distance of the position of the conoid tubercle. A horizontal distance is measured from the centre of the conoid tubercle to the extremity of the acromial end, taken parallel to the base-line. This measurement may be taken from either standard plane. Since the tubercle appears more marked in

the vertical plane, it is included as one of the characters of this group. It should be borne in mind that the first three depth measurements are all perpendicular to the base-line.[1] Readings of the above characters measured with the osteometric board, or with a tape or slip of ruled paper, are given to the nearest 0.5 mm., while those measured with small callipers are to the nearest 0.1 mm., an instrument with a vernier scale being used.

4. Indices. In order to obtain measures of the shapes of different parts of the bone, the following 10 indices were used. Several of these are new ones derived from measurements of the horizontal and vertical sections. Their definitions are:

(28) Caliber index:

$$\frac{\text{100x Circumference of the shaft at the middle (4)}}{\text{Maximum length of the clavicle (1)}}$$

This index expresses the relative delicacy or robustness of the bone as a whole, the larger the value, the stouter the bone.

(29) Shaft index at the middle:

$$\frac{\text{100x Sagittal diameter of the shaft at the middle (3)}}{\text{Transverse diameter of the shaft at the middle (2)}}$$

A higher value signifies that the cross-section at the middle of the shaft shows a closer approach to the cylindrical form, while a lower value indicates greater flattening of the shaft transversely.

(30) Length-height index of the clavicle:

$$\frac{\text{100x Maximum subtense of the diaphysis (16)}}{\text{Maximum length of the clavicle (1)}}$$

The more curved the specimen is, the larger the index will be.

(31) Claviculo-humeral index:

$$\frac{\text{100x Maximum length of the clavicle (1)}}{\text{Maximum length of the humerus}[2]}$$

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[1] Parsons took the depth at four places, namely: (1) the minimum depth of the acromial end (2) depth at the conoid tubercle, (3) depth at the middle, and (4) depth of the sternal end. The first, third and fourth measurements of depth are taken in a similar (but not the same) way in the present study but they are all perpendicular to the base-line. The depth at the middle is omitted since it was taken directly from the bone.

[2] This represents the first measurement of the humerus in Martin's *Lehrbuch*. Its definition is: the greatest distance from the highest point of the caput to the lowest point of the trochea, measured with the osteometric board. The mean measurements of this character for the two Chinese series are given in the writer's paper on the Chinese humerus, *loc. cit.*

This index has been widely used by different authors, so the comparative data for it are more abundant than those for any of the clavicular indices.

(32) Total curvature index:

$$\frac{\text{100x Total chord of the clavicle (8)}}{\text{Total arc of the clavicle (5)}}$$

This index is designed to give a measure of the total curvature of the bone, the lower the index is the more curved the bone must be.

(33) Index of the two arcs:

$$\frac{\text{100x Outer arc (6)}}{\text{Inner arc (7)}}$$

This indicates the relative extents of the two segments. As the inner arc is usually greater than the outer one, the index will usually be less than 100.

(34) Sterno-acromial breadth index:

$$\frac{\text{100x Maximum breadth of the sternal end (18)}}{\text{Maximum breadth of the acromial end (17)}}$$

This index gives the relative measure of the maximum breadth taken at the two ends of the bone.

(35) Sterno-acromial depth index:

$$\frac{\text{100x Minimum depth of the acromial end (24)}}{\text{Maximum depth of the sternal end (25)}}$$

This is of the same nature as the foregoing index giving a relative measure of depths taken at the two extremities of the bone.

(36) Minimum breadth position index:

$$\frac{\text{100x Horizontal distance of the minimum breadth (20)}}{\text{Maximum length of the clavicle (1)}}$$

This gives a relative measure of the position where the minimum breadth is located. A lower index signifies that the position of the minimum breadth is nearer to the acromial end.

(37) Position index of the conoid tubercle:

$$\frac{\text{100x Horizontal distance from the conoid tubercle (27)}}{\text{Maximum length of the clavicle (1)}}$$

As the distance is measured from the terminal of the acromial end, a lower index denotes a more lateral position of the conoid tubercle.

IV. *Comparisons of Mean Measurements.* The mean measurements of all the clavicular characters for each sex considered separately and for the two Chinese series are provided in the Appendix I. The mean constants given are of the following kinds: (1) mean values of the paired specimens for each side separately, (2) means for all the paired bones, the measurements of those of

the right and left sides being pooled, (3) means for all available specimens on each side, and (4) means for all available specimens without regard to side. The probable errors of these constants are only given for the longest, i.e. the Hsiu Chiu Shan, series.

The kinds of means used depend on the nature of comparisons to be made. In the present section there are four comparisons which will be made, viz.: (1) intra-group comparison of all the clavicular characters between the two sides, (2) the same between the two sexes, (3) inter-group comparison between the two series of bones dealt with, and (4) the same between different races for the few characters for which material is available. Excluding the case of the bilateral comparisons, for which means of paired specimens only are used, for sexual and other intra- and inter-racial comparisons the pooled means for all available bones on both sides are adopted in order to make the samples as large as possible. It has been found that differences between means deduced from paired specimens and those deduced from all available cases are all too small to be significant.[1] Hence it is justifiable to use the pooled values for both sides for all except bilateral comparisons.

(1) Bilateral Comparisons. Much have written about the asymmetry of cranial characters but less is known about the asymmetry of other parts of the skeleton. Since our data relate to a considerable number of characters, it seemed desirable to examine the asymmetrical nature of the clavicle. The present comparisons are restricted to the male and female means for the Hsiu Chiu Shan series although the female constants are based on fewer cases. In Table I are provided the mean of the paired specimens for each side, and the side ratios which are formed by expressing the right mean as a percentage of the corresponding left mean.[2] If the right mean is larger than the left the ratio will exceed 100. From the values of these ratios the preponderance of one side over the other can at once be seen. Of 74 comparisons made for both sexes 33 of them show the right side greater and the remaining cases the left side greater. There are 30 characters (80.1%) which show the same side greater for both sexes. Although in the remaining seven cases agreement is not found between the two sexes, yet their deviations of the ratios for these from 100 are all negligible. The average side ratios of absolute characters, and angles and indices for the male series are 99.8 and 101.1, while those for the female series are 99.6

[1] The ratios of differences between pairs of corresponding means to their probable errors are all less than 2.0.

[2] The ratio is 100x right mean/left mean, which may be termed the "side ratio." The inverse form, i.e. 100x left mean/right mean, was previously used by Hrdlička for examining the side difference of humeral characters.

and 99.8, respectively. It is clear that clavicular characters are, on the average approximately symmetrical. Judging from the average ratios no marked distinction can be found between asymmetry in size and that in shape.

The significance of asymmetry of clavicular features can be more accurately determined by comparing the differences between the two sides in terms of their probable errors. The latter constants depend not only on the sizes and variations of the samples but also on the correlations between the homologous measurements.[1] After comparisons have been made in such a way, 13 characters for males are found to be significant and these may be arbitrarily classified into the following two groups.

(1) Characters significantly dominant on the right side. There are only 4 characters belonging to this group, viz.: maximum perpendicular of the acromial end (♂ 7.1, ♀ 3.1), index of the two arcs (♂ 5.9, ♀ 2.5), inclination angle of the entire chord (♂ 4.6, ♀ 2.7), and caliber index (♂ 3.8, ♀ 3.3).

(2) Characters significantly dominant on the left side. 9 characters are included in this group: maximum length of the clavicle (♂ 10.4, ♀ 3.1), inner arc (♂ 6.3, ♀ 3.2), claviculo-humeral index (♂ 5.6, ♀ 5.9), inner chord (♂ 3.9, ♀ 3.2), position index of the conoid tubercle (♂ 3.9, ♀ 3.1), total chord (♂ 3.6, ♀ 3.2), total arc (♂ 3.1, ♀ 3.1), inner angle (♂ 3.1, ♀ 3.0), and outer angle (♂ 3.0, ♀ 2.7).

The characters listed in each group are arranged in order according to the sizes of the ratios for the male series, i.e. the difference between two means of opposite sides ($\triangle_{R-L}$) was divided by the probable error of the difference ($p.e.\triangle$), values being given after each sex in brackets. It is of interest to note that the order of significance for each character is not widely divergent in the two sexes.

Let us discuss at some length the asymmetrical nature of these characters. In the Hsiu Chiu Shan series, the average maximum length of the right clavicle in males is 144.1 and that of the left clavicle is 149.6. Though the difference is merely 5.5, yet it is significant and the same is true for the females. The left dominance of the clavicular length is not only found in the Chinese specimens, but also in those of many other races.[2]

Since the maximum length is greater on the left side, the total chord and its arc are almost bound to be greater on the same side and in fact they are so. It has been noted that the total chord and its arc consist of two components, an outer and an inner. The longer length of the bone may be attributed to its outer or inner component or to both. From the ratios ($\triangle_{R-L}/p.e.\triangle$) shown, it is evident

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[1] The formula used for computing the probable error of the mean difference between two sides is $\frac{.67449}{\sqrt{n}}\sqrt{\sigma_r^2+\sigma_L^2-2r\sigma_r\sigma_L}$.

[2] See R. Martin: *Lehrbuch der Anthropologie*, Zweiter Band, p. 1098.

that both the inner chord and arc are significantly larger on the left side, but the outer measurements have small and non-significant differences. This seems to show that the inner component plays an important rôle in making the whole length larger on the left.

Table I. Male and Female Mean Measurements of the Clavicle on Each Side for the Hsiu Chiu Shan Series and Side Ratios

Character	Means (paired)[1]				Side ratios	
	Male		Female			
	Right	Left	Right	Left	Male	Female
a. Absolute Measurements:						
(1) Maximum length of the clavicle	144.1	149.6	132.7	135.3	96.4	98.1
(2) Transverse diameter of the shaft at the middle	12.9	12.9	11.6	11.4	100.2	101.8
(3) Sagittal diameter of the shaft at the middle	10.6	10.5	9.2	9.1	101.1	100.9
(4) Circumference of the shaft at the middle	37.4	37.3	33.5	33.2	100.4	100.7
(5) Total arc of the clavicle	153.5	155.7	141.4	142.6	98.6	99.1
(6) Outer arc	66.2	64.2	63.1	62.0	103.1	101.8
(7) Inner arc	86.8	92.0	77.5	81.4	94.4	95.2
(8) Total chord of the clavicle	141.7	143.7	129.7	131.9	98.6	98.3
(9) Outer chord	58.2	58.8	54.2	55.3	98.9	98.1
(10) Inner chord	82.6	85.9	74.3	77.7	96.2	95.6
(11) First segment	33.6	33.9	31.8	31.4	99.3	101.3
(12) Second segment	29.4	27.1	25.7	27.8	108.4	92.4
(13) Third segment	40.7	41.4	38.6	37.6	98.2	102.6
(14) Fourth segment	44.5	46.2	39.4	39.6	96.4	99.4
(15) Maximum perpendicular of the acromial end	29.7	28.0	27.0	25.5	106.1	106.2
(16) Maximum subtense of the diaphysis	29.4	29.9	27.9	27.4	98.3	102.0
(17) Maximum breadth of the acromial end	21.9	21.5	19.8	19.9	101.6	99.4
(18) Maximum breadth of the sternal end	19.7	20.1	17.5	17.9	97.9	98.3
(19) Minimum breadth of the shaft	10.5	10.4	9.4	9.2	101.6	102.0
(20) Distance of the position of the minimum breadth	70.1	70.7	64.3	65.6	99.1	98.0
(24) Minimum depth of the acromial end	9.5	9.4	8.6	8.5	101.7	100.9
(25) Maximum depth of the sternal end	23.2	22.8	20.2	20.0	101.8	100.9
(26) Depth at the level of the conoid tubercle	12.5	12.3	11.9	11.7	101.8	101.3
(27) The distance of the position of the conoid tubercle	34.4	35.9	31.6	32.9	95.8	96.1
b. Angles and Indices:						
(21) Outer angle	139°.5	141°.9	139°.6	142°.6	98.3	97.9
(22) Inner angle	151°.1	152°.9	150°.9	152°.3	98.8	99.0
(23) Inclination of the entire clavicular chord	5°.3	4°.7	5°.6	5°.2	111.0	109.1
(28) Caliber index	26.0	25.4	25.4	24.6	102.2	102.9
(29) Shaft index at the middle	82.8	82.1	80.0	80.3	100.9	99.1
(30) Length-height index of the clavicle	20.7	20.5	20.7	20.3	100.9	102.0
(31) Claviculo-humeral index	47.5	48.5	47.0	48.0	98.0	97.9
(32) Total curvature index	92.0	92.6	91.9	92.2	99.4	99.4
(33) Index of the two arcs	79.3	70.4	81.7	78.1	112.6	104.6
(34) Sterno-acromial breadth index	91.2	94.2	87.8	91.7	96.8	95.8
(35) Sterno-acromial depth index	41.7	41.9	43.3	43.8	99.5	98.8
(36) Minimum breadth position index	48.3	47.7	47.1	49.9	101.2	94.5
(37) Position index of the conoid tubercle	23.4	24.5	23.7	24.5	95.5	96.9

[1] See Appendix I.

It is of interest to note that the projective perpendicular of the acromial end is significantly dominant on the right side. The condition is evidently due to the fact that the right bone is shorter in length and its acromial end is bent more inward and projected more forward (see Fig. VII).

Three angular measurements have been used for the purpose of estimating clavicular curvature. It has been found that in both sexes the outer and inner angles are both smaller on the right side, but the inclination angle of the entire chord is larger on the right. These results clearly indicate that the right bone is definitely more curved than the left.[1] It has been shown by Parsons[2] that the curvatures of English clavicle of the right and left sides, as estimated by his index of the curvature or a sum of the outer and inner angles, are identical or only different to a very slight extent. As his method of both measuring and expressing the curvature is quite different from ours, it is not possible to compare the two races in the respect considered. According to our material two indices—the total curvature index and length-height index of the clavicle—show a similar result,[3] viz. that the right bone has a slightly greater degree of curvature, although side differences for these two indices are not quite significant.

In the above two groups there are four indices which are significantly dominant in either direction, the caliber index and the index of the two arcs being dominant on the right side, and the claviculo-humeral index and position index of the conoid tubercle being dominant on the left. However, these cases can all be accounted for by the sizes of their components, some being due to the especially large value of the denominator or the small value of the numerator on the right side, and some due to similar conditions occurring on the left.

Out of the other 24 characters—18 absolute measurements and 6 indices—not shown in the above two groups, 13 are slightly in favour of the right side and the remaining 11 slightly in favour of opposite side, but none of these show a significant lateral difference. In other words, the characters relating to the

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[1] The more curved the bone is, the smaller is the size of the outer and inner angles but the larger will be the inclination angle.

[2] According to Parsons' study, in 83 English left male clavicles the average index of curvature, or a sum of outer and inner angles, is 301°, while in 90 right males it is the same; but when the corresponding bones of opposite sides of fifty males are taken the left index is 300° and the right 301°. In the same way the average index of 64 left female bones is 306° and of 65 right female bones 305°; but when fifty actual pairs of bones are dealt with the left is 305° and the right 304°. In the present material, with the curvature of the bone measured by our method, the male right index of paired specimens is 290°.6 and the male left one 294°.8, while in females the right is 290°.7 and the left 294°.9. In both sexes the side difference is 4°.2.

[3] As the denominator of the total curvature index and the numerator of the length-height index both increase with greater curvature, so a small value of the former index and large value of the latter one on the right side imply a more curved bone of the same side.

size and shape of the middle shaft, to the two extremities, and to the position of some osteometric or arbitrary points, may be considered roughly symmetrical.

It should be noted that the degree of transverse flattening of the Chinese clavicular shaft at the middle is quite pronounced. In the case of the male specimens from Hsiu Chiu Shan the percentage of cases with the transverse diameter greater than the sagittal one is 93.3, while in females the value is 96.0. These are slightly larger than the percentages found in the case of Baiouarii (84%) and Alamanni (94%).[1]

From the above discussion it appears that the asymmetry of the clavicular characters in many cases, especially in the curvature of the bone, may be attributed to the side differences between the lengths. The question whether the asymmetrical traits are inborn or affected by some external factors is one which we cannot attempt to determine at present.

(2) Comparisons between the sexes. Sexual differences of average clavicular characters are considered next. In the second to fifth columns of Table II are provided the male and female means for all available specimens on both sides for the two series considered, and in the last two columns are given the sex ratios of all the characters. The latter constants express the male means as percentages of the corresponding female means.[2] From the values shown the Chinese clavicle exhibits a well marked sexual differentiation, as was found in the case of the humeral characters of the same series. In most cases the ratio for the Hsiao T'un series is sensibly higher than the corresponding one for the Hsiu Chiu Shan series. This is markedly so in the case of absolute characters, and it may be due to the fact that both male and female means of the former and smaller series are subject to large errors of random sampling. If we only take into consideration the larger Hsiu Chiu Shan sample, of 27 linear and angular measurements, with the exception of the inclination angle of the entire chord which is in favour of the females, all the characters show male dominance with the ratios of 100.2–115.1, while in the case of the relative characters 5 indices are in favour of males, and 4 in favour of females. There is only one case of sexual equality. The average ratios of the absolute measurements for the Hsiao T'un and Hsiu Chiu Shan series are 115.2 and 109.5, while those of measurements of shape for the same two series are 100.5 and 99.6 respectively.[3] It is evident

[1] See Martin: *loc. cit.* p. 1099.

[2] The sex ratio is usually formed by taking 100 times the male mean divided by the corresponding female mean. It was used by Black, *loc. cit.*

[3] The corresponding average sex ratios of the two series derived from means of paired specimens are 112.0 and 99.8; those derived from means of the same series on the right side 111.8 and 100.5; and those on the left 112.2 and 99.1, respectively. The differences between the corresponding pairs of these ratios are practically negligible.

Table II. Male and Female Mean Measurements of the Clavicle for Both Chinese Series and Their Sex Ratios

Character	Means (all)[1]				Sex ratios	
	Hsiao T'un		Hsiu Chiu Shan		Hsiao T'un	Hsiu Chiu Shan
	Male	Female	Male	Female		
a. Absolute Measurements:						
(1) Maximum length of the clavicle	147.8	138.5	146.8	134.7	106.7	109.0
(2) Transverse diameter of the shaft at the middle	13.9	12.1	12.9	11.6	114.9	111.2
(3) Sagittal diameter of the shaft at the middle	11.0	9.2	10.5	9.2	119.4	114.6
(4) Circumference of the shaft at the middle	39.5	34.1	37.5	33.6	115.9	111.6
(5) Total arc of the clavicle	155.4	142.6	155.1	143.4	108.9	108.1
(6) Outer arc	67.8	66.3	66.1	62.3	102.4	106.0
(7) Inner arc	87.5	75.6	89.0	81.1	115.8	109.8
(8) Total chord of the clavicle	144.4	131.1	143.0	131.7	110.2	108.6
(9) Outer chord	60.8	57.8	59.2	54.6	105.2	108.4
(10) Inner chord	83.6	73.3	83.8	77.1	114.2	108.8
(11) First segment	35.2	30.0	33.9	31.3	117.2	108.2
(12) Second segment	29.1	32.0	28.9	26.3	91.1	107.6
(13) Third segment	39.2	36.9	40.9	38.4	106.1	105.3
(14) Fourth segment	46.3	37.4	45.1	39.7	123.8	113.6
(15) Maximum perpendicular of the acromial end	31.6	28.0	29.0	26.4	112.6	109.9
(16) Maximum subtense of the diaphysis	31.4	26.2	29.7	27.4	119.7	108.3
(17) Maximum breadth of the acromial end	24.5	17.6	21.9	20.1	139.0	108.8
(18) Maximum breadth of the sternal end	22.2	19.3	20.1	17.7	115.0	113.7
(19) Minimum breadth of the shaft	12.2	9.7	10.4	9.3	125.5	111.9
(20) Distance of the position of the minimum breadth	64.4	50.4	69.0	63.8	127.8	108.1
(24) Minimum depth of the acromial end	11.1	9.4	9.4	8.7	118.7	108.1
(25) Maximum depth of the sternal end	26.2	21.3	23.0	20.0	122.7	115.1
(26) Depth at the level of the conoid tubercle	14.3	12.7	12.5	11.9	112.8	105.1
(27) The distance of the position of the conoid tubercle	38.5	32.2	35.2	32.2	119.4	109.1
b. Angles and Indices:						
(21) Outer angle	141°.3	137°.2	140°.8	140°.5	103.0	100.2
(22) Inner angle	153°.5	152°.5	152°.5	151°.5	100.7	100.7
(23) Inclination of the entire clavicular chord	5°.8	6°.7	5°.1	5°.6	86.5	91.1
(28) Caliber index	26.7	24.6	25.7	25.0	108.2	102.6
(29) Shaft index at the middle	80.6	77.9	82.6	79.7	103.5	103.6
(30) Length-height index of the clavicle	21.2	19.5	20.5	20.5	108.6	100.0
(31) Claviculo-humeral index	47.4	48.8	47.7	47.5	97.2	100.5
(32) Total curvature index	93.0	91.9	92.2	91.9	101.1	100.4
(33) Index of the two arcs	80.3	90.4	76.8	78.1	88.8	98.3
(34) Sterno-acromial breadth index	89.9	110.6	92.2	90.2	81.3	102.3
(35) Sterno-acromial depth index	43.3	43.6	41.4	42.8	99.3	96.6
(36) Minimum breadth position index	43.7	37.3	47.0	47.3	117.1	99.3
(37) Position index of the conoid tubercle	26.0	23.4	23.9	24.1	111.4	99.3

that in either series the former average is appreciably higher than the latter. Similar results are also found for other parts of the skeleton. In the following table are given the average sex ratios of two groups of characters for the skulls

[1] See Appendix I.

and humeri of the same series. It will be seen that the average sex ratio of absolute characters is always larger than that of angles and indices. In other words, the sex differentiation in size appears to be more marked than that in shape.

Bones	*Series*	*Average Ratios of*	
		Absolute Measurements	*Angles and Indices*
Clavicle	Hsiao T'un & Hsiu Chiu Shan	112.5 (48)*	100.1 (26)
Humerus	Hsiao T'un & Hsiu Chiu Shan	113.7 (22)	106.4 (8)†
Cranium	Hsiao T'un	105.1 (53)	100.7 (41)

* Figures in brackets indicate the number of characters averaged.

† The average ratio of angles and indices for the humerus is slightly higher than that for the clavicle owing, possibly, to the small number of characters dealt with.

The order of significance of the sexual differences can be tested exactly in the usual way by finding the ratio of a difference to its probable error. In doing so, it is found that the sexual differences of 24 size characters are all significant (ratios from 3.1 to 14.2), the male being greater. The most significant sexual differences are for: the maximum length, the total arc and its chord, diameters and circumference of the shaft (ratios all greater than 8.0). In the case of three angles the male is slightly greater in the outer and inner angles, while the reversed position is observed in the inclination angle of the entire chord, as was anticipated. However, none of these sexual differences can be regarded as significant (sexual difference, or $M_{\delta}^{\uparrow} - M_{\varphi}^{\uparrow}$, for the outer angle is $.^{\circ}28 \pm 1.01$, for the inner angle $1.^{\circ}06 \pm .69$ and for the inclination angle $-.^{\circ}45 \pm .18$). It has been usually asserted by previous observers that the male clavicle is more curved than the female. Judging from the present measurements, the sexual difference in clavicular curvature is not so marked as it is generally supposed to be. This is possibly due to the fact that since the whole male specimen is larger and more massive than the female bone, so the curvature of the male one is apt to be overestimated on account of its size.

In the cases of 10 indices the sexual differences in either direction are all insignificant, the ratios being all less than 2.7. We may summarize here by saying that the Chinese clavicle shows marked sex differentiation in the whole length and stoutness of the shaft and in the size of its two extremities, but no marked differences are found in its curvature or other measurements of shape.

(3) Comparisons of the Hsiao T'un and Hsiu Chiu Shan specimens. The significance of the difference of two means for any clavicular character, as in

the case of cranial and mandibular characters, may be accurately tested by the value of a, which gives a measure of their divergence in terms of an estimate of the standard error of the difference.[1] A criterion[2] used by biometricians for grading the value of a is adopted: (*a*) 0–2.7, the difference compared is definitely insignificant; (*b*) 2.7–6.1, it is uncertain; and (*c*) greater than 6.1, the difference is improbable to be due to errors of random sampling.

Table III. Values of a between Two Series of Chinese Clavicles (Males)

Number	*Character*	*Values of a*
(19)	Minimum breadth of the shaft	28.67
(24)	Minimum depth of the acromial end	20.11
(25)	Maximum depth of the sternal end	11.19
(26)	Depth at the level of the conoid tubercle	7.91
(15)	Maximum perpendicular of the acromial end	7.64
(17)	Maximum breadth of the acromial end	6.85
(18)	Maximum breadth of the sternal end	6.19
(37)	Position index of the conoid tubercle	6.12
(27)	The distance of the position of conoid tubercle	5.54
(2)	Transverse diameter of the shaft at the middle	5.26
(4)	Circumference of the shaft at the middle	4.89
(3)	Sagittal diameter of the shaft at the middle	2.80
(32)	Total curvature index	2.29
(28)	Caliber index	2.28
(23)	Inclination of the entire clavicular chord	1.68
(30)	Length-height index of the clavicle	1.05
(35)	Sterno-acromial depth index	.95
(11)	First segment	.93
(36)	Minimum breadth position index	.86
(20)	Distance of the position of the minimum breadth	.73
(13)	Third segment	.56
(9)	Outer chord	.33
(29)	Shaft index at the middle	.30
(6)	Outer arc	.29
(34)	Sterno-acromial breadth index	.29
(14)	Fourth segment	.28
(22)	Inner angle	.27
(8)	Total chord of the clavicle	.26
(33)	Index of the two arcs	.26
(7)	Inner arc	.19
(1)	Maximum length of the clavicle	.14
(31)	Clavicule-humeral index	.14
(16)	Maximum subtense of the diaphysis	.12
(21)	Outer angle	.06
(5)	Total arc of the clavicle	.01
(12)	Second segment	.01
(10)	Inner chord	.004

[1] The formula for calculating the value of a is $(m_1-m_2)^2 / \frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}$, where m_1 and m_2 are the two means of the same character for any two series compared; n_1 and n_2, the sizes of the two samples; and σ_1 and σ_2, the two standard deviations. If the σ_1 and σ_2 are assumed to be approximately equal, the formula becomes $\frac{n_1 n_2}{n_1+n_2} \cdot \frac{(m_1-m_2)^2}{\sigma^2}$. In the present case, the second formula was used and the standard deviations of the Hsiu Chiu Shan series were employed throughout on the assumption that the variation of the two populations represented were approximately equal.

[2] See G. M. Morant: "A First Study of the Tibetan Skull," *Biometrika*, Vol. 14, pp. 193–260, (1923).

The 37 α's between our two series for each sex were worked out,[1] although means of the shorter series are admittedly deduced from so few cases that they are of less value. The male values of α are arranged in order in Table III. From these it can at once be seen in which characters the two series compared differ most essentially, and in which they are most alike. Out of all the characters dealt with 8 values of α are larger than 6.1, while all other differences are either uncertain or insignificant. The significant characters which distinguish the two series are: (*a*) minimum breadth of the shaft, (*b*) minimum depth of the acromial end, (*c*) maximum depth of the sternal end, (*d*) depth at the conoid tubercle, (*e*) maximum height of the acromial end, (*f*) maximum breadth of the acromial end, (*g*) maximum breadth of the sternal end, and (*h*) position index of the conoid tubercle. In these cases, the Hsiao T'un means are all greater than the corresponding means of the Hsiu Chiu Shan series. In other words, both acromial and sternal parts of the Hsiao T'un specimens are, on the average, distinctively broader and higher. As the position of the minimum breadth of the shaft and conoid tubercle are both nearer to their respective ends, so the related measurements are accordingly larger. The larger value of the position index of the conoid tubercle is possibly due to the longer length of its component, i.e. of the distance from the tubercle to the acromial extremity.

It is rather interesting to note that the clearest differences of clavicular features between these two series are not found in the total length, diameters at the middle and measurements relating to the curvature of the bone, but in the characters of the two ends. In the case of females[2] there are only four significant values of α, two for absolute measurements and two for indices. In order to compare all the characters together the average values[3] of α between the two series of Chinese clavicles and for both sexes are set forth in the following table.[4]

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[1] Values of α given above are calculated from means of all the specimens available. It might be suspected that the corresponding values, if calculated from means of paired individuals, or from those of the right or left bones only, would be different. In order to test this point, the male average α based on means of paired specimens, and on those of right bones were computed; the former is 3.1 while the latter 2.3 for 37 characters used. Both are not sensibly divergent from the value of 3.4.

[2] The 8 significant values of α found in the male series are slightly smaller in the female series. The largest value of α found for females is for the inclination angle of the entire clavicular chord which is not markedly significant in males.

[3] Owing to the small number of bones represented in each series, the coefficients of racial likeness have not been computed.

[4] 13.4 (all characters) and 13.2 (indices and angles) are the mean numbers of bones for the 37 characters in the Hsiao T'un series while 109.1 (all characters) and 107.4 (indices and angles) are those in the Hsiu Chiu Shan series.

Characters	Average of α's	
	Male	Female
All	3.4 (37)*	2.7 (37)
Indices & Angles	1.3 (13)	3.5 (13)

*Figures in brackets indicate the number of characters averaged.

It is seen that when considering all the characters together the male average α is slightly higher than the female, but the reversed position is observed in the case of the indices and angles. However, the highest average value is only 3.5. On the whole the measurements of two series are closely similar. The same result is obtained from a comparison of their humeral characters.[1]

(4) Comparisons of the Chinese and other series for a few characters. The comparative data for the majority of characters dealt with in the present paper are extremely scanty. In the case of the contour measurements, although several of the characters are of the same nature as those employed by Parsons, yet the results of the two different sets of material are still not comparable on account of the fact that the technique of orientating the bone, as well as the definitions of measurements, are not exactly the same.

Among the characters considered, two—viz. the maximum length and the claviculo-humeral index—have more abundant comparative data than any others. So the racial comparisons made in the present section are restricted to these two characters. In the first place, we are concerned with the maximum length of the clavicle. In Table IV are provided the mean measurements of this character in both sexes for different races. The series are arranged in order according to the size of the group means (male mean + female mean/2).

Table IV. Means of the Maximum Length of the Clavicle for Different Races*

Series	♂	♀	Group Mean
Andamanese	—	—	119
Senoi & Semang	—	—	121
North Chinese-recent	143	128	135
Japanese	147	131	139
Aino	146	132	139
Chinese (Hsiu Chiu Shan)	147	135	141
Chinese (Yang Shao)	159	126	142.
Chinese (Sha Kuo T'un)	—	—	143
Chinese (Hsiao T'un)	148	139	143
Egyptian (Naqada)	152	137	144
Negro	149	142	145
English	152	138	145
Fuegian	155	139	147

* Comparative data given in Table IV are cited either from Martin's *Lehrbuch* or from Black's paper, *loc. cit.* the means are for right and left bones together.

[1] See T. L. Woo: "A Study of the Chinese Humerus," *loc. cit.*

It will be seen that in either sex the means of the 5 Chinese series are not appreciably different from one another, except that the Yang Shao male mean is particularly high, while its female mean is particularly low. According to the size of the group values, the Hsiu Chiu Shan mean is closest to the recent North China one, while the Hsiao T'un mean is nearer to the Sha Kuo T'un and Yang Shao means. When compared interracially, the Chinese clavicular lengths appear to differ insignificantly from those of other Mongolian races, but they are certainly longer than the Andamanese, Senoi and Semang, and shorter than those of the Egyptian, negro, Fuegian and English races.

The next character to be considered is the claviculo-humeral index. This index, as indicated previously, is designed to give a relative measure of the lengths of the two bones considered. If any individual, or a given race, has narrower shoulder but a longer upper arm, a lesser value of the index will be given. The mean measurements of this index for the present two, as well as for other racial, series are given in Table V. The series compared are arranged in order according to the size of the group means.

Table V. Means of the Claviculo-humeral Index* for Different Races

Series	♂	♀	*Group Mean*
Andamanese	42.7	40.8	41.7
European	44.3	45.0	44.6
Chinese (Yang Shao)	45.7	45.1	45.3
Neolithic (Chamblandes)	46.5	44.6	45.5
North Chinese, recent	46.0	45.1	45.5
Egyptian (Naqada)	46.7	46.5	46.6
Negro	45.9	47.4	46.6
Santa Rosa Indian	46.3	47.3	46.8
Chinese (Hsiu Chiu Shan)	47.9	47.5	47.6
Chinese (Hsiao T'un)	47.4	48.8	48.1
Japanese	49.6	47.9	48.7
Aino	49.4	48.3	48.8
Chinese (Sha Kuo T'un)	49.8	—	—
Botokudos	51.5	46.6	49.0

* The mean indices for other races are cited from the same sources as those referred to above.

With the exception of the Sha Kuo T'un series, for which only the male mean is available, the mean indices of the other four Chinese series are by no means the same. The Hsiao T'un and Hsiu Chiu Shan groups means are very close, on the one hand, and those of the Yang Shao and recent North China series are practically the same, on the other. The range of this index for the Chinese series varies from 45.3 to 48.1, and they are not clearly differentiated from the values for American Indians, Negroes and Naqada Egyptians. However, the position of the Chinese as a whole in this respect lies approximately

midway between the extremes. It is clear that the index is capable of distinguishing series quite effectively, but it fails to arrange different races in a suggestive order. It may be tentatively concluded that, with the exception of one or two particular cases, the principal characters of the Chinese clavicle for different series are generally very close, and they show some marked divergences from the corresponding characters of other races.

V. *Comparisons of Variabilities.* Both absolute and relative variabilities, viz. standard deviations and coefficients of variation, of all characters,[1] with their probable errors, have been worked out for the sample from Hsiu Chiu Shan in both sexes. The values calculated are given in appendix II. This includes: (*a*) variabilities of all the characters taken on the right side, (*b*) those taken on the left, (*c*) variabilities based on the paired specimens of both sides and (*d*) those based on all available specimens. As the series dealt with is not a large one, the values obtained have rather large sampling errors. It is, perhaps,

Table VI. Comparison of Grades of Variabilities of Clavicles with Those of Crania*

Bones	*Sources*	*Characters*	*No. of Characters*	*Mean Cases*	*Grades of Variation*		
					% of Low Grade (0–4.9)	*% of Med. Grade (5–9.9)*	*% of High Grade (over 10)*
Clavicle	Hsiu Chiu Shan	Size	24	108.3	——	20.8(5)	79.2(19)
		Indices and angles	13	104.8	46.2(6)	23.0(3)	30.8(4)
Cranium†	Kansù & Honan (pooled prehistoric)	Size	36	36.3	50.0(18)	47.2(17)	2.8(1)
		Indices and angles	46	32.6	78.3(36)	21.7(10)	——
Cranium‡	Hou Chia Chuang (Yin Dynasty)	Size	27	26.6	51.9(14)	48.1(13)	——
		Indices and angles	17	25.1	76.5(13)	23.5(4)	——
Cranium†	North China (modern)	Size	36	79.8	47.2(17)	47.2(17)	5.6(2)
		Indices and angles	46	80.3	71.7(33)	28.3(13)	——

* As suggested by K. Pearson, the variabilities of linear measurements are compared by coefficients of variation and those of indices and angles by standard deviations.

† Values of variabilities for the pooled prehistoric and North China series of crania are cited from D. Black's paper, *loc. cit.*

‡ Values of variabilities for the Hou Chia Chuang cranial series are quoted from a paper by the present writer on "A First Study of the Chinese Skull Excavated from Hsiao T'un, Anyang, Honan." *loc. cit.*

[1] The coefficients of variation for angles and indices are, as usual, not provided in the appendix as they depend on purely arbitrary factors, such as the base-line chosen and the direction in which the measurement is taken.

more desirable in the present case to compare variabilities for groups of characters instead of those for measurements considered singly. For convenience of comparison the variabilities may be arbitrarily divided into three grades: low variation, values under 5; medium, 5.0–10; high variation over 10. In table VI are provided percentages of the three grades for male variabilities and for the clavicular characters in comparison with those of the cranial characters of different Chinese series.

It will be seen that the variabilities of the clavicular characters for either group are exceptionally high. For the clavicular characters, 79 per cent. of linear measurements and 31 per cent. of indices and angles are listed in the high grade of variation, while for the cranial characters, only a few characters, or even none of them, are found in the high grade, yet the majority are classified in the medium or low grade. It is difficult to suggest an explanation of the high variation of clavicular features. It might be supposed that the present material is not very homogeneous, causing peculiarly large variation. We can test this point by comparing the values of variabilities of the claviculo-humeral index, which are available for several races.

The standard deviation of the index for the present male series is 2.6, while the values[1] for the Yang Shao and recent North China series are 2.2 and 2.8, respectively. It is clear that the variability of the present series judged from this single index is not particularly high. The large average variability for the clavicular characters is possibly due to the nature of the particular characters dealt with. It is probable that characters such as the outer and inner arcs and chords, the measurements of the four segments, and the maximum and minimum breadths and depths, are all listed in the high grade of variation simply because these measurements are mostly taken from the arbitrary points for finding the curvature of the bone. Characters of this kind will be expected to have large variabilities.

The next point we will consider concerns bilateral and sexual differences in variability. The significance of differences in variability can as usual be tested by taking the ratio of the difference between constants for the two sides, or for the two sexes, to its probable error. The latter constants are computed by formulas given in a paper[2] by the present writer.

Considering the bilateral differences in variability first, out of all comparisons there are four cases[3] (or 10.8%) of differences of which can be considered to be

[1] Values in variability for other Chinese series are cited from Black's paper, *loc. cit.* p. 83.

[2] See T. L. Woo: "On the Asymmetry of the Human Skull," *loc. cit.* p. 337. The probable error of the difference between two standard deviations $=\frac{.67449}{\sqrt{2N}}\sqrt{\sigma_r^2+\sigma_L^2-2r^2\sigma_r.\sigma_L}$ and the probable error of the difference between 2 coefficients of variation

$$=\frac{.67449}{\sqrt{2N}}\left\{v_r^2+v_L^2-2r^2v_r.v_L+\frac{2}{(100)^2}(v_r^4+v_L^4-2rv_r^2.v_L^2)\right\}^{\frac{1}{2}}.$$

[3] The three significant differences on the right side are: length-height index $\updownarrow$, σ; claviculo-humeral index, $\updownarrow$, σ; and sternal-acromial breadth index, $\updownarrow$, σ. The one significant difference on the left is: sternal-acromial breadth index, $\updownarrow$, σ.

statistically significant, 3 cases being dominant on the right side and the remaining one dominant on the left. These are all found in the male group. A similar comparison may be made with regard to sexual differences in variability. In the following table are summarized percentages of the male and female preponderance in variability for measurements of size as well as for indices and angles.

Measurements of size (based on differences of V)		*Indices and Angles (based on differences of σ)*	
♂ > ♀	♂ < ♀	♂ > ♀	♂ < ♀
70.8%(17)	29.2%(7)	69.2%(9)	30.8%(4)

It will be seen that the percentage for male preponderance is considerably higher than the female, roughly in the ratio of 7:3, in the case of characters of both groups. Among 37 comparisons of variabilities[1] between the two sexes there are 9 cases, or 24.3%, found to be significant. Of these 8 are in favour of males and the remaining one in favour of females; 3 cases are found for absolute variabilities, while 6 are for relative ones.

From the analysis given above it may be concluded: (1) that on the average male variability tends to be greater than female, and that for the same sex variability on the right side tends to be larger than that on the left, (2) that lateral differences in variability are sensibly less than sexual differences.

It may be asked whether there is any correspondence between dominance in size and that in variability. This question can be examined by comparing individually the significant cases of dominant characters in size and in variability. It is found that for the lateral comparisons there is no single case dominant in both ways, while for the sexual comparisons there are only 8 cases which show the same direction of dominance: in the majority of cases dominance either in size or in variability is shown. This clearly indicates that so far as the present material is concerned no relation of any importance is discovered between dominance in size and dominance in variability. The same is true in the case of the cranial characters of single bones.[2]

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[1] Significant sexual differences in variability are: maximum length of the clavicle, inner chord, outer arc, maximum breadth of the sternal end, maximum depth of the sternal end, shaft index at the middle, index of the two arcs, sterno-acromial depth index and maximum subtense of the diaphysis. The first 8 characters are in favour of the males and the last one in favour of the females. In all comparisons the ratios of differences to their probable errors greater than three are considered to be significant.

[2] See T. L. Woo: "On the Asymmetry of the Human Skull," *loc. cit.* pp. 337–340.

Fig. IV. Horizontal and Vertical Type Contours Based on 36 ♀ Chinese Clavicles from Hsiu Chiu Shan (Right Side)

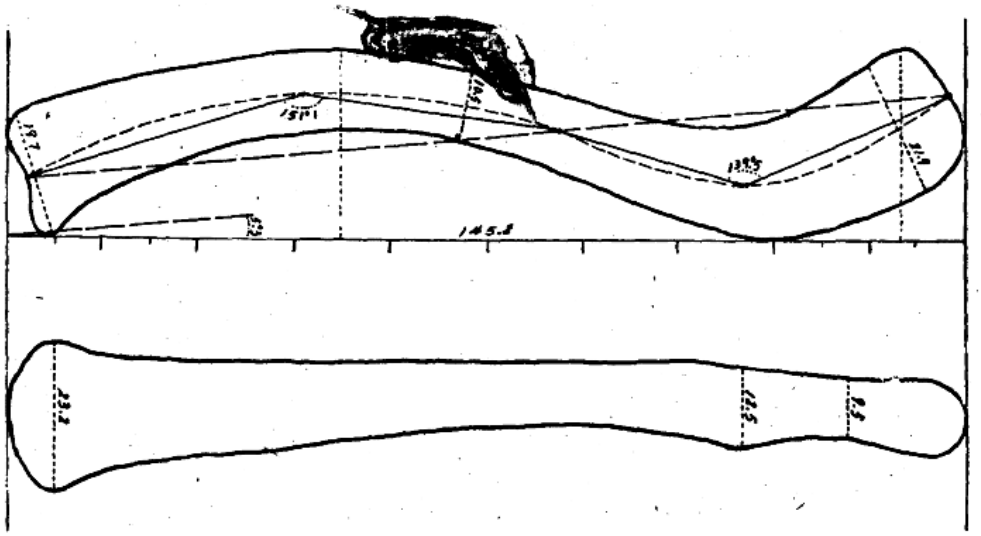


Fig. V. Horizontal and Vertical Type Contours Based on 36 ♀ Chinese Clavicles from Hsiu Chiu Shan (Left Side)

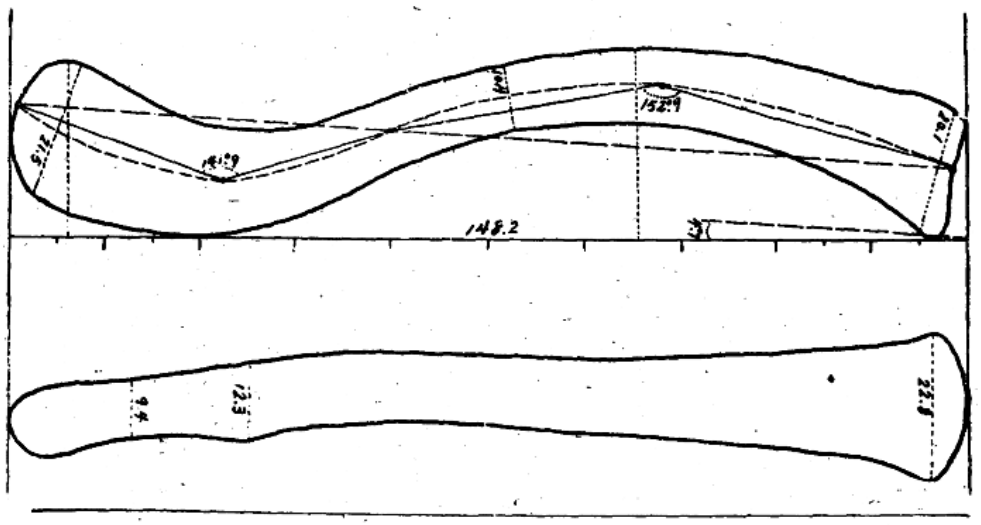


Fig. VI. Horizontal and Vertical Type Contours Based on 18 ♀ Chinese Clavicles from Hsiu Chiu Shan (Right Side)

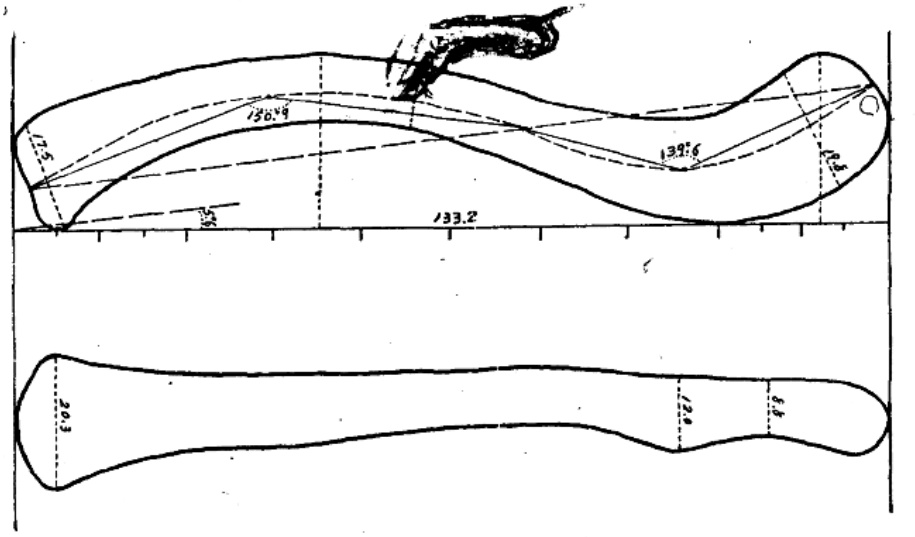


Fig. VII. Horizontal and Vertical Type Contours Based on 18 ♀ Chinese Clavicles from Hsiu Chiu Shan (Left Side)

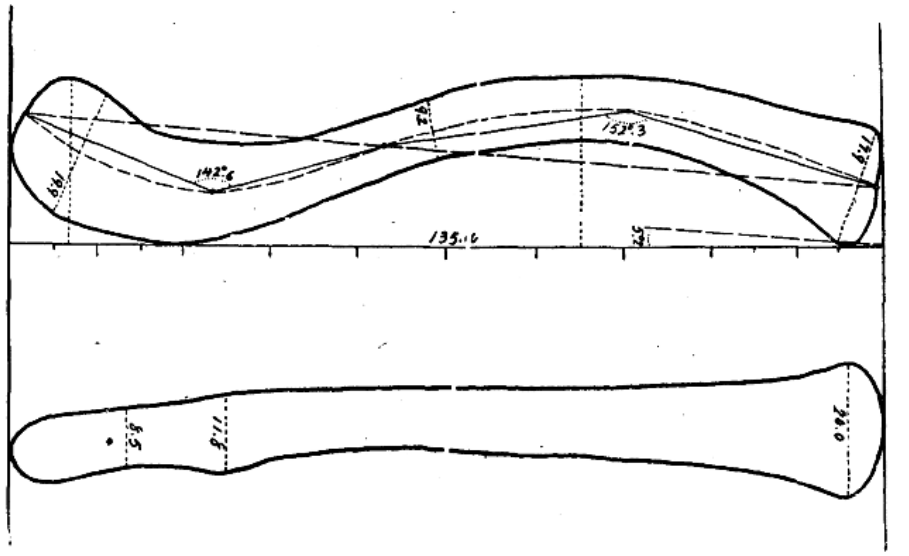


Fig. VIII. Horizontal and Vertical Type Contours Based on 12 ♂ Chinese Clavicles from Hsiao T'un (R+L)

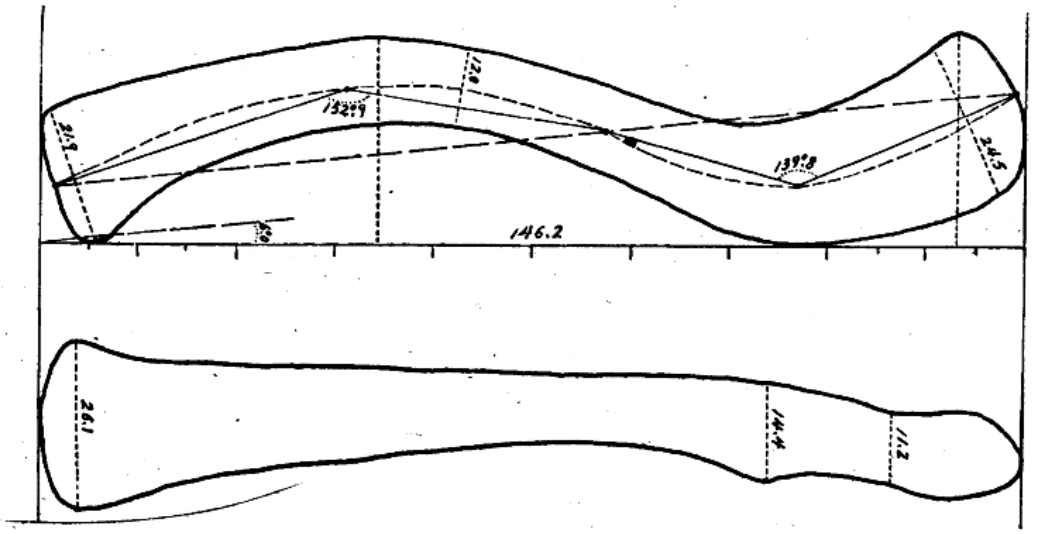


Fig. IX. Horizontal and Vertical Type Contours Based on 8 ♀ Chinese Clavicles from Hsiao T'un (R+L)

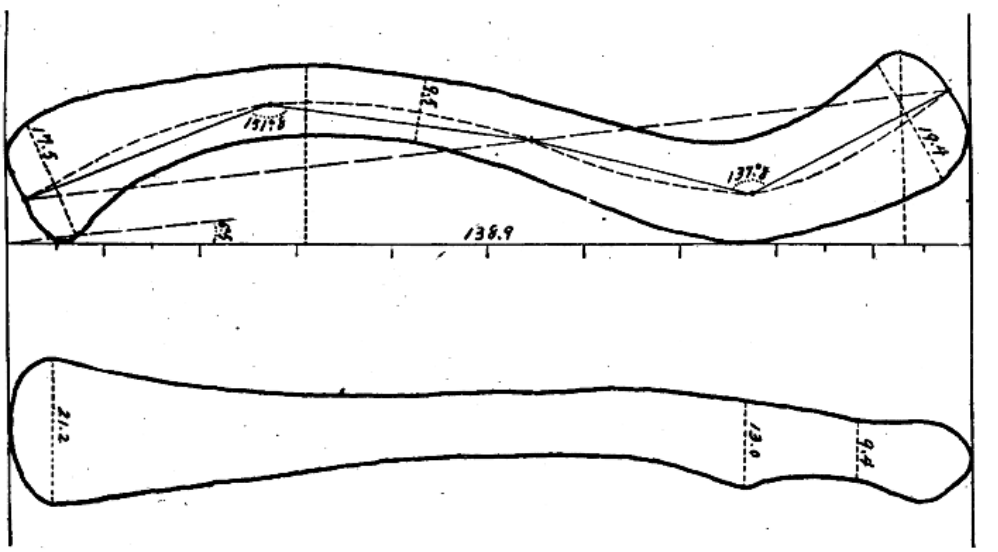


Fig. X. Horizontal and Vertical Type Contours Based on 72 ♂ Chinese Clavicles from Hsiu Chiu Shan (R+L)

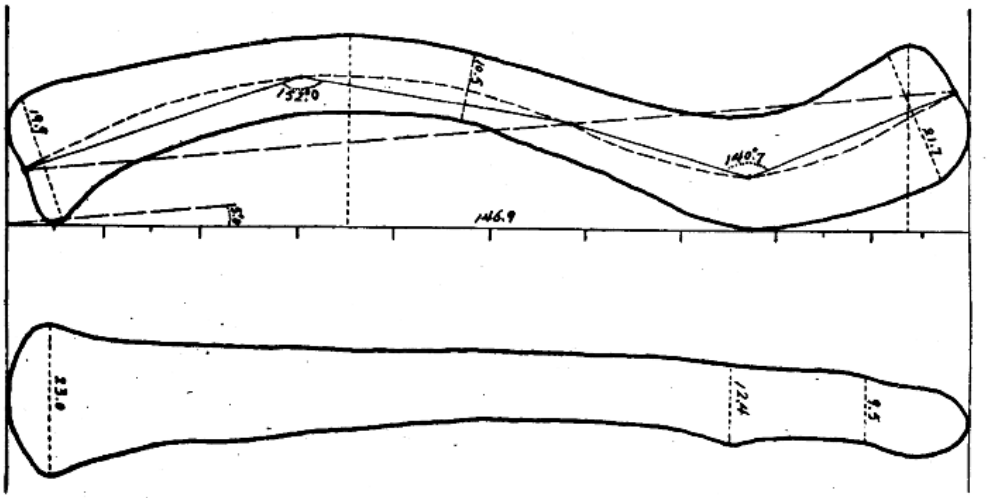
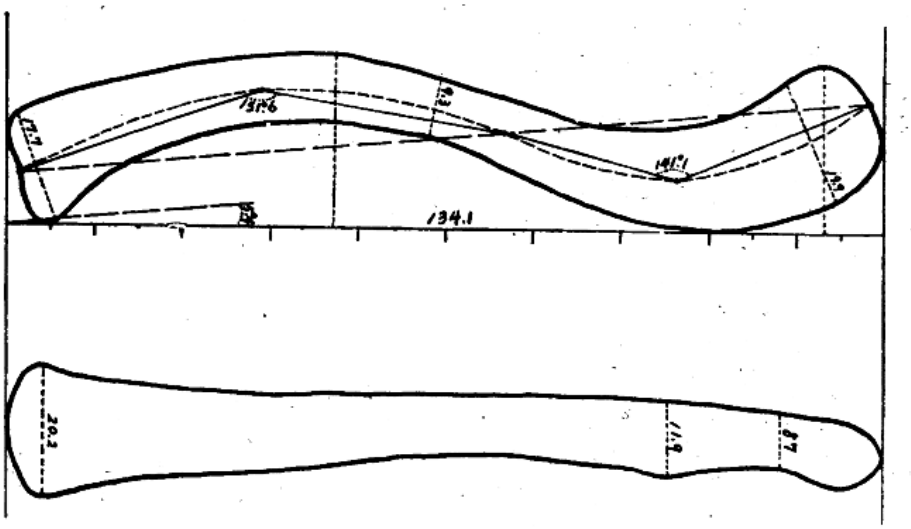


Fig. XI. Horizontal and Vertical Type Contours Based on 36 ♀ Chinese Clavicles from Hsiu Chiu Shan (R+L)



VI. *Comparison of Horizontal and Vertical Type Contours.* It is more interesting and suggestive to make similar comparisons of various groups based on their average (or type) contours. It is not accurate enough, as suggested by Parsons, to construct the average contour of any section from a few points determined by measurements. The more points are used in plotting, the more accurate the features of the mean contour will be. The process of constructing the clavicle type contour is similar to that employed in constructing the cranial type. The maximum length of the bone is first divided into ten equal parts (see Fig. IV) and perpendiculars are drawn through the points of division, numbered in order from the acromial to the sternal end. The distances of the points where the parallels cut the outline are measured from the base-line. As the shapes of the two ends of the clavicle are not determined accurately enough in this way, the first two and last two divisions are also bisected by parallels. The lengths along the 14 parallels, together with the contour measurements in each plane are averaged. From these values the average, or type, contour in either plane can be readily constructed, each sex and side being considered separately. Figs. IV-VII show the male and female average contours of both sections on the right and left sides for the larger Hsiu Chiu Shan series. Figs. VIII-XI reproduce the contours of each sex for both the Hsiao T'un and Hsiu Chiu Shan series formed from the pooled means of both sides. A glance at these figures reveals at once the following facts:

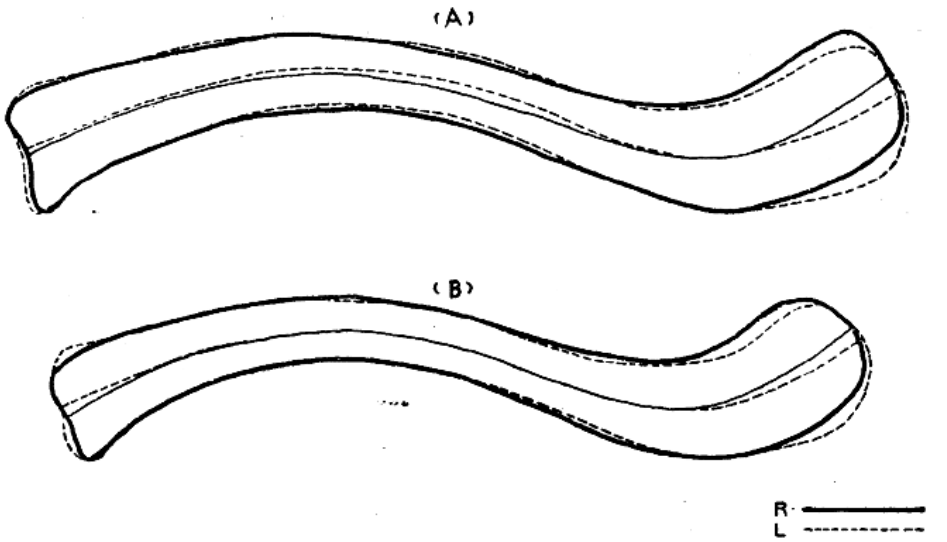
(1) In the horizontal plane the maximum perpendicular of the acromial end is always located in the second half of the first division, while the maximum perpendicular of the diaphysis is located without exception in the 7th division.

(2) The position of the minimum breadth always falls between the 5th and 6th parallels (see the horizontal contours, Figs. IV-XI), while that of the conoid tubercle invariably falls in the third division (see the vertical contours, Figs. IV-XI).

(3) In the vertical plane the minimum depth of the acromial part always lies in the first half of the second division, while the maximum depth of the sternal part always lies in the second half of the last division. It is clear that on the average these features of the clavicle occupy definite positions with regard to the maximum length, regardless of side, sex and different series considered.

Some interesting comparisons may be made. In the first place, the Hsiu Chiu Shan average horizontal or vertical type contour of the right side in each sex may be superposed on the corresponding ones of the left reversed, i.e. Figs. IV and V, and VI and VII are superposed with the base-line and the last parallels coincident so that average side differences will be at once apparent. These

Fig. XII. Bilateral Comparison of the Horizontal and Vertical Type Contours of the Hsiu Chiu Shan Clavicles: (A) Male and (B) Female



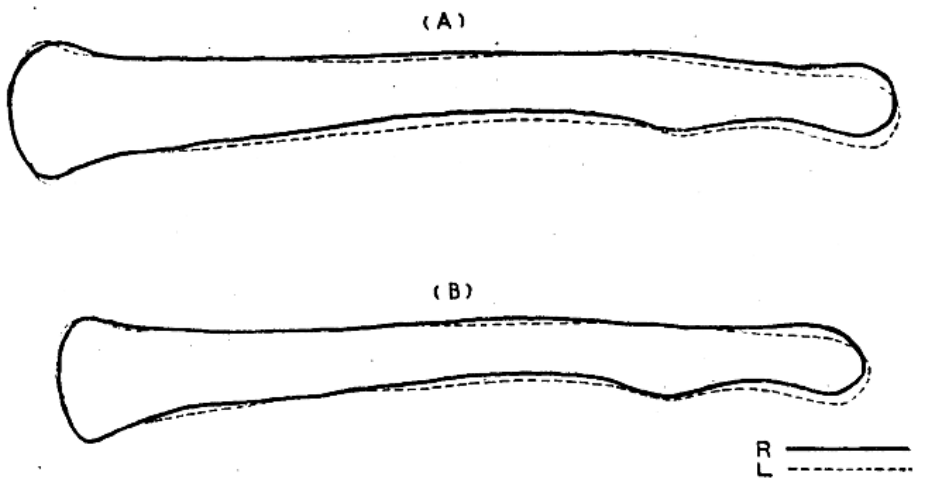


Fig. XIII. Sexual Comparisons of the Horizontal and Vertical Type Contours of the Chinese Clavicles: (A) Hsiao T'un Type and (B) Hsiu Chiu Shan Type

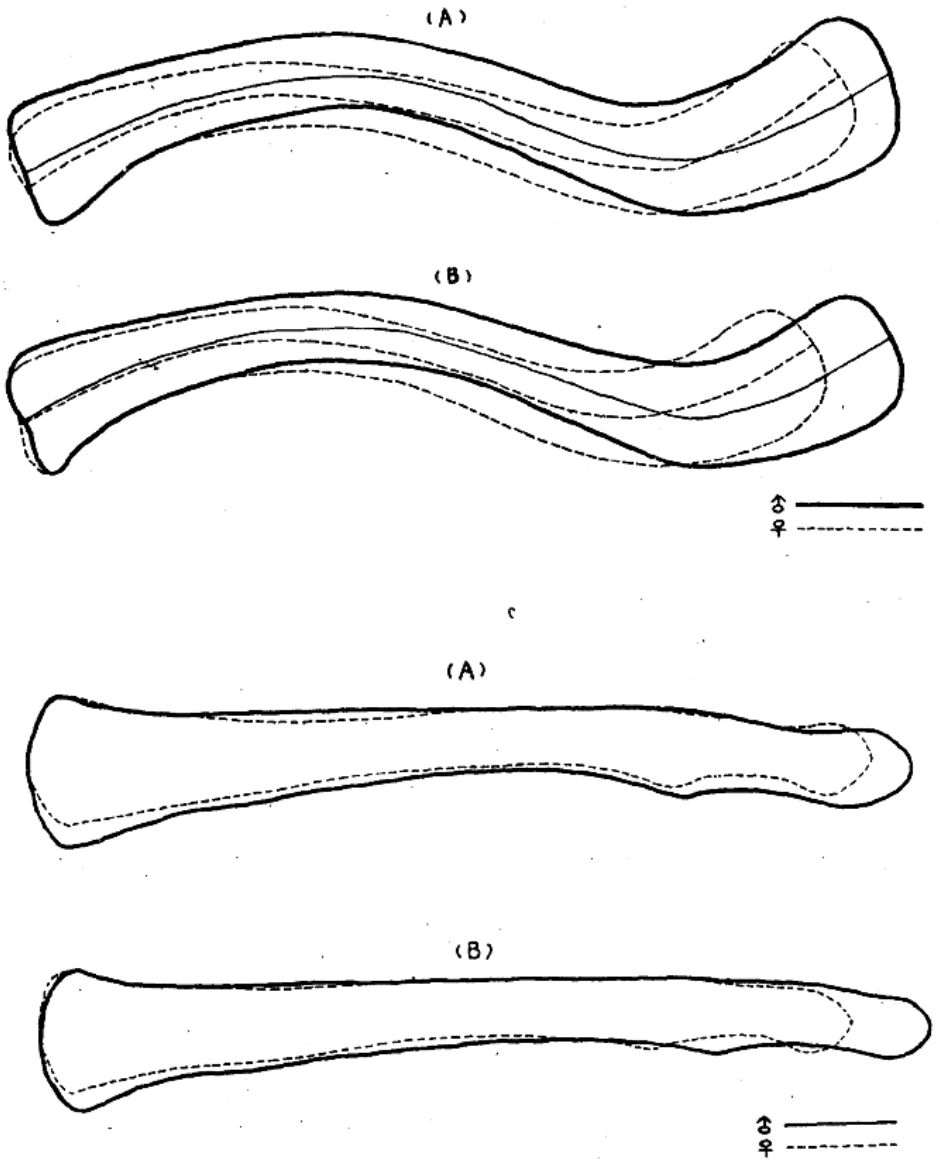
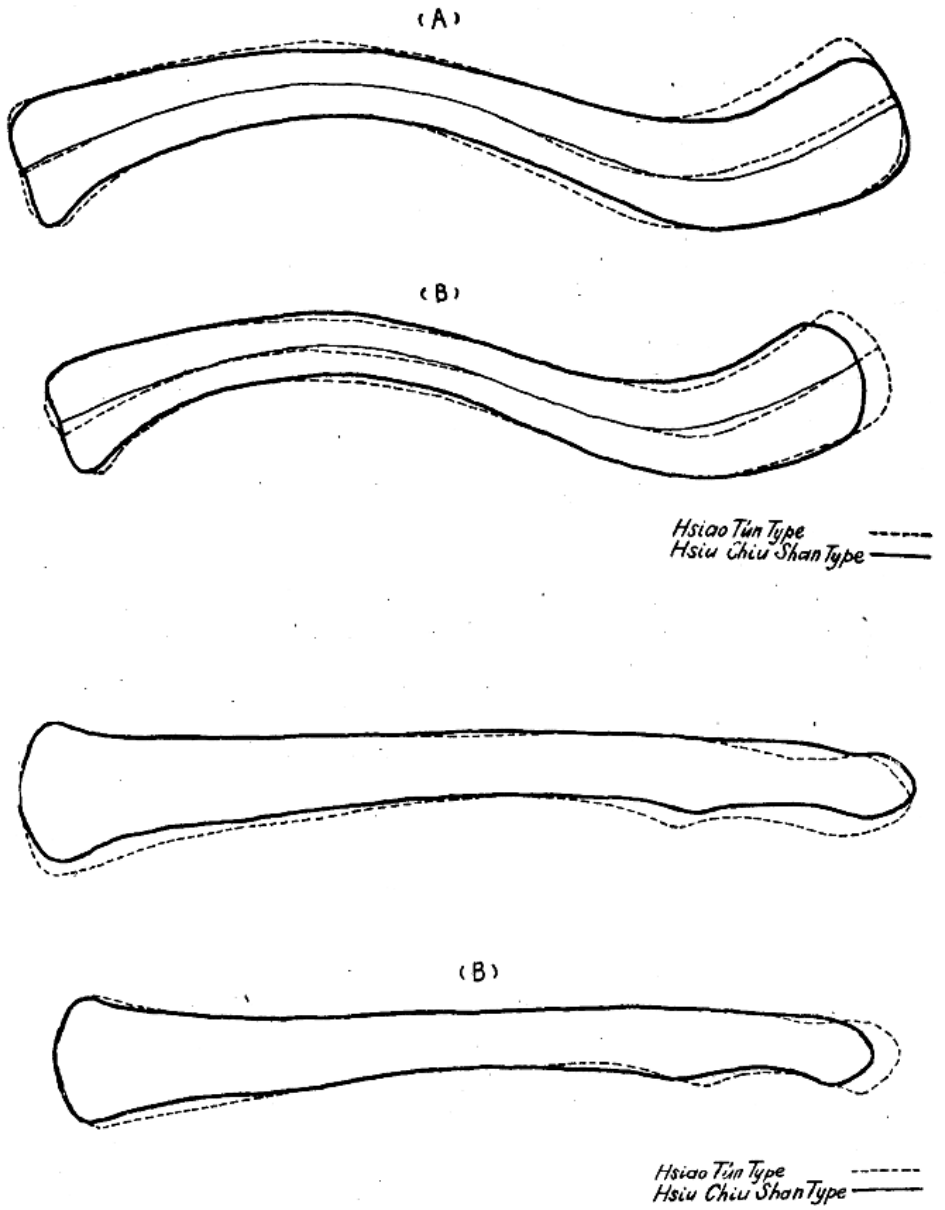


Fig. XIV. Comparisons of the Horizontal and Vertical Type Contours of the Hsiao T'un and Hsiu Chiu Shan Types: (A) Male and (B) Female



superposed types are shown in Fig. XII (A) and (B), respectively. It will be seen that in both sexes the right contour has the shorter clavicular length and its related chord and arc, the higher acromial end and slightly lower sternal end. These facts accord well with the results of the measurements. Sexual comparisons of the type contours may be considered next. Fig. XIII shows the superposed forms of the male and female contours for both horizontal and vertical sections and both series, viz. Figs. VIII and IX, X and XI put together in the way described above. It is clear that in all dimensions the female contour is sensibly smaller than the male. If the contours of the two sexes are made to coincide at the middle parallel, the outline of the female contour will lie entirely inside the circumference of the male outline. The last comparison of the average contours is made between the Hsiao T'un and Hsiu Chiu Shan types. Fig. XIV shows the superposed figures (Figs. VIII and X, IX and XI being superposed). It is clear that the male Hsiao T'un type is wider and thicker at the two ends as was found from the mean measurements. In the case of females the acromial end of the Hsiao T'un type is not particularly wide, but the total length of the bone is clearly greater than that for the Hsiu Chiu Shan series. The inconsistent results for two sexes are possibly due to the small sizes of some of the series. On the whole, the average type contours compared confirm the results gained from the study of metrical characters presented in the previous section.

VII. *Varieties of Cross-sections of the Clavicle taken at the Middle and at the Level of the Conoid Tubercle.* In addition to the metrical characters considered above, attention may be directed to the shapes of different cross-sections. It has been asserted by some anthropologists[1] that the shapes of bones may be influenced to a certain extent by such factors as muscular activity, the stage of development and pathological conditions, but it is probable that heredity is the dominant factor determining them.

Hrdlička[2] has made a detailed study of the subject in the case of the long bones and the scapula in different races. It has been shown by him that each long bone presents a variety of forms which are reducible to definite types. The frequency of these types differs from race to race and modern White show more variation in the shapes of bones than other races. Unfortunately, the bones he examined do not include the clavicle.

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[1] For original reports on this subject see Hrdlička, A.: (1) "Study of the normal tibia." *Proceedings of the Association of American Anatomists*, 11th Section, pp. 61–66; (2) "A further contribution to the study of the tibia, relative to its shapes," *Proceedings of the same Association* 12th–13th Sections, 1900, pp. 12–13; (3) "Typical forms of shaft of long bones," *Proceedings of the same Association*, 14th Session, 1901, pp. 55–60.

[2] Hrdlička, A: *loc. cit.*

Fig. XV. Typical Shapes of the English Clavicle, in the Cross-section at the Middle (After Parsons).

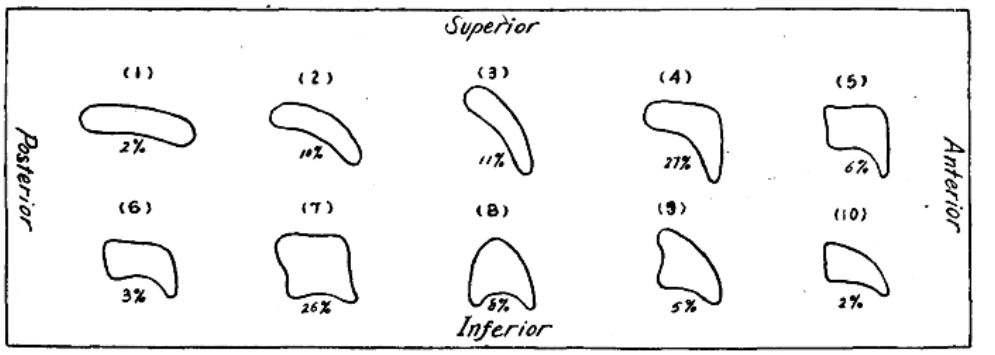


Fig. XVI. Typical Shapes of the Chinese Clavicle, in the Cross-section at the Middle

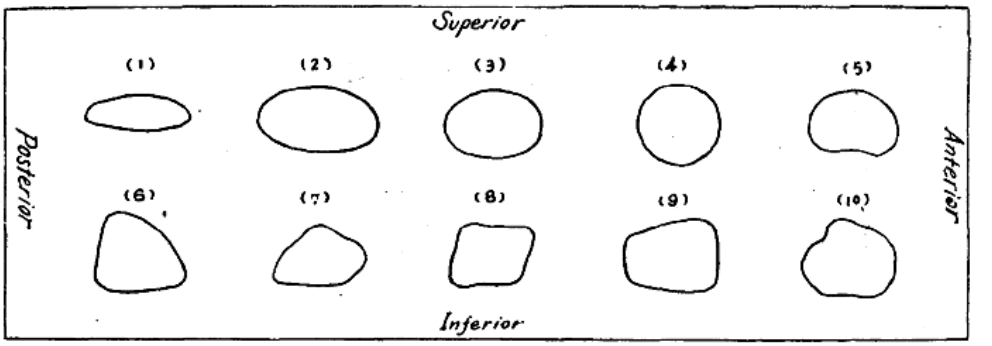
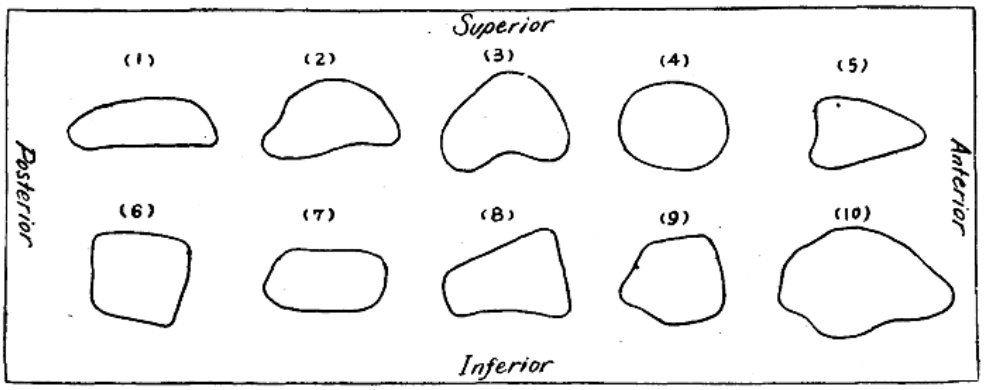


Fig. XVII. Typical Shapes of the Chinese Clavicle, in the Cross-section at the Level of the Conoid Tubercle



The forms of the middle cross-section were first investigated by Parsons.[1] It was found that there are ten types of the shapes at this particular section found among English clavicles. The forms of these types are shown in Fig. XV, (1)–(10). The percentages of occurrence for each type are given below each form. It will be seen that the highest percentages are found in the case of types 4 and 7, so the dominant shapes of the English clavicles are of either 'triangular' or 'quadrilateral' form, accounting for 27% and 26%, respectively. Since then no comparative material for other races has been added.

In the present paper the shapes of two particular sections are chosen for study, viz. (*a*) the section at the middle, i.e. is the plane where measurements of the horizontal and vertical diameters are taken, (*b*) the section at the level of the conoid tubercle. As there are various forms of this tubercle, the section through it may show some interesting shapes which are not necessarily similar to those at the middle.

Let us consider the forms at the middle first. After an analysis and grouping of shapes of the clavicular shaft based on all specimens available, 10 different types were arbitrarily distinguished. The typical forms of these types[2] are shown in Fig. XVI, (1)–(10).[3] It will be seen that the forms classified differ quite distinctly from one another. The first three are more or less oval in form, but their outlines can still be distinguished clearly as 'narrowly oval,' 'intermediately oval' and 'oval' in form. They all present two surfaces and two borders, the surfaces being usually superior and inferior while the borders are anterior and posterior. The fourth type is practically a circle and no 'edges' can be clearly differentiated. The fifth form is quite different from those already discussed as it has a flattened inferior base and a roundly convex surface in other directions. The sixth type is roughly triangular in form and the three surfaces represented may be called anterior, posterior and inferior. The 7th–9th types are all 'quadrilateral' with four definite 'edges.' In the case of the 7th type, the posterior and inferior lengths are larger than the anterior and superior ones,

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[1] Parsons, F. G.: *loc. cit.*

[2] The typical examples of these 10 types, arranged in order, are represented by nos. 210(L), 4 (L), 81 (R), 73 (R), 13 (R), 60 (L), 203 (R), 23 (R), 187 (R) and 3 (R). All these are male Hsiu Chiu Shan specimens.

[3] In dealing with the types of the cross-section, both the Hsiao T'un and Hsiu Chiu Shan series are considered together, since the former series is very small. A common mistake made by some authors is to determine the 'type' of a series by selecting one or two bones which are assumed to be typical. In fact the forms of human bones, modern as well as ancient, are very variable and from a statistical point of view, it is only possible to deduce results of value by dealing with a large sample.

the 8th is somewhat square in form, and the 9th has equivalent lengths of superior and inferior surfaces but its anterior length is apparently greater than its posterior one. The last form is a peculiar type of somewhat quadrilateral form and its posterior surface appears to be convex but its inferior surface is very flattened.

The frequencies and corresponding percentages of all these types for both sides, sexes and for the total number of bones are provided in Table VII. Considering the percentage values of these types deduced from all cases it is seen that the highest value (43.2%) is found for the third type, that is a 'slightly oval form' with its long axis laid horizontally. The next highest percentages are found for the second, fourth and fifth types, ranging from 10.7 per cent. to 13.6 per cent. The forms of these three types are either oval or roundish. The percentages of the remaining types are all smaller than 7. It is clearly seen that a roundish form is the dominant shape of the Chinese clavicle and this is evidently different from the dominant shape of the English clavicle. Comparing the percentages between the two sides and two sexes provided in the same table, the differences are seen to be scarcely significant[1] when taking into consideration the small number of cases represented. In other words, the percentage distributions of shapes of the clavicular shaft taken at the middle in the Chinese specimens are closely similar regardless of side and sex. In the present material, the frequency of the same type on both sides amounts to 46.8 per cent., which is fairly high.

We have only similar data for the English clavicle observed by Parsons. Among the types shown in Figs. XV and XVI, there are only three forms (viz., nos. 1, 6, and 8 in Fig. XVI corresponding with nos. 1, 9 and 7 in Fig. XV) which are somewhat similar and commonly occurring in both races. The other seven types in each set show no correspondence. When a careful comparison of the general features of these types is made, there are two essential differences found between the shapes of the Chinese and English bones, namely: (*a*) The Chinese sections are dominantly of the oval or round form, while the English of the angular or quadrilateral form, and (*b*) the types of shapes in the latter race frequently present clearly concave inferior or postero-inferior surfaces, while those of the former usually show a flat or slightly convex form of the corresponding surfaces. These divergence can hardly be satisfactorily explained as being due to factors other than racial heredity. It has been stated by some anatomists[2]

[1] The largest bilateral difference of percentages is found in the third type (11.7), while the largest sexual one is found in the 7th type (5.0). But in either case the ratio of the difference to its probable error is less than 2.6 so it is possibly insignificant.

[2] The statement has frequently been made in text-books of anatomy.

Table VII. Percentages of 10 Typical Forms of the Chinese Clavicle in the Cross-section at the Middle

Side and Sex	*No.*	*Forms of the cross-section*									
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Right side: (♂+♀)	102	% —	% 12.7 (13)	% 37.3 (38)	% 10.8 (11)	% 15.7 (16)	% 4.9 (5)	% 5.9 (6)	% 7.8 (8)	% 3.9 (4)	% 1.0 (1)
Left side: (♂+♀)	104	2.9 (3)*	11.5 (12)	49.0 (51)	10.6 (11)	11.5 (12)	2.9 (3)	4.8 (5)	5.8 (6)	1.0 (1)	—
Males: (R+L)	122	2.5 (3)	13.9 (17)	42.6 (52)	9.8 (12)	12.3 (15)	3.3 (4)	7.4 (9)	4.9 (6)	2.5 (3)	0.8 (1)
Females: (R+L)	84	—	9.5 (8)	44.0 (37)	11.9 (10)	15.5 (13)	4.8 (4)	2.4 (2)	9.5 (8)	2.4 (2)	—
All cases	206	1.5 (3)	12.1 (25)	43.2 (89)	10.7 (22)	13.6 (28)	3.9 (8)	5.3 (11)	6.8 (14)	2.4 (5)	0.5 (1)

* Figures in brackets under the percentages indicate the numbers of cases in each group.

Table VIII. Percentages of 10 Typical Forms of the Chinese Clavicle in the Cross-section at the Level of the Conoid Tubercle

Side and Sex	*No.*	*Forms of the cross-section*									
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Right side: (♂+♀)	103	% 4.9 (5)*	% 39.8 (41)	% 11.7 (12)	% 16.5 (17)	% 12.6 (13)	% 2.9 (3)	% 2.9 (3)	% 5.8 (6)	% 1.0 (1)	% 1.9 (2)
Left side: (♂+♀)	103	7.8 (8)	34.0 (35)	19.3 (20)	13.6 (14)	13.6 (14)	2.9 (3)	4.9 (5)	1.0 (1)	1.0 (1)	1.9 (2)
Males: (R+L)	125	4.8 (6)	44.8 (56)	13.6 (17)	12.8 (16)	7.2 (9)	4.0 (5)	4.8 (6)	4.0 (5)	0.8 (1)	3.2 (4)
Females: (R+L)	81	8.6 (7)	24.7 (20)	18.5 (15)	18.5 (15)	22.3 (18)	1.2 (1)	2.5 (2)	2.5 (2)	1.2 (1)	—
All cases	206	6.3 (13)	36.9 (76)	15.5 (32)	15.1 (31)	13.1 (27)	2.9 (6)	3.9 (8)	3.4 (7)	1.0 (2)	1.9 (4)

[1] Figures in brackets under the percentages indicate the numbers of cases in each group.

that the rounded form of the shaft of any bone is an acquired character, possibly due to mal-development resulting from mal-nutrition, but this hypothesis is hardly established, as no good evidence in support of it has been furnished. So far as the present material is concerned, although the Hsiao T'un and Hsiu Chiu Shan series evidently represent the bones of two different classes, yet their percentage distributions of types of the cross-section are not markedly different from each other.

The types of shapes at the level of the conoid tubercle is considered next. The cross-section is made at the place where the depth of the vertical section is taken (see measurement 26). Examining the forms of this section obtained from all specimens, there are again found (see Fig. XVII) ten different types[1] which can be more or less clearly distinguished from one another. Among these there are four types which are similar to those found at the middle section: viz. nos. (1), (4), (6) and (8) of the conoid section correspond in order to nos. (1), (4), (8) and (9) of the middle section. The forms of the ten types are shown in Fig. XVII. It can be seen that the areas represented are larger than the corresponding ones obtained at the middle. In the conoid section several forms have concave inferior surfaces. This condition was not found in the shapes of the middle section. Several of the types show a moderately or markedly prominent projection at the region of the tubercle.

Besides the similar types just referred to, the remaining six types may be described. The second type presents two surfaces. The superior surface is very much curved upwards and the inferior one is curved in the same direction but to a slight degree. The third type is somewhat like the shape of a water-caltrops but the bending ends being less sharpened. The fifth type is triangular in form with superior, inferior and posterior sides, and the last one appears concave when viewed medially. The seventh type has an oblong form and the horizontal lengths are definitely larger than the vertical ones. The ninth type is somewhat like the last type of the middle section, but its convex projection is directed medially instead of anteriorly. The last type is very peculiar in form: at the middle of the inferior surface, a markedly round projection is directed downwards. This was only found in one case out of the total number of specimens. The frequencies of occurrence of these types and their corresponding percentages for each side, and either sex, as well as for the total available cases, are given in Table VIII. Judging from the percentages shown at the foot of the table, it is clear that the dominant type of this section is the second one (36.9 per cent.). The next largest values are found in the third to fifth types with percentages from 13.1 to 15.5. Other types occur much less frequently (all less than 7 per cent.). The occurrence of the same type on both sides is found in 54.6 per cent. of cases, which is slightly larger than the corresponding value for the middle cross-section. The lateral differences of percentages are

[1] The typical samples of these types, arranged in order, are nos. 63 (L), 5 (R), 32 (R), 218 (R), 15 (L), 9 (L), 100 (R), 210 (L), 111 (L) and 201 (L). All belong to the male specimens from Hsiu Chiu Shan.

all small, and the same is true in the case of the sexual differences,[1] except that the male value is particularly high for the second type, and particularly low for the fifth one. This fact indicates clearly that the anterior border of male specimens is more frequently thicker and stouter.

Owing to the absence of comparative material, it is not possible to deal with the types of this section inter-racially. It must be remembered that in both sections the types are only presented tentatively on the basis of the available material. Hence it cannot be supposed that they represent all possible shapes of the Chinese clavicles. When more abundant samples of the same bone are examined some new types may be added, and consequently the distribution of frequencies may be altered to a certain extent.

VIII. *Other Morphological Features.* The non-metrical morphological characters of the clavicle present some interesting relations which are of no less importance than the metrical characters for purposes of racial differentiation. Of these, four features—(1) the deltoid tubercle, (2) the conoid tubercle, (3) the costal tubercle and (4) the nutrient foramen are considered in the present section.

(1) Deltoid tubercle. The anterior surface of the clavicle at the acromial end is usually a rough surface which is concave when viewed in front. In several cases, there are found at the inner side of this concave curve a tubercle, termed the deltoid tubercle, from which the deltoid muscle takes its origin. The form of the tubercle varies considerably, from a rough impression to a very marked projection. Frequently there is no tubercle at all to be found in this region. For convenience of comparison the degree of prominence of the tubercle, following Black's classification,[2] is divided into three groups: (*a*) small and faint projection, (*b*) moderate size and (*c*) large and marked.[3] The result of observation of this character in several series is summarized in Table IX. It can be seen that the percentages of absence of the tubercle for all the Chinese series are decidedly high, especially for the ancient series, when compared with that for a non-Asiatic group, although the last is a short and somewhat heterogeneous series. The percentages for presence of the tubercle for the Chinese groups range from 9.8 to 35.4, and the cases included occur most frequently in the 'small' or 'intermediate' divisions. The question whether the frequent absence and small size of the deltoid tubercle when present, is a characteristic of other Mongolian races

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[1] In the former case, the ratio of the difference to its probable error is 4.6, while in the latter case the ratio is 4.3. The remaining values of the ratio are all less than 3.

[2] D. Black: *loc. cit.*, pp. 83–87.

[3] In classifying the bones, three reference specimens representing the three groups were picked out for guidance. The result of the present grouping may be reasonably assumed to be comparable with Black's.

Table IX. Comparisons of the Frequencies of Occurrence of the Deltoid Tubercle and of Grades of its Size for Different Series

Series	*Side & Sex*	*No.*	*Absence of tubercle*	*Presence of tubercle*			
				small	*medium*	*large*	*total*
Sha Kuo T'un	—	71	% 90.2 (64)‡	% 5.6 (4)	% 1.4 (1)	% 2.8 (2)	% 9.8 (7)
Yang Shao	♂+♀*	45	80.1 (36)	6.6 (3)	13.3 (6)	—	19.9 (9)
Hsiao T'un	♂+♀	34	70.6 (24)	20.6 (7)	8.8 (3)	—	29.4 (10)
North China, recent	♂+♀	46	67.5 (31)	15.2 (7)	13.0 (6)	4.3 (2)	32.5 (15)
Hsiu Chiu Shan	♂+♀	144	64.6 (93)	22.2 (32)	11.1 (16)	2.1 (3)	35.4 (51)
Non-Asiatic	—	20	10.0 (2)	15.0 (3)	65.0 (13)	10.0 (2)	90.0 (18)
Hsiu Chiu Shan	Right (♂+♀)	72	63.9 (46)	18.0 (13)	13.9 (10)	4.2 (3)	36.1 (26)
Hsiu Chiu Shan	Left (♂+♀)	72	65.3 (47)	19.4 (14)	13.9 (10)	1.4 (1)	34.7 (25)
Hsiu Chiu Shan	♂ (R+L)	84	66.7 (56)	19.0 (16)	11.9 (10)	2.4 (2)	33.3 (28)
Hsiu Chiu Shan	♀ (R+L)	60	61.7 (37)	26.7 (16)	10.0 (6)	1.6 (1)	38.3 (23)

‡ Figures in brackets indicate the absolute frequencies.
* Specimens of both sides are pooled.

or not will be worth investigating. Judging from the value of the percentages, the Hsiao T'un, North China and Hsiu Chiu Shan series appear to differ insignificantly from one another, but each is apparently different from the Yang Shao and Sha Kuo T'un series. In the modern series examined in this paper, the occurrence of the tubercle is less frequent on the right side than on the left, and in the female than in the male, but the difference of the percentages in either case is not large.[1]

(2) Conoid tubercle. On the posterior border of the bone at the junction of the middle and outer thirds there appears a blunt, rounded eminence called the conoid tubercle, to which the conoid division of the coraco-clavicular ligament is attached. Intra-racially, the conoid tubercle varies greatly in size. For

[1] The range of the ratios of the differences to their probable errors is from .02 to .82, all indicating insignificant differences.

Table X. Comparisons of Various Sizes of the Conoid Tubercle. for Different Series

Series	*Side & Sex*	*No.*	*Size of Tubercle*		
			small	*medium*	*large*
Sha Kuo T'un	—	71	% 25.3 (18)*	% 29.6 (21)	% 45.1 (32)
Yang Shao	♂+♀†	14	14.4 (2)	42.8 (6)	42.8 (6)
Hsiao T'un	♂+♀	36	16.7 (6)	36.1 (13)	47.2 (17)
North China, recent ..	♂+♀	46	13.0 (6)	34.8 (16)	52.2 (24)
Hsiu Chiu Shan	♂+♀	144	18.1 (26)	37.5 (54)	44.4 (64)
Non-Asiatic	—	20	10.0 (2)	60.0 (12)	30.0 (6)
Hsiu Chiu Shan	Right (♂+♀)	72	18.1 (13)	36.1 (26)	45.8 (33)
Hsiu Chiu Shan	Left (♂+♀)	72	18.1 (13)	38.9 (28)	43.0 (31)
Hsiu Chiu Shan	♂ (R+L)	84	16.7 (14)	36.9 (31)	46.4 (39)
Hsiu Chiu Shan	♀ (R+L)	60	20.0 (12)	38.3 (23)	41.7 (25)

* Figures in brackets indicate the absolute frequencies.
† Specimens of both sides are pooled.

comparative purposes the tubercle, as suggested by Black, is classified into three groups—small, medium and marked—in accordance with the degree of its prominence on the bone. The absolute and relative frequencies of this feature in the two new series, together with Black's data, are arranged in order in Table X. For all the Chinese series the conoid tubercle is very markedly developed. The percentages of the 'marked' group for them vary from 43 to 52, all being higher than that for the non-Asiatic series. There are no appreciable differences between the percentages for the different Chinese series, the last three—Hsiao T'un, North China and Hsiu Chiu Shan—being particularly close. In the case of the two new series the percentages for each sex and for each side are available. From the figures shown the sexual as well as lateral differences of the percentages appear to be insignificant, taking into account their large probable errors.

(3) Costal tubercle. On the inferior surface near the sternal end there is a rough impression of variable size and shape termed the costal tubercle. It may be an elevation, a rough depression, or a deep excavation over the greater part of its area, in the bones of certain races. It gives attachment to the costo-clavicular ligament by which the clavicle is bound to the first rib. According to Black's study on this subject, the forms of this tubercle are grouped as 'excavated' and 'non-excavated.' The latter group is again sub-divided into three classes—small, medium and large—in accordance with the relative eminence of the tubercle. But in some cases these classes cannot be clearly distinguished from one another. For simplicity, the costal tubercle of the new specimens is merely noted in this paper as being excavated or not excavated. A

Table XI. Comparisons of Forms of the Costal Tubercle for Different Series

Series	*Side and Sex*	*No.*	*Excavated*	*Not excavated*
Sha Kuo T'un	— ‡	55	% 48.8 (27)*	% 51.2 (28)
Yang Shao	♂+♀†	16	37.5 (6)	62.5 (10)
Hsiao T'un	♂+♀	32	43.7 (14)	56.3 (18)
North China, recent	♂+♀	45	28.3 (13)	71.7 (32)
Hsiu Chiu Shan	♂+♀	144	43.8 (63)	56.2 (81)
Non-Asiatic	—	20	15.0 (3)	85.0 (17)
English	♂+♀	50	10.0 (5)	90.0 (45)
Hsiu Chiu Shan	Right (♂+♀)	72	48.6 (35)	51.4 (37)
Hsiu Chiu Shan	Left (♂+♀)	72	38.9 (28)	61.1 (44)
Hsiu Chiu Shan	♂ (R+L)	84	44.0 (37)	56.0 (47)
Hsiu Chiu Shan	♀ (R+L)	60	46.4 (28)	53.6 (32)

* Figures in brackets indicate the absolute frequencies.

† Specimens of both sides are pooled.

‡ Both the Sha Kuo T'un and Non-Asiatic series are unsexed and the percentages for these are cited from Black's paper.

summary of the percentage distributions for this feature for different series is presented in Table XI. It can be seen that the percentages of the 'excavated' group are particularly high in the Chinese clavicles examined. The 'excavated' percentages for the Hsiao T'un and Hsiu Chiu Shan specimens are very close and each is slightly different from those for the other Chinese series. The percentages for all the Chinese material are definitely higher than those for English and other non-Asiatic groups. Black has suggested that a deep excavation over the site of attachment of the costo-clavicular ligament implies a stronger ligamentous attachment over this area, possibly as a result of variable, violent working strain. If this be true, it is rather difficult to explain the fact that the Sha Kuo T'un clavicles show a higher percentage of excavations than those of the recent northern Chinese, both observed by the same investigator, while the two sets of specimens from Hsiao T'un and Hsiu Chiu Shan which have been supposed to represent different social classes have closely similar frequencies of excavation. According to the usual custom of the Chinese, the right shoulder is more frequently used for carrying or lifting weights than the left, while men are more likely to receive working strain than women. But judging from the figures given at the foot of the table the frequency of excavation of the bone between the two sides, as well as between the sexes, does not show significant differences.[1] A similar result is found for Black's material. These facts hardly support his hypothesis of strains. From the meagre evidence available we can only say for the present that there is a clear racial distinction so far as the occurrence of the excavated depression on the clavicle is concerned. The percentages of this feature for the Chinese series are decidedly higher than those for European series.

(4) Nutrient Foramina. The number and position of the nutrient foramina on the clavicular bone, like other clavicular characters, are subject to a wide variation. In the general case usually only one nutrient foramen is located on the posterior surface near the junction of the lateral third with the medial two-thirds, and it is often directed toward the lateral end. But quite frequently more than one foramen are found in the bone, and in a few cases no definite foramen can be detected. In the latter cases the bones are nourished by the numerous small apertures found at the two ends. The percentages of the various conditions observed for the Chinese as well as the English specimens are summarized in the following table:

Specimens	*No.*	*number of foramina occurred*			
		single	*double*	*multiple*	*no definite foramen*
Chinese	206	60.2% (124)	28.1% (58)*	7.8% (16)	3.9% (8)
English	286	64.2% (183)	26.2% (75)	4.9% (14)	4.9% (14)

* In the first case, the ratio = 1.8; in the second one, the ratio = .4.

It is clear that the percentage distributions of the nutrient foramen for the two different races are remarkably similar, although the Chinese series has a slightly higher percentage in the case of double as well as in the case of multiple foramina. So far as the present material is concerned, it has been found that the foramina do not always appear on the posterior surface. They are, in several cases, found variously on the inferior surface, on the border between the posterior and inferior surfaces, and on the anterior surface. Out of all specimens examined there are 58 per cent. of cases in which the foramina are situated on the posterior surface, and these are mostly single. When the specimen possesses more than one foramen, the position of one of them is often on the inferior surface or its neighboring border.

IX. *Summaries.* The object of the present study is to throw new light on the features of the Chinese clavicle, and to compare their sizes and shapes bilaterally and sexually among themselves and inter-racially with previously published data for Chinese and other series. Two series of clavicles which were collected from different regions of the country—representing populations of the Sui-T'ang dynasties and of modern date—are studied by metrical and non-metrical methods. The material examined consists of 151 male and 95 female specimens, and of these 122 are right and the remaining 124 left bones. 27 linear and angular measurements, taken either directly or from the horizontal and vertical contours of the bone, are employed and the majority of these are newly designed for purposes in view. The ten indices relating to the shapes of different parts of the bone are constructed from pairs of the absolute measurements. Several of these are also new. The shapes of two different cross-sections are differentiated and classified into definite groups which may serve as basic material for comparison with similar data for other racial groups. Four of the more interesting morphological features of the bone are examined and compared with the available data for other Chinese and non-Chinese series. On the basis of the quantitative analysis given above, some tentative results are arrived at and these are summerised below:

(1) The lateral differences of several clavicular characters are quite marked. The right clavicles are, on the average, shorter, stouter and more curved, and their acromial ends project more in the upward direction. These relations are clearly demonstrated by linear and angular measurements and indices. The question whether the asymmetry of these clavicular characters is inborn, or acquired during life cannot be answered conclusively in the present state of our knowledge.

(2) Average absolute measurements of the Chinese clavicle generally show a marked differentiation between the two sexes. In nearly all characters the males are predominant, e.g. the male bones are altogether longer, wider and more massive on the average. Judging from the angular measurements taken, the curvature of the bone does not distinguish the two sexes, though it has often been supposed to. No marked sexual differences are found in the measurements of shape.

(3) The significant distinction between the Hsiao T'un and Hsiu Chiu Shan clavicles is not found in the middle part of the shaft but at the two extremities of the bone. The two extremities of the Hsiao T'un type seem to be wider and thicker. This fact suggests that the Hsiao T'un bones had stronger muscular attachments at the parts referred to.

(4) Judging by the result of a comparison of the maximum clavicular length and the claviculo-humeral index, the mean values of different Chinese series are not sensibly divergent from one another. When compared with those of the other races, the Chinese average values appear in an intermediate position. These measurements seem to be of some value in distinguishing different families of races.

(5) The variation of the clavicular characters leads to conclusions similar to those deduced from most other anthropological characters. The male variability is on the average larger than the female. For the same sex the right side tends to be more variable than the left. Significant differences in variability are found more frequently in sexual than in lateral comparisons.

(6) There is no close association between the dominance of size and the dominance of the variation.

(7) Average horizontal and vertical type contours of the clavicle are constructed for the two series, the two sexes and the two sides separately. The results obtained from various comparisons of the average contours confirm the conclusions deduced from the direct measurements.

(8) The shapes of the cross-section at the middle of Chinese clavicles are very variable. For comparative purposes, they are divided into ten types (see Fig. XVI). The dominant type is found in the third form (43.2%), viz. an oval form with the long axis in a horizontal position. The percentage distributions of these shapes for different series of Chinese clavicles are closely similar to one another. The typical shape of the Chinese bone is obviously different from that of the English. The former is characterized by a round or oval outline with flat or somewhat convex edges, while the latter is characterized by an angular

or quadrilateral outline with concave inferior or postero-inferior surfaces. The dissimilarity of the shapes for the two races may be mainly accounted for by the factor of racial variation.

(9) The forms of the cross-section at the level of the conoid tubercle are also divided into ten types (see Fig. XVII). The dominant shape is found in the second one (36.9%), viz. a form with a convex superior and a concave inferior surface. The general shape of this section has a slightly concave inferior surface and presents an inward projection in some cases at its posterior border, indicating the presence of the conoid tubercle.

(10) Judging by the percentage distributions of shapes in the two cross-sections, the lateral differences are all negligible. The bilateral occurrence of the same form on both sides range from 46.8% to 54.6% showing that the shapes of different sections are the same on both sides in nearly half of the total number of the bone. With few exceptions, sexual differences in the shapes are usually not so marked as in the majority of metrical characters.

(11) The shapes of the vertical section seem to be much less variable than those of the horizontal one.

(12) The Chinese clavicles, when compared with those of the other races, show a low percentage of occurrence of the deltoid tubercle and a high percentage of occurrence of conoid tubercles. Intra-racially, no marked differences are found between the sides, sexes and samples drawn from different regions.

(13) The percentage of 'excavated' costal tubercles found among the Chinese clavicles is also considerably higher than those found in non-Asiatic groups. From various considerations it seems that this can hardly be explained as being due to excessive working strain.

(14) The percentage distributions of the occurrence of nutrient foramina for the Chinese and English clavicles are not appreciably different. In the former specimens there are 60.2 per cent. of cases with a single foramen and the remaining bones possess double or multiple foramina. The position of the foramen is frequently found on the posterior surface near the lateral third of the bone.

It should be noted that the above results can only be regarded as tentative, owing to the fact that the samples used are not large ones, while comparative data are extremely scanty. When more abundant material becomes available it may be hoped that the conclusions reached here will be confirmed and extended. This study supplies an improved technique for investigating features of the clavicle, and the writer hopes that this will be adopted by other workers in the study of new series.

Finally, the writer wishes to thank most heartily Dr. G. M. Morant, London, for his many helpful suggestions and criticisms of this paper.

Appendix I. Mean Constants of the Clavicular Characters in Both Sexes for the Hsiao T'un and Hsiu Chiu Shan Series

Character	Paired				
	No.	Right	Left	No.	R.+L.
a. Absolute measurements:					
(1) Maximum length of the clavicle	6	144.7	149.0	12	146.8
(2) Transverse diameter of the shaft at the middle	6	13.8	13.5	12	13.7
(3) Sagittal diameter of the shaft at the middle	6	10.8	11.3	12	11.1
(4) Circumference of the shaft at the middle	6	39.6	38.6	12	39.1
(5) Total arc of the clavicle	6	153.5	155.7	12	154.6
(6) Outer arc	6	71.6	63.1	12	67.3
(7) Inner arc	3	83.2	92.1	12	87.7
(8) Total chord of the clavicle	6	141.5	145.2	12	143.4
(9) Outer chord	6	61.8	58.6	12	60.2
(10) Inner chord	6	75.4	89.0	12	82.2
(11) First segment	6	34.8	34.9	12	34.9
(12) Second segment	6	31.0	27.7	12	29.3
(13) Third segment	6	35.1	41.8	12	38.5
(14) Fourth segment	6	43.3	48.2	12	45.8
(15) Maximum perpendicular of the acromial end	6	33.3	31.2	12	32.2
(16) Maximum subtense of the diaphysis	6	30.7	31.6	12	31.1
(17) Maximum breadth of the acromial end	6	24.5	24.4	12	24.5
(18) Maximum breadth of the sternal end	6	22.4	21.3	12	21.9
(19) Minimum breadth of the shaft	6	12.6	11.4	12	12.0
(20) Distance of the position of the minimum breadth	6	58.9	67.6	12	63.3
(24) Minimum depth of the acromial end	6	11.5	11.0	12	11.2
(25) Maximum depth of the sternal end	6	26.3	25.8	12	26.1
(26) Depth at the level of the conoid tubercle	6	14.9	14.0	12	14.4
(27) The distance of the position of the conoid tubercle	6	36.4	38.6	12	37.5
b. Measurements of shape:					
(21) Outer angle	6	134°.2	145°.4	12	139°.8
(22) Inner angle	6	151°.0	154°.9	12	152°.9
(23) Inclination of the entire clavicular chord	6	6°.6	5°.4	12	6°.0
(28) Caliber index	6	27.4	25.9	12	26.6
(29) Shaft index at the middle	6	77.9	83.8	12	80.9
(30) Length-height index of the clavicle	6	21.2	20.9	12	21.1
(31) Claviculo-humeral index	6	46.0	48.1	12	47.1
(32) Total curvature index	6	92.2	93.7	12	92.5
(33) Index of the two arcs	6	86.1	70.7	12	78.4
(34) Sterno-acromial breadth index	6	91.6	87.4	12	90.5
(35) Sterno-acromial depth index	6	43.9	43.6	12	43.8
(36) Minimum breadth position index	6	40.8	45.4	12	43.1
(37) Position index of the conoid tubercle	6	25.2	26.3	12	25.7

All linear measurements are taken in m.m. and 3 angular measurements in degrees.

(Continued)

Hsiao T'un

Male						*Female*					
All						*Paired*					
No.	*Right*	*No.*	*Left*	*No.*	*R.+L.*	*No.*	*Right*	*Left*	*No.*	*R.+L.*	*No.*	*Right*
7	146.0	7	149.6	14	147.8	5	137.9	140.0	10	139.0	7	137.4
7	14.0	7	13.8	14	13.9	5	12.2	12.0	10	12.1	7	12.2
7	10.9	7	11.1	14	11.0	5	9.4	9.5	10	9.4	7	9.1
7	40.0	7	39.0	14	39.5	5	34.5	34.0	10	34.2	7	33.2
7	155.1	6	155.7	13	155.4	5	42.1	143.4	10	142.7	6	142.0
7	71.9	6	63.1	13	67.8	5	67.2	65.2	10	66.2	6	67.1
7	83.6	6	92.1	13	87.5	5	74.7	77.2	10	76.0	6	74.3
7	143.7	6	145.2	13	144.4	5	129.9	133.5	10	131.7	6	129.1
7	62.7	6	58.6	13	60.8	5	57.0	59.1	10	58.1	6	56.7
7	79.1	6	89.0	13	83.6	5	72.7	74.3	10	73.5	6	72.4
7	35.5	6	34.9	13	35.2	5	30.2	30.1	10	30.1	6	30.0
7	30.4	6	27.7	13	29.1	5	31.2	33.1	10	32.2	6	31.1
7	36.9	6	41.8	13	39.2	5	36.9	37.4	10	37.2	6	36.5
7	44.6	6	48.2	13	46.3	5	36.5	38.2	10	37.4	6	36.6
8	31.4	6	31.2	14	31.6	5	28.1	27.7	10	27.9	6	28.3
9	31.3	6	31.6	15	31.4	5	26.3	26.4	10	26.3	6	26.2
7	24.6	6	24.4	13	24.5	4	17.7	17.1	8	17.4	6	18.0
7	23.0	6	21.3	13	22.2	4	19.4	19.6	8	19.5	6	19.0
7	12.8	6	11.4	13	12.2	5	9.7	9.6	10	9.6	6	9.8
7	61.6	6	67.1	13	64.4	5	49.1	52.1	10	50.6	6	48.9
7	11.3	7	10.9	14	11.1	5	9.7	9.2	10	9.5	6	9.5
7	26.3	6	25.8	13	26.2	5	21.5	21.0	10	21.2	6	21.6
7	14.7	7	13.9	14	14.3	5	13.0	12.2	10	12.6	6	13.1
7	38.3	7	38.6	14	38.5	5	32.0	32.7	10	32.3	6	31.8
7	137°.8	6	145°.4	13	141°.3	5	136°.3	137°.9	10	137°.1	6	136°.5
7	152°.3	6	154°.9	13	153°.5	5	151°.0	152°.9	10	152°.0	6	152°.1
7	6°.1	6	5°.4	13	5°.8	5	7°.0	6°.2	10	6°.6	6	7°.1
7	27.6	7	25.7	14	26.7	5	25.0	24.6	10	24.8	7	24.7
7	79.6	7	81.7	14	80.6	5	76.1	80.7	10	78.4	7	75.9
7	21.4	6	20.9	13	21.2	5	19.2	19.1	10	19.1	6	19.8
7	46.9	6	48.1	13	47.4	5	48.0	50.1	10	49.1	7	47.9
7	92.5	6	93.7	13	93.0	5	90.7	93.2	10	91.9	6	90.9
7	88.6	6	70.7	13	80.3	5	91.0	89.2	10	90.1	6	91.4
7	92.1	6	87.4	13	89.9	4	109.5	114.1	8	111.8	6	108.8
7	43.0	6	43.6	13	43.3	5	45.1	43.3	10	44.2	6	43.9
7	42.2	6	45.4	13	43.7	5	35.6	39.3	10	37.4	6	36.6
7	25.8	7	26.2	14	26.0	5	23.1	23.2	10	23.2	6	23.5

(*Continued*)

				Male						
All				*Paired*						
No.	*Left*	*No.*	*R.+L.*	*No.*	*Right*	*Left*	*No.*	*R.+L.*	*No.*	*Right*
5	140.0	12	138.5	39	144.1±1.10	149.6±1.05	78	146.9± .76	53	146.0± .95
5	12.0	12	12.1	45	12.9± .15	12.9± .14	90	12.9± .10	58	12.8± .13
5	9.5	12	9.2	45	10.6± .11	10.5± .10	90	10.5± .08	58	10.6± .10
5	34.0	12	34.1	45	37.3± .31	37.3± .33	90	37.3± .23	58	37.4± .27
5	143.4	11	142.6	36	153.5±1.18	155.7±1.16	72	154.6± .83	49	154.0±1.01
5	65.2	11	66.3	36	66.2±1.23	64.2±1.14	72	65.2± .84	49	69.4±1.05
5	77.2	11	75.6	36	86.8±1.18	92.0±1.22	72	89.4± .84	49	84.6±1.01
5	133.5	11	131.1	36	141.7±1.11	143.7±1.10	72	142.7± .78	49	141.6± .95
5	59.1	11	57.8	36	58.2±1.02	58.8± .96	72	58.5± .70	49	58.9± .87
5	74.3	11	73.3	36	82.6± .98	85.9±1.11	72	84.2± .78	49	80.9± .93
5	30.1	11	30.0	36	33.6± .63	33.9± .54	72	33.8± .41	49	34.0± .54
5	33.1	11	32.0	36	29.4± .90	27.1± .96	72	28.3± .65	49	30.8± .77
5	37.4	11	36.9	36	40.7± .75	41.4± .46	72	41.1± .44	49	39.2± .64
5	38.2	11	37.4	36	44.5± .80	46.2± .60	72	45.4± .50	49	43.4± .68
5	27.7	11	28.0	37	29.7± .40	28.0± .32	74	28.8± .26	51	29.9± .34
5	26.4	11	26.2	49	29.4± .30	29.9± .28	98	29.7± .21	62	29.3± .27
5	17.2	11	17.6	36	21.9± .31	21.5± .34	72	21.7± .23	46	22.2± .28
5	19.6	11	19.3	36	19.7± .31	20.1± .33	72	19.9± .23	49	19.8± .26
5	9.6	11	9.7	36	10.5± .12	10.4± .13	72	10.4± .09	49	10.6± .11
5	52.1	11	50.4	36	70.1±2.01	70.7±2.02	72	70.4±1.43	49	67.0±1.72
5	9.2	11	9.4	42	9.5± .15	9.4± .12	84	9.5± .09	51	9.6± .13
5	21.0	11	21.3	42	23.2± .38	22.8± .33	84	23.0± .25	50	23.5± .34
5	12.2	11	12.7	42	12.5± .21	12.3± .23	84	12.4± .16	51	12.6± .20
5	32.7	11	32.2	40	34.4± .52	35.9± .59	80	35.2± .39	49	34.0± .47
5	137°.9	11	137°.2	36	139°.5± .92	141°.9± .99	72	140°.7± .67	49	139°.3± .78
5	152°.9	11	152°.5	36	151°.4± .64	152°.9± .65	72	152°.0± .41	49	151°.9± .55
5	6°.2	11	6°.7	36	5°.3± .18	4°.7± .19	72	5°.0± .13	49	5°.4± .15
5	24.6	12	24.6	39	26.0± .25	25.4± .25	78	25.7± .17	53	25.9± .22
5	80.7	12	77.9	44	82.8±1.30	82.1±1.10	88	82.5± .85	57	83.3±1.14
5	19.1	11	19.5	38	20.7± .30	20.5± .20	76	20.6± .18	51	20.5± .26
5	50.1	12	48.8	36	47.5± .30	48.5± .25	72	48.0± .20	48	47.1± .26
5	93.2	11	91.9	36	92.0± .21	92.6± .21	72	92.3± .15	49	92.0± .18
5	89.2	11	90.4	36	79.3±2.16	70.4±2.06	72	74.8±1.49	49	85.0±1.86
5	112.7	11	110.6	36	91.3±1.08	94.2±1.61	72	92.7± .97	46	91.1± .95
5	43.3	11	43.6	42	41.7± .72	41.9± .63	84	41.8± .48	50	41.2± .67
5	39.3	11	37.3	36	48.3±1.38	47.7±1.27	72	48.0± .93	49	46.0±1.18
5	23.2	11	23.4	39	23.4± .32	24.5± .32	78	23.9± .23	48	24.5± .26

(*Continued*)

Hsiu Chiu Shan

All				*Paired*		
No.	*Left*	*No.*	*R.+L.*	*No.*	*Right*	*Left*
61	147.5± .85	114	146.8± .60	24	132.7±1.02	135.3±1.02
62	12.9± .12	120	12.9± .10	32	11.6± .16	11.4± .15
62	10.5± .09	120	10.5± .07	32	9.2± .13	9.1± .12
62	37.5± .28	120	37.5± .21	32	33.5± .36	33.2± .35
58	155.9± .92	107	155.1± .62	18	141.4±1.28	142.6±1.39
58	63.3± .89	107	66.1± .72	18	63.1±1.37	62.0±1.22
58	92.7± .97	107	89.0± .75	18	77.5±1.32	81.4±1.24
58	144.2± .87	107	143.0± .60	18	129.7±1.23	131.9±1.19
58	59.5± .75	107	59.2± .60	18	54.2±1.13	55.3±1.14
58	86.3± .88	107	83.8± .67	18	74.3±1.18	77.7±1.08
58	33.7± .43	107	33.9± .31	18	31.8± .58	31.4± .65
58	27.3± .75	107	28.9± .57	18	25.7±1.18	27.8±1.00
58	42.3± .36	107	40.9± .52	18	38.6± .98	37.6± .96
58	46.5± .48	107	45.1± .48	18	39.4± .92	39.6± .68
59	28.2± .25	110	29.0± .21	23	27.0± .41	25.5± .43
70	30.1± .23	132	29.7± .16	29	27.9± .35	27.4± .38
50	21.6± .29	96	21.9± .22	18	19.8± .46	19.9± .45
58	20.3± .27	107	20.1± .18	18	17.5± .25	17.9± .35
58	10.3± .11	107	10.4± .07	18	9.4± .19	9.2± .14
58	70.7±1.59	107	69.0±1.20	18	64.3±2.34	65.6±2.41
60	9.2± .10	111	9.4± .09	28	8.6± .16	8.5± .21
59	22.6± .28	109	23.0± .21	25	20.2± .31	20.0± .28
60	12.4± .19	111	12.5± .15	29	11.9± .24	11.7± .30
58	36.1± .49	107	35.2± .32	23	31.6± .49	32.9± .59
58	142°.0± .78	107	140°.8± .52	18	139°.6±1.46	142°.6±1.30
58	153°.1± .51	107	152°.5± .41	18	150°.9± .87	152°.3± .92
58	4°.9± .15	107	5°.1± .11	18	5°.6± .24	5°.2± .19
61	25.5± .20	114	25.7± .15	24	25.4± .34	24.6± .35
62	81.9± .93	119	82.6± .77	32	79.6±1.18	80.3±1.13
63	20.4± .16	114	20.5± .14	23	20.7± .33	20.3± .29
48	48.4± .21	96	47.7± .18	18	47.0± .37	48.0± .29
58	92.5± .16	107	92.2± .11	18	91.9± .34	92.4± .27
58	70.0±1.63	107	76.8±1.51	18	81.7±2.59	78.1±2.22
50	93.2±1.36	96	92.2± .88	18	87.8±2.31	91.7±2.80
59	41.5± .54	109	41.4± .44	24	43.3±1.02	43.8±1.14
58	47.8±1.00	107	47.0± .79	18	47.1±1.82	49.9±1.52
58	24.5± .26	106	23.9± .19	23	23.7± .32	24.5± .38

(Continued)

Female							
		All					
No.	*R.+L.*	*No.*	*Right*	*No.*	*Left*	*No.*	*R.+L.*
48	133.9± .72	32	133.8± .89	33	135.6± .87	65	134.7± .58
64	11.5± .11	37	11.7± .16	37	11.5± .14	74	11.6± .10
64	9.1± .09	37	9.2± .12	37	9.1± .11	74	9.2± .09
64	33.4± .25	37	33.9± .34	37	33.2± .32	74	33.6± .24
36	142.0± .95	23	142.3±1.14	30	144.3±1.08	53	143.4± .77
36	62.5± .92	23	63.8±1.21	30	61.2± .95	53	62.3± .75
36	79.5± .91	23	78.6±1.17	30	83.0± .96	53	81.1± .77
36	130.3± .86	23	130.6±1.10	30	132.6± .92	53	131.7± .69
36	54.7± .80	23	54.1±1.00	30	55.1± .89	53	54.6± .65
36	76.0± .80	23	75.8±1.04	30	78.0± .84	53	77.1± .67
36	31.6± .44	23	31.6± .52	30	31.1± .50	53	31.3± .41
36	26.7± .77	23	25.1±1.04	30	27.2± .78	53	26.3± .66
36	38.1± .69	23	39.1± .87	30	37.9± .75	53	38.4± .55
36	39.5± .57	23	39.2± .82	30	40.1± .53	53	39.7± .48
46	26.2± .30	32	26.4± .35	33	26.4± .36	65	26.4± .27
58	27.6± .26	42	27.6± .29	40	27.3± .32	82	27.4± .34
36	19.9± .31	23	19.7± .41	29	20.4± .35	52	20.1± .27
36	17.7± .21	23	17.4± .23	29	17.9± .28	52	17.7± .18
36	9.3± .12	23	9.5± .17	30	9.2± .11	53	9.3± .09
36	65.0±1.68	23	57.2±2.09	30	68.9±1.87	53	63.8±1.44
56	8.6± .13	35	8.7± .15	36	8.7± .19	71	8.7± .12
50	20.1± .21	33	20.1± .26	32	19.9± .24	65	20.0± .18
58	11.8± .19	36	11.9± .21	36	11.9± .27	72	11.9± .18
46	32.3± .38	29	31.6± .44	32	32.8± .51	61	32.2± .33
36	141°.1± .98	23	134°.9±1.29	30	140°.1±1.03	52	140°.5± .82
36	151°.6± .63	23	150°.8± .77	30	152°.0± .70	53	151°.5± .56
36	5°.4± .15	23	5°.9± .23	30	5°.3± .15	53	5°.6± .14
48	25.0± .24	32	25.3± .30	33	24.7± .31	65	25.0± .21
64	79.9± .82	37	79.4±1.10	37	80.0±1.05	74	79.7± .76
46	20.5± .22	32	20.7± .27	32	20.3± .25	64	20.5± .18
36	47.5± .24	25	46.0± .31	37	46.8± .23	52	47.5± .22
36	92.1± .22	23	91.8± .31	30	91.9± .21	53	91.9± .18
36	79.9±1.71	23	82.4±2.29	30	74.8±1.72	53	78.1±1.43
36	89.7±1.81	23	89.8±2.04	29	90.4±2.18	52	90.2±1.48
48	43.5± .76	32	42.4± .88	32	43.3± .99	64	42.8± .41
36	48.5±1.19	23	43.0±1.62	30	50.6±1.18	53	47.3±1.02
46	24.1± .25	29	23.8± .29	29	24.4± .34	58	24.1± .23

Appendix II. Variabilities of the Clavicular Characters and Their Homologous Correlations for the Hsiu Chiu Shan Series

Character	*No.*	*Right (paired)*		*Left (paired)*	
		σ	v	σ	v
a. Absolute measurements:					
(1) Maximum length of the clavicle	39	10.2± .8	7.1± .8	9.8± .8	6.6± .7
(2) Transverse diameter of the shaft at the middle	45	1.5± .1	11.6±1.2	1.4± .1	11.0±1.1
(3) Sagittal diameter of the shaft at the middle	45	1.1± .1	10.4±1.1	1.0± .1	9.5±1.0
(4) Circumference of the shaft at the middle	45	3.1± .1	8.3± .8	3.3± .2	8.9± .9
(5) Total arc of the clavicle	36	10.5± .8	6.8± .8	10.4± .8	6.7± .8
(6) Outer arc	36	10.9± .9	16.5±1.9	10.1± .8	16.0±1.9
(7) Inner arc	36	10.5± .8	12.1±1.4	10.9± .9	11.8±1.4
(8) Total chord of the clavicle	36	9.9± .8	6.9± .8	9.8± .8	6.8± .8
(9) Outer chord	36	9.0± .7	15.5±1.8	8.5± .7	14.5±1.7
(10) Inner chord	36	9.7± .8	11.8±1.3	9.9± .8	11.6±1.3
(11) First segment	36	5.6± .5	16.8±1.9	4.8± .4	14.1±1.6
(12) Second segment	36	8.0± .6	27.1±3.3	8.5± .7	31.3±3.9
(13) Third segment	36	6.6± .5	16.2±1.9	4.1± .3	9.9±1.1
(14) Fourth segment	36	7.1± .6	15.9±1.8	5.4± .4	11.6±1.3
(15) Maximum perpendicular of the acromial end	37	3.6± .3	12.0±1.4	2.9± .2	10.4±1.2
(16) Maximum subtense of the diaphysis	49	3.1± .2	10.6±1.0	2.9± .2	9.6± .9
(17) Maximum breadth of the acromial end	36	2.8± .2	12.9±1.0	3.0± .2	14.0±1.1
(18) Maximum breadth of the sternal end	36	2.7± .2	13.7±1.6	3.0± .2	14.9±1.7
(19) Minimum breadth of the shaft	36	1.1± .1	10.4±1.2	1.2± .1	11.4±1.3
(20) Distance of the position of the minimum breadth	36	17.9±1.4	25.4±3.0	18.0±1.4	25.6±3.1
(24) Minimum depth of the acromial end	42	1.4± .1	14.7±1.6	1.1± .1	11.7±1.3
(25) Maximum depth of the sternal end	42	3.6± .3	15.5±1.7	3.2± .2	14.0±1.5
(26) Depth at the level of the conoid tubercle	42	2.1± .2	16.8±1.8	2.2± .2	18.0±1.9
(27) The distance of the position of the conoid tubercle	40	4.9± .4	14.3±1.6	5.5± .4	15.3±1.7
b. Measurements of shape:					
(21) Outer angle	36	8.1± .7	—	8.8± .7	—
(22) Inner angle	36	5.7± .5	—	5.8± .5	—
(23) Inclination of the entire clavicular chord	36	1.6± .1	—	1.7± .1	—
(28) Caliber index	39	2.4± .2	—	2.3± .2	—
(29) Shaft index at the middle	44	12.8± .9	—	10.9± .8	—
(30) Length-height index of the clavicle	38	2.8± .2	—	1.8± .1	—
(31) Claviculo-humeral index	36	2.7± .2	—	2.2± .4	—
(32) Total curvature index	36	1.9± .2	—	1.8± .2	—
(33) Index of the two arcs	36	19.3±1.5	—	18.4±1.5	—
(34) Sterno-acromial breadth index	36	9.6± .8	—	14.3±1.1	—
(35) Sterno-acromial depth index	42	7.0± .5	—	6.1± .5	—
(36) Minimum breadth position index	36	12.2±1.0	—	11.3± .9	—
(37) Position index of the conoid tubercle	39	3.0± .2	—	2.9± .2	—

(*Continued*)

Male

'R. L.	No.	R.+L. (paired)		No.	R.+L. (all)		No.	Right (paired)	
		σ	ν		σ	ν		σ	ν
.88±.02	78	10.0± .5	6.8± .5	114	9.4± .4	6.4± .3	24	7.5± .7	5.6± .8
.76±.04	90	1.5± .1	11.6± .8	120	1.6± .1	12.4± .5	32	1.4± .1	12.1±1.4
.56±.07	90	1.1± .1	10.5± .7	120	1.1± .1	10.5± .5	32	1.1± .1	12.0±1.4
.79±.04	90	3.2± .2	8.6± .6	120	3.3± .1	8.9± .4	32	3.1± .3	9.3±1.1
.79±.04	72	10.4± .6	6.8± .5	107	9.5± .4	6.2± .3	18	8.1± .9	5.7± .9
.80±.04	72	10.5± .6	16.2±1.3	107	11.1± .5	16.7± .8	18	8.6±1.0	13.6±2.2
.76±.05	72	10.7± .6	11.9±1.0	107	11.5± .5	12.9± .6	18	8.3± .9	10.6±1.7
.87±.03	72	9.8± .6	6.9± .6	107	9.2± .4	6.4± .3	18	7.8± .9	6.0±1.0
.65±.06	72	8.8± .5	15.0±1.2	107	9.2± .4	15.5± .7	18	7.1± .8	13.1±2.1
.68±.06	72	9.8± .6	11.7± .9	107	10.3± .5	12.3± .6	18	7.4± .8	10.0±1.6
.47±.09	72	5.2± .3	15.5±1.3	107	4.7± .2	14.0± .7	18	3.7± .4	11.5±1.9
.62±.07	72	8.2± .5	29.0±2.5	107	8.7± .4	30.0±1.5	18	7.4± .8	28.8±5.0
.54±.08	72	5.5± .3	13.4±1.1	107	7.9± .4	19.3± .9	18	6.2± .7	16.0±2.6
.52±.08	72	6.3± .4	13.9±1.1	107	7.3± .3	16.3± .8	18	5.8± .7	14.6±2.4
.80±.04	74	3.3± .2	11.5± .9	110	3.3± .2	11.4± .6	23	2.9± .3	10.7±1.6
.79±.08	98	3.0± .2	10.1± .7	132	2.8± .1	9.4± .4	29	2.8± .3	10.1±1.3
.64±.07	72	2.9± .2	13.5± .8	96	3.2± .2	14.5± .7	18	2.9± .3	14.5±1.7
.76±.05	72	2.8± .2	14.1±1.2	107	2.8± .1	13.9± .7	18	1.6± .2	9.1±1.0
.65±.06	72	1.1± .1	10.6± .9	107	1.1± .1	10.5± .5	18	1.2± .1	12.8±2.1
.54±.08	72	18.8±1.0	25.5±2.2	107	18.4± .9	26.7±1.3	18	14.8±1.7	23.0±2.7
.51±.08	84	1.3± .1	13.6±1.0	111	1.4± .1	14.9± .7	28	1.3± .1	15.0±2.0
.76±.04	84	3.4± .2	14.7±1.1	109	3.2± .2	14.0± .7	25	2.3± .2	11.4±1.6
.49±.08	84	2.1± .1	16.8±1.3	111	2.4± .1	19.2± .9	29	1.9± .2	16.0±2.1
.58±.07	80	5.2± .3	14.8±1.1	107	5.0± .2	14.1± .7	23	3.5± .3	11.1±1.6
.60±.07	72	8.5± .5	—	107	8.0± .4	—	18	9.2±1.0	—
.55±.08	72	5.2± .3	—	107	6.3± .3	—	18	5.5± .6	—
.74±.05	72	1.7± .1	—	107	1.7± .1	—	18	1.6± .2	—
.79±.04	78	2.3± .1	—	114	2.4± .1	—	24	2.5± .2	—
.51±.08	88	11.9± .6	—	119	12.5± .5	—	32	9.9± .8	—
.58±.07	76	2.4± .1	—	114	2.3± .1	—	23	2.3± .2	—
.90±.03	72	2.5± .1	—	96	2.6± .1	—	18	2.3± .3	—
.39±.10	72	1.8± .1	—	107	1.7± .1	—	18	2.2± .2	—
.74±.05	72	18.8±1.1	—	107	23.2±1.1	—	18	16.3±1.8	—
.36±.11	72	12.2± .7	—	96	12.8± .6	—	18	14.5±1.6	—
.69±.05	84	6.5± .3	—	109	6.8± .3	—	24	7.4± .7	—
.46±.09	72	11.8± .7	—	107	12.2± .6	—	18	11.5±1.3	—
.61±.07	78	3.0± .2	—	106	3.0± .1	—	23	2.3± .2	—

(*Continued*)

Female

Left (paired)		*R. L.*	*No.*	*R.+L. (paired)*		*No.*	*R.+L. (all)*	
σ	v			σ	v		σ	v
7.4± .7	5.5± .8	.66±.08	48	7.4± .5	5.5± .5	65	6.9± .4	5.1± .3
1.3± .1	11.3±1.4	.75±.05	64	1.3± .1	11.3±1.0	74	1.3± .1	11.2± .6
1.0± .1	11.0±1.4	.73±.06	64	1.0± .1	11.0±1.0	74	1.2± .1	13.0± .7
2.9± .3	8.7±1.1	.82±.04	64	3.0± .2	9.0± .8	74	3.0± .2	9.0± .5
8.8±1.0	6.2±1.0	.96±.10	36	8.4± .7	5.9± .7	53	8.3± .6	5.8± .4
7.7± .9	12.4±2.0	.63±.10	36	8.2± .7	13.1±1.5	53	8.1± .5	13.1± .9
7.8± .9	9.7±1.6	.53±.11	36	8.1± .6	10.1±1.2	53	8.3± .6	10.3± .7
7.5± .8	5.7± .9	.82±.05	36	7.6± .6	5.3± .7	53	7.5± .5	5.7± .4
7.2± .8	13.0±2.1	.64±.09	36	7.1± .6	13.0±1.5	53	7.0± .5	12.9± .9
6.8± .8	8.9±1.4	.55±.11	36	7.1± .6	9.4±1.1	53	7.2± .5	9.3± .6
4.1± .5	13.1±2.1	.57±.11	36	3.9± .3	12.3±1.4	53	4.5± .3	14.3±1.0
6.3± .7	22.7±3.8	.74±.07	36	6.9± .5	25.8±3.1	53	7.1± .5	27.0±1.8
6.1± .7	16.1±2.6	.44±.13	36	6.1± .5	16.1±1.9	53	5.9± .4	15.3±1.0
4.3± .5	10.8±1.7	.21±.15	36	5.1± .4	12.9±1.5	53	5.2± .3	13.2± .9
3.1± .3	12.2±1.7	.35±.12	46	3.0± .2	11.4±1.2	65	3.2± .2	12.0± .7
3.0± .3	10.9±1.4	.81±.04	58	2.9± .2	10.6± .9	82	4.5± .2	16.5± .9
2.8± .3	14.1±1.6	.77±.07	36	2.8± .2	14.2±1.2	52	2.9± .2	14.3±1.0
2.2± .3	12.3±1.4	.83±.05	36	1.9± .2	10.7± .9	52	1.9± .1	10.7± .7
0.9± .1	9.8±1.6	.75±.07	36	1.1± .1	11.8±1.3	53	1.0± .1	10.8± .7
15.2±1.7	23.1±2.6	.57±.11	36	15.0±1.2	23.0±2.7	53	15.6±1.0	24.4±1.7
1.6± .2	18.8±2.5	.79±.05	56	1.5± .1	17.4±1.6	71	1.5± .1	17.2±1.0
2.1± .2	10.6±1.4	.85±.04	50	2.2± .2	11.0±1.1	65	2.2± .1	11.0± .7
2.4± .2	20.5±2.6	.91±.02	58	2.2± .1	18.6±1.7	72	2.3± .1	19.3±1.1
4.2± .4	12.6±1.8	.77±.06	46	3.8± .3	11.9±1.2	61	3.8± .2	11.8± .7
8.2± .9	—	.65±.09	36	8.7± .7	—	52	8.8± .6	—
5.7± .7	—	.85±.04	36	5.6± .5	—	53	6.0± .4	—
1.2± .1	—	.81±.05	36	1.4± .1	—	53	1.5± .1	—
2.6± .3	—	.76±.06	48	2.5± .2	—	65	2.5± .2	—
9.5± .8	—	.56±.08	64	9.7± .6	—	74	9.7± .5	—
2.1± .2	—	.80±.05	46	2.2± .2	—	64	2.2± .1	—
1.8± .2	—	.89±.03	36	2.1± .2	—	52	2.3± .2	—
1.7± .2	—	.79±.06	36	2.0± .2	—	53	1.9± .1	—
14.0±1.6	—	.50±.12	36	15.2±1.2	—	53	15.5±1.0	—
17.6±2.0	—	.69±.10	36	16.1±1.3	—	52	15.8±1.1	—
8.3± .8	—	.54±.10	48	7.8± .5	—	64	4.9± .3	—
9.6±1.1	—	.60±.10	36	10.6± .8	—	53	11.0± .7	—
2.7± .3	—	.73±.07	46	2.5± .2	—	58	2.6± .2	—

唐代雲南的烏蠻與白蠻考

凌純聲

(一) 引言

我們要研究現代雲南的民族,去作實地調查的工作,固然重要,但同時須注意到史書的記載。因爲我們要明瞭一民族的現狀及其以往的遞變和演化,但憑現實的材料去推求,而忽略了過去的事實,所得的結論頗不易於正確。西洋人開始研究中國西南民族,已有四五十年之久,然至今尙沒有整理出一個頭緒來,推原其故,他們是多數不諳中文,未能顧到中國歷史的記載。所以我們現在研究西南民族決不能再蹈西洋人的覆轍。作者近年在雲南實地調查兩次,這篇文字,是調查回來,再讀歷史所得到的與前人不同的見解;現在把他寫出來,以求博雅的指教。

在唐代以前,中國古書對於雲南的記載,如史記,漢書,後漢書,華陽國志等書,多是偏重於地理而略於民族。現在我們要想研究唐以前的雲南民族史,每感材料不足。及至唐時,南詔崛起於雲南,與中國和戰無常,因此從征的將士和貢封的使臣往返頻繁。所以唐人對雲南的著述較詳,如樊綽所著的蠻書,將唐時雲南界內途程,山川,六詔,名類,六睑,城鎭,物產,風俗,條教以及諸蕃詳細敍述,纂成十卷。此書成於咸通五年(西元八六五年),可稱中國輿志中最古之本。其中第四篇名類記述當時雲南的民族共有二十八種之多。且樊氏亦能知分類,分當時的主要民族爲烏蠻與白蠻二類,某種是屬於烏蠻,某種是屬於白蠻,雖不能一一詳列,然亦已大概道及。並且能記其語言風俗,遺留給我們不少考證的資料。

關於唐代烏蠻與白蠻的種族問題,中外學者聚訟紛紜,至今未有定論。這兩個問題頗爲重要,如果我們能夠把他研究清楚,對於整個的雲南民族史,便可得一線索。因爲自漢魏以至元明,在雲南佔有勢力,更迭統治雲南的,除漢族之外,實是烏蠻與白蠻這兩個民族。

西洋學者研究漢學的或擺夷民族史的,大都相信唐代雲南的南詔,爲現代擺夷民族所建的王國(1)。新唐書南蠻傳曾載"南詔本哀牢夷後烏蠻別種也。"南詔既爲擺夷,則烏蠻當爲擺夷無疑,但是蠻書途程篇有云:"第七程至竹子嶺,嶺東有暴蠻部落,嶺西有盧鹿蠻部落,第八程至生蠻磨彌殿部落,此等部落皆東爨烏蠻也。"此烏蠻種的盧鹿蠻,據元史類編(卷四二.)之考訂云:"盧鹿蠻近世譌爲猓玀或稱羅羅。"則烏蠻爲今之羅羅民族,並非擺夷。又南詔之中有越析詔,蠻書六詔篇第三:"越析,一詔也,亦謂之磨些詔。"磨些亦烏蠻種類,爲今之磨些族,亦非擺夷。所以我們以爲建立南詔王國的烏蠻,並非擺夷,而是現在的羅羅民族。

或者可以說唐時的烏蠻爲當時的戰勝者,是南詔的統治階級,其被統治的白蠻當爲擺夷,此所以現在又有許多人相信白蠻的後裔,今之民家爲擺夷。民家的種族問題說素更多,如法人 Madrolle 謂民家爲羅羅(2),丁文江氏謂大理國的貴族和漢人的混合種(3),Rocher 謂民家爲擺夷與羅羅的混合種(4),英人 Davies 別有創見,謂民家爲屬於蒙克語系的民族(5)。唐代白蠻是否今之民家,及其種何屬,非詳細考證一番,很難斷言。

(1) 如 Hervey de Saint-Devis, Parker, Rocher, Cochrane 諸氏。

(2) C. Madrolle: Quelques Peuplades Lolo, pp. 36-39.

(3) 丁文江:爨文叢刊序言。

(4) E. Rocher: La province Yun- nan, t. II, p. 21.

(5) H. R. Davies: Yunnan, pp. 343-347.

我們在考證烏蠻與白蠻之前,尙有一問題須研究淸楚的,卽烏蠻白蠻與兩爨的關係。蠻書名類篇說:"西爨,白蠻也;東爨,烏蠻也。"烏蠻與白蠻當然是兩個民族,可無疑義。而爨究竟是白蠻或是烏蠻,或爲另一民族,我們應當先弄淸楚。所以本文須分三段來敍述:一,東爨與西爨;二,烏蠻;三,白蠻。

(二) 東爨與西爨

爨的名稱,始見於漢魏之際。常璩華陽國志南中志云:"分其羸弱配大姓焦、雍、婁、爨、孟、量、毛、李爲部曲。亮收其俊傑建寧爨習爲官屬,官至領軍。" 又云:"建寧爨量保與古鄴南以叛。" 三國志李恢傳云:"李恢字德昂建寧俞元人也。任郡督郵,姑夫爨習爲健伶令,有違犯之事,恢坐習免官。太守董和以習方土大姓,寢而不許。"又爨道處爨使君碑(又稱大爨碑)(1):"酒祖肅,魏尙書僕射,河南尹位均九列,舒翮中朝。" 可見在漢魏之際,"爨"並非民族的名稱,乃一族的姓氏,且爲方土大姓,子孫繁衍於建寧郡地,當今之曲靖、陸涼、平彝等屬。族中人才輩出,在地方爲豪傑首領,入仕中原,則爲達官顯宦。

至晉初有爨谷爲交阯太守,晉書陶璜傳:"孫皓時交阯太守孫諝,察戰鄧荀,郡吏呂興殺諝及荀以郡內附。武帝拜興安南將軍交阯太守,尋爲其功曹李統所殺。帝以建寧爨谷爲太守。"又有爨琛爲寧州將軍,晉書王遜傳:"漢嘉太守王載以二郡附李雄,雄遣李驤渡瀘水寇寧州,遜使將軍姚崇爨琛拒戰於堂狼大破驤等,直追至瀘水,赴冰死者千餘人。"

自晉室南遷,中原多事,無暇南顧,爨氏以方土大姓,雄據一方,私自襲職爲太守,如爨寶子(西元三八二——四〇五)弱冠卽爲太守。

(1) 大爨碑在今雲南陸涼縣東南二十里良元堡,文詳金石續編,本所藏有拓片。

爨寶子碑（亦稱小爨碑）(1)："晉故振威將軍,建寧太守,……君諱寶子,字寶子,建寧同樂人也。……州主簿,治中別駕,舉秀才,本郡太守。寧撫氓庶,物物得所。春秋廿三,寢疾喪官。……太亨四年,歲在乙巳四月上旬立。"寶子年廿三歲卽死。碑稱本郡太守,寧撫氓庶,物物得所,想他已做了好幾年太守,故有此德政;又弱冠卽守本郡,倘非世襲,烏能有此。且太亨四年,歲在乙巳,按晉安帝元興元年壬寅（西元四〇二）改元太亨,次年仍稱元興二年。乙巳改義熙。碑稱太亨四年乙巳,殆不知太亨年號,改而未行。可見當時的建寧,開門稱藩,閉戶稱王,與中朝常常隔絕。

爨氏發祥於建寧,東晉以來,其勢西漸,奄有建寧晉寧二郡之地,至晉末爨氏子孫分據二郡。迨爨龍顏（西元三八六——四四六）,又統一二郡。大爨碑："祖晉寧建寧二郡太守,龍驤將軍,寧州刺史。考龍驤輔國將軍,八郡監軍,晉寧建寧二郡太守,追證寧州刺史,邛都縣侯。……萬里歸闕,除散騎侍郎,……忠誠簡於帝心,芳風宣於天邑。除龍驤將軍,試守晉寧太守……襲封邛都縣侯。歲在壬申,百六遘覺,州土擾亂,東西二境,凶豎狼暴,緬成寇場。君收合精銳五千之衆,身伉矢石,撲碎千計,肅清邊隅。君南中磐石,人情歸望,遷本號龍驤將軍讚鎭巒校尉,寧州刺史,邛都縣侯。"晉末爨雖已分東西二部:建寧爲東爨,晉寧爲西爨。而爨氏的根據地則在建寧,子孫繁衍於此。爨寶子爨龍顏均爲建寧同樂（今之曲靖陸涼二縣地）人。大爨碑陰有:府長史建寧爨道文,司馬建寧爨德民,倉曹參軍建寧爨口宣,別駕建寧爨敬祖,主簿建寧爨德助,鎭巒長史建寧爨世明,司馬建寧爨順口,中兵參軍建寧爨孫記,門下建寧爨連,錄事建寧爨敬,及作大爨碑文的爨道處亦是建寧人。晉寧當時雖爲爨氏所據,人數尙少。史書所見祇有爨松子一人。宋書文帝本紀："元嘉十八年（西元四四一）晉寧爨松子反,寧州刺史徐循討平之。"

(1) 小爨碑在今曲靖縣武侯祠,本所藏有拓片。

爨松子與寶子似爲兄弟行。如龍顏的兒輩,有驎宏、驎紹、驎暄、驎崇等;孫輩有碩萬、碩思、碩羅、碩俗等;又如爨道慶與爨道文、爨德民與爨德助都是同輩排名的。寶子襲建寧太守早卒,似無嗣。因爲小爨碑乃寶子墓碑,立碑的爲其僚屬主簿楊磐錄事孟愼等,無後嗣之名;且無姓爨之人。龍顏或爲寶子之叔,大爨碑:"監君之令子。"又稱:"寧州長子驎宏早終。"可見龍顏非長子,例不得承襲。或因寶子早卒無嗣,龍顏爭奪而得襲爵,亦未可知?大爨碑:"義熙十年秀才,除郎中相征西鎮,遷南蠻府行參軍,除試守建寧太守,剖符本邦。"爨寶子做建寧太守,小爨碑祇說:"本郡太守。"而龍顏則爲試守建寧太守,足見二人的襲職不同。爨龍顏做了建寧太守,就入朝面聖,又得試守晉寧太守。大爨碑:"君素懷慷慨,志存遠御,萬里歸闕,除散騎侍郎,進無休容,退無愠色。忠誠簡於帝心,芳風宣於天邑。除龍驤將軍,試守晉寧太守。"龍顏雖得兼併二郡,而人心未服,致有壬申(西元四三二)二境之變。收合五千精銳,始得肅清境內。然不十年,爨松子又據晉寧以叛。松子在晉寧雖不知居何職守,他與寶子排名,或爲龍顏之前與寶子分領二郡的晉寧太守,故能據郡叛變。

梁時有爨瓚,竊據一方,僭號稱王。隋書梁睿傳:"僞梁南寧州刺史徐文盛被湘東徵赴荊州,土民爨瓚遂竊據一方。"爨瓚死,其子震,翫分統其衆,歲貢不入者數十年。隋書梁睿傳:"其子震,相承至今,而震臣禮多虧貢賦不入。"隋末唐初,爨瓚二子叛服不常,爲隋文帝所誅。新唐書南蠻傳:"爨瓚既死,子震翫分統其衆。隋開皇初,遣使朝貢,命韋世衡以兵戍之。置恭州,協州,昆州,未幾叛。史萬歲擊之,至西洱河,滇池而還;震、翫懼而入朝,文帝誅之。諸子沒爲奴。高祖卽位,以其子宏達爲昆州刺史奉父喪歸。"

唐初雲南西北部新興的南詔國,已受中國册封。而東部之爨雖稍懼中朝兵威,然猶稱強如故。其時中國欲開拓交阯與四川的

通道,常扼於滇東之蠻。南詔德化碑云:"初節度韋仇兼瓊,不量成敗,妄奏是非,遣越巂都督竹靈倩置府東蠻,通路安南,賦重役繁,政苛人弊,被南寧都督蠻歸王,昆州刺史蠻日進,梨州刺史蠻祺,永州蠻守懿,螺山大鬼主蠻彥口,南寧州大鬼主蠻崇道,陷殺竹靈倩,兼破安寧。" 元宗遣使救雲南王蒙歸義助平其亂。自此以後蠻中唐將李宓之計,自相殘殺,爲南詔所滅。德化碑:"李宓忘國家大計,蹈韋仇詭縱,務求進官榮。宓阻扇東蠻,遂激崇道,令殺歸王,議者紛紜。……都督李宓又赴安寧再和諸蠻,而李宓矯僞居心,尚行反間,更令崇道謀殺日進,東蠻諸酋,並皆驚恐。" 又蠻書名類篇第四:"初蠻歸王爲南寧州都督理石城,襲殺蓋啓父子,遂有升麻川,歸王兄靡湣,湣生崇道,理曲軛川,爲兩蠻大鬼主,崇道弟日進日用在安寧城。……無何崇道殺日進,又陰害歸王,歸王妻阿姹烏蠻女也,走投父母,稱兵相持,諸蠻豪亂。阿姹私遣使詣烏蒙舍川求投。歸義卽日抗疏奏聞,阿姹男守偶,遂代歸王爲南寧州都督,歸義仍以女妻之,又以女妻崇道男輔朝。崇道內懷忿惋,外示和平,猶與守偶母子相攻伐。阿姹又訴於歸義,興師問罪。行次昆川,信宿而曲軛川潰散。崇道南走黎川,歸義盡俘其家族羽黨,幷殺輔朝而收其女。崇道俄亦被殺,諸蠻由是離弱。及歸義卒,于閣羅鳳立,守偶並妻歸河賧。"

以上敍述蠻氏的興亡,不過使我們明瞭:所謂蠻者,在漢魏六朝間爲一族之姓氏,迨隋唐則已漸蛻變爲部落的名號,並且部落有東西之分。至於蠻究屬於何種民族,則尚未解答。大蠻碑云:"其先世則少昊顓頊之玄胄,才子祝融吵胤也。清源流而不滯,深根固而不傾。夏后之盛,敷陳五教,勳隆九土,純化洽於千古,仁功播於萬祀。故乃耀輝西岳,霸王郢楚,子文銘德於春秋,班朗紹縱於季漢,陽九運否,蟬蛻河東,逍遙中原,班彪刪定漢紀,班固述修道訓。爰暨漢末,采邑於蠻,因氏族焉。姻婭構於公族,振纓蕃於王室,迺祖蕭魏尚書僕射,河南尹,位均九列,舒翮中朝,遷運庸蜀,流薄南入。" 據上所述,則

爨之系出於羋,別氏爲班,彪固皆爲其祖。碑文爲爨氏的自述,如無旁證,未可盡信。新唐書南蠻傳下:"西爨自云本安邑人,十世祖晉南寧太守,中國亂,遂王蠻中。" 安邑在今山西之運城縣,夏代禹所都,戰國爲魏都。戰國策有魏爨襄其人。可見爨自云本安邑人亦不爲無因。謝承後漢書:"爨氏望出晉昌,後漢河南尹爨肅"(鄭樵通志引)。晉昌在今湖北的竹谿,陝西的石泉洋縣等地。今湖北竹山竹谿等縣,爲古之庸地,可爲碑文"遷運庸蜀"一語的旁證。爨氏之見於載籍者尚有,唐書突厥傳有爨寶璧率精兵一萬三千人出塞,反爲骨吐祿所敗。可見雲南之爨,並非土著而漢化的民族,乃中原民族之沒於蠻者。爨爲自漢魏迄隋唐之際佔據雲南東部及中部統治者的姓氏,非當地土著民族的自稱。蠻書云:"其人云爨,從其古長之姓。" 爨氏挾其政治勢力,漢族之文化來治斯土,當初祇與當地的漢族通婚,如三國時的爨習爲李恢的姑夫。至後漢時,其族久居蠻中,而同化於蠻,漸與土著通婚,如唐時爨歸王妻,爲烏蠻之女。爨又由部落的名號,而變爲種人的名稱。然爨氏當時轄地延袤二千里,以今日雲南民族分佈的現狀觀之,此二千里廣大區域中的民族,決不止一種,在當時已有東爨烏蠻,西爨白蠻之分,證之以古代的文獻,兩爨的地望,人種,語言及文化,均各有別。因爨所包括的不止一種民族,所以不能代表現在雲南的任何一種民族。民族之名,當以其自稱爲名,現在雲南的羅羅,擺夷,民家等民族,均有其自稱之名,而不知有爨。今滇中有姓爨者,大概爲爨氏之後裔,又有姓寸者,袁嘉穀氏謂卽爨字對音而省筆,此言可信(1)。爨氏初興於建寧,同樂爲建寧郡的首縣。大小兩爨碑,均出土於境內。而當時此地的羅羅概稱烏蠻,如前述新唐書(卷二二二下)所誌烏蠻部落的盧鹿蠻,卽元史類編考訂爲今日的猓玀或羅羅。今之羅羅有文字,相傳漢時有納垢酋之後阿晌者爲馬龍州人,棄職隱山谷,撰夷字如蝌蚪,二年始

(1) 袁嘉穀:滇繹卷二,頁十七。

成字母十千八百四十有奇,夷人號爲書祖。可見當時統治者的爨氏雖用漢文,而土著之民多用羅羅文。後人不察,以羅羅卽爨人,羅羅文爲爨文,這種說法,容有未妥。祇可以說爨人爲少數的漢民族,同化於土著的羅羅,並非眞正的羅羅。研究民族史者最須注意的一點,卽統治者與被統治者常常是不同種的民族。兩爨有東西之分,完全以地域而言,建寧爲東爨,晉寧爲西爨,其爲爨也則一,且同爲統治者。而他們統治的民族則不同:東爨爲烏蠻,西爨爲白蠻。現在我們旣已明瞭兩爨與烏蠻和白蠻的關係,可以進而研究唐代的烏蠻與白蠻,是屬於現今雲南的那兩種民族?

(三) 烏蠻

唐代的烏蠻可分爲兩種:屬於東爨的謂之東爨烏蠻;不屬於東爨的謂之烏蠻別種。蠻書名類篇:"在曲靖,彌鹿川,升麻川,南至步頭,謂之東爨。" 曲靖州卽今之曲靖,彌鹿川今爲滇西彌勒等屬,升麻川在今尋甸境。至於步頭之方位,至今衆說紛紜。據法人 Pelliot 的考訂,古之步頭可位置於今之臨安,然蠻書稱步頭在通海城南十四日程,大約當係今蒙自江外之蠻耗,不知古之陸路如何走法,如以現在途程計之,則不需十四日,若臨安卽步頭,則距離更近。總之東爨烏蠻的地望自滇之東北,經東部直至通海城南十四日程之步頭爲其南端。

至不屬東爨的烏蠻別種,其區域大於東爨烏蠻。新唐書南蠻傳:"南詔本哀牢夷後,烏蠻別種也。" 南詔的政治區域甚廣,現在我們要知道的爲民族的地望。先時滇有六詔,各據其地。蒙舍詔在今之蒙化,遂賧詔爲今之鄧川,施浪詔今之洱源,浪穹詔今之劍川,越析詔今之麗江,蒙巂詔卽今四川之越巂。上述六詔,南起自蒙化,北至麗江,東至越巂,在此廣大的區域中,其大部份的民族爲白蠻及少數漢族的遺民裔人外,餘均爲烏蠻,至於統治者的六詔渠帥,盡爲

烏蠻民族。

此外既不屬於東爨,而又不屬於六詔的烏蠻有獨錦蠻,長褲蠻,施蠻,順蠻,磨蠻五種。蠻書名類篇:"獨錦蠻,烏蠻苗裔也,在秦藏(在今昆明之西)去安寧兩日程;長褲蠻,本烏蠻之後,部落在劍川屬浪詔;施蠻本烏蠻種族也,鐵橋(今麗江縣之巨甸)西北大施,體施賧,斂尋(三地約在今維西縣境內),皆其所居之地;順蠻本烏蠻種類,初與施蠻部落參居劍共諸川;磨蠻亦烏蠻種類也,鐵橋上下及大婆小婆三探覽(三地均在今麗江縣境),昆池等川皆其所居之地也。"

在唐代分佈於雲南自東北部而至步頭,由西北部而達蒙化的烏蠻種族,由其地理的分佈上觀之,雖不能說盡屬於今日狹義的羅羅一族,而屬於今日廣義的藏緬族殆無疑義。我們現在根據蠻書所載烏蠻的語言與文化,來證明今之廣義的藏緬族卽唐代的烏蠻。

蠻書所載東爨烏蠻的語言甚少,共計有八字。風俗篇:"東爨謂城爲弄,謂竹爲篤,謂鹽爲昫,謂地爲梁,謂請爲數,謂酸爲制。"又六詔篇謂山上爲陂陀。我們現在列表如下,並以今之羅羅語與擺夷語作一比較:

漢語	烏蠻(1)	羅羅(2)	擺夷(3)
城	弄(lung)	loù	yn˥
竹	篤(tsi̯ăn)	da	mei˦ bot˨
鹽	昫(xi̯u)	ts'ou	kɣ˧1
地	梁(ńźi̯ęu)	m'(eu)tech	liŋ˧1
請	數(si̯u)		
酸	制(t'śi̯ăi)	tsòh	som˩
山	陂(pji̯ę)	boh	loi˩
上	陀(d'â)	t'o	nɣ˧1

(1) 據 Bernhard Karlgren: Analytic Dictionary of Chinese 所考 Ancient Chinese 注音。

(2) 羅羅註音根據 Paul Vial: Dictionnaire Français Lolo 及 Henri, D'Ollone: Dictionnaire des Caractéres Lolo 二書。

(3) 擺夷單字係一九三六年在雲南孟定調查所得,不久將發表。

上表八個烏蠻單字中,除"請"之一字頗難確定他的意義,不能作比較外,其中祇有"竹"字烏蠻與羅羅語不合,餘六字均可說是同音。七字之中有六字相符,字數雖少,而其相同的程度則甚高。烏蠻語與擺夷語比較,七字之中無一相同。所以從語言上看來,烏蠻當爲今之羅羅而非擺夷。

我們現在再從烏蠻的文化特徵上研究他的種族。所謂文化特徵,是指某一民族特有的文化,這種文化在本民族不易改變或放棄,而他民族不能或不願模仿(1)。並非如居屋與服飾等文化是隨地理環境或時代的變遷能改變的。唐代烏蠻有"父子連名"的習俗,可算他們的文化特徵。所謂"父子連名",卽爲子之名首一字,大致用父之名末一字,例如晟羅皮子名爲皮羅閣。屬於烏蠻種族的六詔均行此俗。現列表如下:

(一)蒙舍詔世系(2)

1. 細奴羅
2. 羅　晟
3. 晟羅皮
4. 皮羅閣
5. 閣羅鳳
6. 鳳伽異
7. 異牟尋
8. 尋閣勸
9. 勸龍晟
10. 勸利晟(勸龍晟弟。)
11. 豐　佑(3)(石刻作勸豐佑,勸利晟之弟。)

(1)論文化特徵,參閱拙著樊人非擺夷考。

(2)六詔世系根據樊綽:蠻書及楊愼:南詔野史。

(3)楊愼:南詔野史卷上,頁二十,註云:"豐佑幕中國之風,獨不肯連父名。"

12. 世　隆

13. 隆　舜

14. 舜化貞

(二) 浪穹詔世系

1. 豐　時

2. 羅　鐸

3. 鐸羅望

4. 望　偏

5. 偏羅矣

6. 矣羅君（亦作羅矣羅君,唐書南詔傳又作羅君。）

(三) 遵賧詔世系

1. 豐　咩

2. 咩羅皮

3. 皮羅遵

4. 遵羅顛

5. 顛之託（新唐書又作顛文託。）

(四) 蒙巂詔世系

1. 巂輔首

2. 陽　照（巂輔首之弟,因兄無子得立。）

3. 照　源

4. 源　羅

(五) 施浪詔世系

1. 望　木

2. 望　干（望木之弟。）

3. 千　傍

4. 傍羅顛　新唐書又作千旁羅顛。）

(六) 越析詔世系

1. 波　衝

2. 于　贈（波衝之姪。）

蠻書六詔篇："越析一詔也，亦謂之磨些詔。"　波衝一族僅傳二世至于贈，卽爲閣羅鳳所滅。于贈爲波衝之姪，故不見連名。另有一磨些族木氏代興，自唐宋以迄元明清，受中朝官職，爲麗江土司。木氏有宗譜起自唐代以迄於今，世代相繼亦多"父子連名"，茲亦列表如下(1)：

麗江木氏世系

1. 秋　陽（唐高宗上元時爲三甸總管。）

2. 陽音都谷（唐元宗天寶時，南詔閣羅鳳授總督元帥）

3. 都谷剌具

4. 剌具普蒙

5. 普蒙普王

6. 普王剌完

7. 剌完西內

8. 西內西可

9. 西可剌土

10. 剌土俄均

11. 俄均牟具

12. 牟具牟西

13. 牟西牟磋

14. 牟磋牟樂

15. 牟樂牟保

16. 牟保阿琼

(1) 按木氏宗譜共有四種：一、木氏歷代宗譜碑，清道光二十二年立，在今麗江縣東南的蛇山；二、楊愼，木氏宦譜序；三、續雲南通志所載木氏宗譜；四、木氏宦譜圖綠世系考。本文根據第一種碑文。

17. 阿琮阿良（元世祖親征大理,功陞茶罕章宣慰司。）
18. 阿良阿胡
19. 阿胡阿烈
20. 阿烈阿甲
21. 阿甲阿得（明洪武十五年賜姓木故又名木得。）
22. 阿得阿初（木初）
23. 阿初阿土（木土）
24. 阿土阿地（木森）
25. 阿地阿寺（木嶔）
26. 阿寺阿牙（木泰）
27. 阿牙阿秋（木定）
28. 阿秋阿公（木公）
29. 阿公阿目（木高）
30. 阿目阿都（木東）
31. 阿都阿勝（木旺）
32. 阿勝阿宅（木青）
33. 阿宅阿寺（木增）
34. 阿寺阿春（木懿）
35. 木　模（清康熙時）
36. 木　松
37. 木　潤
38. 木　楫
39. 木　仁（乾隆時）

由上表可知麼些族的木氏自唐至元末,世代相傳,均父子連名,至明初雖賜姓爲"木",然此風一時不易更改,仍以木姓加上名之最後一字爲姓名,例如阿甲阿得爲木得。至清初此俗始革。

上述六詔的"父子連名",其連名的方法可分爲三類:

(一) 名字爲二字者,僅一種連法,卽父名爲甲乙,其子名爲乙丙。例如:照源源羅之類。

(二) 名字爲三字者,有兩種連法:

1. 三字之中,亦連末一字,與二字名字相同,式如:甲乙丙,丙丁戊,例如鳳伽異、異牟尋、尋閣勸、勸龍晟等是。
2. 三字之中,其中間一字不換,再連末一字,其式爲甲乙丙,丙乙丁,丁乙戊,例如苹羅皮、皮羅遵、遵羅顚之類。

(三) 名字有四字者亦有兩種連法:

1. 四字中連末二字,式如:甲乙丙丁、丙丁戊己,例如陽晉都谷、都谷剌具、剌具普蒙等是。
2. 四字之中,一三兩字不換,子名的第二字連其父名的第四字,式爲甲乙甲丙、甲丙甲丁、甲丁甲戊,例如牟具牟西,牟西牟磋;又如阿良阿胡,阿胡阿烈。

唐代六詔詔主的父子連名,久已引起世人的注意。作者懷疑南詔非擺夷民族,亦因此而起。六詔中之磨些詔,今之遺民卽爲磨些民族,自唐迄清,世代相承均"父子連名"。且此俗不僅行於貴族,平民間亦行之。如余慶遠維西聞見錄有云:"磨些無姓氏,以祖名末一字,父名末一字,加一字爲名,遞承而下,以誌親疏。"羅羅與和泥亦有父子連名風俗的記載,如毛奇齡蠻司合志卷八載有:"諸甸本土,羅羅和泥人好相殺,死則償以財,家無姓名,其有名者或遞承其父名之末字,顧無姓。弘治中知府陳晟以百家姓首八字,司分一字加於各名之上,諸甸皆受,惟納樓不受。"作者於一九三五年在雲南時,遇四川大涼山附近的羅羅青年曲木藏明,曾告予他的父親能背家譜,上下世連名,數十代相承,絲毫不爽。我曾託他回去筆錄一份寄我,惜迄今尙未收到。自一九三五年丁在君先生發表雲文叢刊後,其中有帝王世紀(或稱人類歷史)一篇,是述貴州水西羅羅安家的歷史。書從宇宙開闢,人類始祖講起,到吳三桂滅水西爲

止,共一百十四世,世代相承,都是父子連名。茲列表如下:

水西安氏羅羅世系(一)

1. 希母遮	16. 尺亞索
2. 遮道公	17. 亞索得
3. 公竹詩	18. 得洗所
4. 詩亞立	19. 洗所多
5. 立亞明	20. 多必益
6. 明長夫	21. 必益堵
7. 長夫作	22. 堵洗仙
8. 作阿切	23. 洗仙佗
9. 切亞宗	24. 佗阿大
10. 宗亞儀	25. 大阿武
11. 儀亞祭	26. 阿武儒
12. 祭迫能	27. 儒侏濱
13. 迫能道	28. 濱侏武(又名濱武朱)
14. 道母儀	29. 武老撮(1)(又名武朱撮)
15. 母儀尺	30. 撮侏濱

水西安氏羅羅世系(二)

1. 濱母吾	6. 沙古母
2. 母齊齊(2)	7. 古母襲
3. 齊亞紅	8. 襲亞隴
4. 紅亞得	9. 隴亞告
5. 得古沙	10. 告亞守

(1) 武老撮兄弟共十二人,武老撮最幼;其兄十一人爲:(1)武朱只,(2)武朱佗,(3)武朱儀,4)武朱帝,(5)武朱義,6)武朱明,(7)武朱覺,(8)武朱朋,(9)武朱邏,(10)武朱普,(11)武朱執。

(2) 母齊齊兄弟共六人,母齊齊最幼;其兄五人爲:(1)母亞考,(2)母亞仕,(3)母亞奢,(4)母亞臥,5 母客客。

11. 守亞美
12. 美阿得
13. 得阿詩
14. 詩美武
15. 美武夢
16. 夢蝶多
17. 多亞質
18. 質吾勺
19. 吾說必
20. 必一梅
21. 梅阿亮
22. 亮阿宗
23. 宗亞補
24. 補亞勺
25. 勺亞討
26. 討阿常
27. 阿常必
28. 必益孟
29. 孟吾守
30. 守亞典
31. 典亞法
32. 法一宜
33. 一宜尺
34. 尺亞主
35. 主亞典
36. 典亞卽
37. 卽亞登
38. 登亞堵
39. 堵阿達
40. 阿達多
41. 多阿楊
42. 楊阿期
43. 期阿否
44. 否那知
45. 那知濱
46. 濱阿更
47. 阿更阿文
48. 阿文洛南
49. 洛南阿摭
50. 阿摭一典
51. 一典卽期
52. 卽期忍一
53. 忍一卜野
54. 卜野一尊
55. 一尊老勺
56. 老勺濱在
57. 濱在阿宗
58. 阿宗一衝
59. 一衝下宜
60. 下宜阿義
61. 阿義阿洛
62. 阿洛阿多
63. 阿多大屋
64. 大屋老乃

65. 老乃老在	75. 直巴安作
66. 老在阿期	76. 安作直吾
67. 阿期老帝	77. 直吾老成
68. 老帝下直	78. 老成洛西
69. 下直那考	79. 洛西非說
70. 那考崩在	80. 非說老古
71. 崩在老知	81. 老古老得
72. 老知老舖	82. 老得老顚
73. 老舖不足	83. 老顚一分
74. 不足直巴	84. 一分明宗(1)

我們有了上面水西安氏的材料,可以證實父子連名爲羅羅民族特有的文化。然除羅羅之外,摩些和泥亦有此俗,並且作者在緬甸歷史中亦找到父子連名的事實。在二世紀至四世紀的時候,緬甸有孔雀王朝 Moriya, 其王亦父子連名,如 Pyu-so-ti, Ti-min-yi, Yi-min-baik, Baik-then-li, Then-li-jong, Jong-du-yit (2)等名。所以"父子連名"的文化,亦可以說是廣義的藏緬族的文化特徵。南詔爲烏蠻的別種,雖不能說是嫡系的羅羅,至少是藏緬族的一種,非擺夷民族。

法人伯希和有言:"此父子連名之習,在歹種地域之中,似未曾見有之"(3)。

中國史書如史記,漢書,華陽國志,蠻書等記載雲南的古史,均略而不詳,直至元明時候,中國人得土著用焚文所寫白古記後,始對於雲南的古史略知一二,於是元張道宗的古滇說,明阮元聲的南詔野史,明楊慎的南詔野史及滇載記諸書,均載有南詔先世的世系,然與後漢書所載哀牢夷的沙壹故事,及佛教輸入後的阿育王故事混爲

(1) 一分明宗,康熙時爲吳三桂所滅。

(2) Phayre: History of Burma, p. 279.

(3) 伯希和: 交廣印度考,馮承鈞譯本,頁二十九。

一談。我們在此不能詳論沙壹故事,阿育王故事與南詔世系相互的關係與遞變(他日當另文述之),祇得剔除前二者,記述南詔的先世系(1),同時與緬甸孔雀王朝的世系及水西安氏的世系作一比較表如下:

1. 南詔先世世系:驃苴低——低蒙苴——蒙苴篤(傳三十六世至細奴邏創立南詔)。

2. 孔雀王朝世系: Pyu-so-ti——Ti-min-yi——Yi-min-baik。

3. 水西安氏世系:(27)懦侏濆——(28)濆武朱——(29)武朱撮。

在上表中發現南詔世系中的驃苴低,低蒙苴,蒙苴篤,與緬甸孔雀王朝世系的 Pyu-so-ti, Ti-min-yi, Yi-min-baik 及羅羅世系中的懦侏濆,濆武朱,武朱撮,音甚相似,且三者都是父子連名。這更可證明孔雀王朝、南詔、水西安氏三者的遠祖是同源的民族。

在南詔之後,創立大中國的高氏,亦都有父子連名的風俗。

大中國世系:

1. 高智昇
2. 高昇泰
3. 高泰明
4. 高明清

高氏子孫在清初爲姚安府土同知,尚是父子連名,如舊雲南通志有云:"順治初,高奇映投誠,仍授世職,奇映死,子映厚襲,映厚死,子厚德襲,雍正三年以不法革職,安置江南"(2)。

所以南詔蒙氏,大中國高氏都屬同種的烏蠻,卽今之羅羅民族而非擺夷民族。

至於烏蠻的"烏"字,迄今未有人討論及之。據我的假說,東川夷(卽羅羅)謂人爲"烏撮(3),自昆明至大理沿迤西大道的羅羅,又名土

(1) 楊慎:南詔野史卷上,頁五八,與滇記載頁一。
(2) 光緒二十年,雲南通志卷一百三十五,頁十七。
(3) 續雲南通志稿卷一百六十六,頁十四。

家者,亦稱人爲 Ou-tche(1)。"烏"字的來源由此,亦未可知。然我們對此不過提出問題,因材料不足,未敢斷言。

(四) 白蠻

唐時在雲南的白蠻依他們分佈的地域可分爲四區:一、西爨白蠻,蠻書名類篇第四:"西爨白蠻也。在石城(在今曲靖縣北二十里),昆州(今昆明縣西),晉寧,曲軛(今馬龍),喻獻(今徽江境),安寧,龍和(安寧西一日程)謂之西爨"。二、河東白蠻,所謂河東卽西洱河(今大理洱海)之東,蠻書六賧篇第五:"渠斂趙本河東州也。州中列樹夾道爲交流,村邑連甍,溝塍彌望,大族有王、楊、李、趙四姓,皆白蠻也。" 又名類篇第四:"弄棟蠻則白蠻苗裔也。本姚州弄棟縣部落。青蛉蠻亦白蠻苗裔也,本青蛉縣部落。" 渠斂趙又稱河東州,卽今之鳳儀,弄棟爲今之姚安,青蛉爲大姚。至今大理的土著民家尙稱趙州(卽鳳儀)的民家爲海東人。三、西洱河河蠻,蠻書六賧篇第五:"大和城,大釐城,陽苴咩城,本皆河蠻所居之地也。" 四、邛部白蠻,蠻書途程篇第一:"至勿鄧部落,大鬼主夢衝,地方闊千里,邛部一姓白蠻 …… 又末欽姓,在北谷,皆白蠻,三姓皆屬夢衝。"

上述四區,除邛部在今四川的越雋境外,其餘三區均在雲南,東自曲靖起,西至昆明再沿迤西大道,經楚雄,姚安,大姚,趙州,而達大理,多爲白蠻分佈區域。而雲南的昆明與大理兩大平原肥沃之地,均在其內。

白蠻的地理分佈,與現今民家的分佈區域相同,現在我們要證明民家是白蠻的後裔,並非是擺夷民族。

蠻書記載白蠻的語言較烏蠻爲多,並且說明:"烏蠻言語並與白蠻不同。" 茲將蠻書所載白蠻語十六字列表如下:

(1) Madrolle: Que ques Peuplades Lolo p. 37.

漢　語	白　蠻(1)	民　家(2)	擺　夷(3)
大蟲	波羅蜜 puâ lâ miĕt) 亦名草羅ts'âu lâ)	lo↓	ts'ɤ↓
犀	矣(ji)	ɕi↑	
帶	法其(p.i^{w}ap tsi^{w}o)	vo↓ piŋ↘	
飯	喰(ju)	hn↘ sɿ↓×	k'ao↑, hao↑
驢	賓(pi̯ĕn)	piŋ↑	kv↑
鹿	識(śjok)	vu×	kaŋ↘
牛	舍(śia)	ŋɛ↓×	wo↑
川	賧	koŋ↑×	ṇam↓
谷	浪(lâng)	goŋ↓ǂ	
山	和(yuâ)	ʂo↓×	loi↓
山頂	悲路 ts'ung luo)	ʂo↓ tɕiŋ↓×	
舞	伽倰(g'i̯a b'^{w}ang)	t'ioyǂ	
富	加(ka)	gɐ↓ je^{n}↓ po↑	
高	閣 kak)	kaŋ↑	soŋ↑
深	腊(nak)	s'a↑ǂ	
後	其(tsi^{w}o)	ha^{n}↑ tɕ'ioŋ↑	

上表十六字中,除去六字不同及三字漢化外,餘七字均可說白蠻語與民家語相同,尤以謂"虎"爲"羅,""鹽"爲"賓,"這種名詞相同,較之形容詞更爲可靠。至於用來比較的八個擺夷字,竟無一字相似,在如此證明之下,可說民家是白蠻的後裔,與擺夷是毫無關係。

白蠻的文化,在唐時已深受漢族的同化,如喪葬亦從漢法,烏蠻尙多守其舊俗。蠻書蠻夷風俗篇有云:"西爨及白蠻死後三日內埋殯,依漢法爲墓,稍富室廣栽杉松。蒙舍及諸烏蠻不墓葬,凡死後

(1) 據前引 Karlgren 字典註音。

(2) 係本所同事劍川李家瑞先生發音。又×爲不同音的符號,ǂ爲漢化音的符號。

(3) 係雲南孟定擺夷發音。

三日焚屍。其餘灰燼掩以土壤,唯收兩耳,南詔家則貯以金瓶,又重以銀爲函盛之,深藏別室,四時將出祭之。其餘家或銅瓶鐵瓶藏之也。

白蠻的姓氏在唐時亦已多從漢姓,蠻書六睑篇第五:"渠斂趙本河東州也。大姓有王、楊、李、趙四姓,皆白蠻也。"又六詔篇第三:"越析一詔也,……有蒙族張尋永白蠻也。"師範滇繫疆域繫:"元江直隸州古西南夷地,州名惠龍甸,又名因遠部,蒙時屬銀生節度,徙白蠻蘇、張、周、段等十姓蠻戍之。"白蠻之從漢姓,約在漢魏以後,此前恐尚無此風,如楊愼,南詔野史卷上,建寧國條有云:"後漢諸葛武侯南征至白崖,殺雍闓,擒孟獲,乃封白子國王仁果十五世孫龍佑那爲酋長,賜姓張氏。"可見漢魏以前,酋長之裔,尚未改從漢姓。在今日雲南民家中董、楊、李、趙、王諸姓,尚多爲大族。

從白蠻的姓氏研究,則可知在南詔以前張氏白子國,南詔以後趙氏的大天興國,楊氏的大義寧國,都爲白蠻創立的國家,其遺民爲今之民家。王翰存:光緒十七年趙州册報載有:"焚人卽所稱民家,多焚國後,張樂進求之裔,及趙氏、段氏、楊氏之後,性喜持齋信佛,近年頗多讀書者,其俗與漢民相類,惟能作夷語耳"(1)。又蔡同珍:光緒二十七年雲南縣(今祥雲縣)册報亦有:"民家古號白國,後以夷從漢,自稱爲民家,其居處與民相雜,風俗衣食,悉仿齊民。有讀書應試者,亦有纏頭赤足短褐披羊皮者,但言語多焚音,性鄙而嗇"(2)。

至於白蠻之"白",爲其民族的自稱,可無疑義,因今日民家自稱爲 Pa-tse, 楊愼,南詔野史卷下云:"白民有阿白、白兒子、民家子等名,白國之後,卽滇中之土著。"又皇清職貢圖亦云:"白人其先居大理白崖川卽金齒白蠻部,皆焚種,後居景東府地,而雲南,臨安,曲靖,開化,大理,楚雄,永昌,永北,麗江等府俱有之。"由此可見白兒子,白

(1) 鈔本,本所藏。

(2) 鈔本,本所藏。

人,都是其民族的自稱。因爲以夷從漢,故漢人稱之爲民家,而其自稱仍爲白子,與漢以前白子國之名,數千年未曾改變。

由上所述,則今日之民家爲古代白蠻的遺民。但民家在民族學分類上的地位至今尚未確定,因此白蠻究屬何種民族,亦難斷言。據 Davies 言:民家語中百分之四十二爲漢語,百分之三十三爲藏緬語,百分之二十三爲蒙克語,百分之二爲擺夷語,而民家四周無蒙克語民族,則其蒙克字源非由外鑠或卽其本族之原始語言。氏以此理由,遂卽決定民家語當屬於蒙克語系(1)。然 Davies 的立論甚隘,因民家在雲南的分佈甚廣,且在唐代南詔的移民頻繁,雲南蒙克語系的蒲蠻、卡拉、卡瓦等族的分佈又多在滇西順寧府一帶,與民家的分佈區域接近,蒙克語影響於民家語的可能甚多。故 Davies 之說殊難使人信服。至於丁在君先生謂民家係大理國貴族與漢人的混合種, Madroll 氏稱民家爲羅羅,都是根據民家語言立論,亦都不能解決其種族問題。我們須知今日的民家語已成爲一種混合語言,不能作爲分類的標準。現在要考證白蠻與民家的種族,非從歷史的或文化的方面着手不可。

英人 Cochrane 曾假設說:"唐代弄棟白蠻或與今日下緬甸的卡倫(Karens)是同一民族。" 又云:"漢時的哀牢夷歲輸布貫頭衣二領,現代的卡倫尙穿這種衣服"(2)。Terrien de Laconperie 亦曾說過:"南詔以兵圍脅西爨,徙二十餘萬戶於永昌城。此古代西爨的遺民,今在貴州有仡佬,緬甸有卡倫,二者的語言與文法,大都相似。"照 Cochrane 與 Laconperie 二氏之說,則漢之哀牢夷與唐代的白蠻是屬於仡佬或卡倫民族,民家既是白蠻遺裔之一,當然亦與仡佬同族。作者以爲二氏所提出的假設,頗屬可能,茲舉三事以證之:

(一) 白蠻語卡倫語的比較

(1) Davies: Yun-nan. p. 344.

(2) L. Milne and W. W.Cochrane: Shan at Home. p. 7, 12.

漢語	白蠻	卡倫[1]
虎	波羅鑾亦名草羅	baw-th'oh[2]
犀	矣	
帶	法苴	
飯	喻	hü
鹽	賓	isē
鹿	識	ser
牛	舍	pu mu
川	賧	
谷	浪	law
山	和	so
山頂	惹路	
舞	伽傍	ka
富	加	ka no
高	閣	kang
深	踏	
俊	苴	atsü

上表所列比較的語音共十一字,中有八字音甚相近。卡倫方言甚多,常有一字在某種方言存在,在另一方言音已稍改變或完全不同。上面所收十一字,取於幾種方言中,因手頭無卡倫語字典,不能作澈底的研究,上表不過表示白蠻語與卡倫語相互關係的大概而已。

(二) 楊愼所著南詔野史載哀牢夷有董、洪、段、施、何、王、張、楊、李、趙十姓。白蠻亦有段、張等十姓之稱,今日民家中除洪姓較少外,餘九姓均爲大族。

(三) 民家自稱爲 Pe-tse。卡倫依其方言可分爲 Sgau, Pwo,

(1) J. G. Scott: Gazetteer of Upper Burma and the Shan States, Part I, Vol. I, pp. 646-659.

(2) Cochrane: The Shan, Vol. I, p. 16.

Bghai 或 Bwè 三大語羣(1)。Sgau 卡倫自稱爲 Pa-ga-nyaw (2); Pwo 自稱 Pwo 或 Pa-na; Bghai 或 Bwè 卽爲自稱之名。由此可見民家與卡倫的自稱均與白蠻之"白"音多相近。哀牢夷的人民,亦稱爲"濮"。華陽國志南中志永昌郡條有云:"李恢遷濮民數千落於雲南建寧界,以實二郡。" 又緬甸的卡倫至今傳說其祖先由中國移去,南中志亦有此記載:"凱(呂凱)子祥,太康中獻光珠五百斤,還臨本郡,遷南夷校尉。祥子元,康末爲永昌太守,值南夷作亂,閩濮又乃南移永壽,去故郡千里,途與州隔絕。"

由上面的考證,我們可以相信古代的濮民、白蠻與今日的民家、卡倫都是同一的民族。至於卡倫在今日民族學分類上亦有數說: Lacouperie 氏以卡倫爲中國的原始土著之一,古代百濮之濮爲荆的遺民,與擺夷不是同族(3)。Lowis 根據語言謂卡倫是原始的擺夷族(4)。Cochrane 又反對此說,謂:"卡倫與擺夷的語言,聲調不相似,文法亦不同。因他們古代在中國,今在緬甸,居地常在一處,語字的互相借用,是很可能的。"(5) 其他如 Eales 亦以卡倫語與擺夷語分開,不屬於同一語系(6)。緬甸語言調查報告以漢語、擺夷語、卡倫語歸類成漢暹語系 (Siamese-Chinese Family),並言以卡倫語與漢語作一嚴謹的比較研究,或可解決現在爭論未定的卡倫民族的起源問題(7)。與卡倫同族的仡佬,在中國湖南、貴州、廣西等省,至今尙有很少的人數存在。嚴如煜所著苗防備覽記有湘西仡佬的語言與風俗,並謂:"其民非苗非土,蓋別爲一種類也"(8)。在貴州的仡佬,

(1) Scott: Gazetteer of Upper Burma and Shan States, Part I, Vol. I, p. 476.

(2) Linquistic Survey of Burma, p. 34.

(3) A. R. Colquhoun: Amongst the Shan, p. 57.

(4) C. C. Lowis: The Tribes of Burma, p. 15.

(5) Cochrane: The Shan, pp. 101-102.

(6) Scott: ib pp. 475-476.

(7) Linguistic Survey of Burma, p. vi.

(8) 嚴如煜:苗防備覽卷九,頁五。

Clarke 曾研究其語言,亦謂其語言與苗人仲家羅羅等族都不相同,並且現在大都能說漢語(1)。又云:"在安順府境內有一種老漢人自稱 P'u tsi(2)。此或爲漢化的仡佬,至今尙保存其民族的自稱。所以直至今日作者以爲對於卡倫與仡佬在民族學分類上最好暫時保存其獨立的地位,以待將來有更多的語言、體質、文化、歷史的材料時再來下定論。

(五) 結論

本文對於唐代的烏蠻與白蠻經過一番考證以後,可以得到下列數點的結論:

(一) 唐代的烏蠻爲今之羅羅及廣義的藏緬族。

(二) 白蠻爲漢代的哀牢夷的濮民或稱鳩獠,元明時代的阿僰或僰剌,今日的民家、僰子、僰人、土僚與緬甸的卡倫及湘黔的仡佬是同一民族。

(三) 南蠻乃古代的楚人移入滇中,而同化於羅羅者。

(四) 創立南詔的蒙氏是烏蠻,屬於今之藏緬族,大理的段氏是白蠻(3),爲今之卡倫或仡佬族。二者均非擺夷民族。

(五) 雲南非漢族的分類,有 Davies 的三分法:1. 藏緬語系,2. 太撣語系,3. 蒙克語系(4)。丁文江氏的四分法:1. 撣人類,2. 藏緬類,3. 苗傜類,4. 交趾類(5)。丁氏的苗傜與交趾實爲一類,可以不必分開。作者以前曾贊同 Davies 的分類(6),然近來研究雲南民

(1) S. R. Clarke: Among the Tribes in South-West China, p. 14.

(2) Clarke: ib. p. 10.

(3) 段氏的始祖段思平爲白蠻。鄧通平撰宋簡錄有云:"石晉天福二年有白人段思平者,逐楊氏而有其國,號大理。"

(4) Davies: Yun-nan, p. 337.

(5) 丁文江,雜文數刊,頁三。

(6) 凌純聲,雲南民族之地理分佈,地理學報三卷三期。

族的歷史,覺得戴氏處理民家的分類僅根據語言而忽略了史實,立論未盡妥善,茲特修正前說,將雲南的民族分爲四類:1. 苗傜類,2. 僰僚類,3. 藏緬類,4. 太撣類。列簡表如下:

(一) 苗傜類
- 苗傜羣　1. 苗子 2. 傜人
- 瓦崩羣　1. 卡拉 2. 卡瓦 3. 崩竜 4. 蒲蠻

(二) 僰僚類
- 僰人羣　1. 僰子 2. 僰人 3. 民家 4. 那馬
- 土僚羣　1. 土僚或土老

(三) 藏緬類
- 羅羅羣　1. 羅羅 2. 窩泥 3. 栗粟 4. 倮黑 5. 阿卡
- 西番羣　1. 西番 2. 麼些 3. 怒子
- 藏人羣　1. 藏人 2. 古宗
- 緬人羣　1. 俅子 2. 馬魯 3. 喇傑 4. 阿繁 5. 阿昌
- 野人羣　1. 野人或開欽

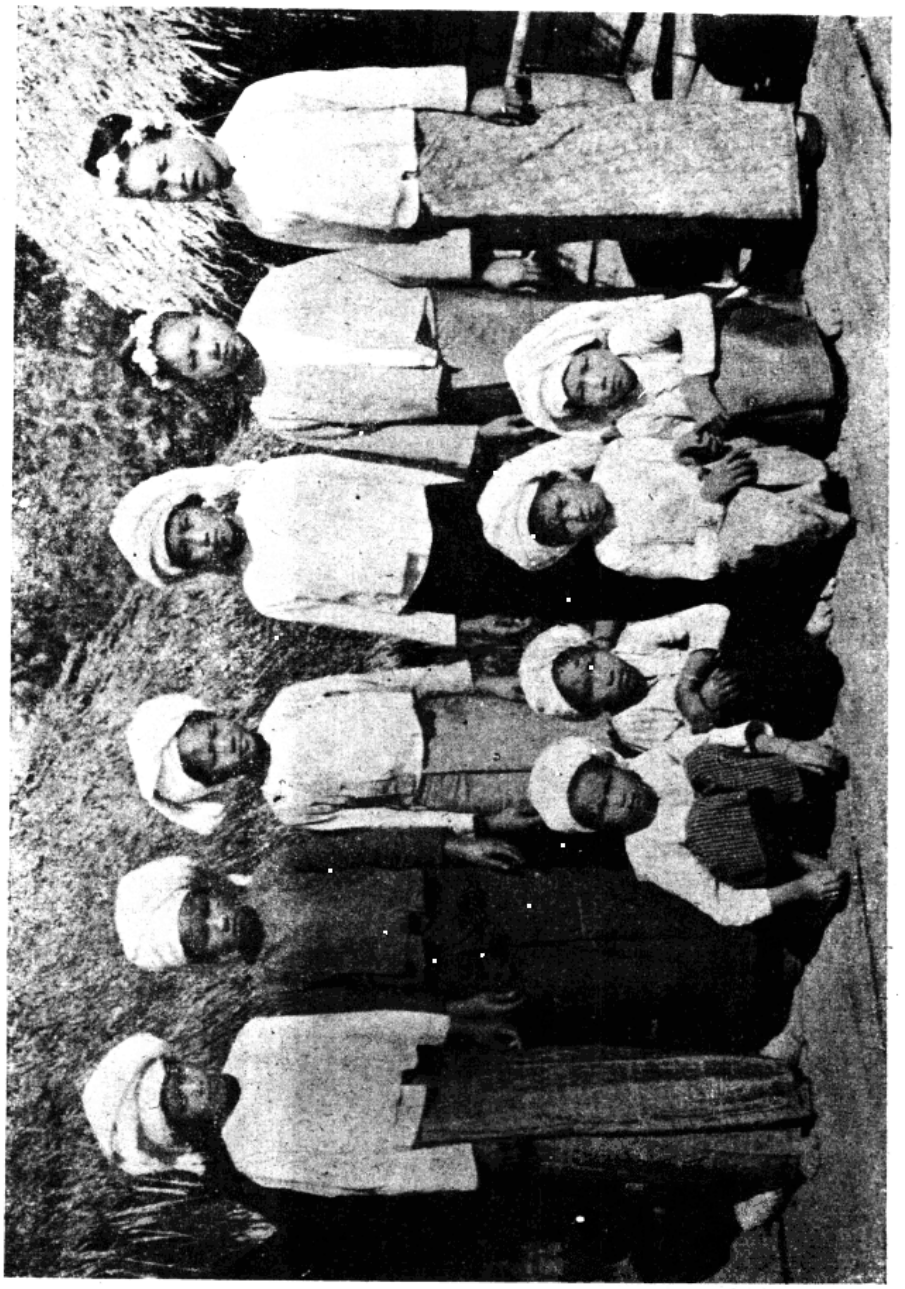
(四) 太撣類
- 仲家羣　1. 仲家 2. 儂人 3. 沙人
- 擺夷羣　1. 擺夷 2. 呂人

關於雲南民族的體質,至今尚少詳細的研究,無材料可作分類的根據。在本文之後附有照片四幅,每幅代表上述四類中的一主要民族,其體質上在圖中大概觀察,亦可見其不同之點甚多。

雲南下關所見之民家婦女

雲南蒙自松林喑之花苗

雲南的蒙化羅羅現遷居在瀾滄縣屬之猛角董土司地



雲南鎮康縣屬孟定土司地的擺夷婦女

麼些族之羊骨卜及貝卜 (附原文)

陶雲逵

麼些是現在雲南麗江及其附近地方的一種土族。關於他們在雲南各種民族中的地位（此處指系屬）以及分佈遷移等,請參閱拙著關於麼些族之名稱分佈與遷移（載本所集刊第七本第一分）及幾個雲南土族的現代地理分佈及其人口之估計（載本所集刊第七本第四分）;茲不贅述。麼些在雲南各種土族中,其文化算是比較高的。他們有文字,並有複雜的宗教條律。本文只是根據作者一九三五年夏季在麗江等地的實地調查及參考麼些文的占卜經典的結果之一部。

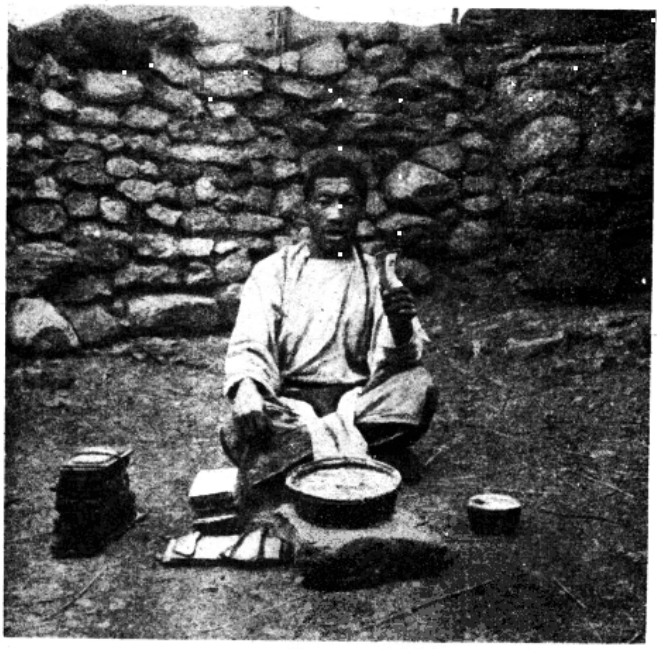
我們這裏所要討論的占卜,只在高山上還流行着,而以麼些族的東巴教（或稱爲多寶教,實是麼些語"東巴"的譯音,意思是智者。其教主爲東巴薩勒,義卽薩勒智者。）在雲南的發祥地北地爲最盛。北地約在北緯 27°, 東經 100°15', 金沙江的右岸,是與麗江,永寧兩縣毗連之中甸縣的屬地。本文分爲兩部份:甲,羊骨卜;乙,貝卜。每部首將實地觀察敍出;次將麼些原文之占卜經典加以譯釋,並將中西書籍對此問題有關之記載摘要錄出;末了,再對各問題加以討論。

(甲) 羊骨卜

I 一九三五年七月廿日在中甸縣屬之北地,請得東巴巫師,年四十歲,自稱係東巴教祖東巴薩勒之第九十五代嫡徒,作羊骨卜。作者及翻譯（麗江省立中學附小教員周汝誠君）得作以下之觀察。

II　以羊的肩胛骨(Scapulus)一個,無論黑白色公母老幼羊或左右邊均可用,但除羊肩胛骨外,不用其他動物的。將其肌肉去淨,使其自乾。此類肩胛骨,凡作東巴巫師的,均留藏甚多。由於平時積聚,並不需爲占卜而當時殺羊,甚至殺時有何儀式。除肩胛骨外,占卜時尙需竹編小筐一個,中盛滿麥子,乾艾一小團,火石,火鐮刀。人們有疑難問題,如出行,疾病,失盜等(詳見下),請巫師占卜時,巫師蹲坐在屋中土炕上(摩梭是有火坑的,但與華北及東三省所用的不相同,將在敍述雲南土族之房屋比較研究中詳述,)在天熱時在房門口,坐着或是蹲着。他面前放着羊骨,一小筐麥子。先問求卜人的姓氏,住址,以及欲卜何事。問完以後,便把放在面前的肩胛骨拿起,手握狹的一頭,平置,不舉,瞇縫着眼,口中唸呪祝請教祖東巴薩勒,兩護法格庫兩馬及怡世惡左降壇。呼請以後,接着就稱述求占人之姓氏,住址,及所卜之事。在唸呪之時,將手中所持之羊骨放在麥子上,將身邊的乾艾折揉成小團。唸畢卽以火石取火,將艾團燃着,用吐沫唾於羊骨之上,後以手抹去,然後將燃着之艾團放在骨之中間,只取無峰的那一面,卽腹面。此時又祝曰:"請神示以吉兆,不吉的請化爲吉。"所唸呪語均用土語,聲音甚低,甚快,但有抑揚頓挫。俟艾團燃透,灼及於骨之時,卽取放在小筐中之麥粒一撮,約廿四五粒,放在灼點。在數秒鐘,甚至半分鐘光景,麥粒突然躍起,頗給在場人以驚訝。實則因骨被艾灼裂炸而麥粒也隨之而躍起也。麥粒躍起,巫師卽宣稱神明已到,且有判斷矣。於是彼將骨上麥粒仍然倒在竹筐中,將艾燼彈去,以觀其裂紋。(參看圖版壹——叁)。有經驗的巫師,則當時就可以按裂紋將兆解釋給問卜人聽。但有些巫師是要翻占卜經典看了再解釋。設艾灼而不裂,則認爲不吉,必再灼之,可以在同一骨頭上灼。如灼點放了麥粒而不躍起,雖不必從新灼,但總認爲不吉祥。每占,普通灼兩次,但也有灼三四次的。同時,一塊骨頭可以爲一個以上的人占卜,而留很多的灼痕。我們請

1. 北地麼夢之房屋



2. 巫師占卜情形

圖　版　壹

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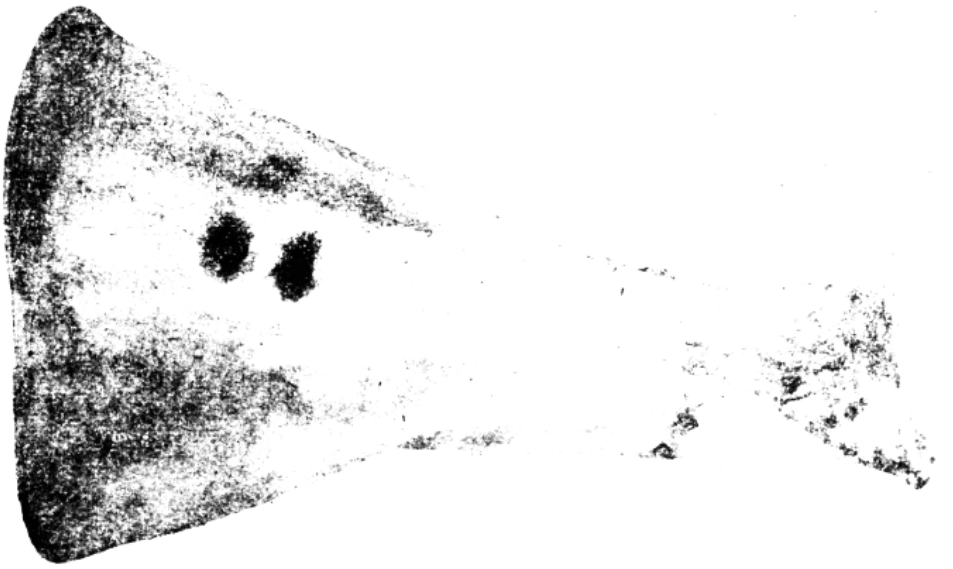
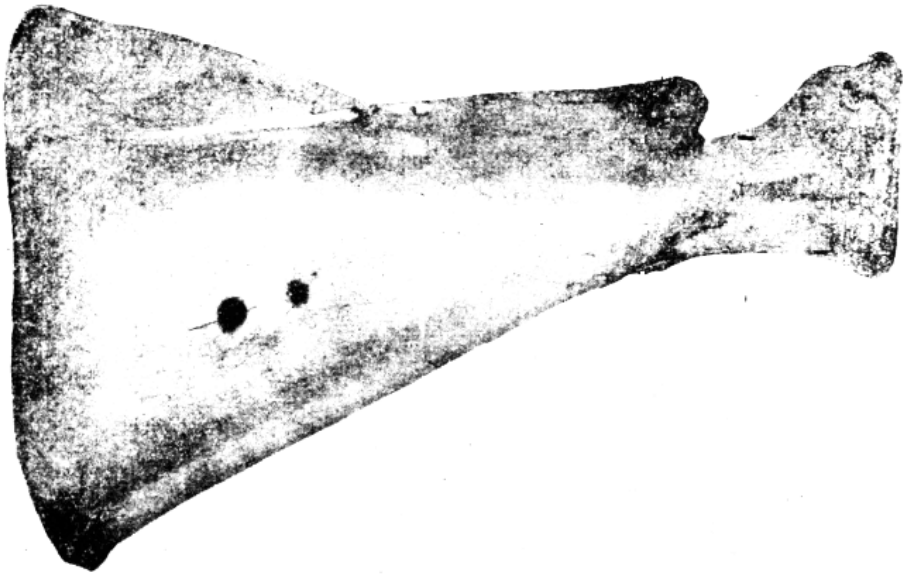
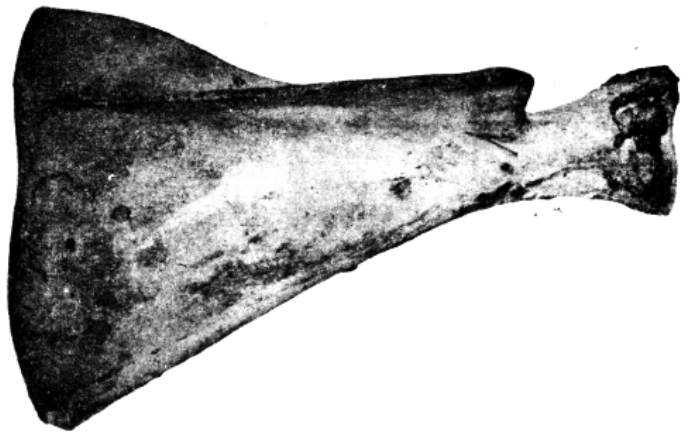


1. 羊肩胛骨的面

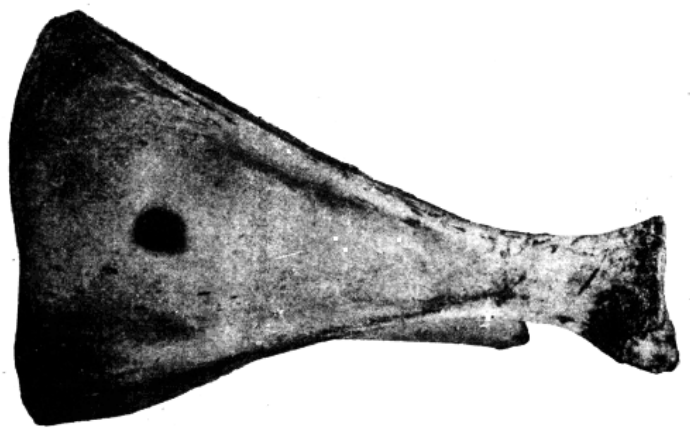


2. 同骨背面

圖版叁



2. 肩骨背面



1. 羊肩胛骨灼面

那個巫師占卜出行凶吉,審兆的結果說:"只要你們寬洪大量(意思是肯花錢)便到處逢凶化吉的。"

羊骨卜的方法已如上述,至於審兆,是有專門的書籍的。麼斐經典,據作者所調查(紀錄書名,內容,)共得一千零八十五種;占卜的書只是其中的一部分。羊骨卜爲占卜書中之一種。因爲羊骨卜現在流行的已經不廣了,所以卜書也隨之而漸亡。作者在麗江東山及南山,凡是麼斐村落,可以說都走遍,只得到一本羊骨卜書;在中甸屬的北地得獲一本,所以兩處共爲兩本。麗江的那本很薄很小,是在南山魯齊古村中買得。調查時隨身就帶得一位巫師,漢名和士貴,已經七十歲的人了;從麗江到中甸北地的途中,就由和老人將此書解釋,由周汝誠君翻譯給我聽,當卽一一紀錄下來。不幸的很,從中甸北地往維西的道上,不知怎麼樣,竟將該書遺失了。把所有的行李檢查一過,始終沒有找到。所幸是將其書已在途中譯完,並將兆形(卽胛骨上的裂紋格式)也照書描了下來。但在北地買到的那本,卻存在着,後由阿四(卽上述北地巫師)譯述,我們是把阿四由北地帶到維西的。在維西正是雨季,雨中不能出門工作,所以試譯了些麼斐經典。現在先把北地本原文及譯文對照列之如下。南山本究是抄本譯文,且其原本就是很薄的幾張,疑是殘本,茲略去不錄。

(關於本文中的漢譯麼斐文的三種卜書,不能不把翻譯時的情形說一說。我是不懂麼斐文的,而巫師阿四的漢話程度又很有限。幸得有麗江周汝誠君的幫助,他不但會說麼斐話,認識許多麼斐字,而且是對於民俗,歷史,以及平時不爲人所注意的許多小物事感到極大興趣的一個人。因此,他很細心的聽巫師的講解,然後再用漢語譯給我聽。並且很耐心的轉譯我的疑問給巫師,以及他的答案給我。在這三本,及其他我認爲重要的書譯了以後,我便到他處調查。以後回京,爲求準確,我又把譯稿寄給

現在昆明的方國瑜君;請他校勘,標音。方君對於麼些文字研究是有相當成績的。往返多次,乃抵於定。今特謝謝方先生的幫忙。麼些文的標音,如果要把每句的音都標出來,是個困難的事。而且也不是本文所必不可少的工作。所以本譯文,只標幾個專名詞的音。我們希望能早點有好的麼些字典出來,好給我們這幫極感着麼些文字之參考在解決許多文化問題上之重要而又無時間專從事於語言研究的人以便利。)

羊肩胛骨卜書摩梭原文及譯文

（原文第一頁）

記音

p'iɹ oɹ kɯɹ meɹ

譯文

灼骨卜

（原文第二頁）

譯文

啊,神!〔1〕係“至美”之課，被地下之吐鬼(1)作祟,百事不吉,主人必致窮苦,如鳥被繫於柏樹之像。〔2〕係“瓜古至美腰長”之課,如白鹿之中箭,不吉,須建替生道場(2)及祭風道場(3)。〔3〕係“二瓜古,一至美而曲向左”之課,千事百事俱吉。〔4〕係“瓜古連上,二至美相向”之課,水神(4)至家中作祟。〔5〕係“瓜古向左,至美向右,苦向下,必向上”之課,不吉,有女人來尋仇,須建替生道場。〔6〕係“二至美”之課,有病者須建替生道場,須禳牛魔(5)之災,並招魂。

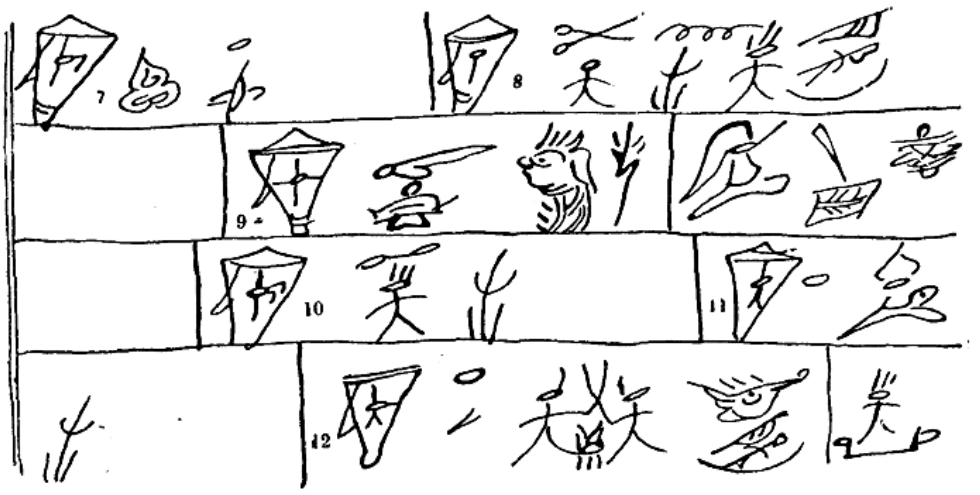
(1) 吐鬼 t'ɪ-ɪ

(2) 替生道場 to'ɪ k ɯ-ɪ

(3) 祭風道場 he-ɪ k'ɯ'ɪ

(4) 水神 lɯ-ɪ mɯ-ɪ

(5) 牛魔 no-ɪ pɣ-ɪ kɣ-ɪ ɯ-ɪ



（原 文 第 三 頁）

譯 文

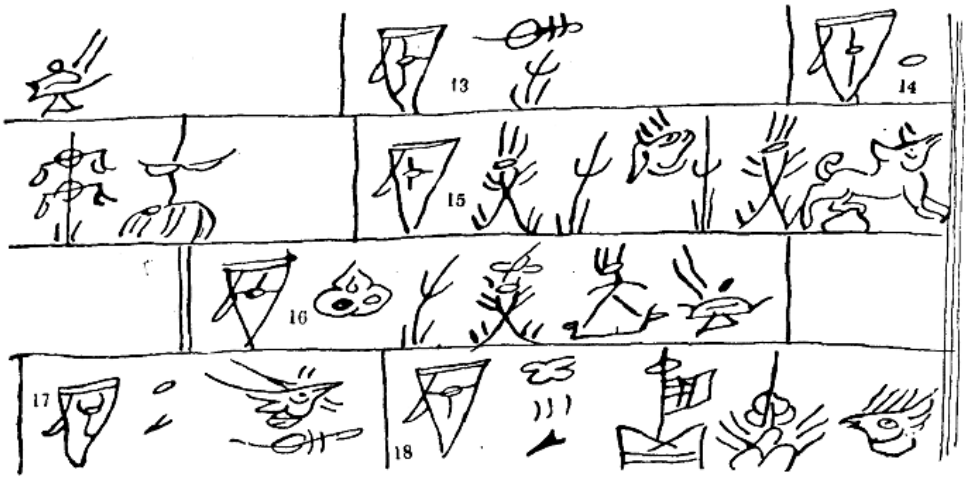
〔7〕係“至美,瓜古,必向下曲”之課,吉,能勝人。〔8〕係“至美”之課,須爲小孩禳不潔,誦車必經(1),祭鬼,建替生道場。〔9〕係“瓜古,至美,苦,必”之課,家中之祖先來尋食物,須請喇嘛(2)唸經。〔10〕係“瓜古,至美,二必曲向下”之課,須禳俄鬼(3)。〔11〕係“瓜古,二至美成叉”之課,是得罪於神(4),須祭神。〔12〕係“瓜古,二至美成叉,必連右”之課,男者發生口角爭鬬,須用豬建替生道場,須祭地下之吐鬼。

(1) 車必經 tʂʻɤ⊣ pɣ⊣ ɖi⅄

(2) 喇嘛 la⊣ ma⊣

(3) 俄鬼 o⊣

(4) 神 he⊣



（原文第四頁）

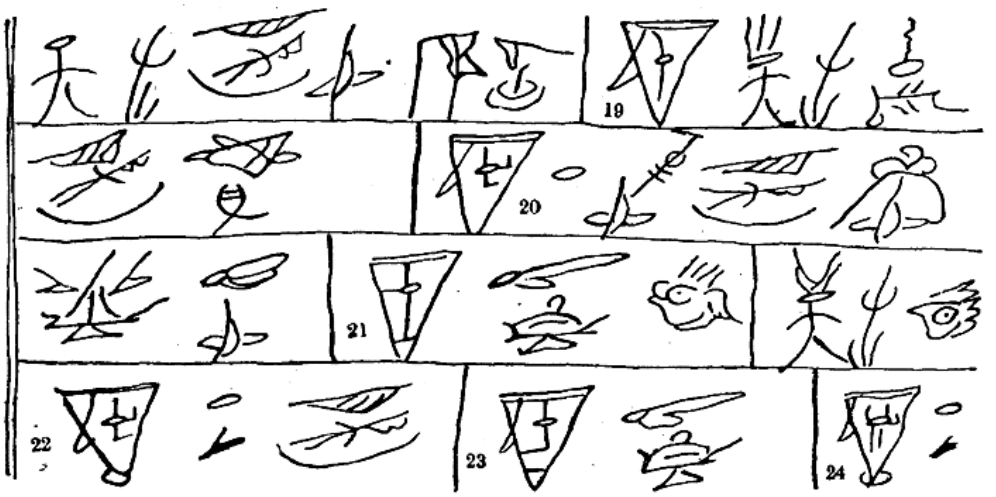
譯文

〔13〕係“瓜古連上,至美曲連左,必連右”之課,須祭星。〔14〕係“瓜古短,至美長”之課,吉,宜建祭風道場。〔15〕係“瓜古,至美,必”之課,須祭水鬼(1),並壓之。〔16〕係“瓜古曲向右,苦,必”之課,大吉,須祭水鬼,並祭地下之吐鬼。〔17〕係“二瓜古,至美向右連”之課,不吉。〔18〕係“至美梢向右,苦連左,必連右”之課,三兆不吉,須用豬以祭土地之神(2),並祭鬼,破強敵(鬼)之壘(3),建替生道場。

(1) 水鬼 muɣ uɹ

(2) 土地神 çɣɹ uɣɹ

(3) 鬼壘 daɹ uɣɹ



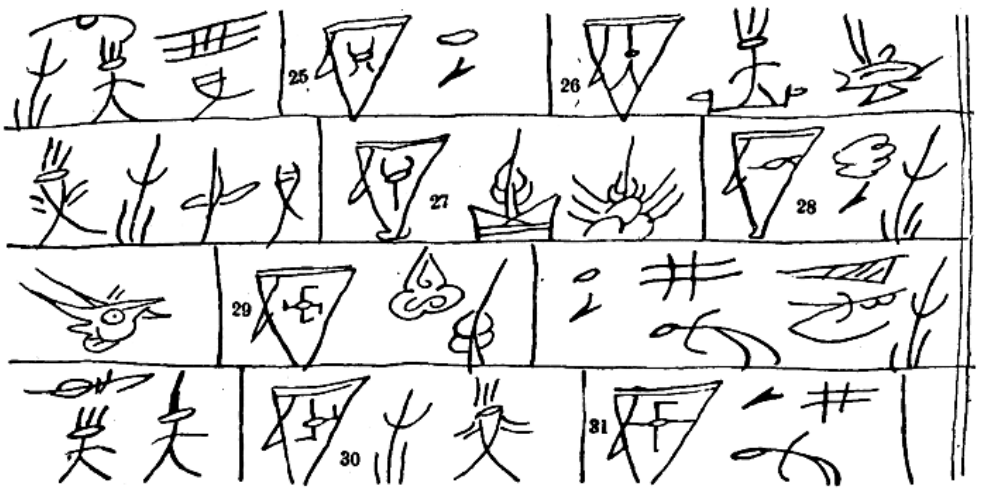
（原 文 第 五 頁）

譯 文

〔19〕係“瓜古向右,至美”之課,宜祭鬼,須建男替生女替生道場。〔20〕係“瓜古,至美曲向右,必曲向上”之課,須防人來尋仇,宜建替生道場,須送麵偶(1),以解仇隙。〔21〕係“瓜古連上,至美連下,苦連左”之課,是祖先來尋食,須用鷄祭則鬼(2)。〔22〕係“瓜古,至美曲向右,必曲向上”之課,不吉,宜建替生道場。〔23〕係“瓜古連上,至美曲向左連”之課,須施酒食於門外。〔24〕係“二瓜古,二至美,必曲向上”之課,不吉,雖禳鬼亦無濟於事。

(1) 麵偶 to ma4 或 ha4 ci4 to4 ma4

(2) 則鬼 tse4



（原文第六頁）

譯文

〔25〕係“二瓜古相向,二至美相背”之課,不吉。〔26〕係“瓜古連上,二至美分叉”之課,是地下吐鬼作祟,宜祭吐鬼,祭水鬼。〔27〕係“二瓜古相向,至美”之課,宜祭土地之神。〔28〕係“二必分叉,苦”之課,諸事不吉,須祭鬼神。〔29〕係“瓜古曲向右,至美曲向右,苦曲向上,必曲向下”之課,大吉,病者須建替生道場,如星辰作祟,須祭星。〔30〕係“瓜古,至美曲向右,必曲向上”之課,宜祭水鬼。〔31〕係“瓜古曲向右,至美梢向右,苦連左,必連右”之課,不吉,病者不利,宜祭星辰。

（原 文 第 七 頁）

譯　文

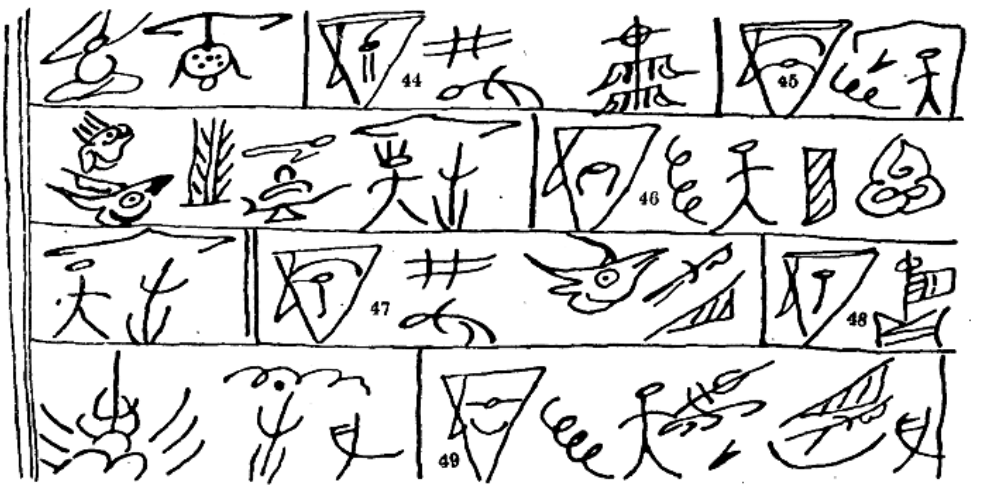
〔32〕係“瓜古,至美曲向右連”之課,雖作竊亦吉。〔33〕係“三瓜古,三至美”之課,不吉,是鳥被繫於柏樹上之象。〔34〕係“苦連左,必連右”之課,病者吉。若東巴卜得此課,則如鳥之棲於樹。〔35〕係“瓜古曲向左,至美曲向右”之課,不吉,是吐鬼作祟,宜建解是非道場(1),宜祭祖先。〔36〕係“瓜古連上,至美腰長”之課,病者不可愈,宜變賣田地,以禳不祥。〔37〕係“瓜古,至美,必連右,苦曲向下”之課,大吉,作戰可勝,行竊亦吉。病者宜建替生道場,宜祭土地之神。

(1) 解是非道場 k'oɹ k'uo˩ pɣ˩

（原文第八頁）

譯文

〔38〕係“三至美,中長,旁二相向”之課,病者占之吉,宜祭星辰。〔39〕係“瓜古向左,至美向右”之課,宜用羊建替生道場,出戰必勝,行竊亦吉,宜祭祖先。〔40〕係“棋子格”之課,不吉,家有白頭之人卜之必死。〔41〕係“三苦,中虛上下連,三必中連上下虛”之課,宜爲家人建替生道場。〔42〕係“瓜古,至美連右,必曲向上”之課,不吉,宜請喇嘛誦經,以破敵鬼之壘。〔43〕係“瓜古上有横紋,至美曲向右,苦曲向下”之課,東巴之神不悅,宜祀神,宜祭土地神,如喇嘛搖鈴之象。



（原 文 第 九 頁）

譯 文

〔44〕係“瓜古曲向右,二至美”之課,病者須建祭風道場。〔45〕係“苦曲向左連下,布曲向右連下,上有抽痕”(1)之課,家中之人被穢氣所暈,不吉。宜用猴與狐祭祖先,並施以酒肉,宜祭天。〔46〕係“苦曲向下,必曲向下”之課,是被穢氣所暈,但男者宜祭天。〔47〕係“苦連左,至美曲向左,上有抽痕”之課,病者須建用牛之替生道場。〔48〕係“至美長腰曲向左”之課,宜祭土地之神,宜誦車必經。〔49〕係“苦,必連右,下有抽痕”之課,是被穢氣所暈,宜建替生道場。

(1) 抽痕 tɕʻʏɨ,係術名。但有鬼名 tɕʻʏɨ tsʻʅɨ,意爲污穢鬼。

（原文第十頁）

譯文

〔50〕係“至美,瓜古,必連右”之課,是英達(1)鬼在家作祟,宜招祖先之魂。〔51〕係“苦曲向下,必曲向上連”之課,是吐鬼,則鬼在家作祟,不利於馬,馬被則鬼騎去。〔52〕係“未炙而裂”之課,家中兒女不吉,心如喇嘛之搖鈴,宜插神箭(2),宜用羊以祭祖先。〔53〕係“瓜古,二至美”之課,家中有則鬼作祟,不利於馬,夫婦必分離,宜祭祖先,建替生道場。〔54〕係“瓜古連上,二至美分叉”之課,家中有則鬼作祟,不利於馬,夫婦必分離,宜祭祖先,建替生道場。〔55〕係“三至美,旁二相向”之課,宜祭俄鬼。〔56〕係“二至美相向,苦曲向下,必曲向上”之課,宜祭俄鬼。〔57〕係“瓜古,至美,必連右”之課,宜誦車必經。

(1) 英達鬼 iɹ daɹ

(2) 神箭 heɨ kāɨ

（原文第十一頁）

譯文

〔58〕係“苦曲向上,必曲向下連右”之課,病者不吉,如小孩病,須禳鬼,宜禳穢氣。〔59〕係“瓜古曲向左連,至美曲向左連,苦連左”之課,出戰能勝敵,宜向祖先之前,陳以竹籮,內盛小梯及神箭供之。〔60〕係“瓜古,苦,必”之課,是神將騎白馬之象,神皆喜悅,出戰能勝敵。如東巴占之,遇水有橋可以得渡。〔61〕係“苦連左”之課,如從居那世隴(1)降臨,而到人間之象,須用犛牛,綿羊以祭神將。〔62〕係“苦曲向上,必曲向上”之課,如從居那世隴降臨,而到人間之象,須用犛牛,綿羊以祭神將。〔63〕係“瓜古向右,二至美分叉,苦曲向上連左”之課,家中有孕婦,生之,吉。但必生病,須送麵偶。祖先在家尊食。

(1) 居那世隴 ʤʏ˩ naˬ ʂlˬ lo˦ 或 ʤʏ˩ naˬ ʂõˬ lõˬ 即佛書上之虛彌山。

（原文第十二頁）

譯文

〔64〕係“苦與必不在炙點而有裂痕”之課,不吉。夫婦折離之兆,發生口舌,宜建替生道場。〔65〕係“瓜古曲向右,至美腰長”之課,宜建替生道場,宜祀祖先。〔66〕係“瓜古,三至美,二苦,二必”之課,病人不吉,須賣田產,以解不祥。〔67〕係“至美曲向右,苦曲向下,必曲向上”之課,被穢氣所暈,水神被觸怒,宜祭水神,宜祭天。〔68〕係“瓜古曲向右連上,二至美曲,一連左,一連右”之課,家中發生驚嚇,宜建替生道場。〔69〕係“瓜古,苦曲向上,必曲向上”之課,家中有孕婦必生子,宜祭天。〔70〕係“三苦連左,三必連右”之課,是被穢氣所暈,宜建替生道場。

（原文第十三頁）

譯文

〔71〕係“兩次炙二瓜古”之課，如出戰必得病，須向飛鬼贖罪。〔72〕係“三苦向右連”之課，宜以犛牛，綿羊祭土地神。〔73〕係“三必曲向右連”之課，是無頭鬼作祟，須壓之。〔74〕係“二苦，二必向右連”之課，水神與尼紹高士衝突，須插木牌以酒祭水神。〔75〕係“瓜古連上，至美曲向左”之課，爲人解紛不吉。〔76〕係“瓜古，至美，苦連左，右之炙點不裂”之課，爲人解紛，大吉（按此或係炙兩次。）〔77〕“係瓜古連上，至美分叉，一連左，一連右”之課，爲人解紛大吉。〔78〕係“右裂痕”之課，爲人解紛不吉。〔79〕係“苦梢向下連左，必梢向下連右”之課，爲人排紛，吉。〔80〕係“瓜古連上，至美曲向左，苦連左，必連右”之課，如寶花之象，大吉。〔81〕係“苦連左，有直痕穿過，必連右”之課，是美利騰吉海之象，大吉。

（原文第十四頁）

譯文

〔82〕係“苦曲向上連上,必梢曲向下連右”之課,如寶花之象,倘採取金與綠松石,宜到黃海之濱;又如盤,盞神在海上過渡之象,大吉。〔83〕係“瓜古分叉連上,至美分叉連左右”之課.是兄弟因分產失和,宜祭祖先,宜建替生道場。鬼在家中作祟,宜驅鬼,禳除是非。〔84〕係“苦曲向下連左,必曲向下連右”之課,男人不吉,宜祭祖先,宜建替生道場,宜祭地下之吐鬼。〔85〕係“至美曲連右”之課,領牲畜不吉,必失,宜用羊祭祖先。〔86〕係“必連右”之課,與人發生仇隙,宜建替生道場,宜破敵鬼之壘,疾病之災可退。〔87〕係“瓜古曲向左連上,至美曲連右”之課,與人發生仇隙,須建替生道場,宜破敵鬼之壘。〔88〕係“二瓜古,三至美”之課,家中之男人不吉,但病者可愈。

（原 文 第 十 五 頁）

譯 文

〔89〕係 “三苦連左,必連右” 之課,稍有穢氣,但卽去。 孕者生子,宜建祭風道場。〔90〕係 “二必曲相向” 之課,家中發生仇恨之事,宜破敵鬼之壘,宜祭祖先。〔91〕係 “至美,苦必曲向下” 之課,行人卽歸,有福有祿。〔92〕係 “至美曲連右” 之課,是抽鬼(1)作祟,如喇嘛搖鈴。宜祭風神(2),幷祭吐,則鬼。〔93〕係 “二瓜古向上苦連右” 之課,宜用豬建替生道場。〔94〕係 “瓜古左曲連上,至美曲連右” 之課,病者宜用豬建替生道場。〔95〕係 “二瓜古曲相向,二至美曲相背” 之課,宜禳敵鬼,宜建祭風道場,宜祭神,用豬建替生道場。

(1) 抽鬼 tʂʻɤ˧ tʂʻʅ˧ 汚穢之鬼,

(2) 風神 hɔ˧

（原文第十六頁）

譯文

〔96〕係“炙而不裂,又炙點之上裂橫紋”之課,家中諸事俱吉,爲男子者宜建替生道場,破敵鬼之壘。〔97〕係“苦必曲向上”之課,男子卜之吉,日月出山之像,須請喇嘛唸經,用牛羊祭,繼以燎。〔98〕係“瓜古曲連右,至美曲連右”之課,夫婦離異,病者不吉。〔99〕係“瓜古梢曲向右而連上,二至美”之課,宜建祭風道場,用羊建替生道場,宜在岩間放燎火,宜祭天。〔100〕係“瓜古,至美,苦曲向下,必曲向下”之課,病者宜用牛以祈禱,宜祀祖先。〔101〕係“二瓜古,至美曲連右”之課,病者夫婦之中,必死其一。用白羊一隻,神箭一支祭祖先。

（原 文 第 十 七 頁）

譯　文

〔102〕係“二瓜古,至美曲連左”之課,宜建替生道場,宜破敵鬼之壘,用鷄以祭吐,則鬼,並祭土地之神。〔103〕係“炙而不裂”之課,家中男女不吉,主僕必衝突,須用犛牛,綿羊祭土地神,用羊建替生道場,用黑山羊解穢。〔104〕係“瓜古上穿横裂紋,二苦連左,二必連右”之課,用山羊,鷄祭吐,則兩鬼,宜建祭風道場,宜祀土地神,宜祭天。

由上面的原文及譯文并巫師阿四的解釋,茲作以下之敍述。

羊骨卜書的排列可以分爲三個層次:(1)兆象(卽裂紋,)如易經上的卦爻。(2)吉凶之說明,如易經之繫辭。(3)禳解之法,每一個兆象有一個名稱,這個名稱是由於每條裂紋之名稱組合起來的。裂紋線條共歸成四類:

(一) 線條在灼點之上者(♂)名瓜古,主於男神。

(二) 線條在灼點之下者(♀)名至美,主於女神。

(三) 線條在灼點之左者(⊸)名苦,主於家事。

(四) 線條在灼點之右者(○—)名必,主於外事。

此線條之曲直多寡長短,在名稱上無分別,但於名稱之外,加以形容。如北地本第三號"  ",則名之爲"二瓜古一至美而左曲"之課,第四號"  ",則名之爲"瓜古通上,二至美相向"之課。兆象之名稱,不寫在書上,而是由巫師唸出給求卜之人聽。

我們從北地本中,看到有104個不同的象爻(裂紋標本),其判斷吉凶的繁辭是很簡單,含糊,並且有些矛盾不可解的地方。我們這裏就要問象爻與繁辭的關係是怎樣,就是說裂紋線條的長短多寡曲直與吉凶的關係是怎樣?作者曾將這個問題問過兩三個有名的巫師,則均答稱沒有關係。至說何以認此象爲凶,彼象爲吉,則答云是古代相傳下來如此,所以我們也就這樣去審釋。每課繁辭之後,附有解禳方法。如應做某種道場等等。即使象爻爲吉,也有應作道場之語。若以何以象吉也須作道場,問之巫師,則答以防患於未然,意思是想多掙點錢。

至於卜事,則據巫師說,凡有疑難,均可卜。如疾病,口舌,失物,訴訟,出門,貿易,作戰,報仇,行竊以及家宅平安等等。這本卜書的104課中,只有49課很含糊的寫了一點所卜事類,其餘的各課則只籠統的說凶或吉,而未提何事吉,何事凶。其49課中,所舉卜事,可歸納以下各項:

疾病——14課(6,31,34,36,37,38,47,58,86,88,94,98,100,101)。

家事(包括夫婦,弟兄,子女之友愛與平安)。

——21課(1,4,8,9,41,45,50,51,52,53,54,58,64,68,81,84,90,96,98,101,102)。

孕育——3課(65,69,89)。

牲畜——4課(51,53,54,85)。

解紛——5課(75,76,77,78,79)。

訴訟——1課(49)。

出行——1 課（91）。

仇隙——3 課（5,86,87）。

作戰——6 課（37,39,59,60,70,97）。

行竊——3 課（32,37,39）。

每課之後,多附有禳解之法。此104課中,有71課有之,23課無之。茲將其禳解法分類述之如下,並附課號:

1 替生道場——2,5,6,12,18,19,20,22,29,37,39,41,45,47,49,53,54,64,65,68,70,83,84,86,87,93,94,95,96,99,103。

2 祭風道場——2,14,44,89,99,104。

3 解是非道場——35。

4 祭神——11,18,27,37,42,43,48,61,62,67,72,74,92,95,101,102,103,104。

5 祭鬼——8,10,12,15,16,18,19,21,23,26,28,30,55,56,58,71,84,92,102,104。

6 祭祖先——35,52,53,54,59,65,83,84,85,89,90,99,100。

7 祭天——45,46,67,69,97,99,104。

8 祭星——13,29,31,38。

9 招魂——6,50,57。

10 壓魔——15,73。

11 驅鬼——83。

12 送麵偶——20,63。

13 誦經——8,9,48,97。

14 賣田產解災——36,66。

無禳解之法者,計有——1,3,4,7,17,24,25,32,33,34,40,51,60,75,76,77,78,79,80,81,82,88,91,98。

III 作者所觀察到的羊骨卜的事實,已如上述。茲將中西書籍與此問題相關之記載,錄之如下。前人關於雲南土族之羊骨卜

記載最詳的是清余慶遠維西聞見錄,羊骨卜條下:

"夷人食羖,於膊骨,皆焚香而懸之佛堂門,存爲卜。其卜也,爐焚柴香再拜,取骨置爐上,祝以所謀,炙灼。閱時,反骨裂文,直者吉,叉文明而有理者次之,亂者凶。遼史載契丹以羊骨灼占,謂之羊卜。徐沙屯集蒙古炙羊骨卜,曰跋焦。維西夷人卜法,習自番僧也,而同於契丹蒙古。"(按此處所指夷人當係在維西之麼些。維西縣屬〔昔爲廳〕之土人有栗粟,麼些,西番等。)又雲南通志南蠻志種人:

"楚雄府誌:黑猓玀……其占以蚆錢,草籤,或鷄羊骨爲之。"

此外在雲南各地方志上以及關於雲南掌故的書籍,均無骨卜之記載。但敍述雲南以外的有:

四川通志,卷六十一,風俗:

"松潘直隸廳……炙羊膊以斷吉凶"又"懋功直隸廳……其俗……灼羊膊扯索卦以占吉凶"又"嶺州……尙骨卜。"

清顧亭林天下郡國利病書,四川。

"四夷風俗記云:維州諸番,炙羊膀以卜吉凶。越嶲衞九種志云:猓玀人,性最惡,凡有事以艾炙羊膀占吉凶。上南志云:麼些人,身長色黑……以艾炙羊骨占。上川南道建昌衞本志,東門十部蠻,巫以雜骨卜。"

西藏記(自容肇祖占卜的源流轉錄:)

"西藏占卜之術不一,有等喇嘛以紙畫人卦,書番字而占者,有以青稞掛卦,抽五色毛線而卜者,或數素珠而占者,或畫地而占者,或燒羊骨,或看水碗,種種不一。"(龍威祕書本)

柔克義喇嘛之國(Rockhill, W. W: The Land of the Lamas 1891)第176——177頁:

"……在我們吃完晚飯以後,那個蒙古人多味從他的馬褥套裏取出一塊羊肩胛骨。在一度祝告之後,便將牠放在火爐裏,

直等牠燒焦了;於是很小心的取出來。我們大家便都圍起,想知道我們未來之事。他很詳細的審察被火灼出的裂紋:直紋是代表我們的旅行,橫紋是代表我們未來的遭遇。骨之一面是爲牲畜占卜用的,另一面是爲我們自己。此外,從骨的顏色上,他可以看出天氣,實際說任何事都可以占卜得出來。幸喜我們本身所卜皆吉,但馬有災。在羊肩胛骨用完了之後,多味仍能想法去看未來的事,就是用他的卜珠。但這個卜法,他不視爲很重要。他只用他去卜問我們失踪的馬是否可以尋回,及其他不重要的問題。

此外,柔克義又在其書附錄中(第341——342頁),轉抄克雷姆,人類文化史(Klemm, G.: Allgemeine Kulturgeschichte der Menschheit) III, 第200——201頁中所錄伯拉斯之報告(Pallas's Nachrichten) II, 第350頁所載的羊肩胛骨卜。文較長,茲不錄。

宋沈括夢溪筆談:

"西戎用羊卜,謂之跋焦。以艾灼羊髀骨,視其兆,謂之死跋焦。其法,兆之上爲神明,近脊處爲坐位,坐位者,主位也。近旁者爲客位。蓋西戎之俗,所居正寢當中留一間,以奉鬼神,不敢居之,謂之神明,主人乃坐其旁,以此點主客勝負。又有先咒栗以食羊,羊食其栗則自搖其首,乃殺羊,視其五臟,謂之生跋焦,土人尤神之。"

遼史,卷一百十五:

"西夏本魏拓拔氏後,……凡出兵,先卜。有四:一,炙勃焦,以艾灼羊脾骨。二,擘算,擘竹於地,以求數,若揲蓍然。三,呪羊,牽羊焚香禱之。又焚穀火於野,次晨屠羊腸胃,通則吉,羊心有血則敗。"

古今圖書集成藝術典第五百六十四卷卜筮部:

"燕北雜記:契丹行軍不擇日,用艾和馬糞於白羊琵琶骨上,炙。炙破便出,不破不出。"

清徐霆黑韃事略:

"其占筮則灼羊之枚子骨,驗其文理之逆順而辨其吉凶,天棄天予,一決於此,信之甚篤,謂之燒琵琶,事無纖粟不占,占不再四不已……燒琵琶卽鑽龜也。"

凌純聲松花江下游的赫哲族自135——138頁,關於赫哲族的占卜有很詳細的記載。幷譯有Bogoras研究楚克欺人(The Chukchee)關於胛骨卜的部分。詳細情形請閱凌著,茲摘要錄之如下:

赫哲(Goldi tribe)民族是用"麅鹿等獸的肩胛骨,骨先使之乾燥而去肉務盡……。" Bogoras寫楚克欺:"有一種占卜法是用一塊肩胛骨,把骨的中心放在小火上灼,直至骨的一部分已成炭而向各方面開裂,開裂的紋決定各答案的意見……。養馴鹿的楚克欺人,祇用家畜的馴鹿的肩胛骨來占卜……。沿海的居民用海豹的肩胛骨來占卜,但並不常卜。" 又說:"楚凡次(Chuvantzy)人以及阿那德(Anadyr)地方的拉木忒(Lamut)也採用這種占卜方法(按卽骨卜)。" Jochelson述科利雅克(Koryak)的鯨節中,提到骨卜:"這天晚上最後的儀式是用海豹的肩胛骨來占卜。這是兩位年老人做的,一人持骨,一人把燒紅的煤堆在骨上,所有的人注視肩胛骨上的裂紋……。"

後漢書東夷傳:

"倭灼骨以卜,用決吉凶。"

日本之占卜(Revon, M.: Divination in Japan),在赫斯亭:宗教及倫理彙典(Hasting, J.: Encyclopedia of Religion and Ethics)占卜節(Divination)第802頁中述日本之用鹿肩胛骨占卜"……將鹿肩胛骨放在火苗之上爊烤,審視由熱灼出之裂紋……。"

古今圖書集成藝術典第五百四十六卷卜筮部:

"北戶錄:邕州之南……又見卜者流雄書傳虎卜,紫姑卜,牛蹄卜,灼骨卜,鳥卜,雖不法於蓍龜,亦有可稱者'。 又"番禺雜編:嶺

表凡小事必卜,名鷄卜,鼠卜,米卜,蓍卜,牛骨卜,鷄卵卜,田螺卜,篾竹卜"。

佛來策:金枝第二册禁忌及魂祟(J. G. Frazer: Golden Bough, Part II, Taboo and the Perids of the Soul)第229頁:"此外在蘇格蘭高山地也用羊肩胛骨占卜婚姻,生育,喪葬等事;但骨上的肉須是用非金屬器具剝淨的,其兆方能靈驗。"

羅振玉殷墟書契考釋:

"卜以龜,亦以獸骨。龜用腹甲,棄其背甲(背甲厚,不易作兆,且甲面不平,故用腹甲)。獸骨用肩胛及脛骨(脛骨皆剖而用之)。凡卜祀者用龜,卜他事皆以骨,田獵則用脛骨,其用胛骨者則彊理爭伐之事爲多。故殷墟所出,獸骨什九,龜甲什一而已"。

董作賓新獲卜辭寫本後記:

"丑,參用骨卜期。龜不足用,乃有刮去重刻之舉,此後當有以骨代甲之發明。其時代當在商之中葉。然卜他事參用骨,卜祭則猶須專用龜甲也"。

由以上各記載看來,亞洲各民族中有"灼骨以卜"的風俗的很多,而卜以羊骨的分佈也很廣,計有西戎,西夏,西藏人,黑韃,四川松潘,懋功,嶲州,維州,越嶲等地的土人,以及雲南的麼些及黑猓玀。記載中很清楚的告訴我們用羊的肩胛骨的沒有,但中文的身體各器官的名稱是很含糊的,所以我認爲各記載中所稱的"膊骨","髀骨","琵琶骨","膀"等就是指肩胛骨。如這個說法是對的,則我們可以說上述的有羊骨卜的諸族也就是用羊肩胛骨的諸族。麼些的羊骨卜灼時用艾。與麼些灼法相同的,記載中有夢溪筆談的西戎,遼史的西夏人,四川越嶲衞九夷志的猓玀。但余慶遠維西聞見錄所說的夷人,Bogoras 的楚克欺人,Jochelson 的科克雅克人,凌純聲的赫哲族,董作賓推測的商代龜卜,則是用小煤炭塊放在骨上灼,或將骨放在小火上灼。但上述各族,取材及方法上相同的是:都是用

骨爲介物,都是用火去灼,從灼出的條紋上,去卜吉凶。

IV 現在我們討論一下骨卜審兆有無標準的問題。麼斐的羊骨卜的客觀的標準,巫師是說不出來的,已如上述。現在我們據以上諸記載看看旁的民族的骨卜有無客觀的標準。余慶遠記維西土人(當爲麼斐)云:"直者吉,叉文明而有理者次之,亂者凶"。燕北雜記云:"契丹行軍不擇日,用艾和馬糞於白羊髀胛骨,炙。炙破便出,不破不出。"徐霆黑韃事略:"其占筮則灼羊之枚子骨,驗其文理之逆順而辨其吉凶"。此三段記載,只有余慶遠的還有個線索可尋,後兩個語太含糊。但均是說有標準的。凌純聲的赫哲族,也有標準,"如兩個舌頭緊接爲吉兆,兩舌分離,則視距離的遠近,定吉凶的程度,一個舌頭或一舌不見,是爲凶兆"。Bogoras 的楚克欺族審兆的標準是:"坼從海的方向來的是好的,沒有壞的;從山或內地來的有好有壞,自地下區來的是壞的,沒有好的"。我們現在把範圍放寬,看看龜甲骨卜,審兆有無標準。容肇祖占卜的源流一文中說商代甲骨卜的"觀兆定吉凶,自然需要太卜或卜師的神悟了"。換言之,容氏認爲是無客觀的標準。董作賓的商代龜卜的推測說:"審兆坼,判吉凶之研究,唯有俟諸異日耳"。蓋對此問題未作斷語也。凌氏認爲由於現代赫哲,楚克欺,科利雅克等骨卜民族的審兆之有標準,可以間接推測商代骨卜審兆是有標準的。

麼斐骨卜審兆的標準,巫師既然講不出來,我們只好從卜書上想想法子。我們把卜書分析一下,看究竟可否找出一點線索,卜書上每一課之首,畫着一個圖像,就是我們所稱爲象爻的。象爻雖是像形,但究竟是人工的,但我們無其他更好的辦法之時,只能以此爲根據。此書有 104 課。又因爲麼斐書籍均是抄本,無印本,所以難免在抄寫之時有錯誤,所以要預先聲明以下的分析,祇是本着北地的這本卜書。我們知道卜書上除了圖像而外,尙有判語,卽我們稱爲繫辭的。現在我先把判語,按我個人意見分爲上,中,下三類。這個分法自然是人工的。但爲研究這個問題,只有如此去分。茲列表如下(請參閱上面原文及譯文):

上 類 炙 象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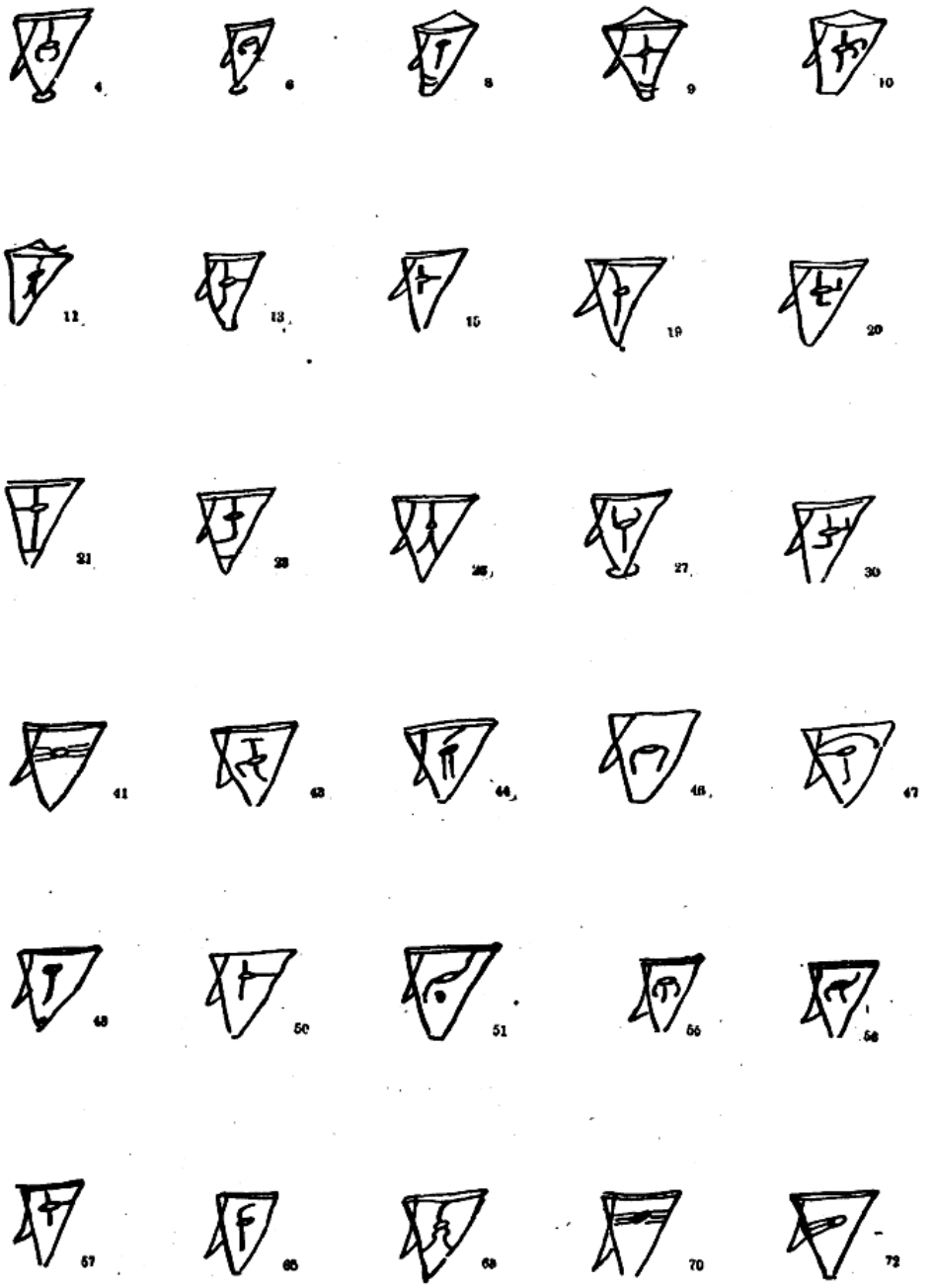
中類炎象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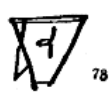
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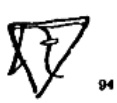
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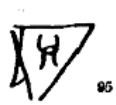
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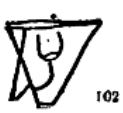
102


104

下類炙象


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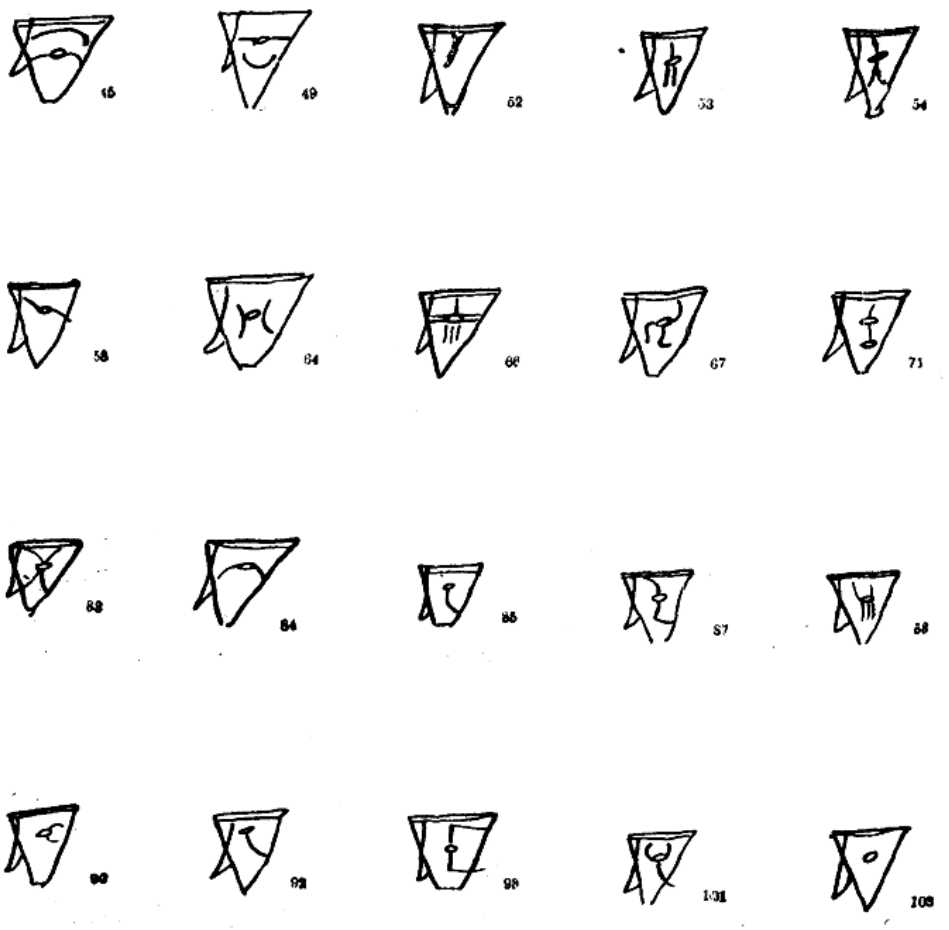


按上面的分析表格,我們看到"上"類少,"下"類次之,"中"類最多。但是我們的"中"類,實際上可以歸到"下"類,蓋凡是未明言"吉"的,也未明言"凶",但須建作道場或釀祭的都歸入"中"類。故"中"類之"不吉"的成份,比"吉"的成份來得多。因此我們可以說,75% 是凶,25% 是吉。然此三類在其裂紋上有什麼分別?我們現在按每課裂紋之直,曲,簡,繁作如下分析(每類之下,只註課之號數,閱者請按此號數與前表對照,便知吉凶):

平直

上——14,34,36,60,61,76,81,89。

中——8,9,15,21,41,50,57,70,72,73,74,78,86,104。

下——1,2,18,33,40,53,66,71,88。

全曲

上——29,39,62,63,79,82,96,97。

中——6,44,46,48,51,56,68,94,95。

下——17,35,45,58,67,83,84,85,87,90,92,98,101。

直曲

上——5,7,16,32,37,38,55,59,69,77,80,91。

中——4,10,11,13,19,20,23,26,27,30,43,47,54,65,75,93,99,100,102。

下——5,12,22,24,25,28,31,42,49。

又:

簡（自二劃以下）

上——14,32,34,36,39,61,62,79,82,96,97。

中——6,8,19,23,46,48,51,65,75,78,86,94。

下——1,2,35,52,58,64,71,84,85,87,90,92,98。

中常（三劃）

上——3,7,16,37,38,59,60,69,76,77,81,91。

中——4,13,15,20,21,26,27,30,44,47,50,55,57,65,68,72,73,93,99,102。

下——17,18,22,28,42,45,49,53,54,67,101。

繁（自四劃以上）

上——29,63,80,89。

中——9,10,41,43,70,74,95,100,104。

下——5,12,24,25,31,33,40,66,83,88。

由上表,我們看不出裂紋之直曲簡繁與吉凶之關係。至云不規則的炙象,如炙而不裂,裂紋不連炙點等,則我們找到以下幾課:

40	（下）	棋子格
47	（中）	抽痕
49	（下）	抽痕
52	（下）	未炙而裂
64	（下）	不在炙點
78	（中）	不在炙點
96	（上）	不在炙點
103	（下）	炙而不裂

此八課之中,有五課屬於“下”類,兩課屬於“中”類,一課屬於“上”類。以次數而論,則我們可以說,不規則的炙象中,多數是不吉的。但此結論實是不可靠的。因爲屬於“吉”類的第96號課,與第64,78號兩課的情形（裂紋不在炙點）是相同的,而我們這裏正是以其炙象之規則與不規則爲標準,故可以說不規則的並非是凶兆,但除炙而不裂（103是屬於下）。在前面我們也看到如炙而不裂須重炙,認爲凶。故此現象,可認爲凶兆。現在我們再從前面所述的炙紋,瓜古,至美,吉,必——四條紋之每課每紋之多少,及其彼此間的配合上看看,但是我們看每一條紋,長短,曲直,連邊不連邊各自不同;其在每課各條紋之配合上,也各有變化;換言之,即此104課,有104個樣子的,其判辭因之亦各異。故我們現在只能把此複雜的樣式縮到他的基本的四個紋條及其配合:

104課炙紋配合表

1	1瓜古+1至美——2,14,19,23,32,35 36,39,65,75,76,87,94,98	5上,5中,4下
2	1瓜古+2至美——11,26,44,53,54,68,77,99	1上,5中,2下
3	2瓜古+1至美——3,4,17,27,101,102	1上,3中,2下
4	2瓜古+2至美——25,95	1中,1下
5	2瓜古+1吉——93	1中
6	3瓜古+1至美——88	1下
7	3瓜古+3至美——33	1下

8	1 瓜古+1 至美+1 苦——21,43,59	1 上,2 下
9	1 瓜古+1 至美+1 必——7,13,15,20,22,3 ,37,42,50,57	2 上,6 中,2 下
10	1 瓜古+1 至美+2 必——10	1 中
11	1 瓜古+2 至美+1 苦——63	1 上
12	1 瓜古+2 至美+1 必——12,24,83	3 下
13	1 瓜古+3 至美+2 必——66	1 下
14	1 瓜古+2 苦+2 必——104	1 中
15	1 瓜古+1 苦+1 必——16,60,69	3 上
16	1 至美+1 苦+1 必——18,56,67 91	1 上,2 中,1 下
17	1 苦+1 必——34,46,51,58 61,62,79,81 82,84	6 上,3 中,1 下
18	1 苦+1 必（不在爽點）——64	1 下
19	1 至美——1,8,48,85,92	2 中,3 下
20	2 至美——6	1 中
21	3 至美——38,55	1 上,1 中
22	1 必——86	1 中
23	2 必——90	1 下
24	3 必——73	1 下
25	2 瓜古——97	1 上
26	2 瓜古（兩爽各一）——71	1 下
27	3 苦——72	1 中
28	1 苦+2 必——28	1 下
29	2 苦+2 必——74	1 中
30	3 苦+1 必——89	1 上
31	3 苦+3 必——41,70	2 中
32	1 苦+1 至美+1 抽——47	1 中
33	1 苦+1 必+1 抽——45,49	1 中,1 下
34	1 瓜古+1 至美+1 苦+1 必——5,9 29,31,80,100	2 上,2 中,2 下

我們從上面的表,也找不出什麼標準來,如第一號“1瓜古+1至美,”共有十四個課,其中有五個是上,五個是中,四個是下,又第十七號“1苦+1必,”共有十個課,六個是上,三個是中,一個是下。換言之,即是在同樣的裂紋配合之下,有的是吉,有的是凶。所以結

果可以說仍是找不出個標準來。從這裏我們自然的得到一個結論是:麼斐的羊骨卜在審兆上,無客觀(卽從裂紋之曲直,繁簡等以定其吉凶)的標準。占卜時的判詞,是依照着自古傳下來的習慣,也就是照着卜書上所示。說得更顯明點:卜書本身就是個標準了。但是我們上面弄出來的各表格,也不能說是白費心思,因爲我們究竟關於審兆上得着一個結論,雖然是消極的。同時可以證明余慶遠的記載維西夷人羊骨卜之有客觀的標準之錯誤,蓋自乾隆迄今,麼斐骨卜上,恐無如此之變化。

關於麼斐族羊骨卜的來源,我們不能作若何結論。但由上述各參考書所載,我們知道骨卜在西比利亞之楚克欺,楚凡次(Chuvantzy),阿那德(Anadyr),拉木忒(Lamut),以及松花江下游的赫哲,古籍上所載的西戎,西夏,西藏人,並四川西部土人等均有。中國南部及南亞各羣島民族無顯明之記載(1)而有骨卜的這些民族,均是從事畜牧,或漁獵的(自然有些是參雜了耕種的)。換言之,就是他們有與多量的哺乳動物接近的機會。所以不但卜的觀念相同,而且所用的介物及方法,均是在一個思想圈兒裏,卽是說用哺乳動物骨與炙。殷代的占卜用龜甲與獸骨。董作賓先生以爲"占卜之事,初本完全用龜,龜甲不敷用,然後取牛胛骨以代之,此可據理推知者也"。我們從(1)分佈上看,有骨卜的各族,多是取材於哺乳動物骨,如麋鹿,海豹,牛羊骨,殷商用龜甲實是與衆不同的。(2)商代生產,雖不能像郭沫若所說"商代的末年還是以牧畜爲主要的生產",但未完全業農是可能的,因爲"卜辭中用牲之數,每每多至三百四百以上"。因此我們可以知道此個人羣,與哺乳動物接觸的機會,像上述各骨卜族一樣,是很多的。由此兩點,可以去推想商族必先用骨,然後用龜甲。凌純聲先生在他的松花江下游的赫哲族 138 頁中,論及商

(1)上海圖書集成卜筮部所云的灼骨卜,牛骨卜,雖不能說不可靠,但此種占卜,在南方尚遠不如在北方諸族流傳之盛。

族骨卜材料問題,也認爲"最初用天然獸骨,祇求其得兆而已,後來文化漸進而有文字,要記載文字在骨上,天然骨骨面粗糙不適用,所以用牛肩胛骨磨刮光潤,以便刻文字;肩胛骨雖經磨刮,然終不如龜腹甲的平正,易於編成典册,因此殷代骨卜,多用龜甲"。這一段也正是我所要據以駁董說之理由之一。

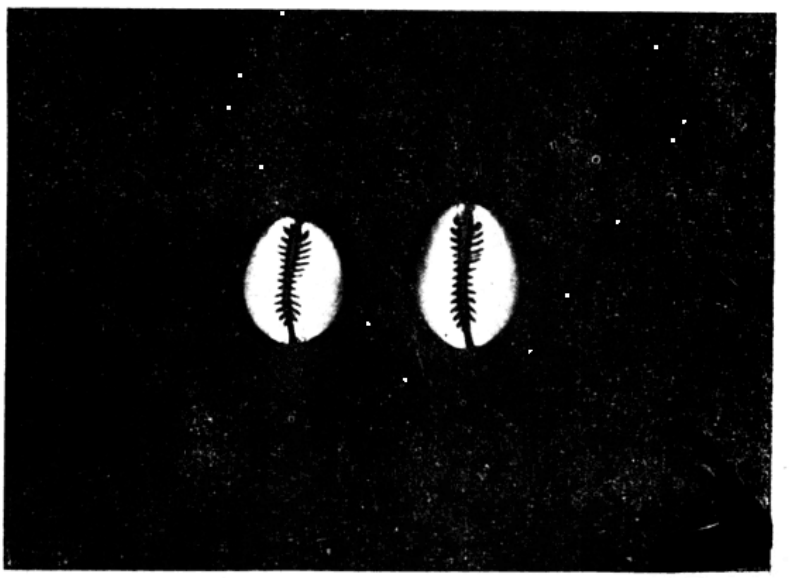
綜上所談,我們可以暫時作個結論說:灼骨卜是漁獵或牧畜社會的文化產物;在亞洲東北,北部,以及中央亞細亞,康藏高原一帶流行。這也是給雲南麼梭族來自西藏高原的一個旁證,而麼梭正是由牧畜變化到農業的一個人羣。

(乙) 貝卜

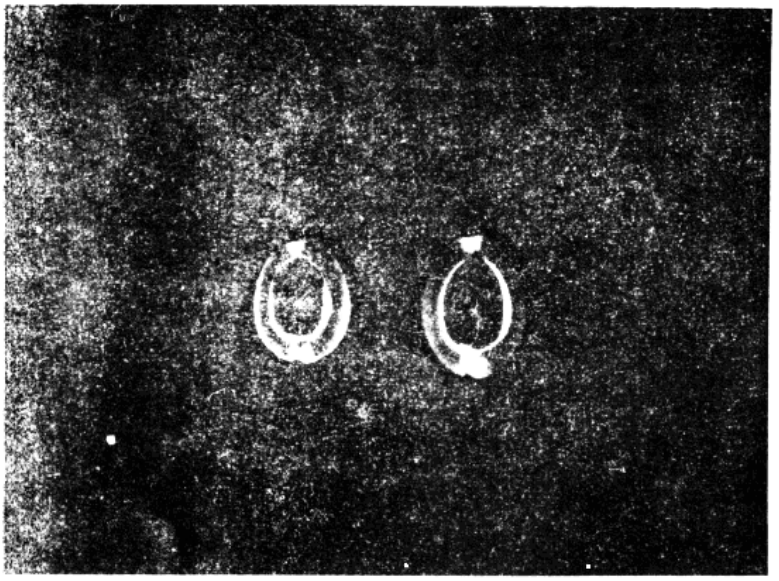
I 爾雅釋蟲,"蚆博而頯"。注,"頯者中央廣兩頭銳"。義疏,"雲南人呼貝爲海貝,貝爲蚆之別體"。光緒二十七年戴綱孫輯昆明縣志轉錄舊志云:"街期昔多用貝,俗曰貝子"。顧炎武天下郡國利病書,卷乙百零七,雲南,"交易用貝,一枚曰莊,四莊曰手,四手曰苗,五苗曰索"。至今滇人仍稱之爲貝子或海蚆,麗江的麼梭,稱此類貝殼爲[bar]([bar]與蚆音甚相近,但其關係如何甚難定)。麼梭族用以爲卜占的貝殼,就是這類,我收集占卜所用的貝,有兩種:一爲貨貝(Cypraea Moneta Linn),一爲寶貝(俗名海貝)(Cypraea Tigris Linn)。卜貝是將普通的貝的背面,即無齒的那一面磨平,敷以松香成爲黑色。有齒的那面,存其原形,爲白色。占卜之時,即將貝子拋於地上,視其翻覆,以定吉凶。有三種;(一)用兩個貝子;(二)用十三個貝子;(三)用二十七個貝子。(參看圖版肆——陸)。以用兩個的爲最普遍。作者在中甸之北地,及麗江,得作以下之觀察:卜貝盛於小竹筒或小藏布袋之中。占卜之先,由巫師祝請東巴薩勒及格庫兩馬,怡世惡左兩讖法降壇,將求卜人的姓名,年齡,住址,幷所求之事述明。其祝禱情形與上述羊胛骨卜相同。祝時將貝子放在兩

手之中,上下的搖動,揉撮。祝畢,卽將手分開,貝子落碗中,或卽拋於地上。用兩個貝子者,每課擲三次,十三個貝子者,擲一次。二十七個者未得觀察,據云儀式相同。

除用貝外,還有一種用木削成貝形,長有四公寸,較貝大兩三倍。將其一面挖空,填以松香,成黑色,其另一面是原色。卜時拋於地上,視其黑白以定吉凶。此種木貝,普通是放在交通路口旁之山洞內,往來行人,可以取而卜之。木貝卜只用兩個。麗江東北有山名"盤滿墮欹"(卽貝卜山),其地爲麗江,永寧,中甸之摩斐,呂斐,古宗往來交通必經之地,放有木貝。但作者未親到其地,據云,卜法與用眞貝相同。作者在麗江南山得貝卜書兩本,一本是爲用兩個貝子,一本是爲用十三個貝子占卜的。茲將原文及譯文錄之如下:



(1) 二 貝 卜 白

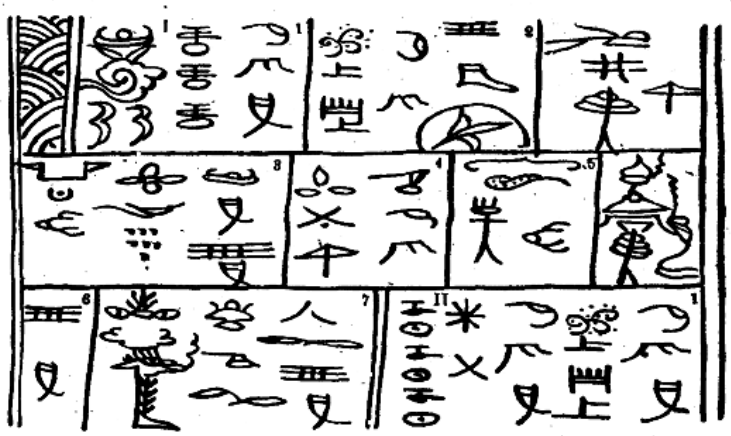


（2） 二 貝 卜 照

圖 版 肆

所肥卜書原彝文及譯文

（原書第一頁）



（原書第二頁）

第一頁記音

bǎ˩ kɤ˧ bɤ ma˧ to˧ ʂɤ˧ me˧

mur˧ ʂuo˩ me˧ t'ɛ˧ ur˩ ua˩

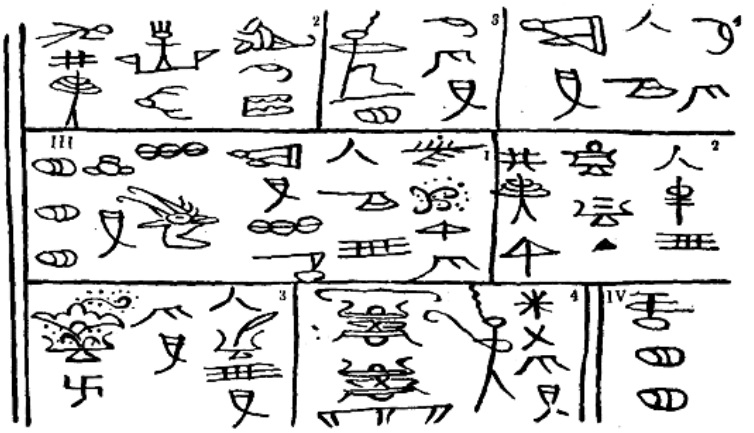
第一頁譯文

如天高之肥卜書

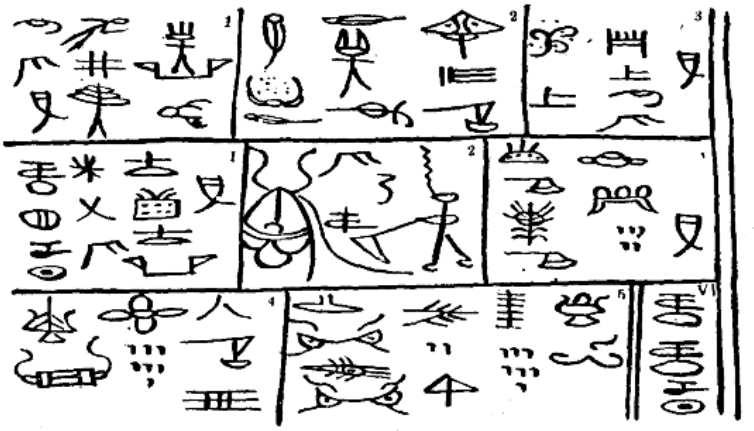
第二頁譯文

啊,神! I 獅三次白者不吉(1),官司不利,宜解口舌(2),病者是犯土煞(1),並失其魂,宜招魂(3),生意不利(4),宜祭天(5),宜祀神(6),宜祭祖先(7)。 II 獅三次黑者,千事百事不吉,官司不利(1),

(1) 土煞 t'u˧ k'ɛ˧



（原書第三頁）



（原書第四頁）

譯　文

病者是犯土煞，心中不安寧〔2〕，不宜出門〔3〕，不宜尋失物〔4〕。III 擲三次黑白相間者吉利，失物尋之可以速得，後事大吉〔1〕，病者是中蠱〔1〕，宜禳之〔2〕，宜服良藥〔3〕，開闢田地大吉〔4〕。IV 擲初次白，二次三次黑白相間者，病者犯土煞〔1〕，泉水中之水魅（2）作祟〔2〕，不宜訴訟〔3〕。V 擲初次白，二次黑白相間，三次黑者，千事百事俱吉，心中所欲可得〔1〕，卽翻雪山亦吉〔2〕，求財求食大吉〔3〕，家中宜祭祖先招魂〔4〕，祖孫相得，後事大吉〔5〕。

（1）蠱 dvɹ

（2）水魅 dɔ̃ɹ tsɛɹ

（原書第五頁）

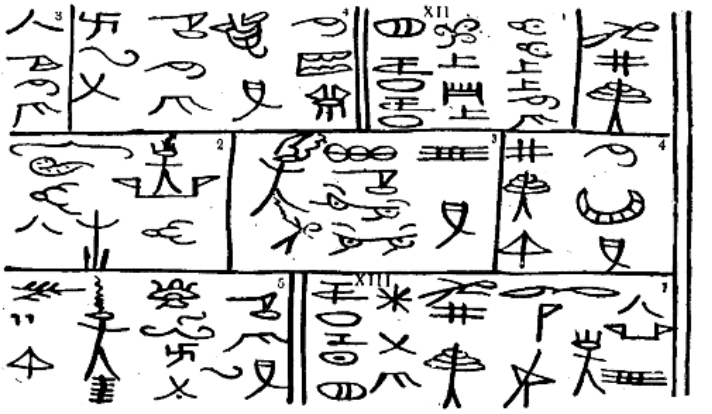
（原書第六頁）

譯　文

VI 擲初次二次白,三次黑者,千事百事不吉,官司不利〔1〕,宜穰不祥〔2〕,病者宜送蛇鬼(1)〔3〕,須向泉水祭水魅〔4〕,因水魅作祟〔5〕。VII 擲初次黑,二次黑白相間,三次白者,千事百事俱吉,播種耕田大吉〔1〕,生意不利〔2〕,病者不吉〔3〕。VIII 擲初次黑白相間,二次白,三次黑白相間者,千事百事俱吉,官司中平,攜犬出獵可以獲禽獸〔1〕,病者宜祀天神(2)〔2〕,是犯不見天之土煞〔3〕,宜祀吐鬼(3),則鬼(4),宜招魂〔4〕,病者多出淚,心中不悅〔5〕,後事大吉,心中莫不如意,失物可尋得〔6〕,病者無危險〔7〕。IX 擲初次黑白相間,二次黑,三次白者,宜訴訟,宜解口舌〔1〕,

(1) 蛇鬼　ʑɪɹ tʂʻuɹ
(2) 天神　duɹ
(3) 吐鬼　dɯɹ
(4) 則鬼　tsəɹ

（原書第七頁）



（原書第八頁）

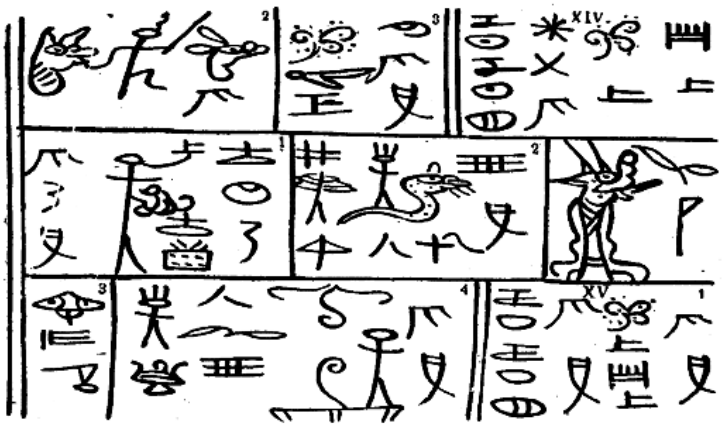
譯　文

病者是犯土煞〔2〕,是水神（1）作祟,宜供花穰之〔3〕,生意不利〔4〕。X 擲初次二次黑白相間,三次黑者,千事百事俱吉,宜訴訟〔1〕,病者宜祭天〔2〕,在東方可分出吉凶〔3〕。XI 擲初次黑白相間,二次白,三次黑者,千事百事不吉,官司不利〔1〕,病者宜祀東方之神（2）〔2〕,尋失物不可得〔3〕,生意不利,心中不悅〔4〕。XII 擲初次黑白相間,二次三次白者,官司不利〔1〕,病者宜祭天,是犯土煞〔2〕,孕婦必早生〔3〕,無病痛〔4〕,後事吉,平安如意,生意大吉〔5〕。XIII 擲初次白,二次黑,三次黑白相間者,千事百事俱吉,病者爲縊鬼（3）在家所祟〔1〕,

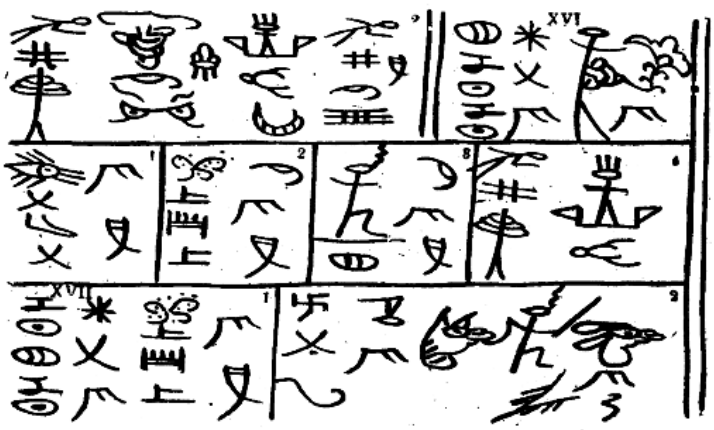
（1）水神 luɹ mɯɹ

（2）東方之神 ɲiɹ meɹ tʻɐɹ pʻaɹ gɐɹ heɹ

（3）縊鬼 ʈiɛ̃ɹ teɪɹ tʂʻɐɹ



（原書第九頁）

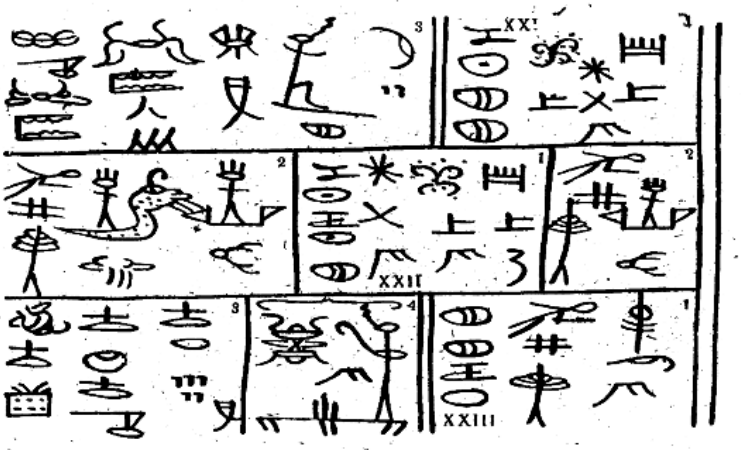


（原書第一〇頁）

譯　文

獵狗出獵獲禽〔2〕,官司不利〔3〕。XIV 鄰初次二次黑,三次黑白相間者,千事百事俱吉,官司大吉,凡所願順心,所說如意〔1〕,病者宜禳蛇鬼〔2〕,水神在家中作祟〔3〕宜送鬼飯,但得天地神之佑〔4〕。XV 鄰初次二次白,三次黑白相間者大吉,官司大吉〔1〕,病者是犯不見天之土煞,宜禳之,病者無危險〔2〕。XVI 鄰初次黑白相間,二三次黑者,千事百事俱吉,心花開放大吉,耕種亦吉〔1〕,官司不利〔2〕,出門不利〔3〕,病者是犯土煞〔4〕。XVII 鄰初次黑,二次黑白相間,三次黑者,千事百事俱吉,官司得利〔1〕,生意大吉,獵犬出獵可獲禽獸〔2〕,

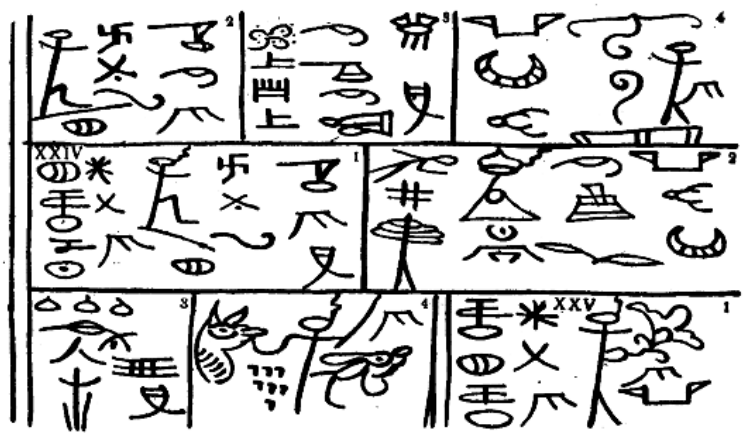
（原書第一一頁）



（原書第一二頁）

譯　文

播種亦吉〔3〕。XVIII 擲初次二次黑,三次白者,官司不利〔1〕,病者宜送鬼,誦經〔2〕,播種耕耘吉〔3〕。XIX 擲初次黑,二次白,三次黑者,心不宜急,亦不宜速,後事大吉〔1〕,官司不利〔2〕,病者宜請喇嘛誦經,宜祭祖先,施食〔3〕。XX 擲初次黑,二次三次白者,官司大吉〔1〕;病者宜祭天〔2〕,早得好消息,不宜出門〔3〕。XXI 擲初次黑,二次三次黑白相間者,千事百事均吉,官司亦吉〔1〕,病者宜送蛇鬼,宜釁土煞〔2〕。XXII 擲初二次黑,三次黑白相間者,千事百事俱吉,官司利〔1〕,病者是犯土煞〔2〕,所爲如意,所願順心〔3〕,開闢新田地大吉〔4〕。XXIII 擲初次二次黑白相間,三次白者,病人不利〔1〕,



（原書第一三頁）

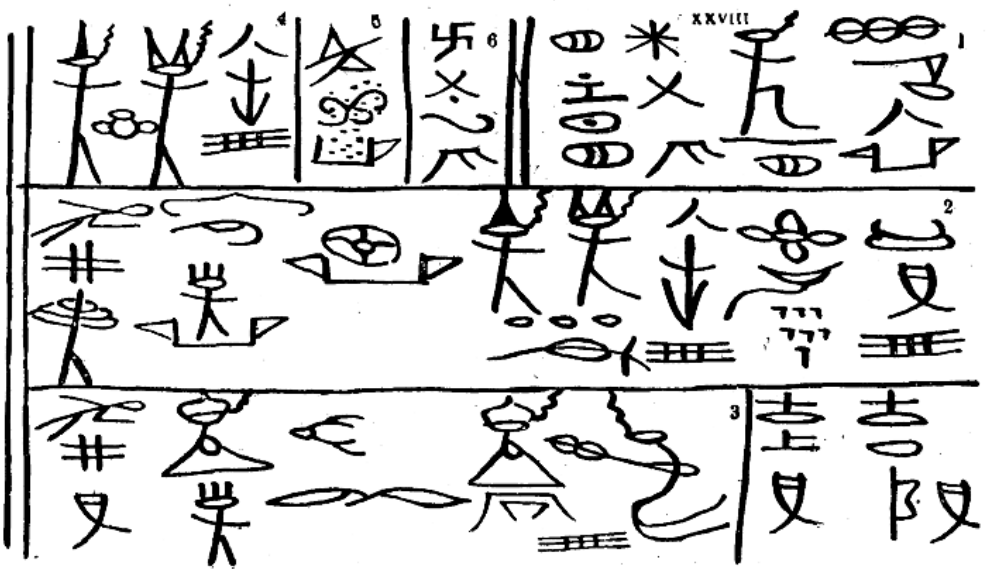
（原書第一四頁）

譯　文

出門做生意不利〔2〕，官司不輸不贏〔3〕，犯土煞，但天地之神佑之〔4〕。XXIV 擲初次黑白相間，二次白，三次黑者，千事百事俱吉，出門做生意吉〔1〕，病者宜祭神，是犯土煞〔2〕，宜釀粢星（1）〔3〕，宜攜犬出獵，必獲禽獸〔4〕。XXV 擲初次白，二次黑白相間，三次白者，千事百事俱吉，心花開放大吉〔1〕，病者是犯土煞〔2〕，不宜播種耕耘，不宜出門〔3〕，伐木裂石吉〔4〕。XXVI 擲初次白，二次三次黑者，千事百事不利，官司不利，尋仇不利〔1〕宜尋失物，得神歡悅，後事吉，家事順利〔2〕。XXVII 擲初次白，二次黑，三次白者，求財得利，但容易遺失，宜招魂〔1〕，病者宜釀縊死鬼〔2〕，宜祀卡神（2）〔3〕，

（1）粢星 tsa」

（2）卡神 ka」

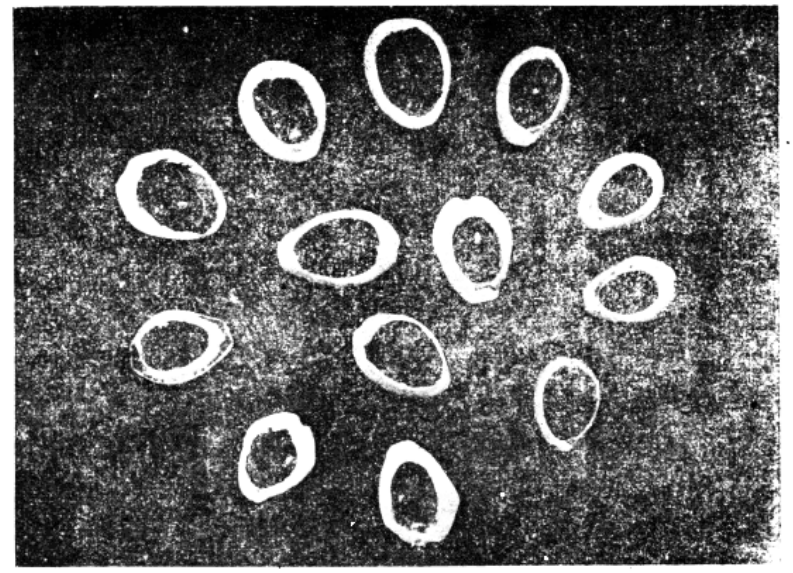


（原書第一五頁）

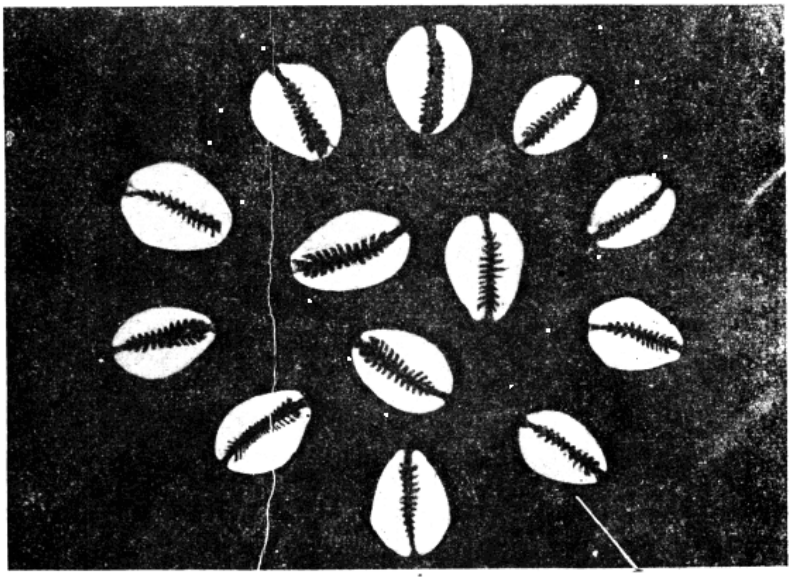
譯　文

宜祀吐鬼,則鬼〔4〕,宜禳魔〔5〕,生意大吉〔6〕。XXVIII 擲初次黑白相間,二次黑,三次黑白相間者,千事百事俱吉,行人速至〔1〕,病者是犯不見天之土煞,宜祀東方之吐鬼,紮鬼〔1〕,則鬼,宜招魂〔2〕,病者是神作祟,宜祀拜神〔3〕,

（1）紮鬼 za」



2. 十三貝卜骨

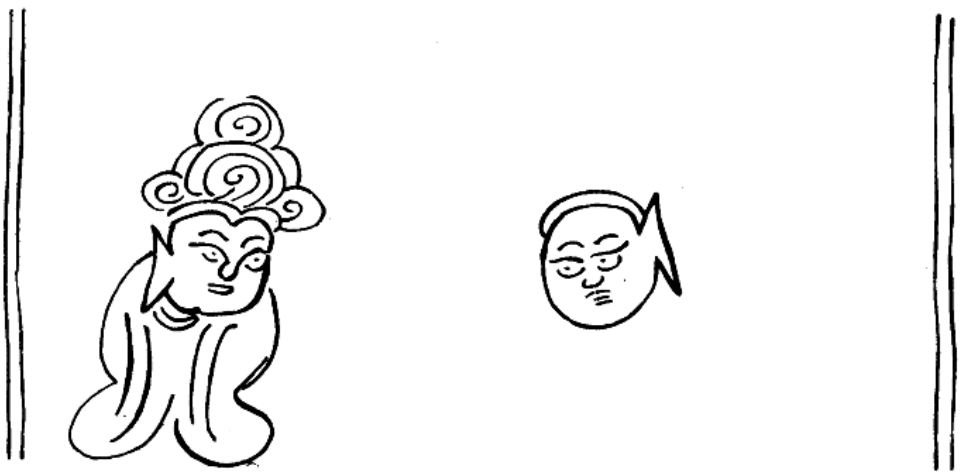


1. 十三貝卜甲

圖版伍。

十三 貶卜書摩梦原文及譯文

（原書第一頁）



（原書第二頁）

第一頁記音

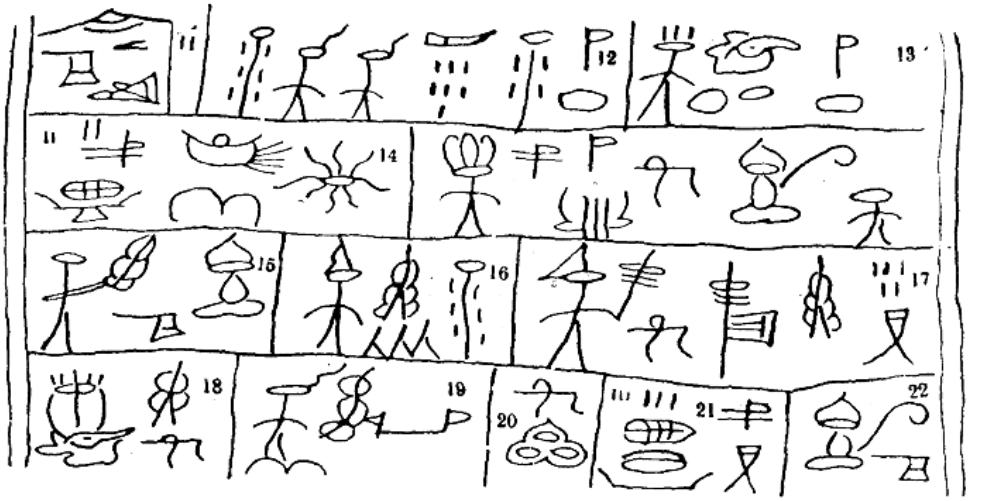
bəɹ maɬ toɣ t'eɬ ɯɬ meɹ

第一頁譯文

貶　卜

（第二頁係戲畫神像，無意義。）

（原書第三頁）



（原書第四頁）

譯　文

啊!神!I擲一子白者〔1〕,如日月之初出山〔2〕,枯木復榮而生花〔3〕,白腹鵰飛上高山之象〔4〕,貧者能致富〔5〕,貿易順利,失物可得〔6〕,家中之事中平〔7〕,不宜尋仇〔8〕,病者〔9〕,可有一歲之久,是黑蔴布作祟〔10〕,有黑鐵到家中不利,有鬼作祟〔11〕其鬼與二男攜手齊來〔12〕,鷄生大小蛋不祥〔13〕。II二子白者,如月光出山之兆〔14〕,遇見白布纏頭之人大吉,有神佑之,宜祀神〔15〕,如女人占之,有鬼作祟〔16〕,出去尋仇能勝之〔17〕,尋失物吉〔18〕,行人可速回〔19〕,大吉大利〔20〕。III三子白者〔21〕,有神來尋食〔22〕,

（原書第五頁）

（原書第六頁）

譯　文

不宜尋仇〔23〕,貿易順利〔24〕,家中諸事均吉〔25〕,病人占之,宜祀高山上之水神（1）〔26〕有二女人之美作祟〔27〕,失物不可得〔28〕。IV 四子白者〔29〕,家內不利〔30〕,若尋仇必生禍殃〔31〕宜出門〔32〕,宜尋失物〔33〕,病者占之,是村中之孤女吵鬧之後,鬼來作祟〔34〕,須向水神處招魂〔35〕。V 五子白者〔36〕,必生禍殃〔37〕有二子發生衝突〔38〕,見虎皮豹皮能作祟〔39〕,黃金白銀也能作祟〔40〕,是親戚着白服者來作祟〔41〕,病者驚駭不寧〔42〕,宜建替生道場（2）〔43〕,宜解仇隙〔44〕,尋失物不可得〔45〕,

（1）水神 luɪ˧ mɯ˧

（2）替生道場 to˧ k'ɯ˧

（原書第七頁）

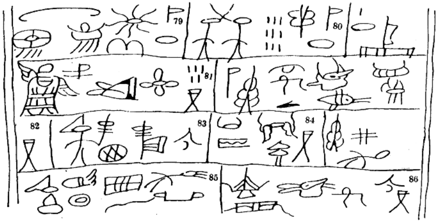
（原書第八頁）

譯　文

宜壓魔[46]。VI六子自者[47]，用柳枝代替"韓英寶連"樹（1）以分神鬼之界[48]，病者占之，是被女人作祟[49]，行人遽至[50]，若尋仇不能遇仇人之面[51]，患病痛[52]，有白物作祟，食紅肉者作祟[53]，家中須供奉水神[54]，請東巴壓魔[55]。VII七子自者[56]，不宜訴訟[57]，不宜尋仇[58]，如二鳥飛來而相禮之兆[59]，病者常驚嚇[60]，是見一婦負物者祟之[61]，病者延長[62]，有魔作祟[63]，有親戚[64]之寡婦來[65]，鬼隨之到家中而作祟[66]，宜壓魔[67]，不宜出門[68]，家中之神如黑臉而怒[69]宜建替生道場以解厄[70]，

（1）韓英寶連樹 ha⊥ i⊣ ba⊣ da⊣，神樹，云與供祀相似。

（原書第九頁）



（原書第一〇頁）

譯　文

不能唸經病不得愈(71)。VIII 有八子白者(72),神悅喜(73),失魂有神人佑之(74)白頭之老人不宜取銅器鐵器,能作祟(75),宜爲縊鬼(1)施食(76)用山羊以解黑穢(2)(77)。IX 有九子白者(78),如天上日月之明(79)如九神子商議之兆(80),一人能歸地,爲官之兆(81),在家中不利,必有失物之小災(82),宜尋仇能勝之(83),能得好消息(84),病人占之,如喇嘛得病,必至死亡(85),若祀祖先,可以得愈(86)。

(1) 縊鬼 ȶiə̃˧ tsə˩˩ tʂ'ɤ˩

(2) 黑穢 tʂ'ɤ˧ na˩

（原書第一一頁）

（原書第一二頁）

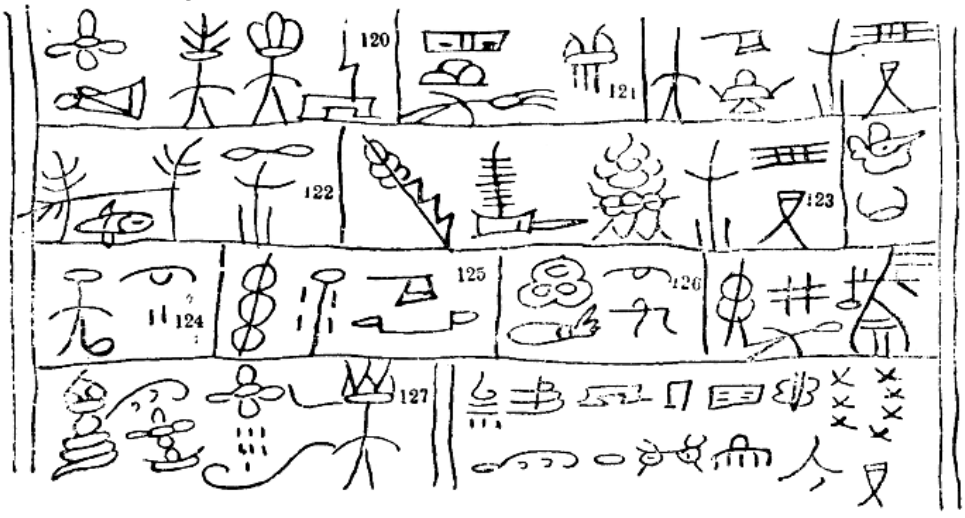
譯　文

X有十子白者[87],父子有緣可以聚會之兆[88],爲官出征,手執利矛快刀[89],能勝敵[90],家中諸事俱吉[91],出門翻山之人可以卽歸[92],尋失物可得[93],經商亦吉[94],病人占之,其魂被水神所攝[95],宜祀水神[96],不宜驚擾[97],XI十一子白者[98],是遺失之兆[99],病者死而爲神[100],神爲穢氣所罩[101],家中之事不吉[102],牛馬被賊竊去[103],病者占之,宜獻藥水神[104],宜祭吐鬼(1),則鬼(2)[105],宜用肉燒之,以解口舌[106],宜送衆鬼[107],宜壓仇鬼,若不誦經,必出眼淚[108]。

(1) 吐鬼 dz'

(2) 則鬼 tse'

（原書第一三頁）

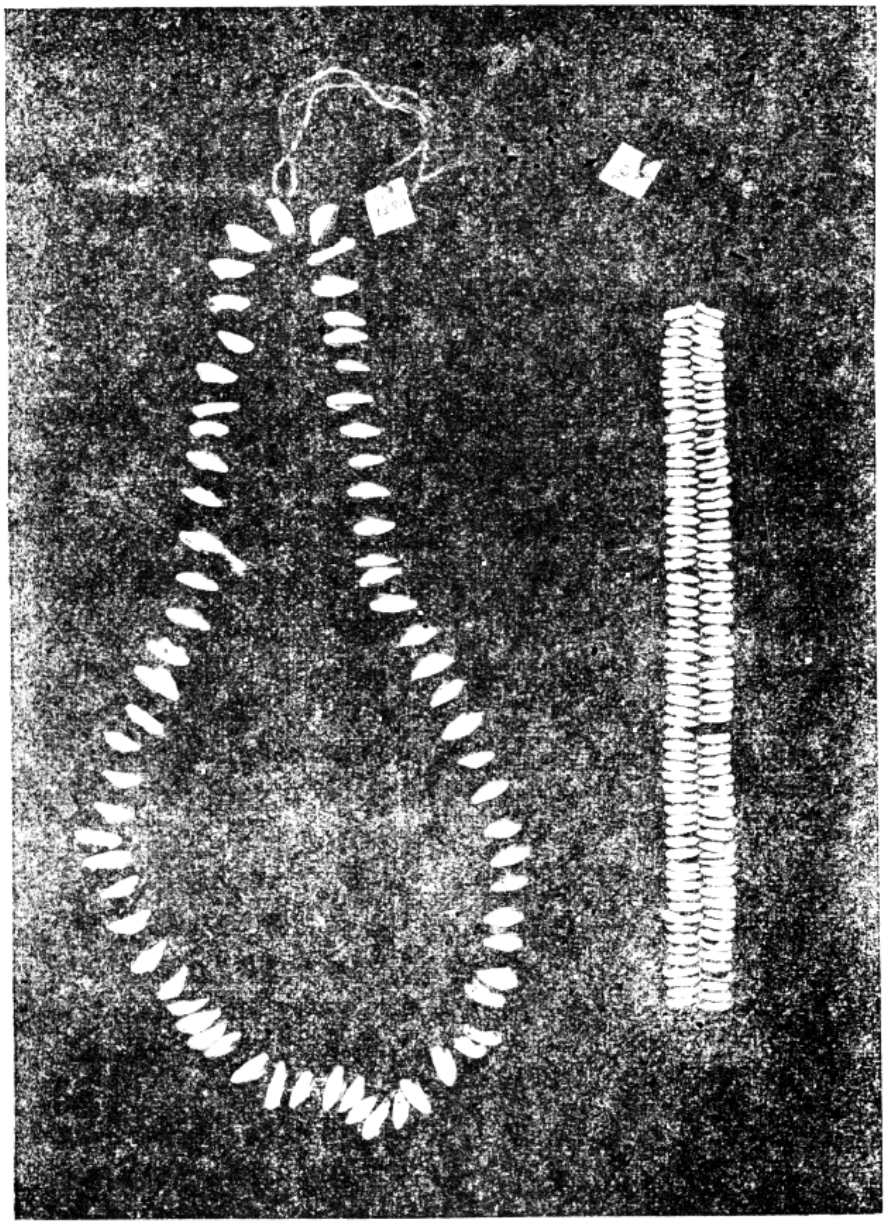


（原書第一四頁）

譯　文

XII 十二子白者[109],如日之出山,家中有不利事宜壓仇魔,快箭快矛宜直墜[110],出門翻山者,宜速回家[111],宜訴訟[112],宜尋仇能勝而殺之[113],病者占之[114]是由先代父輩[115]有被殺之人[116]來尋食作祟,宜送癘之[117],宜送縊鬼,宜解口舌,宜祭風[118],XIII十三子白者[119],是破家亡產之兆,有父輩祖輩之鬼作祟[120],宜壓鬼[121],宜退口舌[122],宜誦長壽經(1)[123],不宜出遠門[124],鬼作祟[125],作生意不利[126]病者占之,是山上之水神攝其魂,宜向水神處招魂[127]。

(1) 長壽經 zɿ˩ tʂuɤ˩ pɤ˩



乙 138 A　瀾滄縣阿卡婦女腰間佩飾
乙 136　墨江縣必岱婦女腰索
（原尺寸之 1/4）

圖版陸

關於所卜的事類,則所譯兩書中所載,可歸納到以下數項。貝卜與上述羊骨卜在此點,略有不同;即是貝卜將所卜的事類,述註出來。但除"疾病"一項述其成因及禳除之法外,餘事均無說明。此外,貝卜上有遇到某物或某樣人吉或凶的預言,這也是羊骨卜上所沒有的。卜事用二貝者,可歸爲:疾病、生育、祭祀、排紛、訴訟、耕種、伐木、畋獵、出門、貿易、行人歸期、尋失、報仇等十三項。用十三貝者,可歸爲:疾病、祭祀、家常、排紛、訴訟、出門、貿易、行人歸期、尋失、解仇、報仇、行竊、遇人、遇物等十三項。至疾病之成因,則用二貝者爲冲犯了土煞、水魅、縊鬼、水神等四項。用十三貝者,爲下列各項之作祟:黑麻布、親戚之白衣女人、二女之美、食紅肉之人、負物之婦、祖先、水神、鬼等九項。禳解之法,用二貝者爲:祀天、祀神、祭祖、祀星、招魂、禳鬼(蛇鬼,水魅、吐鬼,則鬼,縊鬼,紮鬼,土煞)、服藥等七項。用十三貝者爲:建道場(替生道場)、祀神(水神,風)、祭祖、招魂等四項。

II 書籍中關於雲南土人用貝卜的記載很少,僅有雲南通志南蠻志種人轉錄楚雄府志:

"黑倮玀……其占以蚆錢,草籤或鷄羊骨爲之"(此處所謂蚆錢當即貝子)。

貝卜或貝卜這個名種在古書上所見雖然很少,但是記與貝卜相似的事實的,却有不少。古人稱之爲"环珓"。

宋程大昌演繁露:

"後世問卜於神,有器名环珓者,以兩蚌殼投空擲地,觀其俯仰以斷休咎。自有此制,後人不專用蛤殼矣。或以竹,或以木,略使如蛤形而中分爲二,有俯有仰,故亦名盃珓,盃者言蛤殼中空,可以受盛,其狀如盃也。珓者本合爲教,言神所告教,現於此俯仰也"。

梁宗懍荆楚歲時記:

"秋祉,擬教於神,以占來歲豐儉,注文曰:教以桐爲之,形如小蛤,言教,教,令也。其擲法,半俯半仰爲吉者也"。並引韓愈謁衡嶽廟詩:"廟令老人識神意,瞧盱偵伺能鞠躬,手持环珓導我擲,云此最吉餘難同"。

是則环珓卜在唐時就有了。再往上推,容肇祖在他的占卜的源流(本所集刊第一本)一文中,疑:楚辭離騷中之"孑瓊茅以筵篿兮,分靈氛爲予占之。"王逸注說:"瓊茅,靈草也,筵,小折竹也。楚人名結草折竹以卜曰篿"。後漢書方術傳李賢注引楚辭說:"筵,八段竹也",筵是折竹的占卜,疑卽杯筊的起源?換言之,容氏把环珓與竹草連在一條線而忽略了記載上的"蚌殼","蛤"等等名詞。其所以聯想到筵,大約因爲見到"觀世音籤,附有觀世音菩薩靈杯圖,分杯珓爲二十八首,各有繇辭。又天后籤附的杯珓辭有二種。"

由於我上面所述的麼些族有貝卜,同時有模彷貝形之竹貝卜上看,似乎可以證明程大昌的說法是對的。就是說:先用蛤,然後用蚌,以後才用木竹,製如蛤形。至於筵篿,與环珓似是兩件事。關於筵篿的卜法,圖書集成藝術典第五百六十四卷卜筮部載有环珓卜法序:"筵篿卜法者,本楚越間小術也。自楚屈原始稱爲筵篿之卜,越相范蠡頗有其書,然今特類後世術者所託,要之亦必古有此法。當卜時,自其所向得草木枝,初不計多寡,左右手一縱一橫,揲之以三而數,用其扐,然後一時之吉凶,從違休咎,禍福,立可見者"。這個占卜,在材料及形式,並方法上,均與环珓不同。可以說與环珓全無關係。至於以後,在觀音籤裏會有靈杯圖。分环珓爲二十八首,和籤併爲一談,怕是較後的事。現在在福建福州一帶還流行着一種名爲"對"的占卜,董作賓"高湖一夜記"中有一段說:

"對,神案前有物名'對'。是一塊竹根削成橢圓形,再破爲兩半做成的。聽說是這爲抽籤時用的。抽籤時搖出一枝,先插入香爐中,然後雙手舉'對'默禱,向地下摔之,無論全俯或全仰,皆

不對,則取爐中篝這筒中,再搖而再摔之,若一俯一仰,就算'對'了,也就是這支簽對了,然後看簽文來定凶吉"(孟姜女,第一卷,第一號,二十六年一月)。

又此次隨本院與中央博物院合組的四川民族調查團工作的趙至誠君,在本年二月二日自雷波縣來函中稱:"自屏山縣往雷波縣路過黃廊時,見有一老者用枯竹筍三枚,自筍之中間切開,成爲六个半個。擲地上,卜吉凶"。趙君並請老者將卜法詳細寫出,想不久卽可寄來。但就趙君書中所云,似亦爲环珓卜之一種。又鼎新民:廣東北猺山雜記(本所集刊第二本,第四分)掃墓節下:"見一赤足巫者,身著青色巫服,頭戴球冠,在墓前喃喃咒語,地上木卦一對,用辨吉凶。又廣西猺山雜記(本所集刊第四本第一分)迷信節下稱:"板猺信巫教,凡行巫教者,皆備有巫書,神像,竹兜卦,鐵劍等類……"。所云"木卦","竹兜卦",當亦爲环珓。

III 但蛤卜是否可以與貝卜混爲一談?摩梭用的是貝,貝殼是不能分爲兩半的,只能一面人工去磨平,一面存其本來樣子,但"觀其俯仰,以斷休咎"却是相同。蛤,蚌,貝,均是屬於貝殼類,至少在與用此類物爲占卜的,正如同有用鹿骨,有用羊骨,有用牛骨,有用龜甲去占卜,其觀念及方法之要點是相同的,雖然其所用的介物僅相似而不盡同。此種介物之不盡相同,是爲環境所限制的。

據以上的討論,我們可以說,环珓是濮族名貝殼類占卜的一種術語。摩些的貝卜爲环珓之一種,由於摩梭有以木製貝形之木貝卜,可以看出环珓之初用蛤殼,蚌殼,後來改用木竹之演變的說法是對的。环珓與筮筭無關係。环珓與籤的合併是晚近的事。

現在我們再往下說貝卜審兆定吉凶的有無標準的問題。程大昌說环珓"觀其俯仰,以定吉凶,"而未說出其俯仰究以何爲吉。宗懍荆楚歲時記說"教",半俯半仰爲吉。董作賓"對",則云有籤書,半俯半仰始得查籤書。現在我們看看摩梭族的貝卜有無標準。今我仍用在分析羊骨卜審兆的方法,卽是將卜書上所陳的兆象之斷詞,分爲上(吉)中(中常)下(凶)三類。今據所獲的兩本貝卜書,一本是兩貝卜,一本是十三貝卜,列表分析如下:

兩 把 卜 兆 象 分 析 表

次數	卜 把 象 一	象 二	象 三	兆繞例	訴訟	排紛	疾病 繞例	犯中	祀天	祀神	祭祖	驅鬼	招魂	誦經	服藥	祀星	普通 祀天	祀神	祭祖	耕種	伐木	收獲	出門	貿易	行人歸期	生育	尋失	報仇
1	○○	○○	○○	下	下	上		土煞 失魂					上				上	上						下				
2	●●	●●	●●	下	下			土煞															下				下	
3	●○	●○	●○	上				蠱							上					上							上	
4	○○	●○	●○	下	下			土煞 水魅																				
5	○○	●○	●●	上															上				上	下				
6	○○	○○	●●	下	下							蛀鬼 水魅																
7	●●	●○	○○	上			下													上				下				
8	●○	○○	●○	上	中		上	土煞	上			鬼 鬼	上									上						
9	●○	●●	○○	中	上	上		土煞 水神										上						下				

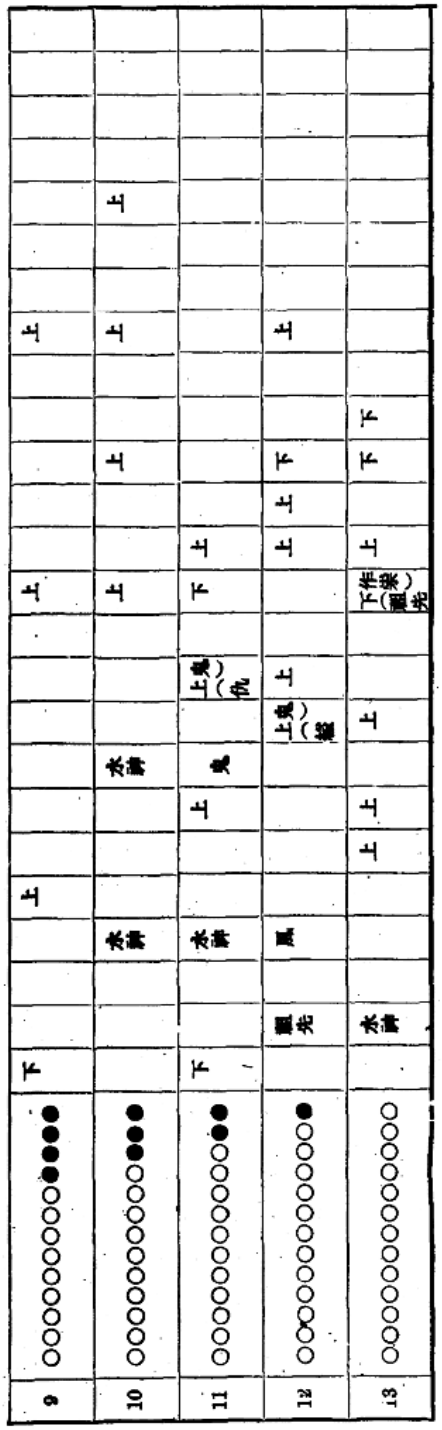
兩肥卜兆象分析表（續）

次數	肥象	兆纔列	訴訟	排紛	疾病：纔例	疾病：犯中	疾病：祀天	疾病：祀神	疾病：祭祖	疾病：禳鬼	疾病：招魂	疾病：誦經	疾病：服藥	疾病：祀星	普通：祀天	普通：祀神	普通：祭祖	耕種	伐木	畋獵	出門	貿易	行人歸期	生育	尋失	報仇
10	●○ ●○ ●●	上	上				上																			
11	●○ ○○ ●●	下	下				上方之神（東）															下			下	
12	●○ ○○ ○○		下			土煞		上														上		上		
13	○○ ●● ●○	上	下			縊鬼														上						
14	●● ●● ●○	上	上			水神				蛇鬼																
15	○○ ○○ ●○	上	上		上	土煞																				
16	●○ ●● ●●	上	下			土煞												上		下						
17	●● ●○ ●●	上	上							上								上		上		上				
18	●● ●● ○○		下									上						上								

19	●●	○○	●●		下						上			上															
20	●●	○○	○○		上				上															下					
21	●●	●○	●○	上	上								土煞蛇鬼																
22	●●	●●	●○					土煞													上								
23	●○	●○	○○		中		下	土煞																下					
24	●○	○○	●●	上				土煞		上						上(星)							上	上					
25	○○	●○	○○	上				土煞													下	上		下					
26	○○	●●	●●	下	下																						上	下	
27	○○	●●	○○	中						上(神)		上(鍾鬼)	鬼鬼(鬼										上						
28	●○	●●	●○	上				土煞	神	上		鬼													上				

表析分象兆卜肥三十

次數	卜肥 事象	疾病						普通					家常	排紛	訴訟	出門	貿易	行人歸期	尋失	解仇	報仇	行竊切	人遇 吉	人遇 凶	物遇 吉	物遇 凶
		魂判	作祟	宜建	祀神	祭祖	招魂	唸經	祀神	禱鬼	壓魔	解祓														
1	○●●●●●●●●●●●	中	黑麻布鬼														上		上		下					生大小蛋黑鐵，鷄
2	○○●●●●●●●●●●								上									上			上		白頭之人			
3	○○○●●●●●●●●●		美二女之		水神								上				上		下		下					
4	○○○○●●●●●●●●		鬼				上						下			上			上		下					
5	○○○○○●●●●●●●	下	衣親戚之白	替生道場							上		下						下	上						黃金白銀虎皮豹皮
6	○○○○○○●●●●●●	女人，白物，食	紅肉者作祟，					水神		上							上			下						
7	○○○○○○○●●●●●	下	婦，鬼賣物之	場替生道				下			上		上		下	下	下									
8	○○○○○○○○●●●●						上			上（經鬼）																銅鐵器老人取



我們從這個表上,看不出兆象與吉凶的關係來,即是說無有客觀的標準。 簡言之,卜書就是標準。 兩胛卜中,11號與24號,14號與22號相同,而釋詞則異,想是原文本來有錯。

按作者手頭所有的關於占卜的西文書籍,沒有找到有其他民族用胛或蚌蛤之類作占卜介物的記載(約憶非洲黑人有胛卜,見載某書,忘其名。)所以關於胛卜的比較研究,暫時只能不談。但"胛"在文化人類學上是個極好的材料,牠有許多重要的問題,如貝幣,貝飾等等。 這也只好將來再討論了。

一九三七年四月於南京

附圖一　漢武梁祠石室伏羲畫像

（翻攝清錢塘黃氏摹刻唐搨本，參看本文頁178及註(2)，(3)，又頁193至194。）

附圖二　隋高昌故址阿斯塔那墓室人獸蛇身圖

（翻攝英人史坦因氏亞洲腹地考古記附圖SIX，參看本文頁178註（2），及頁193至194。）

苗族的洪水故事與伏羲女媧的傳說

芮逸夫

（一）前　言
（二）四個湘西苗族的洪水故事
（三）洪水故事中的兄妹二人與伏羲女媧
（四）伏羲女媧之族屬的推測
（五）餘　論
徐中舒先生跋
後　記

（一）前言

民國二十二年春夏間，我隨凌純聲先生等同赴湘黔邊境考察苗族。於五月一日由京出發，溯江西上，經由武漢、長沙，轉至常德、桃源，再溯沅江西進；至瀘溪的浦市，舍舟登陸，改乘肩輿，直達湘西的鳳凰。在鳳凰、乾城、永綏三縣邊境，實地考察苗人的生活狀況及社會情形（黔東的銅仁與松桃兩縣境地，本也在原定考察範圍之內，惜因戰事，未能前往），日夕與苗人相處，工作了五十餘日。迄八月一日返來，爲時適足三月。

我們初到鳳凰，因前鳳乾麻三縣聯立師範學校校長石宏規先生的介紹，請得曾在該校畢業的苗學生吳良佐（鳳凰北鄉邦珍地方苗人）與吳文祥（鳳凰東鄉都良田地方苗人）兩君爲繙譯，並

金博導。後到乾城,又因該縣縣長田耀六先生的介紹,得識曾在長沙湖南華治法政學校畢業的苗人石啓貴君(乾城北鄉仙鎮營人)。迨後回到鳳凰工作,就寫信把他請來。因此,我們得與苗人日夕聚首,鑿談他們的上下古今。在他們講述的故事中,最令我感興趣,且在我腦海中留下深刻印象的,就是洪水故事。

返京後越一年,又接得他們寄來一些歌謠材料,發現其中有兩首,也是講的洪水故事。因此引起我回憶到當初親聽苗人講述的洪水故事,同時且引起我把它當作專題研究的興趣。適承傅孟眞先生命爲本所集刊撰文,當時卽擬將所獲材料整理成篇。嗣因從事人體測量及搜集手紋材料工作;去年秋間又因參加中英會勘滇緬南段界務而有雲南之行。迄未報命,彌覺愧歉。

今夏由滇返來,又承吳均一先生爲本所同人講習會徵集講演之命;因將舊集材料略加參研,草成講稿;藉便提供討論,而求本所諸位導師及同仁的教正。原稿涉及苗族的一種"還儺願"的禮俗,故題爲苗族的洪水故事與儺神崇拜。現因關於"儺神崇拜"部份,承梁思永先生的指示,尙待研究,而凌純聲先生也以爲可析爲兩題;故將洪水部份先行錄出,並改題如上。所見必不免有牽合及未到之處;幸世之博雅,有以敎之!

二五,一二,二五夜。

(二) 四個湘西苗族的洪水故事

在湘西考察苗族時,我們所聽到的洪水故事有二:一個是在乾城時聽鳳凰東鄉苗人吳文祥君講述的,一個是返至鳳凰時聽該縣北鄉苗人吳良佐君講述的。我現在且把那兩個故事分別轉述如下:

(一) 吳文祥講述的洪水故事(下文引述,簡稱祥述故事):

古時有一個苗人名叫 [aɣ pʻəɤɻ koɣ pʻeiɣ](1), 年五十,父逝已久,僅有老母尚在,年已七十餘歲了,不幸染了重病;求神服藥,都不見效。一日,他的母親說道:"我的壽命將終,恐不能有救了!"他聽了,大哭不止。母親止住道:"我兒要母病癒,只有一法:若得天上雷公[koɣ ɤoɻ] 的心來吞服,便可痊癒;不然,命在旦夕,母子就將永別了!"他聽罷,滿心歡喜,忻然對母親道:"母親放心,待兒設法取雷公的心來給你服就是。"他便一面煮了許多米飯,一面叫人去到山上剝得許多椿樹皮,蓋在瓦上;蓋好之後,就將煮成的飯撒在汚穢之處。即刻陰霾四佈,大雨驟至;忽然霹靂一聲,雷公從屋頂上跌落在地。[aɣ pʻəɤɻ koɣ pʻeiɣ] 就雙手把雷公捉住,用繩綁縛在屋柱上。他知道雷公最怕的是鹽,就要去買鹽來醃死雷公。臨出門的時候囑咐家人道:"我去買鹽,如雷公要討什麼東西,切不可給!"說罷,去了。

雷公待[aɣ pʻəɤɻ koɣ pʻeiɣ]去後,就向看守的人討火;不給,又討浸過水的火子;看守人以爲火既浸水,不可再用,就給了一個。雷公取來吹了幾下,忽然現出紅火;他就轟隆一聲,上天去了。於是大發雷霆,雨下如注。那時[aɣ pʻəɤɻ koɣ pʻeiɣ]買鹽回家,正走到半路;忽聞雷聲,知道雷公已經脫逃;一時怒不可遏。但大雨如注,欲歸不得。適見道旁有大樹一株,隨手一折而斷,拿在手中,打雨而行。雷公無法,就用洪水淹他;因此天天不斷的下雨,下得世上成了一片汪洋。

有兄妹二人,先見大雨不止,知道大禍將至;取黃瓜種數粒,清晨到園裏播種,即刻發芽,及午開花,等到天晚,已結成兩個大瓜。二人歡喜;各取一個,提回家中。那時水勢高漲,將及住處;兄妹倆便各將瓜剖開,挖空瓜子,使浮在水面;然後爬入瓜中,隨水漂流。

[aɣ pʻəɤɻ koɣ pʻeiɣ] 因見大雨連下數十日,到處洪水滔天;他

(1) 這括入方括弧[ ]內的乃是用國際音標所記的音,其記聲調之符號則係趙元任先生式,以下倣此。但列表時,方括弧從省。

就乘樹浮游,要到天上去找雷公,取他的心。那知雷公早已遠避,所以到了天上,還是不見雷公,只見遺下鐵棍兩根。他就取來,到處亂打亂撥;打一下水,成一江河,撥一下土,成一山陵。因此,地上才有山陵江河之分。後來洪水下注,漸漸現出陸地。

那時兄妹二人也已漂落地面,因見世上無人,妹擬與兄結婚,以傳人類;便對兄道:"現在世上只賸你我兄妹二人,不若兄妹婚配,以免人類絕種。"

兄驚訝道:"兄妹婚配,有違天意,萬難依從。"妹便心生一計,忙對兄道:"你既不肯,我們且看天意如何。今將磨子一副,從山巔滾下;如到山麓合在一起,你我卽應順從天意,結爲夫妻。"兄想磨從山巔滾下,決無再合之理,便卽應允。妹却另取一副磨子,預先擺在山麓。然後邀兄各抱一面磨子走上山巔,二人向天拜禱既畢,便將磨子滾下;待到山麓觀看,果見磨子合在一起。但兄仍執意不肯與妹結婚。妹又生一計,對兄說道:"一次既不肯信,再看二次。今我二人可到山坡,同在一處出發,一向東走,一向西走,走時各不偸眼窺看,若又在一處相遇,就可知道天意有定,你我再行婚配。"兄只得又應允了。二人卽刻去到山腰,同在一處地方,分向東西走去。兄只知俯首前進,妹却常常偸眼窺看;走了許久,二人果又相遇。兄羞得滿面通紅,只得與妹配婚。不久生了一個肉塊,無頭無腦又無足;二人就用刀剖割拋棄,每拋一塊,必叫一聲,叫的是什麽聲音,就是什麽姓,所以有吳、龍、石、麻諸姓;到了最後一塊,叫聲無用,把它撂去,就成廖姓。兄妹二人割到天晚,回家就睡覺,到明晨起來一看,只見昨天拋棄肉塊的地方,都有了人。問他們時,都不知來自何處。後經兄妹備說出來由,才都知道。因此世人奉祀爲神,就是現在"還儺願"時奉祀的儺公儺母。

(二) 吳良佐講述的洪水故事(以下引述,簡稱佐述故事):

雷,苗名[koɣ soɣ],與[koɣ peŋɣ]是很好的朋友。他們是時常

來往的。有一天,[koɴ soɴ] 到 [koɴ peŋɴ] 的家裏來;[koɴ peŋɴ] 整備酒飯給他吃,吃完了,[koɴ soɴ] 道:"我平素最恨生長在雞屎上的菜,所以絕不吃的。" [koɴ peŋɴ] 答稱"是是。" 沒有多久,[koɴ soɴ] 又到 [koɴ peŋɴ] 家來了。[koɴ peŋɴ] 就悄悄的吩咐他的兒女專摘取生長在雞屎上的菜來,請 [koɴ soɴ] 同吃;吃完之後,才對他說道:"你說最恨的菜,今天我們已經吃了!" [koɴ soɴ] 聽了,氣忿已極,惡狠狠的說道:"我必定要劈死你!" [koɴ peŋɴ] 問道:"你要劈我,從什麼地方走來?"我從屋頂上來;在某日某時,你可要當心!" 答罷,去了。

[koɴ soɴ] 去後,[koɴ peŋɴ] 就將椿樹(苗名 [ndua tɕiɛ kəŋ]) 的皮剝來蓋在屋頂。到了某日某時,[koɴ soɴ] 果然來了。椿樹皮乃是極滑的;[koɴ soɴ] 踏在屋頂,便覺身不由主,滑跌一交,滾下地來。[koɴ peŋɴ] 就把他捉住,先罩在大鍋內,後又關在鐵倉裏面,不給飲食。他知道[koɴ soɴ]最怕的是鹽,所以要去買鹽來醃死他。臨去的時候吩咐他的子女道:"我去之後,若 [koɴ soɴ] 需要什麼;切不可給! 吩咐已畢,買鹽去了。

[koɴ peŋɴ] 去後,[koɴ soɴ] 果向他的子女要水要火。先時,子女一些也不給,後來 [koɴ soɴ] 再三的懇求,才給他一些已熄滅的火子與餿豬的臭水。不料他得了火子用力就吹,竟給他吹起火來;不一刻,雷聲隆隆,大雨驟至;他便破鐵倉而出,隨即去找尋 [koɴ peŋɴ]。

那時 [koɴ peŋɴ] 走在途中,聽得雷聲,又見大雨,知是 [koɴ soɴ] 脫逃,心裏十分着急。忽見 [koɴ soɴ] 趕來,自覺不能抵抗,乃匿身在道旁的牛屎堆裏。迨 [koɴ soɴ] 趕到,不見了 [koɴ peŋɴ],只見道旁有一牛屎堆;他便手使戈矛,用力刺去,誰知無意中刺中了 [koɴ peŋɴ] 的脚。[koɴ peŋɴ] 俟他去後,便負痛回家;不久就死了。

[koɴ soɴ] 追尋 [koɴ puŋɴ] 不得,忿怒異常,一時就打起大雷,下起大雨;一連七日七夜,下得洪水滔天。幸得太白金星送給 [koɴ

peŋ˥]的子女一個葫蘆種子;他們把那種子寅時種下,卯時長成,當日就結成一個大葫蘆,如船般大。洪水漲時,他們兄妹倆同入葫蘆避水,遂得不死。後來上帝降旨,止住洪水,兄妹二人降落地面。當時人類都已被水淹死,金魚老道乃撮合兄妹二人配成夫婦,遂得遺傳人類。這兄妹二人,就是現在"還儺願"的時候奉祀的儺公儺母。

我們返京後接得他們所寄關於洪水故事的兩個歌謠,一個就是吳良佐君鈔寄的,另一個是乾城苗人石啓貴君鈔寄的。我再把這兩個歌謠轉錄如下:

(三) 吳良佐鈔寄的儺公儺母歌:(1)

李王娶婦顏氏女,成婚多年不懷孕;太白金星賜八豆,一口吃下生八人。後園裏面有桃樹,桃樹脚下出妖精;玉帝差遣雷公將,差來地下收妖精。霹靂一聲驚天地,扯捉張良八個人;却被張良來動手,拿住雷公難脫身。上帝玉皇心大怒,七日七夜雨霖霖;只因洪水漲天界,淹死盤古一朝人。寅時種瓜卯時生,辰時瓜長上牽藤;一刀剖開是葫蘆,兄妹二人去藏身。只留伏羲兩兄妹,葫蘆裏面藏了身;上擺天來下擺地,擺到天界南海門。葫蘆擺到天門上,驚動玉皇大帝身;上帝玉皇聞知道,急問兩班文武臣。若是他是凡間子,拿去妖公問罪名。葫蘆裏面忙答應,我是凡間有靈人。張長手來李長脚,打脫雷公上天廷。掌牢天井忙不住,開了南方河海門。後來洪水都消了,葫蘆走出一雙人;只因天下人民絕,嶽王與妹要配婚。心中思想無計較,去到靈山把香焚;你到東山去燒香,我去南山把香焚。若是香煙來結圓,妹妹與你結爲婚。禱告蒼天齊發火,兩邊香煙結一圓。看見香煙快結圓,妹妹急忙躲藏身。伏羲看見妹妹走,隨後追趕不稍停。伏羲行到中途上,

(1) 歌詞原文,除用字措辭顯然有錯誤者予以改正外,其他意義不明及費解之處,均仍其舊。

巧遇金龜老道人;金龜開言從實講,西眉山上去藏身。伏羲聽得這句話,急忙前往尋妹身;果然尋見妹妹面,松樹脚下拜爲婚。妹妹開言問兄道:"誰人報告你眞情?"伏羲從實回言答:"金龜老道報得眞。"後生一個肉胞胎,無頭無腦不分明。伏羲禱告天和地,將刀剖開看分明。見有十二壹男子,又有十二壹女人;就把兒女安名字,置了百家姓人名。當初水漫人民絕,正是皇王初起根;若無皇王來起奏,萬國九洲少人民。自從我皇起立世,安定乾坤治人民;如今世上人供養,供養我皇爲祖神。

(四) 石啓貴鈔寄的儺神起源歌:(1)

講古事來要最古,說新聞來要最新;黃帝以後我不講,單唱初民一段情。古時到處荒涼土,四面八方沒有人;天上禾聳管世界,地下禾璧創乾坤。禾璧是人名和姓,禾聳就是雷公名;一在天上一在地,彼此不睦懷恨深。各顯妙法圖報復,要達目的快其心;雷公降下三年雪,禾璧雪上露赤身。雷公又晴三年久,禾璧鑽火還說冷;因是雷公不服勁,要用斧劈他原身。禾璧知道其中意,忙用滑皮蓋屋頂;假說要落三天雨,才能劈着他原身。那知滑皮被雨濕,光滑難踹會滾人;雷公閃火降下地,踹着屋頂滾地坪。就被禾璧來動手,關在倉內難脫身;預備用鹽來醃滅,急往商店去找尋。趁着禾璧商店去,雷公閃光鬧沉沉;禾璧子女親眼見,即到倉邊看個眞。雷公一見開言道:"要火要水是眞情。"二人那知其中意,急忙轉步就去尋。水火二人都送到,雷公吩咐聽原因:"賜你兩顆仙瓜種,好好保存放在身。後遇狂風下大雨,忙把仙瓜種完成;若是洪水滔滔漲,可到瓜內去藏身。"說罷一聲火光閃,斧劈倉破脫了身;一朵黑雲化身去,即時天上顯威靈。禾璧走到中途上,知道雷公脫了身;雙手拍胸一聲嘆:"這番冤恨雪不成。"雷公騰雲空中望,看見禾璧路上行;因知禾璧好妙法,徘徊天空不敢搶。道

(1) 看前頁註。

旁有樹大三圍,禾璧一見巧計生;一手將樹來折斷,拿起樹榦打水行。雷公一見無辦法,才用洪水淹他身;忙使鰲魚來塞海,五湖海水不流行。卽起狂風並暴雨,七日七夜雨霖霖;洪水因此滔滔漲,一時漲起到天門。世上之人無處躲,男女老少命歸陰。兄妹記得雷公話,就把仙瓜種完成。先將瓜種撒下地,卽時發芽就牽藤;開花結果來得快,結成大瓜空中心。兄妹二人瓜內躲,漂漂蕩蕩到天門。雷公爐內去打鐵,打成快箭四五根。盤古把箭拿在手,分別放射海水門;一箭射出退海水,二箭射出現山林。五湖四海射五箭,齊天洪水就消盡。兄妹雙雙出仙瓜,但見世上沒有人。山林不聞鳥獸叫,平地不見人畜行;豬羊牛馬都絕跡,遍地荒涼冷清清。妹妹心憂無計較,哥哥忽然巧計生;他想若要留人種,惟有兄妹配成婚。想罷卽忙開言道:"妹妹聽兄說原因:依禮說來原不該,兄妹本是同根生。但因世上沒有人,且變禮法來配婚。"小妹聽說回言答:"哥哥在上且請聽:你我同娘共母養,不是別姓外來人;要我與你成婚配,此事斷乎不可行。"哥哥聽罷回言道:"小妹側耳再細聽:你說同娘共母養,話不虛傳果是眞。並非世上人多衆,到處求婚都可行;如今只剩你我倆,此外無人可配婚。不如與我來婚配,免得日後絕人根。"小妹聽了回言道:"哥哥聽妹說分明:二人園裏去剖竹,將竹剖開兩片分;各取一片上山頂,由頂把竹往下扔。如果兩片合一起,兄妹就該結成婚。"那知哥哥心計巧,先把竹片合端正。二人上山扔竹片,再到山下看分明;下去一看竹果合,小妹無言嘆一聲。左思右想出妙計:"再把磨子看分明;如果磨子又合起,自應與你結爲婚。你我抬磨上山去,各把一面往下扔;扔下磨子再去看,看它合成合不成?"那知哥哥多巧計,早把磨子先合成;待把磨子扔山下,一看自然又合成。小妹看了無言答,預備逃走不成婚;妹妹急忙往前走,哥哥追妹隨後行。趕了三天三夜半,肚餓一刻不留停;用盡平生好氣力;只見行跡難近

身。趕至一條狹道路,妹妹遇獅忙轉身;哥哥一見回身轉,急忙道上把妹迎。雙手將妹來抱住,青天白日結成婚。成婚一年生一子,詎料這子是怪人。四肢形同人模樣,是男是女分不清;忙將此子用刀劃,一人拿做百塊分。全身四體割完了,分別拋棄在山林。一塊放在堂屋內,封做吳姓掌乾坤。一塊放在龍山地,才有龍姓一脈人。一塊放在石頭上,叫做石姓不差分。一塊放在蔴園地,把他喊成蔴姓人。最後一塊無拋處,將它撂在地埃塵;後來變人就姓廖,從此才有百家姓。明晨四處煙火起,黃河流域盡是人。後來子孫多發達,家財萬貫斗量金。禾璧原是先世祖,兄妹就是他親生。"禾"字取義同"苗"字,如今才有這苗名;五姓吳、龍、石、麻、廖,算是世上先來人。如今世上人多廣,二皇究是原始人;世人因此多信仰,年年秋後要敬神。幾句來源略表過,事屬實在又合情。歌言唱到這裏止,馬上收場歇住聲。

以上四個故事,前兩個是在湘西一帶苗人中常可聽到的傳說,後兩個是他們在舉行一種"還儺願"的禮俗時唱的歌。苗人的"還儺願",大概是由傜做漢俗而來(1),所以唱的歌詞很多漢化;如儺公儺母歌中的"玉帝、""玉皇上帝、""嶽王、"李王、顏氏、百家姓、"萬國九洲"等等,儺神起源歌中的黃帝、盤古、百家姓、黃河流域,及苗姓來源,"禾"字取義的解釋等等。這些都是因爲漢苗同化後隨時隨地添上去的枝葉細節,與故事的"母題(motif)"無損。我們知道,有許多歌謠傳說或故事都是大同小異的。大同的地方是它們的"母題,"小異的地方是隨時隨地添上去的枝葉細節。往往有一個"母題,"經過許多人輾轉的傳說或歌唱,傳播到各地,因爲隨時隨地的改變,變到末了,幾乎句句變了;但是無論如何改變,只要我們能把這些歌謠,傳說或故事比較着看,剝去枝葉,仍舊可以看出它們原來同出於一

(1) 關於此種禮俗的傳播問題,作者將別有專文討論;本文限於篇幅,不能詳及。

個"母題"(1)。所以要研究上述的四個故事,首先要剝去枝葉細節,再拿來互相比較,而後可以看出它們的"母題"是什麽。爲便於比較研究起見,我們且把那四個故事中的中心人物及重要情節列成一表如下:

故事 / 情節	祥述故事	佐述故事	儺公儺母歌	儺神起源歌
兄(儺公)		koˬ Peŋˬ 的兒子	伏羲	禾璧的兒子
妹(儺母)		koˬ peŋˬ 的女兒		禾璧的女兒
雷公	koˬ soˏ	koˬ soˏ	koˬ soˏ	禾嬖
雷敵(2)	aˬ p'əɤˏ koˬ p'eiˬ	koˬ peŋˬ	張良(?)	禾璧
洪水	雷公怒發洪水數十日	雷公怒發洪水七日七夜	玉皇上帝怒發洪水七日七夜	雷公怒發洪水七日七夜
避水	兄妹各入黃瓜避洪水	兄妹共入葫蘆避洪水	兄妹共入葫蘆避洪水	兄妹共入仙瓜避洪水
配偶	扔磨子,東西分走	金魚老道撮合成婚	分赴東山南山焚香·香煙結團	扔竹片,扔磨子
傳人	生下肉塊,劃棄變人	未詳	生下肉塊,劃開後發見十二童男童女	生下怪胎,劃棄變人

由上表看來,四個故事中的人物和情節顯然有許多地方是各不相同;但是仔細比察,就可知道它們大體是相同的。我們先從那幾個人名上來比較着看。第一,兄妹二人,只是儺公儺母歌提及兄名伏羲,在其他三個故事中都沒有提及,無從比較,且待下文引述他處苗族的洪水故事時再說。

第二,雷公在祥述與佐述故事中都稱 [koˬ soˏ],但在儺神起源歌却稱禾嬖。按"雷",苗名 [soˏ](鳳凰苗方音),或 [soŋˬ](乾城苗方音);前者就是祥述與佐述故事中 [koˬ soˏ] 的 [soˏ],後者就是儺神起源歌中禾嬖的"嬖"("嬖"就是 [soŋˬ] 的譯音)。[koˬ] 是苗語中置於具體名詞前的一種"字頭(prefix)",並沒有一定的意義。這是苗猺語系中共有的,顏復禮商承祖合著的廣西凌雲猺人調查報告稱之

(1) 語本胡適之先生;參看胡氏歌謠的比較的研究法的一個例一文,見胡適文存二集卷四,頁三〇九;上海亞東圖書館,民十三年初版

(2) 這是故事中抵抗雷公的人物,因他與雷公匹敵,並爲便於稱述故作"雷敵"。

爲"附屬字"。這個字頭或附屬字在鳳凰苗人多數讀作[koɴ],而在乾城苗人則讀作[oɴ];鈔寄雛神起源歌的石啓貴是乾城苗人,所以他用漢字譯音作"禾"(湘西鳳凰乾城一帶漢方音通讀作[oɴ])。祥述故事的講述人吳文祥與佐述故事的講述人吳良佐都是鳳凰苗人,所以他們都讀作[koɴ]。這個[koɴ]就是苗防備覽風俗考所記苗語:"呼民曰'果乍',呼苗曰'果雄'"的"果"字("果"就是[koɴ]的譯音)。苗語"乍",義卽漢人;"雄",義卽苗人自稱。"果"就是"乍"與"雄"的字頭。可見[koɴ soɴ]與禾聳,實在是一語的異讀,意義同是"雷公"。

第三,雷歟在祥述故事叫[aɴ p'əɤɴ koɴ p'eiɴ],在佐述故事叫[koɴ peŋɴ],在雛神起源歌叫禾璧。[aɴ p'əɤɴ koɴ p'eiɴ]的[aɴ p'əɤɴ],苗語爲"祖父"之義;就是苗防備覽風俗考、永綏廳志、乾州廳志所記"呼祖曰阿譜"的"阿譜"(當係[aɴ p'əɤɴ]的譯音)。[koɴ p'eiɴ]與[koɴ peŋɴ]的[koɴ]和上述[koɴ soɴ]的[koɴ]相同,禾璧的"禾"與禾聳的"禾"也相同,都是字頭;上文已有解釋,此處不再說了。禾璧的"璧",湘西一帶漢方音通讀作[pieɴ],與[koɴ p'eiɴ]的[p'eiɴ]除去"吐氣(aspiration)"及[koɴ peŋɴ]的[peŋɴ]除去"鼻音聲尾"(nasal auslaut)的音很相近。按苗語中聲母的吐氣與不吐氣及元音的帶不帶鼻音聲尾,常常有交互轉變的現象。如上述的"雷",鳳凰苗語爲[soɴ],乾城苗語爲[soŋɴ],後者帶鼻音聲尾,前者不帶。又日人鳥居龍藏所記貴州安順花苗語"天"爲(dō),"金"爲(kō);青岩花苗語"天"變爲(don),"金"變爲(kon);而安順花苗語"人"爲(mún),"銅"爲(ton);青岩花苗語"人"變爲(mu),"銅"變爲(to)(1)。前者元音由不帶鼻音聲尾而變爲帶鼻音聲尾,後者由帶鼻音聲尾而變爲不帶。又如"女"(包括女子、婦女、女孩或女兒諸義),鳳凰苗語爲[mp'aɴ],乾城苗語爲[mbaɴ];

(1) 看鳥居龍藏的苗族調查報告國立編譯館譯本頁一五六至一七〇(安順花苗單語)及頁一七〇至一八二(青岩花苗單語);上海商務書館,民二五年初版。

前者聲母[p]吐氣,後者不吐氣。又據法人德弗洛爾氏(De Fleurelle)所記貴州歸化廳(今紫雲縣)苗語"炭"爲(ka tieh),"蒔秧"爲(tsi lai)(1);而據勒巴齊氏(Lepage)所記該處黑苗語"炭"變爲(ka t'ie),"蒔秧"變爲(ts'i le)(2)。前者聲母(t)與(ts)均不吐氣,後者並變爲吐氣。由這些例子上,我們可以看出[p'eiɴ][pieɴ]及[peŋɴ],實在都是一音之轉。苗語[pieɴ](乾城苗方音)或[peiɴ](鳳凰苗方音)爲"頭"之義。乾州廳志云:"頭曰多比","比"音與[pieɴ]相近;苗防備覽風俗考及永綏廳志並云:"呼頭曰多北","北"音與[peiɴ]也很相近。所以"比"就是[pieɴ],"北"就是[p'eiɴ],同爲"頭"字之義,而"多"同爲字頭。由這個有"頭"字意義的[pieɴ]或[peiɴ],又引伸而爲"始","初"之義。如乾城的苗人稱一月的第一日爲[oɴ pieɴ lhaɲ],[lhaɲ]爲"月",[pieɴ]爲"初",[oɴ]是字頭,就是"月初"之義。所以[koɴ p'eiɴ]的[p'eiɴ],[koɴ peŋɴ]的[peŋɴ]及禾璧的"璧",都是一語的異讀,同爲"始","初"之義。我們再把祥述故事中有"祖父"意義的[aɴ p'əɤɴ]連起來,卽成了"祖父始初"之義。苗語語法,形容詞是在名詞之後的(3),可見就是"始祖"之義了。

至於儺公儺母歌中的張良,當然不能從音變上去看,也決沒有"始祖"意義的可能。但從故事的情節上看,他是相當於其餘三個故事中的雷敵;或者就是禾璧、[koɴ peŋɴ]、[koɴ p'eiɴ]或[koɴ peiɴ]之誤,也很可能。因爲這個儺公儺母歌與儺神起源歌,根本就是受過漢人教育的苗人根據原有傳說用漢語歌唱的。傳唱儺公儺母歌的苗人也許記不起原來的人名,便任意拉上一個中國歷史上的或民

(1) 看D'Ollone: "Langues des peuples non chinois de la Chine", pp. 24—187; Vocabulaires, 6, Paris, 1912.

(2) 看上引書; pp. 24—187, Vocabulaires, bis 6.

(3) 看 F. M. Savina: "Dictionnaire Miao-tseu Francais", p. XV, 見 Bulletin de l'ecole Francaise d'extrême orient, tome XVI, Hanoi, 1916.

間傳說中的人物如張良之類,再胡亂湊上幾個漢姓而妄稱李王,顏氏;那都是很可能的。苗人既受過漢人的教育,習聞漢族的歷史傳說,自然很容易把漢人傳會到苗人的故事中去。這正是崔東壁所謂"記憶失眞之彌縫(1),本屬事理之常,並不足怪,也不會損及故事的"母題"。所以我們很可不用做那苗族故事中的漢族人名來源的考證,而簡簡單單的認爲僸公僸母歌中的張良就是[koɴ p'eiɴ],[koɴ peŋɴ]或禾璧之誤,大概不致有錯。

以上我們考四個苗族故事中的人名,以下再從故事中的重要情節上來比較着看。

第一,兄妹二人在佐述故事及僸神起源歌都說是雷敵的子女,其餘兩個故事都沒有提及;他們同避水患在祥述故事是藏身黃瓜,佐述故事與僸公僸母歌是同入葫蘆,僸神起源歌是同入仙瓜;決定配偶的方法,在祥述故事是"扔磨子與"東西分走",佐述故事是"金魚老道撮合",僸公僸母歌是"分赴東山南山焚香",僸神起源歌是"扔竹片"與"扔磨子";結婚後的生育,在祥述故事與僸神起源歌是生下肉塊,割裂拋棄,變化爲人,僸公僸母歌是生下肉胎,剖開後見十二壹男及十二壹女,佐述故事未詳。

第二,雷公在祥述故事是被[aɴ p'əʁɴ koɴ p'eiɴ]設計擒獲,要取心治母病;在佐述故事中,[koɴ peŋɴ]與[koɴ soɴ]本是好友,因吃菜結仇,致遭擒獲;僸公僸母歌却說是雷公奉旨捉妖精;僸神起源歌又說是禾璧與禾登彼此不睦,各圖報復。

第三,洪水的發生,除在僸公僸母歌說是玉皇上帝因雷公遭擒,怒發洪水外,其餘三個故事都是說雷公始而遭擒,繼而脫逃,因欲報復而發洪水。

以上提出的一些情節,表面上看來似乎不同,其實都是由於輾轉的傳說,演變而來的。我們知道,傳說的生長,最初只有一個簡單

(1) 看清崔述:崔東壁遺書考信錄提要卷上。

的故事作中心的"母題";後來經過衆口的傳說敷演,這個故事便一天一天的改變面目(1)。或因傳聞異詞而曲全其解,或因語義失解而附會其說,或因記憶失眞而彌縫其詞,甚或買榮求益,雜糅多方面的傳說而增飾敷演;所以往往有一個"母題",會變成許多大同小異而內容錯綜複雜的故事或歌謠。我們且舉包公的傳說做個例:在宋史中只記包公知天長縣時,斷"盜割牛舌"一案;到元朝會變出十四本雜劇,都是記的包公斷獄的故事;到明清之際;又變出一部包公案,一名龍圖公案來;後來又演化而爲三俠五義或七俠五義(2)。諸如此類的例子,舉不勝舉。以此例彼,可見上文所述的湘西苗族的四個洪水故事,雖有許多情節不同之處,還只是小枝細葉的改變,在大體上仍舊可以說是相同的。所以我們可把那四個洪水故事當作一個看,把其中的中心人物與重要情節總結起來,只是下列的幾條:

(一) 人類的始祖設計擒住雷公,旋被脫逃。

(二) 雷公爲要報仇,就發洪水來淹人類的始祖。

(三) 世人盡被淹死,只留兄妹二人。

(四) 兄妹結爲夫婦,生下怪胎,剖割拋棄,變化爲人。

以上我們研究湘西苗族的四個洪水故事,可得一條結論:

這四個洪水故事的中心"母題",只是以爲"現代人類是由洪水遺民兄妹二人配偶遺傳下來的子孫。"

(三) 洪水故事中的兄妹二人與伏羲女媧

上文所述洪水故事中的兄妹二人,現在湘西的苗人都信奉爲儺神。每年秋後,請巫師,紮彩洞,舉行一種"還儺願"的禮俗以酬儺神,

(1) 參看胡適:三俠五義序;見胡適文存三集卷六,頁六八五至六八七;上海亞東圖書館,民十九年初版。

(2) 看上引書,頁六六三至六七〇。

而稱之爲"儺公儺母"。考"儺公儺母"之名,見於宋李淳秦中歲時記(1);大概苗人所謂"儺公儺母"是依託漢俗而來。我將別撰專文討論,此處不贅。現在所要討論的是儺公儺母歌中所唱的"只留伏羲二兄妹,……伏羲看見妹妹走,……伏羲行到中途上,……伏羲聽說這句話,……伏羲從實回言答,……伏羲祝告天和地,……";凡六提伏羲之名,可見不是偶然說兄妹二人的兄,名叫伏羲了。初時,我本也認爲是傳歌的苗人記憶失眞後的傅會之說。後與馬松玲先生談,知嗣猺纖志記苗人有祀伏羲女媧之俗。我把清陸次雲的原書翻來看,見他記苗人"報草"(恐係"報賽"之誤)之俗說:

苗人臘祭曰"報草",祭用巫,設女媧伏羲位。

又貝青喬苗俗記也說:

婦有子始告知聘夫,延師巫,結花樓,祀聖母。聖母者,女媧氏也。

看這兩段記載,可見苗人所奉祀的神,本非儺公儺母,而是伏羲女媧。伏羲女媧是傳疑中的中國古代帝皇(2),今乃見之於苗族的神話歌謠中,苗人且舉行一種宗教儀式以奉祀之。這不能使人不疑,所以我們不能不一考究竟。

我嘗讀日人鳥居龍藏的苗族調查報告,知貴州安順青苗也有兄妹配偶遺傳人類的神話。他記一青苗老人所述的故事如下:

太古之世,有兄妹二人,結爲夫婦,生一樹,是樹復生桃,楊等樹,各依其種類而附之以姓。桃樹姓"桃"名 Ché lá,楊樹姓"楊"名 Gai

(1) 秦中歲時記云:"歲除日道儺,皆作鬼神狀,內有二老兒,其名皆作儺公儺母"。

(2) 伏羲在易繫辭就說是王天下的,漢伏生也有"伏羲爲戲皇"之說,其後遂多以伏羲爲三皇之一。女媧也被一部份古史家列入三皇之一。參看顧頡剛楊向奎合著的三皇考一六及一九開章,燕京學報專號之八,北平哈佛燕京學社,民二五年出版。

yang, 桃楊等後分爲九種, 此九種互爲夫婦, 遂產生如今日所有之多數苗族。比九種之祖先卽 Munga chantai, Mun bān (花苗), Mun jan (青苗), Mun lō (黑苗), Mun lai (紅苗), Mun la'i (白苗), Mun ahália, M'man, Mun anju 是也。(用國立編譯館譯文, 見該館譯本頁四九。)

另一青苗老人所述略有不同, 說太古之世, 岩石破裂生一男一女, 結爲夫婦, 後生多數子孫, 形成今日的苗族 (見同上頁四八)。這兩個故事的情節雖各不同, 然在兄妹結爲夫婦, 遺傳人類的"母題"上看來, 與湘西苗族的四個故事大致是相同的。惟並沒有說到洪水, 更沒有提兄妹之名, 我們仍得不到比較材料。

又法人薩賚那氏 (F. M. Savina) 的苗族史 (Histoire des Miao) 也記一個相類的洪水故事, 我也譯錄如下:

有一次, 水漫世界, 漲到天上。

有兩對男女, 藏身鼓中, 以避水災。一對藏在鐵鼓內, 不久就沉沒了。另一對藏在很輕的木鼓內, 所以能浮到天上。在鼓內有各種穀類的種子。木鼓內的一對是姊弟二人。天神問他們爲什麼上天來。姊弟齊聲答道: "水已淹沒了全地面, 世界上已不能住人了!" 天神聽了此言, 立卽遣龍下界退水。在第五十天上水都退了, 鼓落地面。地上仍很潮濕, 好似鳥糞一般。有大鷹來到鼓邊, 用翅膀挾姊弟二人到一乾燥的高處。後大鷹在地上覓不到食物, 姊弟爲要報它的恩, 把皮肉餧它。各人給它三塊肉: 頭後, 腋下及腿彎各一塊。這是人類的腦後, 腋下及腿彎所以致凹的來源。

姊弟立卽到各地播種那帶在鼓內的各種種子。

弟尙年幼, 姊已長成。後來弟漸漸長成, 便向姊求婚。她以姊弟不能結婚的理由拒絕他。弟却說姊是世上唯一的女子。後來他們決意請求天意解決這個問題。起初是把磨子由山上

滾落地下,那兩片磨子合而不分。後又把針拋在空中,落地仍是連在一起。最後拋兩個錢幣,既不分散,也不落下。天意是顯然的決定了,因此他們姊弟倆就結了婚。

後生一個小孩,無頭無手也無脚,圓如一個雞卵。他們以爲小孩或許是在卵內,所以就把它切開。誰知裏面也沒有小孩;但見切下的肉塊落到地上就變成小孩。因此他們就把它儘量切成小塊。這樣世上才有無數的人,世上才有新的殖民。(見原書 pp. 245—246。)

這個故事,雖中心人物已經由兄妹變爲姊弟,但姊弟配偶,遺傳人類,在"母題"上仍可說是並沒有變。惟也沒有提姊弟之名,仍無從與伏羲女媧兩個名字比較。

又英人克拉克氏(Samuel R. Clarke)的中國西南夷地旅居記(Among the Tribes in South-west China)記有三個洪水故事:一個是黑苗的洪水歌,一個是鴉雀苗的洪水故事;這兩個是他親聽苗人講述的。還有一個是花苗的洪水故事,那是聽赫徵特氏(H. J. Hewitt)轉述的。我再一一譯錄如下:

赫徵特氏轉述的花苗洪水故事(下文引述,簡稱花苗故事):

一日,有兄弟二人同犁了一坵田,到次日去看時,只見犁過的田已經復原,且更平坦,就像沒有動過一樣。這樣經過四次,他們很奇怪,決定再犁一次,以便坐觀其變。等到半夜,見一老婦從天而降,手裏持一木板,先把田土撥使還原,再用板壓平。兄大聲喚弟,叫幫他把毀壞田土的老婦殺死。但弟的意思却要先問明這老婦,究竟爲什麼要來這樣惡作劇。所以他們就問那老婦,爲什麼要這樣使他們徒費辛苦。她告訴他們道:"洪水快要氾濫世界,犁田是沒有用的,不過徒費光陰罷了。"她並勸那弟弟預備一個大木鼓,以避水災;因爲他曾阻止他的哥哥殺她。他就砍一段樹,挖空中心,口上釘上一張皮。她又勸那哥哥做一個鐵鼓;因

爲他是要殺她的。洪水來時,兄弟二人各到他們的鼓裏安身去了。

當水漲時,弟弟請他的妹妹同到鼓內去避難,妹妹便跟他爬入鼓中。哥哥在鐵鼓內已爲水淹歿,弟妹在木鼓內則安然無恙。水勢高漲及於半天,弟妹二人在樹中也隨水升高;他們在水中流來流去,後爲天上神魔所見;神魔以爲是一個巨形動物,生着許許多多的角,因爲樹有許多枒枝。他很驚駭的說道:"我也不過有十二個角,這個東西有那麼許多,我怎麼辦呢?"因此它就招呼龍、蜥蜴、蝌蚪、鰻鱔前來清除河道,竄成孔穴,使洪水退去;這樣它才能脫離了這多角怪物。

由於龍等的盡力,在二十天之內水就退了。那挖空的樹落在一個很危險的山崖上。適有一隻母鷹在那裏造了一個窠,孵了兩隻雛鷹。兄妹二人見了,兄就在頭上拔取幾根頭髮編成小繩,把雛鷹的翅膀扣了起來;所以那雛鷹雖然長了毛羽,仍是不能飛行。

母鷹看見雛鷹到了該飛的時候還是不能飛,心裏非常奇怪,就去問神仙。神仙道:"你可去問那靠近你造窠地方的樹榦,它能告訴你的。不過你要報答它,把它帶到平地上去。"母鷹飛回窠中對樹榦道:"我求你讓我的雛鷹飛行。"樹內的人答道:"如果我讓他們飛了,你可能把我帶到平地嗎?"母鷹自然應允,樹內的人解了扣住雛鷹翅膀的髮繩,立卽能飛行了。於是母鷹就負了內藏兄妹二人的樹榦飛到地面。

兄妹二人走出了樹榦,覺得窘極了。沒有同伴,沒有火,也沒有食物。

哥哥見有一隻紅鳥銜一塊舊鐵,飛起來擊石,能生出火星。他們才發現取火的方法,就取了些乾柴生火取煖。

因爲世上沒有別人,哥哥要想和妹妹配成夫妻。妹妹不肯,

哥哥提議到山頂去扔磨子;待到山下去看時,磨已合在一起。後來妹妹又取一根針,哥哥又取一根線,扔至山下,待到山下一看,線又已穿在針上。因此就配成夫妻。後來生了一子,既沒有手又沒有足;他們去求問神仙,神仙教把它切成百塊,散棄百處。他們依照神仙的話實行之後,到次日早晨,所有的肉塊都已變成了人;這些人就以散棄肉塊落在地所有的東西爲姓氏,所以有水、木、石等姓。因此才有百家姓。這就是世上重有人類及其得姓的來源。(見原書 pp. 50—54。)

克拉克氏記述的黑苗洪水歌本事(下文引述,簡稱黑苗洪水歌):

A-F'o(卽雷)與A-Zie兄弟二人,因爭分財產不睦。雷居天上,A-Zie居地上。雷用洪水來毀滅陸地時,A-Zie就挖空一個大葫蘆藏身;同時搜集了幾千百種的種子,裝在另一個較小的葫蘆裏面。

後來地龍吞去了全部的水,山龍吞去了全部的霧,洪水退去,陸地重現。世上的人盡都淹死了,只留A-Zie兄妹二人(A-Zie的妹妹何以沒有淹死,歌中未說起);因此,A-Zie就向他的妹妹求婚。她以兄妹配偶是不正當的理由拒絕他。但A-Zie仍是固請不已,妹妹就獻議道:"我們各取一面磨子跑上山頂,把它們滾下去;如果到了山下,這磨子能合在一起,我就允許和你結婚。但若不能合在一起,我們可就不能結婚。"

A-Zie一想,這太不可靠了;但他心計乖巧,就另覓兩面磨子,先在山麓合好。他們滾下磨子,當然是不知去向了;但來到山下,哥哥就指給妹妹看,兩面磨子果是合在一起;遂又要求她和他結婚。但她仍不心服,還要試看天意。她說要把一個刀鞘放在山下,各取刀一把,跑上山頂扔下。如果雙刀入鞘,她才能和他結婚;否則,就不行。

A-Zie一想,這又是很不可靠的;他就另取雙刀,私自插入鞘中,預置山下。他們扔的兩把刀,當然又是不知去向的,但到山下,哥哥又指給妹妹看,雙刀果又入鞘。到了這時,妹妹就只得允許結婚了。後來生了一個小孩,但沒有手足。A-Zie大怒,用刀剖割成塊,散棄山間。明天早晨起來一看,這些肉塊都已變成人了。(見原書 pp.43—46。)

克拉克氏又記述貴陽南部鴉雀苗的洪水故事(以下引述,簡稱鴉雀苗故事),也是說洪水退後,只賸了兄妹二人,兄名"Bu-i",妹名"Ku-eh"。他們也是藏身在大葫蘆裏面。哥哥要求妹妹配婚,第一次也是到山頂上扔磨子,第二次不同,他們是把兩棵樹扔到山下,要都結果實,就可以結婚;只有一棵結果也不行。後來他們結婚了,生下兩個孩子,既不會哭,又沒有手足。他們也是把它切塊散棄,後來肉塊變成了人。(見原書 pp. 54—55。)

以上三個洪水故事中,花苗故事的前段很像猓玀的洪水故事(1),後段則與其他苗族故事大體相同。前月四川華西大學博物館主任美人葛維漢(David Crockett Graham)氏在金陵大學演講川南的苗子,所述洪水故事也和花苗故事的前段很相像。究竟是誰傳給誰,那是很難說的。至於黑苗洪水歌與鴉雀苗故事,除前者以兄妹的兄爲雷公之弟一點不同外,其餘情節十九與湘西苗族的洪水故事相同。可見這些洪水故事都是同出於一個"母題"的,所以也可以把它們當作一個故事看。

在這些洪水故事中,只有黑苗洪水歌說及兄妹二人的兄名叫"Zie"或"A-Zie",及鴉雀苗故事說及兄名"Bu-i",據克拉克氏說,苗人用漢語講述時則稱"Fu-hsi"(伏羲)(2),妹名"Ku-eh"。這幾個名字很重要,供給我們很好的比較材料。現在且把這兩個故事中

(1) 看 Paul Vial: "Les Lolos", pp. 8—9, Changhai, 1898.

(2) 看 S. R. Clarke: "Among the Tribes in Southwest China", p. 55, London, 1911.

所說的兄妹二人之名與僸公僸母歌中所說的兄名伏羲作一比較表如下:

故事 / 名別	僸公僸母歌	黑苗洪水歌	鴉雀苗故事
兄名	伏羲	A-Zie (或 Zie)	Bu-i (Fu-hsi)
妹名	——	——	Ku-eh

看上表,第一可注意的就是鴉雀苗故事說的兄名"Bu-i",而苗人用漢語講述時所稱"伏羲"適與僸公僸母歌所說的相符。我們知道,中國古時是沒有輕脣音(1)(即脣齒音 dentilabials, [f] [v])的,所以伏羲的"伏"與 Bu-i 的"Bu",音本相通;伏羲本又作包犧(2),"包",當爲"伏"字古讀的音轉;然韻母雖轉,而聲母與 Bu 音仍極相近。羲或犧與"i"音也很相近。據克拉克氏說, Bu-i 的"Bu"是"祖先"之義,"i"是"一"或"第一"之義(3)。所以"Bu-i"就是"第一祖先"之義。這與我上文所考[aɴ pʻəɤɴ koɴ pʻeiɴ]爲"始祖"之義正相符合(4)。Bu-i 的"Bu"與[aɴ pʻəɤɴ koɴ pʻeiɴ]的[pʻəɤɴ]及"阿譜"的"譜",大概都是一音之轉。由此可見"伏羲"也就是"始祖"之義了(5)。至女媧之名,本爲

(1) 看清錢大昕:古無輕脣音說,見錢氏十駕齋養新錄卷五。

(2) 易繫辭作包犧;唐陸德明經典釋文云:"包,本又作庖,孟京作伏;犧字又作羲,孟京作戲"。

(3) 看上引 S. R Clarke 書, p. 55.

(4) [aɴ pʻəɤɴ koɴ pʻeiɴ]在祥述故事本是雷敵,而 Bu-i 在鴉雀苗故事却是兄妹二人的兄。按黑苗洪水歌也把雷敵與兄妹二人的兄混爲一談。大概這段情節的傳說不一;或云兄妹二人是雷敵的子女,或云雷敵就是兄妹二人的兄。

(5) "伏羲"二字之義,自漢以來,解說頗多。禮緯含文嘉說:"伏者,別也,變也;戲者,獻也,法也"(並見風俗通義皇霸篇及太平御覽卷七十八引)。又漢班固白虎通德論:"伏羲……畫八卦以治天下,下伏而化之,故謂之伏羲也"。又晉皇甫謐帝王世紀:"取犧牲以充庖廚,以食天下,故號曰庖犧也"(太平御覽卷七十八引)。清姚配中周易姚氏學繫辭下傳:"古者包犧氏之王天下也"句下注云:"孟喜京房云:'伏,服也;戲,化也'。鄭云:'包,取也;鳥獸全具曰犧'。……案包犧之義,諸儒皆望文爲訓"。本文據苗語考定伏羲爲"始祖"之義,似最近似原始人稱其祖先的心理。

單獨一個"媧"字;漢許愼說文:"媧,古神聖女。"女媧又作媧媧,宋羅泌路史後紀注云:"媧與包、庖同,名媧"。媧字讀音,據唐顏師古漢書古今人表注:"媧,音古蛙反,又音瓜"。又廣韻作古華切,集韻作姑華切,並音瓜。瓜與Kueh,音極相近。

其次可注意的是黑苗洪水歌中說的Zie或A-Zie之名,似與伏羲絕不相關;然"Zie"音極近"羲"或"犧"。按羲犧二字古讀,據高本漢(Bernhard Karlgren)氏的漢文及漢和文分析字典(Analytic Dictionary of Chinese and Sino-Japanese)並音[xjie],與Zie音都很相近。A-Zie的"A",據克拉克氏的解釋是人名與親屬稱呼前的一個很普通的字頭(1),與我前文所釋祥述故事中[aɣ p'əɤɴ]的[aɣ]正相同。所以Zie或A-Zie之名,也很像是伏羲的又稱。這固然不免牽合;如果沒有上文所考可資參證,當然是絕不可信的。

以上是從名字的音讀上比察,未免有牽合的危險。以下我們從洪水故事的母題上與關於伏羲女媧的傳說來比較着看。

上文曾說苗族洪水故事的中心母題只是以爲:"現代人類是由洪水遺民兄妹二人配偶遺傳下來的子孫"。我們現在要問:中國古來是不是有伏羲女媧爲兄妹,爲夫婦,傳人類,及爲洪水遺民的傳說

第一,伏羲女媧爲兄妹的傳說很早就有,漢應劭風俗通義說:

女媧,伏希(2)之妹(宋羅泌路史後紀注引)。

此外則宋大中祥符時重修的廣韻"媧"字注說:

女媧,伏羲之妹。

又宋鄭樵通志三皇考引春秋世譜說:

"華胥生男子爲伏羲,女子爲女媧,"故世言女媧,伏羲之妹。

又與鄭樵同時而稍後的羅泌路史後紀也說:

(1) 看上引 S. R. Clarke 書, p. 43.

(2) 羅氏自注云:"羲希古通用"。

女皇媧,大昊氏(1)之女弟。

又明周游集,黃奭釋的開闢衍繹說:

女媧係女身,乃伏羲之妹,同母所生(卷一第十一回)。

又近人鍾毓龍編的上古神話演義也說:

伏羲氏的妹子,號叫女媧氏(卷一第三回)。

由以上所引各節看來,可見伏羲女媧爲兄妹的傳說,自漢以來,至今不衰。

第二,伏羲女媧爲夫婦的傳說也很早,如現在所傳的僞三墳書天皇伏羲氏策辭即說:

(伏羲)后,女媧。

又元杜道堅玄經原旨發揮也說:

女媧氏爲伏羲后。

考僞三墳書,自宋晁公武以來,大抵都認爲出於宋人僞撰(2)。然該書所記女媧爲伏羲后之說,則不始自宋。唐盧仝與馬異結交

(1) 太昊又作太皞,始見於左傳昭十七年:"郯子曰:'太皞以龍紀'。"又見於荀子正論篇:"自太皞燧人莫不有也"。按左傳記郯子所述諸帝,太皞次黃帝、炎帝及共工氏之後,少皞氏之前;疑本非伏羲。看秦漢以前古籍,不見太皞與伏羲連稱可知。清崔述也有太皞非包犧之說(看崔東壁遺書補上古考信錄卷下)。至以太昊即爲伏羲,大概源於緯書;太平御覽卷七十八引遁甲開山圖云:"仇夷山四絕孤立,太昊之治,伏羲生處"。後遂誤以太昊伏羲爲一人,所以班固作漢書古今人表即稱太昊帝宓犧氏;晉杜預注左傳也以太昊爲伏羲;皇甫謐帝王世紀更附上解說:"帝出于震,未有所因,故位東方,主春,象日月之明,是稱太昊"(並見北堂書鈔及太平御覽引)。唐孔穎達左傳昭十七年疏又說:"太昊身號,伏羲代號"。所以自漢以來,太昊與伏羲,遂多混爲一人。路史所稱太昊,當然就是太昊伏羲氏的省文。

(2) 看清姚際恆:古今僞書考古三墳書條引晁子止(公武),陳直齋(振孫),胡元瑞(應麟)諸氏之說。

詩有"女媧本是伏羲婦"(1)之句,可見唐時就有伏羲女媧爲夫婦的傳說,然尙不始自唐。今所存漢武梁祠石室畫像有伏羲像,繪二人:右一人右手執物似矩,下身鱗尾環繞向左;左一人下身也是鱗尾環繞與右相交(看附圖一)(2)。這個畫像顯然是象徵二人爲夫婦。淸瞿中溶武梁祠堂畫像考卽說,左一人必是伏羲之后(3)。又馬邦玉漢碑錄文也有武梁祠石刻,馬氏考伏羲畫像云:

> 按此刻伏羲像人首蛇身,兩尾相交,與祝誦氏以下作人形者迥異。往在蘭山,見古墓中兩石柱刻:羲皇、媧皇、農皇及堯、舜像,伏羲亦鱗身,兩形尾交。又余家西寨里伏羲陵前石刻畫像亦兩形並列,人首,一男一女,龍身尾交。予意古之圖畫羲媧者皆類此。

(1) 看盧氏:玉川子集卷二。

(2) 這是第一石第二層的第一圖。按左石室第四石也有類似的一圖,惟兩像相背,而不是相向(看日人關野貞的支那山東省に於ける爲漢代墳墓の裝飾及附圖解說)。又英人史坦因(Aurel Stein)氏在新疆吐魯番附高昌國首都卡拉可家(Karakhoja)故址附近發掘阿斯塔那(Astāna)墓地所得的彩色絹畫中也有人首蛇身畫像,惟兩尾互絞三市,並附繪太陽及列星,以示天界(看附圖二及氏所著"Innermost Asia", Vol. II, Text, pp. 665, 707-708; Vol. III, Plates and Plans, pp. CVIII, CIX; Oxford, 1928)。又黃文弼先生於十九年春在吐魯番古塚中也曾得絹質彩色人首蛇身相糾畫像一幀,覆被死人身上(看黃氏所著高昌第一分本,西北科學考查團叢刊之二,考古學第一輯,北平中國學術團體協會西北科學考查團理事會,民二十年初版)。這是承傅孟眞先生見告的,作者尙未見其圖;據傅先生說,該圖比史坦因氏所得者爲精。這大概是由漢時鱗尾相交的伏羲畫像流傳演變而來,同有用作副葬的意義;其覆被死人身上,很像現在的陀羅尼經被的作用。

(3) 瞿氏云:"按畫像此圖有兩人,惟題'伏羲倉精'云云,而不言其左一人爲何人,……予細辨其首爲髮髻,與後凡爲婦人者形同,……必伏羲后也"。又"此圖中間有一裸體散髮小兒,下體亦龍蛇形,而變一爲二,略具兩腿之狀,手奉伏羲袖,如戲躍之勢者;其卽繫辭男女化身之意乎?"(並見上引瞿氏書卷一)。

按帝王世紀:"宓犧蛇身人首,"楚辭注:"女媧人頭蛇身,"玄中記云:"伏羲龍身,女媧蛇軀,"靈光殿賦:"伏羲鱗身,女媧蛇軀,"列子、文子、史記皆云:"二皇牛首蛇身,"曹植云:"今繪畫羲媧者,猶眞爲太牢委蛇之狀,"蓋自古記之矣(卷一)。

又近人容希白先生的漢武梁祠畫像考釋記武梁祠石室第一石第二層的畫像說:

其上山形橫列,第一段畫二人,右爲伏羲,冠上方下圓。左手平舉,右手執物似矩。下身鱗尾環繞向左。右爲女媧,面泐。身同伏羲,尾亦環繞與右相交(頁七)。

由以上所引諸家的伏羲畫像考釋看來,可見伏羲女媧爲夫婦的傳說,最晚當在東漢以前。按漢時盛行的緯書,詩含神霧有"赤龍感女媧"(北堂書鈔引)之說;這與伏羲畫像恐也很有關係。依郭氏玄中記:"伏羲龍身,女媧蛇軀"(文選王延壽魯靈光殿賦李善注引)之說,則"赤龍"大概是指伏羲,"感女媧"當然就是畫像所云尾交之義。然畫像的作伏羲女媧尾交之形,尙遠在緯書盛行之前。翟中溶武梁祠堂畫象考說:

且考祠畫之有女媧,其來已久。楚辭,屈原見楚先王之廟及公卿祠堂畫天地山川神靈,琦瑋僊傀,及古聖賢怪物;及作天問,其詞有云:"登立爲帝,孰尙道之?"王逸注:"言伏羲始畫八卦,修行道德,萬民登以爲帝,誰開導而尊尙之也?"下卽云:"女媧有體,孰制匠之?"王逸注:"傳言女媧人頭蛇身,一日七十化,其體如此,誰所制匠而圖之乎?"宋洪氏興祖補注謂:"登立爲帝,逸以爲伏羲,未知何據,"愚謂其畫必有伏羲,並有女媧,故逸云然。又王延壽魯靈光殿賦言殿之圖畫云:"寫載其狀,託之丹靑,千變萬化,事各繆形。隨色象類,曲得其情。"而後云:"伏羲鱗身,女媧蛇軀,"則明言其畫之狀,蓋如此圖二人之形,而云伏羲女媧,文考當必有所據也。逸與延壽皆漢人,必當時之畫像多如此,故逸注天問,亦以伏羲女媧並

解（卷一）。

據此,則楚先王廟及公卿祠堂的畫與魯靈光殿的畫都有同樣的伏羲女媧畫像了。說雖出於推測,然有相當的可以相信。如天問確爲屈原所作,則當戰國末,就有伏羲女媧爲夫婦之說了。

第三,關於創造或遺傳人類的傳說,見於載籍的,似只記女媧,而沒有伏羲。如漢王逸楚辭天問注說:

女媧……一日七十化。

化的什麼?許愼說文有如下的解釋:

媧,古神聖女,化萬物者也。

可見漢時的傳說,以女媧爲化萬物的神聖女。人類當然是包括在萬物之內的,既云萬物是由女媧變化而來,則人類自然也是由女媧變化而成了。所以應劭風俗通義便明明白白的說女媧創造人類:

俗說天地開闢,未有人民,女媧搏黃土作人,劇務力不暇供,乃引繩於泥中,舉以爲人。故富貴者,黃土人;貧賤凡庸者,絙人也（太平御覽卷七十八引。）

上文所引兩條,只是說女媧化萬物,造人類。然據禮緯含文嘉:

伏羲始別八卦,以變化天下（應劭風俗通義皇霸篇引。）

"天下"二字與"萬物"二字,常相連用;如呂氏春秋云:"天下太平,萬物安寧;"所以"變化天下,"可作"變化天下萬物"的省文看。這與許愼所說女媧化萬物之義正同。可見當時的傳說,不止是女媧,並有伏羲變化萬物之說了。

第四,關於洪水的傳說,見於載籍的,似乎也只記女媧,而沒有伏羲。如淮南子覽冥訓說:

往古之時,四極廢,九州裂,天不兼覆,地不周載,火爁炎而不滅,水浩洋而不息,猛獸食顓民,鷙鳥攫老弱。於是女媧鍊五色石以補蒼天,斷鼇足以立四極,殺黑龍以濟冀州,積蘆灰以止淫水。蒼

天補,四極正;淫水涸,冀州平;狡蟲死,顓民生。

至唐司馬貞作史記補三皇本紀把淮南子天文訓的共工觸不周山的故事與上引覽冥訓的女媧洪水故事糅合在一起說:

當其(女媧)末年也,諸侯有共工氏任智刑以強,霸而不王,以水乘木,乃與祝融戰,不勝而怒,乃頭觸不周山崩,天柱折,地維缺;女媧乃鍊五色石以補天,斷鼇足以立四極,聚蘆灰以止滔水,以濟冀州;於是地平天成,不改舊物。

這兩條都只是說女媧時的洪水故事。然據宋羅泌的路史後紀:

太昊氏衰,共工氏作亂,振滔洪水,以禍天下。……於是女皇氏(媧媧,卽女媧)役其神力,以與共工氏較,滅共工氏而遷之。然後四極正,冀州寧;地平天成,萬物復生。

這是說伏羲氏衰時,有洪水之禍,給女媧平了的。羅氏雖生南宋,然他的路史是雜采漢時盛行的緯書及道書而成;可見漢時洪水的傳說,必不止說女媧,與伏羲也是有關的了。

綜看上引三條,只能說伏羲女媧時曾有洪水而爲女媧所平,似與苗族兄妹二人避洪水的故事絕不相類。然而要知道,傳說與故事是最容易變遷的,前文已經論及。我們只要看西洋記與包公案所記"五鼠鬧東京"的神話,到三俠五義或七俠五義裏,"五鼠"會變成"五個義士","玉貓"會變成"御貓展昭"(1);則苗族洪水故事中的"避水",到伏羲女媧洪水傳說中變爲"治水",可見並不足怪了。況且無論是治水或避水,它們的母題,仍可說是沒有變。苗族洪水故事中的兄妹二人,我們可以說他們是洪水遺民;淮南子、史記補三皇本紀及路史後紀所記洪水傳說中的伏羲女媧,自然也可以說他們是洪水遺民。

以上我們考苗族洪水故事中的兄妹二人與伏羲女媧的傳說,

(1)看前引胡適文存三集卷六,頁六六九至六七〇。

可得兩條結論:

(一) 伏羲與兄名很相似,女媧與妹名很相似。

(二) 關於伏羲女媧的傳說,也有很多是與兄妹二人的情節很相似。

(四) 伏羲女媧之族屬的推測

看了上文的結論,大概都要發生如下的一個問題:究竟伏羲女媧是漢族還是苗族? 這個問題的肯定的答案,恐怕是永遠不會有的。 因爲現在既找不到關於伏羲女媧的史實,以供歷史學家的參研;也找不到關於他們的文化遺存,以供考古學上的探討及民族學上的比證;自然更談不到找他們的骨骼與語言,以供人類學及語言學上的研究了。 本章所論,只是從神話學的觀點上來加以推測;因爲現在所能找到的材料,只有如上兩章所論及的一些神話或傳說。

由上文第二章所論,我們已知苗人自認是洪水故事中兄妹二人的子孫。 然在載籍可稽的,尚有槃瓠故事,說苗族爲槃瓠遺種。 宋朱輔溪蠻叢笑葉錄序說:

> 五溪蠻,皆槃瓠種也。 聚落區分,名亦隨異,沅其故壤;環四封而居者,今有五:曰猫,曰猺,曰獠,曰獞,曰犵狫。 風俗氣習,大抵相似。

這個"猫",當然是由"苗"加上犬旁而來。說苗爲五溪蠻之一,大概以葉氏此序爲最早;而苗的名稱之再現於載籍,恐也以朱氏此書爲最早(1)。自漢以來,載籍只見有"蠻";葉氏以後,私家著述,官修志乘,

(1) 苗的名稱見於尚書,皋陶謨:"苗頑弗即功;"呂刑:"鰥寡有辭於苗,……降咎於苗。"此外尚有三苗(書堯典:"竄三苗於三危,……分北三苗,"禹貢:"三苗丕敘"又國語楚語:"其後三苗復九黎之德,"韓非子"三苗之不服者,"戰國策秦策:"舜伐三苗,"魏策:"昔者三苗之居");有苗(書皋陶謨:"何遷乎有苗,"又墨子尚同篇中:"遠至有苗之制五刑"荀子議兵篇:"舜伐有苗,"戰國策趙策:"昔舜舞有苗,"呂氏春秋召類篇:"舜却有苗");苗民(書呂刑:"苗民弗用靈,……遏絕苗民,……惟時苗民匪察於獄之麗,……苗民無辭於伐")等稱。 惟只見於先秦古籍;自漢以後,除淮南子及史記稱述堯舜時的三苗外,苗及三苗、有苗、苗民等名均不見於載籍直至宋末始再見。

始多記苗事,並多以苗爲槃瓠種族。如陸次雲峒谿纖志:

苗人,槃瓠之種也。帝嚳高辛氏以槃瓠有殲溪蠻長之功,封其地,妻以女,生六男六女,而爲諸苗祖。

又貝青喬苗俗記:

槃瓠,高辛氏之畜犬也;銜犬戎吳將軍頭獻闕下,帝酬其功,妻以少女。槃瓠負女入南山,生六子,自相夫婦;此羣苗鼻祖也。

又續雲南通志稿南蠻志種人二:

苗人,相傳爲槃瓠之種。

此外相類的記載尙多,此處不能,也不必盡引。這個傳說,大概是本於後漢書南蠻西南夷傳:

昔高辛氏有犬戎之寇,帝患其侵暴,而征伐不剋,乃訪募天下有能得犬戎吳將軍頭者,購黃金千鎰,邑萬家,又妻以少女。時帝有畜狗,其毛五采,名曰槃瓠。下令之後,槃瓠遂銜人頭造闕下。羣臣怪而診之,乃吳將軍首也。……乃以女配槃瓠。槃瓠得女,負而走入南山,止石室中。……經三年,生子一十二人,六男六女。槃瓠死後,因自相夫妻。……其後滋蔓,號曰蠻夷。今長沙武陵蠻是也。

又晉干寶晉紀也記這個故事:

武陵、長沙、廬江郡夷,槃瓠之後也,雜處五溪之內。槃瓠憑山險阻,每每爲害。糅雜魚肉,叩槽而歌,以祭槃瓠。俗稱赤髀橫裙,卽其子孫。

干氏這一段記的很簡單,他在搜神記說的較詳:

高辛有老婦人居於王宮得耳疾,醫爲挑治出頂,蟲大如繭,婦人置於瓠中,覆之以盤;俄化爲犬,因名槃瓠。時戎吳強盛,數侵邊境。乃募天下有能得戎吳將軍首者,購金千鎰,封邑萬戶,又賜以少女。後槃瓠銜得一頭造王闕,王診視之,卽是戎吳。……槃瓠得女上南山,入谷,止於石室之中。蓋經三年,產六男六女,自相配偶。

……號曰蠻夷。

上引三條,顯然是同出於一個母題,卽"蠻夷乃狗種"。范干二氏所記似乎又由風俗通義演變而來。應劭記槃瓠故事云:

高辛之犬槃瓠,討滅犬戎;高辛以少女妻之,封槃瓠氏(路史後紀引)。

近人很多以爲槃瓠卽盤古,如夏曾佑在中國古代史(原名中國歷史教科書)中說:

今按盤古之名,古籍不見,疑非漢族舊有之說。或盤古槃瓠音近,槃瓠爲南蠻之祖,此爲南蠻自說其天地開闢之文,吾人誤用以爲己有也。

所謂南蠻或蠻夷,依范干二氏所云,是在長沙、武陵、廬江郡一帶;從地理上看來,似乎就是現在湘西與黔東及由此再向西南遷移的苗族。所以自宋以來,或以苗爲蠻的一種,如前引溪蠻叢笑之說;或以苗蠻連稱,如元史有"諸洞苗蠻"(1)之句。明清以來,遂多以苗爲槃瓠種族。但就我們考察所得,湘西的苗族,很少人知道槃瓠故事;烏居龍藏、克拉克、薩費那諸氏的調查報告,也都沒有提及現在的苗族傳說着槃瓠故事;更沒有關於狗的圖騰崇拜或禁忌。現在盛傳這個故事且有狗的圖騰崇拜遺跡的,是在浙閩一帶山居的畲民。他們並有婦孺都能口誦的狗王歌,詠槃瓠故事(2)。每家中堂且都供着"本家寅奉堂上高辛氏敕封忠勇王一脈宗親長生香火祖師之神位"(3)。每宗都刻有一根狗頭杖,繪有槃瓠故事畫像;各家子

(1)見世祖至元二十九年正月條。

(2)看史圖博李化民:浙江景寧敕木山畲民調查記(H. Stübel u. Li Hua-min: Die Hsia-min vom Tse-mu-schan),pp. 68—70,國立中央研究院社會科學研究所專刊第六號,民二一年出版。

(3)這是作者在民國二十三年調查浙南畲民時所錄麗水東北鄉望城嶺畲寮中堂的原文。

弟祭祖時,必供狗頭杖,懸槃瓠故事畫而祭拜之。"忠勇王,"他們說是槃瓠所受高辛王的封號;"狗頭杖,"就是他們圖騰崇拜的遺跡(1)。此外,在粵桂一帶最多的猺人,也都說是槃瓠或盤古的子孫(2)。一說,古時猺人航海遇風,得盤古拯救,因奉祀盤古王(3)。所以相傳桂林有盤古祠,南海有盤古墓(4)。而現在的苗族,既罕傳槃瓠的故事,也沒有奉祀槃瓠或盤古的禮俗。或者後漢書、晉紀及搜神記所云槃瓠子孫的蠻夷,本非苗族,而是猺畲。我們看與范干二氏差不多同時的郭璞所記槃瓠故事,所謂槃瓠子孫,就不是長沙及武陵一帶的蠻夷了。山海經海內北經有犬封國,一名犬戎國,狀如犬;郭氏注云:

> 昔槃瓠殺戎王,高辛以美女妻之,不可以訓,乃浮之會稽東南海中,得三百里封之。生男爲狗,女爲美人,是爲狗封之民也。

又郭氏的玄中記也記這個故事:

> 高辛時犬戎爲亂;帝曰:"有討之者,妻以美女,封三百戶。"帝之狗曰槃瓠,去三日而殺犬戎,以其首來。帝以女妻之,不可教訓,浮之會稽東海中,得三百里地封之。生男爲狗,女爲美人,是爲犬封氏"(並見藝文類聚九十四及太平御覽九百五引)。

證以現在畲民的地理分布及猺人古時航海的傳說,似乎很可能,槃瓠的子孫,乃是猺畲,而不是苗族。

由前兩章所述,我們知道,現在的苗族都傳說着兄妹配偶遺傳

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(1) 看何聯奎:畲民的圖騰崇拜一文,見民族學研究集刊第一期,頁235-238,上海商務印書館,民二五年初版。

(2) 看余永梁:西南民族起源的神話——槃瓠一文,頁11-12,見國立中山大學語言歷史學研究所週刊第三集第三十五、六期合刊西南民族研究專號,一九二八年出版。

(3) 看顏復禮商承祖:廣西凌雲猺人調查報告,頁21—22,國立中央研究院社會科學研究所專刊第二號,民一八年出版。

(4) 看梁任昉:述異記。

人類的洪水故事,且有奉祀兄妹二人或伏羲女媧的禮俗。按上文所引夏氏疑盤古爲槃瓠的論據有二:一爲盤古之名,古籍不見;一爲槃瓠與盤古音近。現在兄妹二人的名字與伏羲女媧音近,已如前章所考;而故事的情節與伏羲女媧的傳說,尤多相似。今更考伏羲女媧之名,雖並見於世本作篇:

伏羲作瑟(風俗通義聲音篇引)。一作:

伏羲造琴瑟(孝經正義引)。

女媧作簧(風俗通義聲音篇引)。一作:

女媧作笙簧(禮明堂位鄭玄注引)。

然作篇所記有:"蚩尤以金作兵器"(廣韻引)。可見世本作者記造作的人,不限漢族。換句話說,我們不能以世本曾記伏羲女媧,而認定他們爲漢族。此外,於經,則包犧之名,見於易繫辭:

古者,包犧氏之王天下也。

於百家言,則見於管子雜篇封禪:

虙羲封泰山。

又見於莊子內篇人間世:

是萬物之化也,……伏羲几遽之所行,終而況散焉者乎?

又雜篇繕性:

伏戲始爲天下。

又見於荀子成相篇:

文武之道同伏戲。

又見於戰國策趙策:

伏戲神農,教而不誅。

然繫辭不是孔子所作,宋歐陽修易童子問早就說的很明白。近人梁啓超(1)、馮友蘭(2)諸先生所見也都相同,顧頡剛先生則認爲

(1) 看梁氏:古書眞僞及其年代卷二,頁七六至七七,上海中華書局,民二五年初版。

(2) 看馮氏:孔子在中國歷史中之地位一文,見燕京學報第二期,頁二三六至二三八,北平燕京大學民一六年出版。

是作於戰國或西漢間(1)。管子也不是管仲所著,大概是戰國至漢初時人雜湊而成(2)。莊子內篇雖大致可信,但也有後人加入的話;外篇更靠不住,至少有十分之九是後人假造的(3)。荀子也不是完全出於荀卿之手(4)。戰國策的話,當然最早也不出戰國末年。

至女媧之名,則不見於上引見伏羲之名的各書,而見於山海經大荒西經:

女媧之腸化爲神。

又見於楚辭天問:

女媧有體,孰制匠之?

然山海經一書,漢劉歆所云作於禹益之說,自不可信。明胡應麟四部正僞及清姚際恆古今僞書考都認爲是戰國末年作品。楚辭天問,最早也不出戰國末年,胡適之先生且認爲是漢時作品(5)。

此外,伏羲女媧兩名連稱,見於列子黃帝篇:

(1) 看顧氏:論易繫辭傳中觀象制器的故事一文,見古史辨第三册,頁四五至五〇,北平樸社,民二〇年出版。

(2) 看梁啓超:漢書藝文志諸子略考釋一文,頁二〇至二一,見氏所著中國古代學術流變研究,上海中華書局,民二五年初版。

(3) 看胡適:中國哲學史大綱卷上,頁二五四,上海商務印書館,民八年再版。

(4) 看梁啓超:要籍解題及其讀法荀子條論荀子書之著作及其編次,頁七七至八五,北京清華學校清華周刊叢書社,民一四出版。本文所引荀子成相篇一條是承徐中舒先生見告後補入的,作者初不知荀子中有伏戲。徐先生並說成相恐是漢人之辭,漢書藝文志有成相雜辭。按唐楊倞注荀子成相篇也說:"漢書藝文志謂之成相雜辭,蓋亦賦之流也"。漢劉向校錄孫卿新書,定著三十二篇(漢書藝文志著錄,名孫卿子作三十三篇,據宋王應麟說是傳寫之誤),以賦篇置在末後,而以成相篇列次第八;或者成相原篇本非賦之流,因爲亡失了,後人便把漢人的成相雜辭來補充湊數,也未可知。參看楊筠如:荀子研究前論第二節關於荀子本書的考證,頁一二至三一,上海商務印書館,民二十年初版。

(5) 看胡氏:讀楚辭一文,頁一四四至一四五,見胡適文存二集卷一。

伏羲氏、女媧氏,……蛇身人面。

又見於淮南子覽冥訓:

伏羲女媧,不設法度,而以至德遺於後世。

而緯書則以伏羲女媧合神農而爲三皇。春秋運斗樞說:

伏羲、女媧、神農,是三皇也(風俗通義皇霸篇引,文選東都賦李善注引春秋元命苞同。)

然今所傳列子一書,已非漢志著錄的本來面目,大概是漢以後人附益晚說而成(1)。緯書當然絕不會有人相信是孔子以前解演經義之書,大概出於西漢末年(2)。

綜看上引各條,可知伏羲及女媧之名的見於古籍,最早不出戰國末年(3),並且也不多見。因此,我們很可以仿夏氏疑盤古爲南蠻之說,作如下的推測:

今按伏羲女媧之名,古籍少見,疑非漢族舊有之說。或伏羲與 Bu-i, 女媧與 Ku-eh 音近,傳說尤多相似。Bu-i 與 Ku-eh 爲苗族之祖,此爲苗族自說其洪水之後遺傳人類之故事,吾人誤用以爲己有也。

在這個推測的論據中,有必須解釋的一事,卽"兄妹配偶遺傳人類的洪水故事"並非苗族所獨有,在東南亞洲的各民族中,大半多有相類的故事。坊間有王顯恩編的元始趣事集記百家姓由來的故事,說從前有姊弟二人,因石獅預告洪水將臨,從它的勸告,爬入石獅口中避水。洪水退後,人類淹絕,姊弟結爲夫婦,生男女各百人,而傳人類。又周旋冠編的民衆傳說也有百家姓傳說,惟洪水變爲大火。又鄭辜生編的中國民間傳說集有人類與石磨傳說,雖略去

(1) 看馬叙倫:列子僞書考一文,見古史辨第四册,頁五二〇至五二九,北平樸社,民二二年出版。

(2) 看明胡應麟:四部正譌卷上,讖緯諸書條。

(3) 本章所稱伏羲,均不兼指太昊或太皞;參看本文頁177,註(1)。

避水一段,而記兄妹配偶的經過,則絕類苗族的洪水故事。此外口述的尙多,不能盡舉。可見漢族的民間,有與苗族相類的故事。

法人維亞爾(Paul Vial)氏的倮玀族(Les Lolos)記雲南倮玀的洪水故事,說倮玀始祖的家庭是三個兄弟,一個妹妹組成的。後遇洪水,兩兄各在銅鐵箱內避水,箱沉淹死;弟妹在木箱內避水,得免於難,遂傳人類。(詳見原書 pp. 8—9.)

去年我們在雲南西南邊境耿馬土司地,曾聽大平石頭寨的栗粟講述一個洪水故事,說古時發洪水,有兄妹二人同入葫蘆中避水。洪水退後,世上只賸兄妹二人,兄因找不到配偶,便與妹結婚;後生七子,遺傳現在的栗粟、漢人、犵拉、黑黑、老亢、崩竜、擺夷等七種人(1)。

同時又聽蚌隆寨的老亢講述一個洪水故事,說古代洪水時,有兄妹二人同入木床避水。洪水退後,也只賸兄妹二人,隨自行婚配;後生一子,爲獵神砍成肉塊,散棄田野,變爲人類(2)。

劉咸先生的海南島黎人文身之研究一文,記加欽峒黎人講述一個洪水故事,說上古時天翻地覆,世界生物盡被淹埋,人類同遭此厄,僅遺姊弟二人;雷公將姊面畫黑,使姊弟結婚,遺傳人類。(詳見原文,民族學研究集刊,第一期,頁 201。)

日人 Shinji Ishii 氏的臺灣島及其原始住民(The Island of Formosa and its Primitive Inhabitants)記阿眉族(Ami)有三個洪水故事,都是說洪水時有兄妹二人同在木臼避水;洪水退後,二人結爲夫妻。一說生三男二女,遺傳人類;一說先小產二胎變爲魚蟹,後又

(1) 栗粟,一作倮玀,又作力些或黎蘇;其詳將別有報告。

(2) 老亢,卽野人,一稱山頭人。緬甸人稱之爲卡欽(Kachin),自稱則爲徵頗(Chingpaw);其詳將別有報告。本文所述洪水故事,並見英人司格德氏(J. G. Scott)的上緬甸與撣邦地名辭書(Gazetteer of Upper Burma and the Shan States, Part i, Vol. i, pp. 417–418, Rangoon, 1900.)及法人齊爾霍德氏(Ch. Gilhodes)的卡欽人的神話與宗教(Mythologie et religion des Katchin, Anthropos, iii, 1908, pp. 683–686);可參看。

生石變化爲人;一說生男育女,遺傳人類(詳見原書 p. 13.)(1)。

法人拉崇幾哀氏(Lunet de Lajonquière)記法領東京的蠻族(Man)一個洪水故事,說有神名 Chang Lô-Cô,以芭蕉葉建成巨屋,雷公要燬他的屋,變一雞,爲該神所擒,旋被脫逃。後來洪水漲發;有人名 Phu-Hay 與他的妹妹 Phu-Hay-Mui 同入南瓜避水。洪水退後,兄因找不到配偶,便與妹妹結婚;生一南瓜,剖瓜得子,播種變人。(薩維那氏苗族史引,詳見該書 p. 105.)

蓋拉希(Guerlach)的氏巴那蠻族的生活與迷信(Mœurs et superstitions des souvages Ba-hnars)一文記交趾支那的巴那族(Ba-hnars)一個洪水故事,說洪水之後,只賸兄妹二人,因在大箱中避水未死。(詳見原文, Les Missions Catholique, xix, p. 479.)

英人勿特(Owen Butter)氏的北婆羅洲的配甘族(The Pagans o North Borneo)一書,記配甘族(Pagans)幾個洪水故事,有兩個類似苗族的故事;一說,古時洪水退後,只存姊弟二人;弟因見蜥蜴交尾,而白於姊,與姊結合,後生雙胎,卽現代人類的始祖。一說,洪水退後,也只存姊弟二人;弟因見松鼠交尾,歸告於姊,與姊結合,後生一犬,遺傳人類。(詳見原書, pp. 248-249.)

英人魯阿德(C. E. Luard)氏的馬爾瓦的森林部族(The Jungle Tribes of Malwa)一書,記印度中部的比爾族(Bhils)一個洪水故事;說有人因在河邊洗衣,得魚警告洪水將臨,囑備大箱避難,其人依魚的預言偕妹避水;洪水退後,拉馬(Rama)神命他遺傳人類,因此兄妹結爲夫婦,生七男七女。(詳見原書, p. 17.)

英人羅塞爾(R. V. Russell)氏的印度中部的土族與社會階級(Tribes and Casts of the Central Provinces of India)一書,記卡馬爾族(Kamars)一個洪水故事,說洪水退後,兄妹二人結爲夫婦,遺傳現在

(1) 這個洪水故事並見日人佐山融吉大西吉壽合著的生蕃傳說集,頁 1-14. 台北杉田重書店,大正一二年出版。

的人類。（詳見原書 iii, pp. 326-327.）

以上這些洪水故事,都是大同小異的兄妹或姊弟配偶遺傳人類的神話。依巴林高爾德（S. Baring-Gould）氏的印歐民間故事分型的方法(1), 我們可以把這些洪水故事與前述苗族洪水故事歸入同一種型式的故事,而稱之爲"兄妹（兼指姊弟）配偶型"的洪水故事。這種型式的洪水故事的地理分佈,大約北自中國本部,南至南洋羣島,西起印度中部,東迄臺灣島。按近人研究蘆笙與銅鼓,考其地理的分佈,也與此大致相同(2)。而在這個區域以內的民族,大抵多說單音節語（Mono-syllabic language）。我嘗以爲這個區域也許是可以劃成一個"文化區（Culture area）"的,似可稱之爲"東南亞洲文化區。" 形成這個文化區的"文化複質（Culture complex）,"現在雖不能一一確指;然兄妹配偶型的洪水故事,至少是組成這個文化區的一種"文化特質（Culture trait）。"

在一個文化區內,常包含一個"文化中心（Culture center）"(3)。據現代人類學者的研究,文化中心就是一種文化特質起源的地方,而文化區乃是那種文化特質傳播所及的範圍(4)。在所謂東南亞洲文化區的範圍以內,從地理上看察,它的文化中心當在中國本部的西南。所以我推測,兄妹配偶型的洪水故事或即起源於中國的西南,由此而傳播到四方。因而中國的漢族會有類似的洪水故事;海南島的黎族,臺灣島的阿眉族,婆羅洲的配甘族,印度支那半島的巴那族,以及印度中部的比爾族與卡馬爾族也都會有類似的洪水

(1) 看 C. S. Burne: "The Handbook of Folklore", Appendix C, pp. 344-355, London, 1914.

(2) 看前引鳥居龍藏苗族調查報告,第七、八兩章。

(3) 看 Clark Wissler: "An Introduction to Social Anthropology," Chap XIX, pp, 349-351, New York, 1929; 又 "Man and Culture", pp. 61-63, New York, 1923.

(4) 看上引第一書, Chap. XX, pp. 357-359.

故事。中國西南的民族,除苗族外,雖尚有猺人、狆家、擺夷、倮玀、麼些、以及其他許多因地殊號的名稱;但據現有的材料,如上文所考,大概兄妹配偶型的洪水故事是起於苗族的可能性較多。在尚未發見更多材料可資證明起源於他族之前,則上文所云伏羲女媧乃是苗人之說,或者可以說是較近似的推測。

或者有人要說,洪水故事是廣布全世界的,並不限於東南亞洲。前人頗多以爲世界各族的洪水故事,都是起源於舊約創世紀的"挪亞洪水 (Noaching Deluge)"(1)。如果所有洪水故事都出一元,則所謂兄妹配偶型的洪水故事,便沒有起源於東南亞洲的可能。然須知洪水故事起於一元之說,自英人赫胥離(T. H. Huxley) 氏發表"洪水氾濫全球之說,與地質學說衝突,祇能認爲是一種寓言"(2)之說以後;多數學者,均已不復置信。據英人傅雷塞 (Sir J. G. Frazer) 氏研究的結論,說世界各族的洪水故事,除希伯來的是源於巴比倫,北美多數部族的是源於阿爾共琴(Algonquin),以及南美奧利諾哥 (Orinoco) 的是與坡里尼西亞 (Polynesia) 同源外;其餘有一小部分是關於解釋自然現象,並無事實背景的純粹神話;而大多數都是關於荒古民族遭遇實際洪水的半神話的傳說(3)。又吳賚(H. G. Woods) 氏論洪水(Deluge) 一文也說:"由於比較研究的結果,顯然可以證明大部分的洪水傳說是因局部洪水的事實而發生;這些傳說,常因未開化民族對於所見各式自然現象而生的幻想,加上許多色彩,且不時轉變"(4)。可見兄妹配偶型的洪水故事起源於中國西南的推測,

(1) 看 J. G. Frazer: "Folk-lore in the Old Testament", Vol. I, Chap. IV, pp. 125–130, and p. 334, London, 1919.

(2) J. G. Frazer 引,看上引書, p. 104.

(3) 看上引書, pp. 332–338.

(4) 原文見 Hastings' "Encyclopaedia of Religion and Ethics," Vol. 4, pp. 545–557, New York, 1925.

在一般研究洪水故事的學者,對於洪水故事起源的見解上看來,也是很可能的;雖然這個故事究竟是純粹的神話,抑或是半神話的傳說,現在尚不能斷言。

(五) 餘論

上文講論既畢,曾蒙本所諸位先生指教。因特提出數點,作此餘論。

第一,董彥堂(作賓)先生曾提及伏羲女媧人首蛇身或龍身的傳說,並以爲龍蛇是一物。按前文所述漢武梁祠石室的伏羲畫像作鱗尾相交之形;及所引列子黃帝篇有"伏羲氏、女媧氏,蛇身人面;"王逸楚辭天問注有"女媧人頭蛇身;"王延壽魯靈光殿賦有"伏羲鱗身,女媧蛇軀,"郭氏玄中記有"伏羲龍身,女媧蛇軀";皇甫謐帝王世紀有"太昊帝庖犧氏……蛇身人首,……女媧氏……亦蛇身人首"諸說。這種超自然的形態的畫像及傳說,雖或有與原始社會圖騰信仰相關的可能;然我以爲另一可能也許是起於當時漢族賤視異族的心理。說文蟲部:

蠻,南蠻蛇種。

閩,東南越蛇種。

可見在漢以前,早有以南方蠻閩等族爲蛇種的傳說。正因伏羲女媧乃是南方蠻族,所以纔產生人首蛇身的傳說。好事者更因神話的傳說,繪成圖畫;這便是武梁祠石室伏羲畫像繪成鱗尾相交的所由來(1)。這一點也許可作伏羲女媧爲南方民族的一個佐證。

(1)這是作者的一種推測。日前承董彥堂先生以近出逸經見示,得讀日人島田貞彥原著畢任庸譯的人首蛇身圖一文;島田氏以爲人首蛇身圖可視爲"崇靈的信念與恐怖之綜合的表現"之思想而來者,氏並申說其義道:"即於一個現實的人物爲靈的表現而附以蛇身,使生存於人間的最高之想像中。其半神半獸之點,意識所謂伏羲及女媧之最高的人類之存在"。(用畢任庸譯文,見逸經文史半月刊第廿二期,頁一八至一九。)這是人首蛇身圖由來的又一解釋。

第二,徐中舒先生曾提及伏羲女媧皆"風姓",及伏羲"德於木","出於震"的傳說,並以爲均含有伏羲女媧爲南方或東方民族之義。按皇甫謐帝王世紀:

"太昊帝庖犧氏,風姓也,……首德於木,爲百王先;帝出於震,未有所因;故位在東方。……女媧氏,……亦風姓也"(太平御覽七十八引。)

"出於震之說,始見於易說卦:"帝出乎震"。"德於木"之說,又見於魏宋均春秋內事:"伏羲氏以木德王"。魏曹植庖犧贊也有"木德風姓"之說(1)。說文:"風動蟲生",廣韻、集韻、韻會並云:"蛇,毒蟲也"。今俗仍多稱蛇爲長蟲。由風之從蟲,蛇之稱蟲,可見風蛇的相關;所以風姓之說,或者也與南方或東南方蛇種之說有相關的可能。又說文:"木,東方之行"。易說卦:"震,東方也"。漢蔡邕獨斷:"震者,木也"。可見震卽訓木,都含有東方之義。這兩點似乎又可作伏羲女媧爲南方或東方民族的一個佐證。

二六,一,三一之夜,續成餘論及一部份註脚。

(1)看曹子建集卷七。

跋苗族的洪水故事與伏羲女媧的傳說

徐中舒

先秦之世,歷史與神話混而不分;故玄鳥生商,履跡造周,皆形於歌詠,垂之竹帛,視爲信史,不敢非難。

其後此商周民族以文化上政治上之優越,而漸次同化其隣近部族,由黃河上下游而延展於江淮流域,以及東南西南一帶。此諸部族因同化先後之不同,亦先後將其部族神話加入中國文化系統中,其同化愈後者,則其神話在古史的系統中轉愈遠而愈古。此如積薪,如壘塔,皆後來居上。顧頡剛先生所謂層累地造成的中國古史,卽指出此種現象(見古史辨第一册六十葉)。不過顧先生所謂造成(編造或僞造)之說,似有語病。蓋此等荒古遠史,皆應有其民族的意識;視爲信史旣不可,視爲僞作亦不能。(拙著陳侯四器考釋論黃帝之傳說一節,已發其凡,可以參閱)。

芮先生從現存民族中尋出伏羲女媧之故事。從民族與地理的分布,以爲伏羲女媧爲苗和猓玀的傳說,盤古爲猺和畲民的傳說,爲古史指出一個新方向。芮先生這兩個假定,皆有堅實論證。將來因材料增多,容有若干補充,但大體已不可易。

芮先生所搜集四個故事,已在本所講論會中詳細講過,當時同事中曾有若干補充,皆蒙採納。茲余又得讀芮先生修正後之原稿,就記憶及翻檢所得,又得若干斷片故事,拉雜寫出,以供芮先生和讀者參考。

(一) 伊尹生空桑

伊尹生空桑之說,始見於呂氏春秋本味篇,原文如下:

有侁氏女子採桑,得嬰兒於空桑之中,獻之其君。其君令烰(庖)人養之。察其所以然:曰,其母居伊水之上,孕,夢有神告之曰:"臼水出而東走毋顧,明日視臼出水,告其鄰,東走十里而顧其邑盡爲水,身因化爲空桑,故命之曰伊尹。此伊尹生空桑之故也。長而賢。湯聞伊尹,使人請之有侁氏,有侁氏不可。伊尹亦欲歸湯,湯於是請取婦爲婚,有侁氏喜,以伊尹媵也。

此故事又見於列子天瑞篇云:

伊尹生乎空桑。

張湛注:

傳記曰:"伊尹母居伊水之上,既孕,夢有神告之曰:'臼水出而東走無顧'。明日視臼出水,告其鄰,東走十里而顧其邑盡爲水,身因化爲空桑。有莘氏女子採桑,得嬰兒於空桑之中,故命之曰伊尹,而獻其君。令庖人養之。長而賢,爲殷湯相。"

又楚辭天問篇云:

成湯東巡,有莘爰極;何乞彼小臣,而吉妃是得?水濱之木,得彼小子;夫何惡之,媵有莘之婦?

王逸注:

言伊尹母妊身,夢神女告之曰:"臼竈生蠶,亟去無顧"。居無幾何,臼竈中生蠶。母去東走,顧視其邑盡爲水,母因溺死化爲空桑之木。水乾之後有小兒啼水涯。人取養之。既長大有殊才。有莘惡伊尹從木出,因以送女也。

張王兩注似卽本於呂書,又論衡吉驗篇云:

伊尹且生之時,其母夢神謂己曰:"臼出水疾東走勿顧"。明日視臼出水,卽東走十里,顧其鄉皆爲水矣。

此說亦與呂書同,故此當爲戰國秦漢間流傳最盛之故事。案此故事主要兩點:一大水驟然而至,二嬰兒在空桑中得免水難,頗與苗和猓玀民族伏羲女媧故事中間一段相似;惟此屬之伊尹,彼屬之

伏羲女媧;伊尹僅爲商之良相,而伏羲女媧則爲首出庶物之帝王,爲人類之始祖。此其不同之故,現尙無從解釋。至於此云空桑,彼云葫蘆或黃瓜,則仍有關聯。

周禮春官大司樂云:"空桑之琴瑟",漢書樂志郊祀歌云:"空桑琴瑟結信成",空桑爲琴瑟材。蓋古琴瑟卽於空木上加弦而成,故淮南子說林篇云:"頭蝨與空木之瑟,名同實異,"不云空桑而云空木,意義尤爲明白。又楚辭大招云:"魂乎歸來,定空桑只";王逸注:"空桑瑟名也,古者弦空桑而爲瑟"。自戰國以來,琴瑟皆以梧桐爲之,如莊子齊物論云:"昭文之鼓瑟也,師曠之枝策也,惠子之據梧也",司馬注:"梧琴也";又同書德充符云:"今子(惠子)外乎子之神,勞乎子之精,倚樹而吟,據槁梧而瞑",此樹與槁梧,亦當是琴;又枚乘七發稱龍門之桐斬斫以爲琴;皆琴材用梧桐之證。古書屢稱空桑,或古以桑爲之。

琴瑟爲古代最盛行之樂器,葫蘆亦爲南方民族中最盛行之樂器。唐劉恂嶺表錄異云:

葫蘆笙,交趾人多取無柄之瓠割而爲笙,上安十三簧,吹之,音韻清響,雅合律呂。

又宋朱輔溪蠻叢笑云:

潘安仁笙賦,"曲沃縣瓠","汶陽匏篠",皆笙之材。蠻所吹葫蘆笙亦匏瓠餘意,但列管六,與說文十三簧不同耳,名葫蘆笙。

唐宋時蘆笙所列之簧雖不同,其用葫蘆爲樂器則不殊。至云黃瓜,或以形似葫蘆之故。

(二) 歷陽之都與邛都縣城

淮南子俶眞篇云:

夫歷陽之都,一夕反而爲湖。

高誘注:

昔有老嫗常行仁義，有兩書生過之，謂曰："此國當沒爲湖。"謂嫗視東城門闕有血便走上北山勿顧也。自此嫗數往視門闕。鄰者問之，嫗對如是。其暮門吏故殺雞塗血門闕。明日老嫗早往視門見血，便走上北山。國沒爲湖。與門吏言其事，適一宿耳故曰一夕反而爲湖也。

此與伊尹故事前半全同，惟彼以臼水爲徵，此以門闕有血爲徵爲稍異。

李膺益州記載邛都縣城陷爲湖，與此亦可參照。原文錄之如下：

邛都縣下有一老姥，家貧孤獨。每食輒有小蛇頭上戴角在一床間，姥憐之，飴之。後稍長大，遂長丈餘。令有駿馬，蛇遂吸殺之。令因大忿恨，責姥出蛇。姥云在床下，令卽掘地，愈深愈大而無所見，令又遷怒殺姥。蛇乃感人以靈言，瞋令何殺我姥，當爲姥報讎。此後每夜輒聞若雷若風四十許日，百姓相見咸驚語："汝頭那忽戴魚"。是夜方四十里與城一時俱陷爲湖，土人謂之爲陷河。惟姥宅無恙，迄今猶存。漁人採捕必依止宿。每有浪輒居宅側，恬靜無他。風靜水清猶見城郭樓櫓宴然。今水淺時，彼土人沒水取得舊木，堅貞光里如漆，今好事人以爲枕相贈（見後漢書西南夷傳邛都夷注，太平御覽七九一卷南蠻部七引）。

此老嫗與城陷，與歷陽之都一夕爲湖極相似，當爲同一故事之轉變。其說舊木爲枕，當亦由空桑說推衍而來。又小蛇頭上戴角，乃古所傳虬龍之形。此當爲古代南方民族之圖騰，說另詳。又爲母報讎與苗民故事中之報讎說，亦有相類似處。

(三) 竹王與九隆

後漢書西南夷傳記夜郎之傳說云：

夜郎者，初有女子浣於遯水，有三節大足流入足間，聞其中有

號聲。剖竹視之得一男兒,歸而養之。及長有才武,自立爲夜郎侯,以竹爲姓(唐章懷太子注云:"見華陽國志")。……夷獠咸以竹王非血氣所生,甚重之,求爲立後。牂柯太守吳霸以聞,天子乃封其三子爲侯,死,配食其父,今夜郎縣有竹王三郎神是也。

此可與伊尹生空桑故事相比擬,蓋空桑與大竹皆中空可浮之物,而皆於水上得之,當屬同一母題。

又同書同傳記哀牢夷之傳說云:

哀牢夷者,其先有婦人名沙壹,居於牢山,嘗捕魚水中,觸枕木,若有感,因懷妊,十月產子男十人。後枕木化爲龍,出水上,沙壹忽聞龍語曰:"若爲我生子,今悉何在"?九子見龍驚走,獨小子不能去,背龍而坐,龍因舐之。其母鳥語謂背爲九,謂坐爲隆,因名之曰九隆。及後長大,諸兄以九隆能爲父所舐而黠,遂共推以爲王。後牢山下有一夫一婦復生十女子,九隆兄弟皆娶以爲妻。後漸相滋長,種人皆刻畫其身象龍文,衣著尾。(唐章懷太子注云:"自此以上並見風俗通也";案今風俗通此文已佚。又路史所引風俗通,今本亦多不見,蓋今本已非全帙。)

此感生之說,雖與玄鳥生商履跡造周相似,但水中空木仍與空桑大竹爲近,仍當屬於同一母題。又此說枕木化龍,與伏羲女媧人首蛇身之說亦有關聯。案范氏後漢書分南蠻西南夷爲二,以槃瓠之傳說屬之南蠻,而以大竹、枕木等傳說屬之西南夷。又前引邛都夷城陷之說,范書亦屬之西南夷。即伊尹生空桑,實爲西南夷族傳說之母題。芮先生就現今民族傳說之分布,謂槃瓠爲猺與畲民間之傳說,謂伏羲、女媧爲苗與倮倮間之傳說,與相比較,則范書之南蠻即今之猺與畲民,范書之西南夷即今之苗與倮倮。又案伏羲、女媧、伊尹之傳說,見於戰國秦漢人所著書,知苗與倮倮在彼時即已與中國文化發生關係。至槃瓠之傳說,始見於風俗通(見路史引,今風俗通已佚)魏略,漢魏時人始傳其說,則猺畲與中國文化之接觸,當在

苗與猓猓之後。

(四) 伏羲鱗身女媧蛇軀

武梁祠石刻畫伏羲女媧手執規矩,自腹以下作龍形,蟠曲相交而無足,其左隸書一行,僅云伏羲而不及女媧,原文云:

伏羲倉精,初造王業。畫卦結繩,以理海內。

瞿中溶武梁祠畫像考據王延壽魯靈光殿賦"伏羲鱗身,女媧蛇軀",以爲卽伏羲女媧之象,其說是也。

案言伏羲女媧人首蛇身者,見於列子黃帝篇,王逸天問注,帝王世紀,補史記三皇本紀。傳說中之伏羲女媧爲首出庶物之帝王,當云龍身,龍爲古民族之圖騰。蓋畫龍蛇皆作蟠曲之形,後人見其委蛇之狀而不識其義,遂漫謂之爲蛇身。後漢書西南夷傳哀牢夷下云:"種人皆刻畫其身象龍文",當卽人首蛇身之說所由來。又淮南子地形篇云:

燭龍在雁門北,蔽於委羽之山,不見日,其神人面蛇身而無足。

雷澤有神,龍身人頭,鼓其腹而熙。

此可見西漢人尙知此委蛇之狀之爲龍而非蛇。

史記高祖本紀載高祖之誕生云:

其先劉媼嘗息大澤之陂,夢與神遇。是時雷電晦冥,太公往視則見蛟龍於其上,已而有身,遂產高祖。

此漢代帝王尙不免有蛟龍感生之傳說,可見其時淮泗之間猶盛有此種圖騰說之遺存。

左氏昭十七年傳,謂太皞氏以龍紀,故爲龍師而龍名;據此可知伏羲太皞同以龍爲圖騰。又皞或作昊,天曰昊天,與伏羲爲始祖意,義亦相近。故太皞伏羲仍當視爲一人。芮先生據崔東壁說以伏羲太皞爲二人,似求之過密。蓋傳說中之人物只當問其母題是否相同,而不當拘拘於其名稱之殊異。以此論之,謂太皞爲伏羲似無

不可。（至黃帝有熊,少昊金天,炎帝神農,則皆當別論。）

（五）徐偃王

晉張華博物志卷八云:

徐偃王志云:"徐君宮人娠而生卵,以爲不祥,棄之水濱。狐獨母有犬名鵠倉,獵於水濱,得所棄卵,銜以來歸。狐獨母以爲異,覆煖之,遂蜕成兒。生時正偃,故以爲名。徐君宮中聞之乃更錄取。長而仁智,襲君徐國。後鵠倉臨死生角而九尾,實黃龍也,偃王又葬之徐界中"（又見史記秦本紀趙世家正義引）。

案此乃三種民族傳說混合而成:烏爲商民族之圖騰,犬爲南蠻族之圖騰,龍爲西南夷族之圖騰。徐偃王志不知所出,但其書必成於博物志之前,卽西晉以前。此期南蠻與西南夷之同化者必已甚盛,故有此等傳說之產生。至徐果爲何種民族?史記秦本紀稱趙徐同祖,逸周書作雒篇又稱徐盈族,盈嬴同,明爲嬴姓。又秦本紀云:

秦之先帝顓頊之苗裔。探日女脩。女脩織,玄鳥隕卵。女脩吞之,生子大業。大業取少典之子曰女華,女華生大費。……大費生子二人,一曰大廉,實鳥俗氏;二曰若木,實費氏。其玄孫曰費昌。子孫或在中國,或在夷狄。……大廉玄孫曰孟戲中衍,鳥身人言。

秦之先有吞玄鳥隕卵之女脩,有鳥俗氏之大廉,有鳥身人言之孟戲中衍,當是以鳥爲圖騰之民族。秦徐同祖,則此傳說中之卵生說,當爲徐民族之固有者。

二六,四,二二,在南京北極閣山下。

後記:本文既承徐中舒先生賜跋如上;復蒙傅孟眞先生教正,並告以漢楊雄蜀王本紀所記洪水故事。緣是,我又得因傅徐二先生之教而附綴數語於後,並藉此對二先生敬謝誨益。

徐先生跋文所論五個故事與苗族洪水故事相互間的類似,記

載顯然,可無疑義。而傅先生所告蜀王本紀所記的洪水故事與徐先生所論也有一部分很相似之處。蜀王本紀云:

荆有一人名鼈靈,其尸亡去,荆人求之不得。鼈靈尸隨江水上,至郫,遂活,與望帝(蜀王杜宇之號)相見,望帝以鼈靈爲相。時玉山出水,若堯之洪水,望帝不能治,使鼈靈決玉山,民得安處。鼈靈治水去後,望帝與其妻通,慙媿,自以德薄不如鼈靈,乃委國授之而去,如堯之禪舜。鼈靈卽位,號曰開明帝(並見後漢書張衡傳注,文選思玄賦注,太平御覽八百八十八又九百二十三,事類賦注六引)。

這個故事又散見於漢許愼說文,李膺蜀志及晉常璩華陽國志。說文隹部"灌"字解云:

蜀王望帝婬其相妻,慙,亡去。

蜀志:

望帝稱王於蜀,時荆人有一人化從井中出,名曰鼈靈;於楚身死,尸反泝流上,至汶山之陽,忽復生,乃見望帝,立以爲相(晉張華禽經注引)。

華陽國志蜀志:

七國稱王,杜宇稱帝,號曰望帝。……會有水災,其相開明決石壘山,以除水害。帝遂委以政事,法堯舜禪授之義,遂禪位於開明帝。

又同上序志:

荆人鼈靈死,屍化西上,後爲蜀帝。

上述故事主要四點:一鼈靈流尸復活,二望帝以爲相,三鼈靈治水,四望帝禪位。第一點未斂失尸,死而更生,恐混有道家"尸解"之說的成分,當非傳說的本來面目。其尸隨江水流上,可見必因有驟然而至的大水,才能由荆逆流至郫,或至汶山之陽。此與空桑故事恐仍有關。而第二點望帝以鼈靈爲相,則絕類殷湯的相伊尹。

同時,這個故事似又與鯀禹的傳說也有相似之處。山海經海內經云:

帝令祝融殺鯀於羽郊,鯀復生禹。

禹是怎樣生的?歸藏云:

鯀殛死三歲不腐,剖之以吳刀,是用出禹(並見初學記二十二及路史後紀引)。

這明明是說禹是鯀尸所化的。但傳說又有鯀尸化黃龍或黃熊之說。開筮云:

鯀死三歲不腐,剖之以吳刀,化爲黃龍也(見山海經海內經郭璞注引)。

此所以近人有"禹或卽是龍"(見顧頡剛先生與錢玄同先生論古史書引伯祥語)之說。史記夏本紀正義云:

鯀之羽山,化爲黃熊,入於羽淵。

熊是什麼?正義引束晳發蒙記云:"鼈三足曰熊。"這可見熊或鼈與禹的相關。這與鼈靈之尸化爲開明帝的傳說就很相類了。而開明的決石壘山,以除水患,及受望帝之禪;與伯禹的敷土甸山,平治水土,及受虞舜之禪;尤絕相類似。這其間恐也有其相聯之故。惟尙有待於新材料的發現,以爲堅實的論證耳。

二六,五,十八,逸夫。

On the Glabella Prominence of the Human Cranium

By T. L. Woo

I. *Introductory.* The degree of the glabella prominence of the human skull has long been recognised by physical anthropologists as an important character in aiding the discrimination or grouping of human races. For the purpose of studying the individual or racial differences of specimens in this particular feature, some investigators have suggested the use of a diagrammatic scale[1] and others use descriptive terms. Although both methods give a general description of the feature for different varieties of man, yet neither of them is quantitative and the data thus obtained cannot be treated with precision. Some years ago, Dr. Morant suggested a useful index[2] derived from the mean measurements of the horizontal type contour for measuring the frontal flattening of the cranium. The section represented is one through the glabella parallel to the Frankfort horizontal and the index gives a measure of the frontal curvature anterior to the temporal lines. It is obvious that although the index of frontal flattening is closely related with the degree of projection of the glabella, yet it depends also on the width of the frontal diameter and the position of the bending of the temporal lines. The main purpose of the present study is to make a quantitative survey of the degree of projection of the glabella region in the median sagittal plane in a sample of some of the principal races. We are concerned, then, in this paper with measurements which are designed to give accurate estimates of the antero-posterior projection of the region in question, not with its transverse flattening. The part referred to is confined to the glabella region. Four new absolute measurements and two indices are designed for the purpose in view. The definitions of these are given in the next section. The data dealt with can easily be collected either by direct measurement or from the average sagittal type contour.

II. *The Material Measured.* The cranial series measured are:

(1) Chinese: Sui-T'ang dynasties. 15♂ and 6♀. These specimens were excavated some years ago by Dr. Li Chi and Mr. Tung Tso-pin of the Archæolo-

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[1] See Martin, R.: *Lehrbuch der Anthropologie.* Zweiter Band, p. 873, (1928).

[2] The index is defined to be $100\frac{\frac{1}{2}[T_r(x)+T_l(x)]}{T_r(y)+T_l(y)}$. See *Biometrika*, Vol. XIV, pp 193–260, (1923).

gical Section, Institute of History and Philology, Nanking, from several ancient graves of the Sui-T'ang dynasties (A.D. 581–899) at Hsiao T'un, Anyang, Honan. More than 30 specimens of both sexes belonging to the same period were obtained, but measurements were only taken of the complete crania.

(2) Chinese: in general. 99♂ and 66♀. These crania were collected by the writer in 1936 from graves at Hsiu Chiu Shan near the vicinity of Hsia Kuan, Nanking. The majority of them represent the poor class. Most came from the eastern part of the country but several are from unknown localities.

(3) Chinese: Southern. 73♂. These specimens came either from various localities on the southeast coast of China or from the south of the country.

(4) Burmese. 32♂. These specimens came from different parts of the country. Those belonging to the primitive tribes of Burma were excluded.

(5) Javanese. 40♂. These came from various parts of Java and the Island of Madura.

(6) Dayak. 13♂. These crania came from Borneo and they are catalogued as Dayak.

(7) Andamanese. 17♂. The majority of these specimens came from the Great Andaman Islands.

(8) English. 44♂. These crania came from a single cemetery at Portugal Street, London. They were probably of eighteenth century date.

(9) Italian. 50♂. These specimens came from 12 provinces in the northern and central parts of Italy. Measurements were only taken of a random sample of 50 male crania.

(10) Swedish. 31♂. They came from various parts of Sweden.

(11) Finnish. 22♂. These crania came from various localities of Finland, several of them belong to a Seaman's Hospital collection.

(12) Punjabi. 81♂. This series comprises all specimens inscribed as either Mohammedan or Hindus from the province of Punjab.

(13) Hindu: Bihar and Orissa. 37♂. The majority of these specimens came from the Patna district in the northwest of Bihar.

(14) Singalese. 24♂. These crania came from various parts of Ceylon, especially from Colombo.

(15) Australian. 71♂. The series came from the following parts of the country, viz. Western Australia, New South Wales, Victoria and South Australia. Those from the Northern Territory and Queenland were not included. According to the recent studies of Dr. Morant and the writer,[1] the feature of

[1] T. L. Woo and G. M. Morant: "A Biometric Study of the 'Flatness' of the Facial Skeleton in Man." *Biometrika*, Vol. XXVI, pp. 212–214, (1934), and also see Morant's Study of the Australian Skull. *Biometrika*, Vol. XIX, pp. 417–440, (1927).

the crania from the regions firstly mentioned was not significantly different from one another, so it may be justifiably assumed that they form a racially homogeneous sample. Consequently, the means of all the specimens from these parts have been pooled together for the present comparative purpose.

(16) Kanaka. 52♂ and 54♀. These crania came from the Islands of Oahu and Hawaii.

(17) Maori. 40♂. These were collected in different parts of New Zealand.

(18) Moriori. 33♂ and 21♀. These specimens came from various parts of Chatham Islands.

(19) Guanche. 16♂. Nearly all these crania came from Teneriffe.

(20) Eskimo. 33♂. These came from various parts of Greenland and the neighbouring islands.

(21) Fuegian. 11♂. These came from the southwest coast of Tierra del Fuego.

The specimens of the first two Chinese series are preserved in the Museum of the Institute of History and Philology. The writer measured them in 1936. Those of the remaining series are all preserved in the Museum of the Royal College of Surgeons, London, and they were measured by the writer in 1934 when he was investigating other craniological problems. He is greatly indebted to the authorities of the two Institutions, namely, Professors Fu Ssû-nien and Li Chi, and Miss M. L. Tildesley, for granting him every facility for pursuing this study. With the exception of the first Chinese series belonging to the 5th-8th century period, all other series are of modern date. The specimens dealt with in this paper total 834 male and 147 female grouped in twenty-one male and four female series representing some of the principal races in different parts of the world. It is clear that the Oriental and Oceanic races are better represented than the other groups. It is regrettable that there are none from Central Asia, South Africa or Egypt. The numbers of crania forming the series in several cases are too small to give reliable means for comparison, but they may still be of value in a preliminary study.

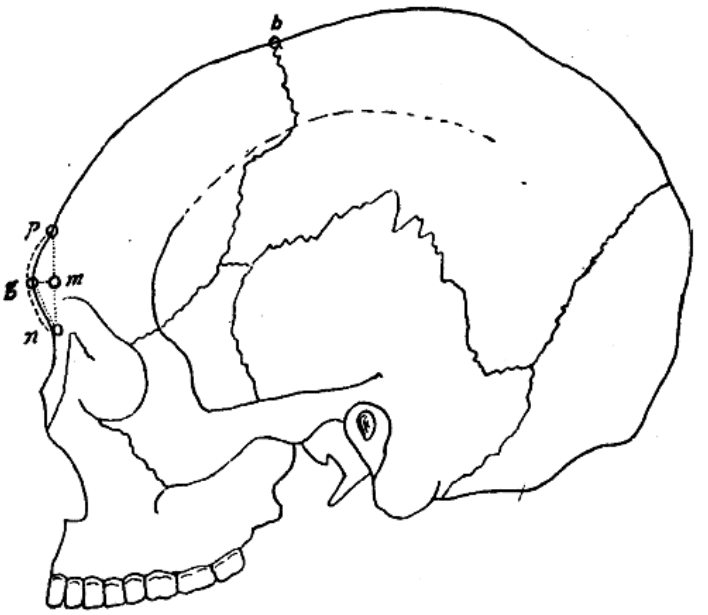
III. *Definitions of Measurements Taken.* The points from which the measurements are taken are shown in Fig. 1, the points *n* and *g* being the *nasion* and *glabella* defined in the usual way. *P* is a point above the *glabella* in the median sagittal section and the distance *gp* is equal to *ng*. This is usually found to be a little below the *ophryon* which is in some cases not easy to be determined accurately. Furthermore, the reason for which the arbitrary point *p* is employed instead of *o* (ophryon) is that the former point can also be accurately marked on the sagittal type contour. M is the point where the perpendicular

from g meets the line np. It is also the midpoint of the line np. The measurements taken are:

(1) The chord from n to g measured with small calipers.

(2) The chord from n to p, the latter point having been previously marked as a pencil one.

Fig. 1. Showing the Points Where Measurements Were Taken



(3) The subtense of the *glabella* from the chord np.

The measurements 2 and 3 were taken at the same time with the aid of a pair of co-ordinate calipers which has been described by the writer.[1]

(4) Minimum arc from n to p measured with a steel tape.

Two indices which provide a measure of the projection of the glabella can be derived from pairs of these absolute measurements. They are:

(5) The subtense-chord index = 100 subtense to np/chord np.

(6) The chord-arc index = 100 chord np/arc np.

Readings of the subtense and chord were taken to the nearest 0.1 of a millimetre and those of the arc to the nearest 0.5.

IV. *Sexual Comparisons.* Table I gives the means for the four absolute measurements and the two indices together with their probable errors. For comparative purpose the weighted means of the characters for each racial group

[1] T. L. Woo and G. M. Morant: *loc. cit.*, pp. 196–250.

Table I. Mean Measurements of Glabella Projection and Their Probable Errors

Series	Sex	N	Absolute Measurements (in mm.) (1) Chord ng	(2) Chord np	(3) Subtense to np	(4) Arc np	Indices (5) 100 Sub. np / Chord np	(6) 100 Chord. n p / Arc np
Asiatic:								
(a) Oriental								
Chinese (Sui-T'ang dynasties)	♂	15	12.53±.42	22.86±.52	2.19±.01	24.06± .53	9.57± .36	95.00± .30
Chinese (in general)	,,	99	11.79±.13	22.34±.26	2.33±.06	23.62± .28	10.43± .23	94.56± .11
Chinese (Southern)	,,	73	10.27±.10	19.99±.20	2.14±.05	20.83± .20	10.14± .29	95.94± .17
Burmese	,,	32	10.52±.13	20.56±.27	2.17±.08	21.70± .26	10.59± .39	94.65± .27
Javanese	,,	40	10.29±.12	20.13±.25	2.25±.09	21.25± .25	11.36± .48	94.62± .35
Dayak	,,	15	11.61±.22	21.93±.60	2.18±.16	23.83± .58	9.89± .69	91.99±1.06
Weighted Means	,,	272	11.04	21.18	2.23	22.33	10.62	94.85
(b) Indian								
Andamanese	,,	17	10.60±.16	20.95±.32	1.34±.10	21.88± .31	6.49± .49	95.73± .49
Punjabi	,,	81	8.66±.12	16.66±.22	2.20±.06	17.77± .22	13.26± .30	93.74± .30
Indian (Bihar and Orissa)	,,	37	9.51±.16	18.76±.29	2.20±.09	20.16± .29	11.90± .51	92.95± .31
Singalese	,,	24	10.08±.23	19.23±.37	2.28±.10	20.89± .40	12.02± .57	92.19± .62
Weighted Means	,,	159	9.28	18.00	2.12	19.24	12.03	93.53
European:								
English	,,	44	10.08±.15	19.15±.30	3.01±.09	20.25± .31	15.88± .48	94.58± .26
Italian	,,	50	9.01±.10	16.68±.17	2.59±.07	18.67± .18	15.46± .33	89.39± .40
Swedish	,,	31	9.58±.12	18.84±.25	2.87±.09	21.00± .24	15.26± .51	89.72± .59
Finn	,,	22	9.70±.13	18.83±.28	2.86±.13	20.56± .30	15.25± .69	91.66± .49
Weighted Means	,,	147	9.55	18.20	2.82	19.92	15.51	91.35
Oceanic:								
Australian	,,	71	11.13±.13	20.34±.24	4.28±.11	22.55± .27	21.02± .44	90.28± .30
Kanaka	,,	52	11.96±.16	22.30±.30	3.93±.13	24.34± .33	17.59± .50	91.79± .36
Maori	,,	40	11.62±.16	21.95±.29	3.36±.13	23.83± .33	15.17± .47	92.37± .34
Moriori	,,	33	10.46±.21	20.37±.41	2.87±.13	22.02± .45	13.76± .52	92.39± .40
Weighted Means	,,	196	11.34	21.19	3.76	23.20	17.69	91.46
African & American:								
Guanche	,,	16	8.84±.20	16.78±.50	2.31±.18	18.04± .52	13.40± .95	93.00± .57
Eskimo	,,	33	12.84±.17	24.72±.34	3.04±.11	26.40± .35	12.39± .42	93.66± .45
Fuegian	,,	11	13.01±.29	25.38±.84	4.24±.30	28.16±1.03	16.64±1.02	90.48± .94
Weighted Means	,,	60	11.80	22.72	3.07	24.49	13.44	92.90
Chinese (Sui-T'ang dynasties)	♀	6	12.82±.60	24.68±.99	1.70±.12	25.60± .97	6.95± .47	96.30± .59
Chinese (in general)	,,	66	11.68±.16	22.55±.33	1.58±.06	23.47± .32	7.01± .26	95.99± .14
Kanaka	,,	54	10.97±.12	21.16±.21	2.04±.07	22.43± .23	9.70± .35	94.42± .32
Moriori	,,	21	10.65±.15	20.99±.32	2.03±.07	21.99± .30	9.80± .37	95.36± .35

are also given in the same table. There are only three series—viz. the Chinese in general, the Kanaka and the Moriori—which are long enough for the purpose of examining sexual differences. The sex ratios (male mean/female mean) which are derived from the means given in Table I are provided in Table II. Of the

Table II. Sex Ratios of the Absolute Measurements and Indices for Three Racial Series

Characters \ Series		Chinese (in general)	Kanaka	Moriori	Average Ratios
Absolute Measurements	Chord ng	1.01	1.09	.98	1.03
	Chord np	.99	1.05	.97	1.00
	Sub. to np	1.47	1.93	1.41	1.61
	Arc np	1.01	1.09	1.01	1.03
Indices	$100\frac{Sub.\ np}{Chord\ np}$	1.49	1.81	1.40	1.57
	$100\frac{Chord\ np}{Arc\ np}$	.99	.97	.97	.98

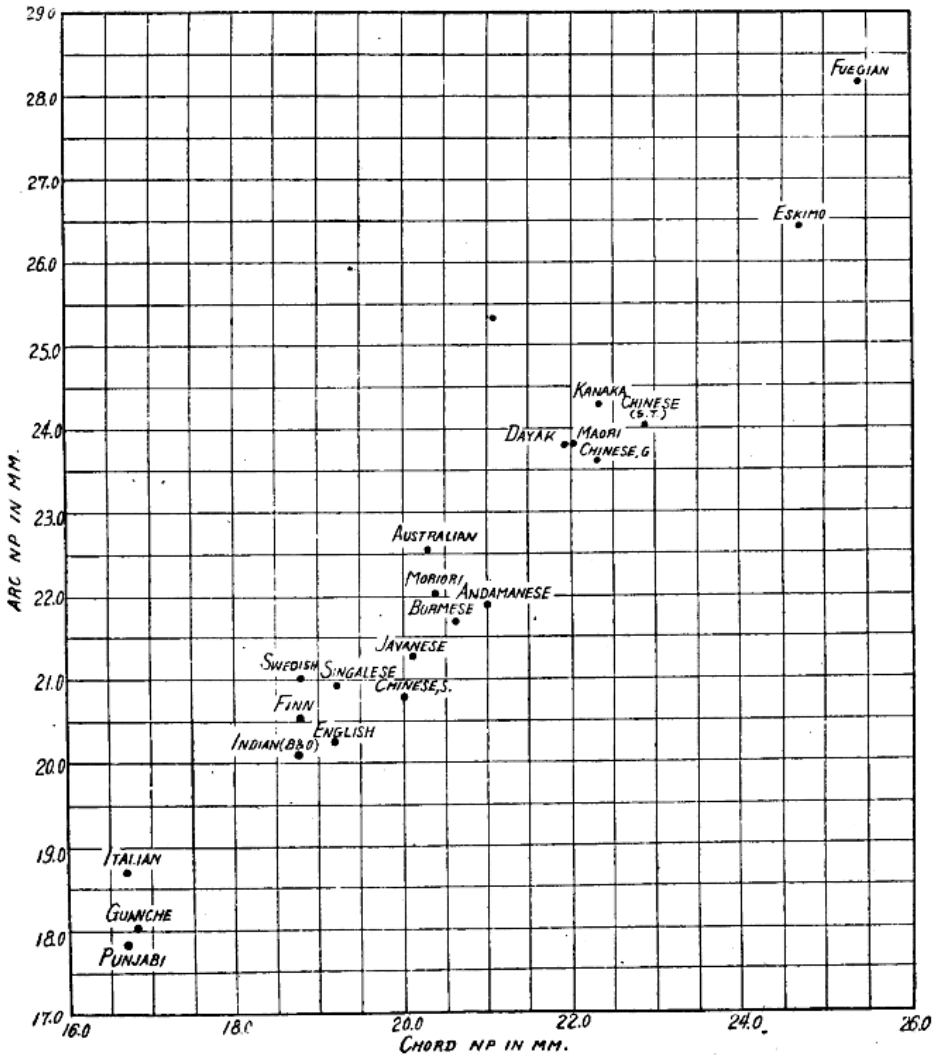
six characters, four—viz. the two chords, the arc and chord-arc index—show only slight sexual differentiation. The ratios for these range from .97 to 1.09, the male being the greater in nine cases and the position being reversed in the other seven. Judging from such slender evidence, there is no suggestion that these ratios are significantly different for different races. However, sex ratios for the remaining constants—the subtense and subtense-chord index—for the three series are considerably higher, varying from 1.40 to 1.93. It has been shown in earlier studies of facial flattening[1] and of the malar bones[2] that for any racial series the ratios for facial subtenses tend to be greater than those for facial chords. The same is true for the measurements of the glabella projection. The measurements confirm the common supposition that the forward projection of the glabella region is, on the average, decidedly more marked for male than for female crania. The subtense and the index derived from it might prove to be of value in sexing individual crania by metrical means when they are considered in conjunction with other characters.

[1] T. L. Woo and G. M. Morant: *loc. cit.*, pp. 196–250.

[2] T. L. Woo: "A Biometric Study of the Human Malar Bone," Biometrika, XXIX, pp. 113–123, (1937).

V. *Racial Comparisons of Mean Measurements.* The mean measurements for different characters from which racial comparison can be made are given in Table I. The number of male series represented is not large, but it is sufficient to give a fairly good estimate of the value of the new characters for the purpose of racial classification. Figs. 2–5 give distributions of the constants taken in pairs.

Fig. 2. Inter-racial Correlation of the Chord np and Its Arc (Male Means)



Abbreviations: S. T. = Sui-T'ang Dynasties, G = In General, S = Southern, and B. & O. = Bihar and Orissa.

Fig. 2 shows the inter-racial correlation of the chord *np* and the corresponding arc. Except for the Fuegian and Dayak series which comprise 11 and 13 skulls respectively, all the male means are based on 15 or more individuals. It is clear that the inter-racial correlation between the two characters is very high. The same is true for the intra-racial coefficient between the same constants (see Table V). In both measurements the Fuegian and Eskimo types have the largest values and these differ from all the others with marked significance. The means of Oriental and Oceanic races are larger than those of European and Indian ones, but no clear distinctions can be made between the Oriental and Oceanic series on the one hand, and between the European and Indian ones on the other. In several cases, however, differences between the means for series representing the same family of races are statistical significant. Both measurements are capable of making many clear distinctions between different races but they fail to differentiate all pairs of the families of races from one another.

Fig. 3 shows the inter-racial correlation of the chord *np* and the subtense. The arrangement given is more interesting. The five racial groups—American, Oceanic, European, Indian and Oriental—are seen to occupy their own respective

Fig. 3. Inter-racial Correlation of the Chord np and Its Subtense (Male Means)

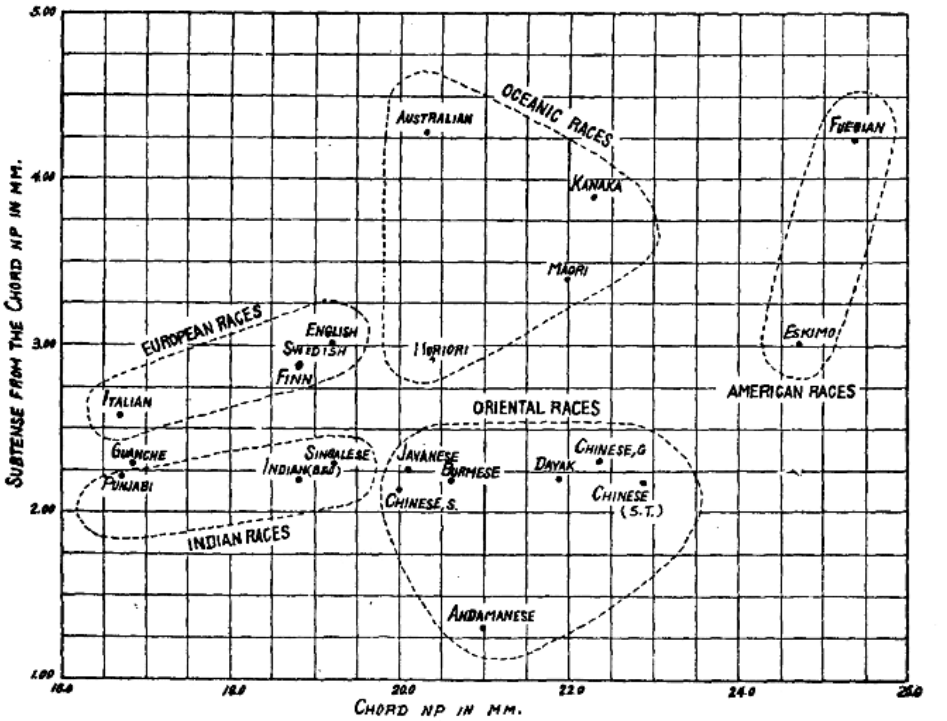
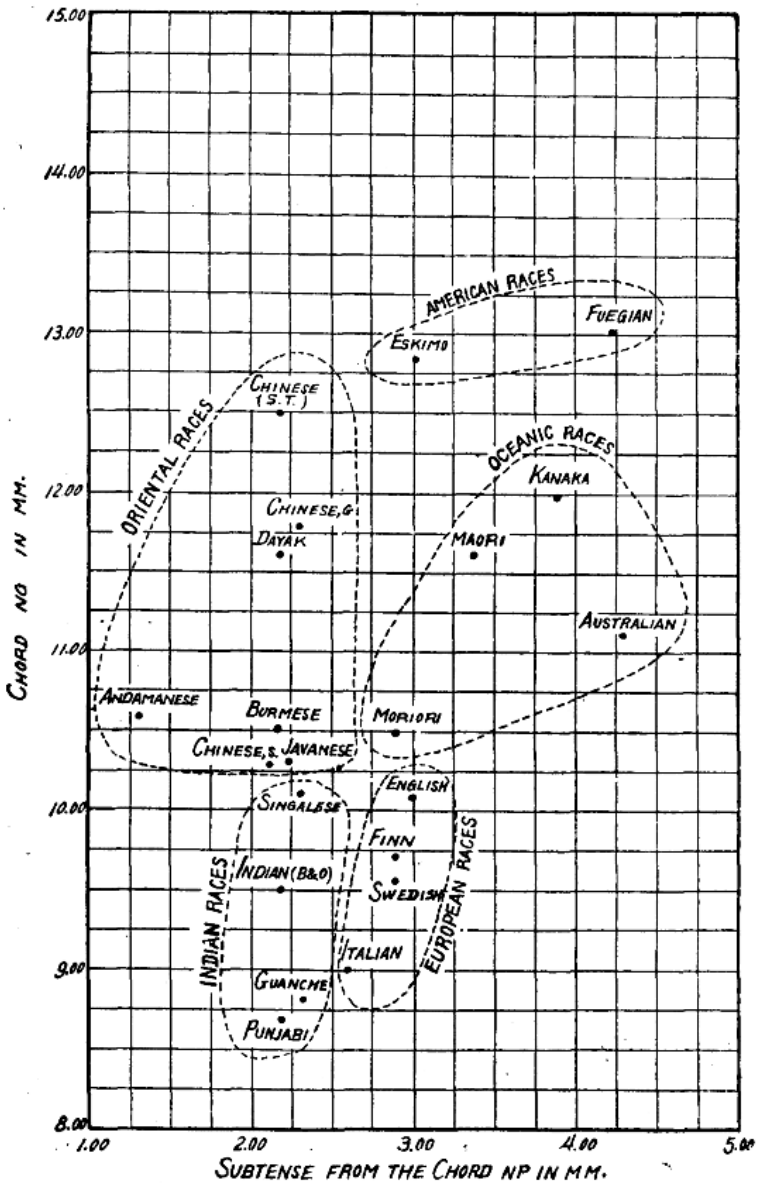
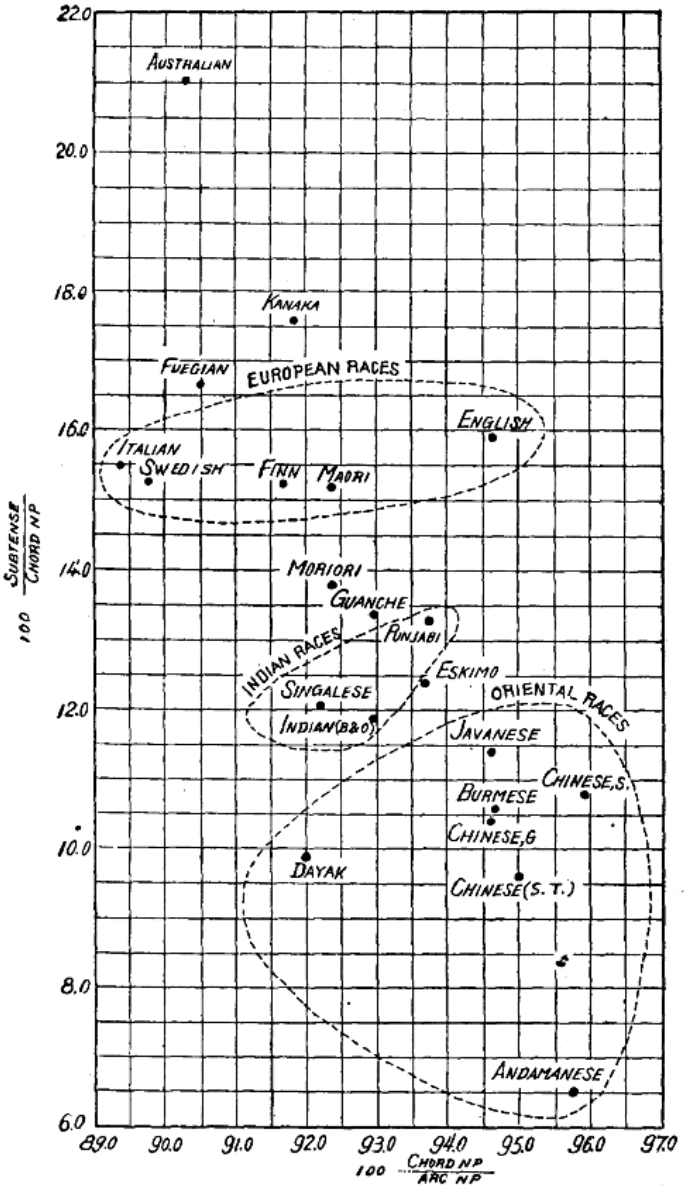


Fig. 4. Inter-racial Correlation of the Chord ng and Subtense from the Chord np (Male Means)



areas without any overlapping for the material available, although the series represented in each group are quite few in number. It should be noted that

Fig. 5.



if each character is considered separately no such clear inter-group distribution is made such as that shown in Fig. 3. Judging from the subtense measurement only, Australian and Fuegian crania have the most projecting glabella as was anticipated. The subtense for European races, being intermediate in position between the two extremes, is definitely higher than those for both Indian and

Oriental races. The means of the subtense for the three Indian and six Oriental series are very similar if the Andamanese series is excluded. It is of interest to note that the Andamanese type has the lowest subtense which is widely removed from those for other Oriental types. It is clear that the subtense measurement and its chord considered together are capable of providing a suggestive inter-group arrangement. They are also in some cases capable of differentiating clearly some pairs of races belonging to the same family.

Fig. 4 shows the distribution of the series given by the means for the chord *ng* and the subtense to the *np*. It shows that the arrangement provided by these two constants is very similar to that in Fig. 3, except that the two American series are closer to the Oceanic and Oriental series. Hence it is clear that the two chords *ng* and *np* are of almost equal value for the purpose of arranging races.

A distinct but negative and spurious inter-racial correlation is found between the two indices which are treated in Fig. 5. It is obvious that the indices arrange the races in somewhat similar orders, but the subtense-chord index discriminates them far more clearly than any other index does. Considering the index involving the subtense first, the arrangement provided is quite interesting. The range for the four Oceanic races varies considerably from 13.6 to 21.1. The Australian series stands at the top of the distribution as appeared in the case of the subtense, and the point indicated is widely removed from those for the other three Oceanic series. Three racial groups—the European, Indian and Oriental—are seen to occupy discrete ranges, showing that the European glabella region is, on the average, more protruding than the Indian and still more so than the Oriental. It is not without interest to note that the means for the Guanche and Eskimo series are not significantly differentiated from those for the Indian races. The position of the Fuegian type is within the range for the Oceanic group. The mean for the Andamanese skull is again extreme. We may conclude that the subtense-chord index may be counted as a valuable criterion, since it shows many clear intra-group differences, and it also makes several clear inter-group distributions. The chord-arc index fails to make any clear distinctions between the different groups of races, and it fails, too, to provide any intra-group arrangements to which significance can be attached. The relative value of the two indices can be further compared by considering some additional data. The following table shows the weighted means of the two indices for palæolithic skulls of both sexes compared with the modern ones. In the majority of cases the values were derived from mean measurements of sagittal type contours given in *Biometrika* and other journals. It is clear that

Table III. Variabilities of Measurements

Series	Standard Deviations					
	Measurements				Indices	
Male	(1) *chord ng*	(2) *Chord np*	(3) *Subtense to np*	(4) *Arc np*	(5) *100 Sub. np / Chord np*	(6) *100 Chord np / Arc np*
Chinese (in general) ..	1.94±.09	3.89±.19	0.84±.04	4.07±.20	3.33±.16	1.63±.08
Chinese (Southern)	1.24±.07	2.47±.14	0.67±.04	2.52±.14	3.62±.20	2.19±.12
Burmese	1.17±.10	2.26±.19	0.69±.06	2.14±.18	3.29±.28	2.30±.19
Javanese	1.17±.09	2.51±.17	0.84±.06	2.30±.17	4.53±.34	3.30±.25
Punjabi	1.56±.08	2.87±.15	0.75±.04	2.88±.15	4.06±.22	3.97±.21
Indian (Bihar and Orissa)	1.41±.11	2.63±.21	0.80±.06	2.57±.20	4.63±.36	2.79±.22
Singalese	1.67±.16	2.66±.26	0.76±.07	2.90±.28	4.16±.40	4.52±.44
English	1.48±.11	2.94±.21	0.89±.06	3.09±.22	4.76±.34	2.60±.19
Italian	1.00±.07	1.77±.12	0.71±.05	1.85±.12	3.43±.23	4.16±.28
Swedish	0.95±.08	2.02±.17	0.77±.07	1.97±.17	4.18±.36	4.84±.42
Finn	0.89±.09	1.92±.20	0.93±.09	2.10±.21	4.83±.49	3.41±.35
Australian	1.61±.09	2.94±.17	1.35±.08	3.35±.19	5.50±.31	3.79±.22
Kanaka	1.71±.11	3.19±.21	1.35±.09	3.51±.23	5.30±.35	3.89±.26
Maori	1.49±.11	2.74±.21	1.17±.09	3.12±.24	4.38±.33	3.14±.24
Moriori	1.80±.15	3.48±.29	1.14±.09	3.84±.32	4.44±.37	3.41±.28
Eskimo	1.47±.12	2.93±.24	0.92±.08	2.98±.25	3.54±.29	3.82±.32
Female						
Chinese (in general)	1.92±.11	3.95±.23	0.77±.05	3.91±.23	3.15±.19	1.70±.10
Kanaka	1.28±.08	2.30±.15	0.81±.05	2.54±.16	3.81±.25	3.48±.23
Moriori	1.05±.10	2.20±.23	0.45±.05	2.03±.21	2.52±.2	2.41±.25

of the Projection of the Glabella

Coefficients Variation					
Measurements				*Indices*	
(1) *Chord ng*	(2) *Chord np*	(3) *Subtense to np*	(4) *Arc np*	(5) *100 Sub. np / Chord np*	(6) *100 Chord np / Arc np*
16.45±.79	17.41±.83	36.05±1.73	17.23±.83	31.93±1.53	1.72±.08
12.07±.68	12.36±.70	31.31±1.91	12.10±.69	33.39±2.06	2.28±.13
11.12±.94	10.99±.93	31.80±2.68	9.86±.83	31.07±2.62	2.43±.20
11.37±.86	11.48±.87	37.33±2.82	10.82± 82	39.88±3.01	3.49±.26
18.01±.95	17.23±.91	34.09±1.81	16.21±.86	30.62±1.62	4.24±.22
14.83±1.19	14.02±1.12	36.46±3.21	12.75±1.02	38.91±3.48	3.00±.24
16.57±1.61	13.83±1.35	33.33±3.24	13.88±1.35	34.61±3.37	4.90±.48
14.68±1.08	15.35±1.13	29.57±2.30	15.26±1.12	29.97±2.34	2.75±.20
11.10±.75	10.61±.72	27.41±1.85	9.91±.67	22.19±1.50	4.65±.31
9.92±.86	10.72±.93	26.83±2.30	9.38±.81	27.39±2.34	5.39±.46
9.18±.93	10.20±1.04	32.56±3.31	10.21±1.04	31.67±3.22	3.72±.38
14.47±.84	14.45±.84	31.54±1.96	14.86±.86	26.17±1.58	4.20±.24
14.30±.95	14.30±.95	34.35±2.27	14.42±.95	30.13±1.99	4.24±.28
12.82±.95	12.48±.96	34.82±2.93	13.09±1.00	28.87±2.35	3.40±.26
17.21±1.43	17.08±1.42	39.72±3.30	17.44±1.45	32.27±2.68	3.69±.31
11.45±.95	11.85±.98	30.26±2.51	11.29±.94	28.57±2.37	4.08±.34
16.44±.97	17.52±1.03	48.73±2.86	16.66±.98	44.94±2.64	1.77±.10
11.67±.76	10.87±.71	39.71±2.58	11.32±.73	39.28±2.55	3.69±.24
9.86±1.03	10.48±1.09	22.17±2.31	9.23±.96	25.71±2.67	2.53±.26

the subtense-chord index distinguishes the racial types, the two sexes and specimens of different periods far more clearly than the other index does.

Specimens	Palæolithic Crania*		Modern Crania	
Sex	Male	Female	Male	Female
Subtense-chord Index	21.21 (15)‡	15.00 (9)	11.27 (1600)	7.68 (486)
Chord-arc Index	90.49 (15)	92.00 (9)	96.62 (1600)	98.40 (486)

* Materials nearly all derived from Morant's papers on Studies of Palaeolithic Man published in the *Annals of Eugenics*, London (1926–1930).

‡ Figures in brackets give the number of specimens pooled.

VI. *Comparison of Variability and Correlation.* Table III gives the standard deviation and coefficients of variation for all the racial distributions of absolute measurements and indices made up by 20 or more crania. The sexual differences in variability may be considered first. For the measurements of size, variability is usually judged by the coefficient of variation, while for the measurements of shape it is judged by the standard deviation. For these constants, out of 18 possible comparisons there are only 7 cases in which the difference of corresponding male and female values exceeds 3.0 times its probable error. In six cases the male constant is in excess of the female and there is only one case for which the reverse position is observed. This seems to indicate that the male variation shows, on the average, a distinct tendency to be greater than the female. However, as few series are available for comparison no definite conclusions of this kind can be drawn. Racial comparisons of the male constants of variability may be considered next. The percentages of significant differences —viz. for cases for which the ratio of the difference between two constants to its probable error is greater than 3.0—between pairs of series arranged in three groups are shown in Table IV. It is clear that the percentages in each horizontal row are not markedly different, but those in each vertical column are quite different. In other words, the differences of the variabilities of the same character are not markedly different for different kinds of racial comparisons, but those of different characters vary considerably. The percentage of significant differences is highest for the chord-arc index, and for the two chords, one arc and subtense-chord index, the percentages gradually decrease in this order. The subtense measurement has the smallest percentage. It should be noted that the variation of the last character is the least inter-racially, but its intra-racial variation, as judged by the coefficient of variation, is the largest amo ; the characters compared. (See Table III).

Table IV Percentages of Significant Differences ($\frac{\Delta}{P.\ E.\ of\ \Delta} > 3.0$) in Variability for the Six Constants (Male Series)

Characters	*Percentages of Significant Differences in Variability between Series of:*		
	the Same Family (21 comparisons)	*Different Families (99 comparisons)*	*All Races (120 comparisons)*
Chord ng	24.0	28.4	27.5
Chord np	28.0	22.1	23.3
Sub. to np	00.0	4.2	3.3
Arc np	24.0	30.5	29.2
$100\frac{\text{Sub. np}}{\text{Chord np}}$	16.0	12.6	13.3
$100\frac{\text{Chord np}}{\text{Arc np}}$	36.0	43.2	41.7
All Characters	21.3	23.5	23.1

Table V. Intra-racial Correlations of the Measurements of Glabella Prominence

Male Series	*No. of Crania*	*Pair of Characters*			
		Chord and Subtense*	*Chord* and Arc*	*Subtense and Arc*	*Two Indices*
Chinese (in general)	99	0.41±.06	0.98±.003	0.68±.04	−0.51±.05
Javanese	40	0.48±.08	0.95±.01	0.61±.07	−0.68±.06
Punjabi	81	0.41±.06	0.96±.01	0.52±.05	−0.42±.06
English	44	0.44±.08	0.98±.004	0.55±.07	−0.57±.07
Australian	81	0.51±.06	0.96±.01	0.65±.05	−0.67±.04
Kanaka	52	0.44±.08	0.94±.01	0.66±.05	−0.82±.03
Moriori	33	0.69±.06	0.97±.01	0.77±.05	−0.53±.08

* Referring to the chord np.

Table V gives the intra-racial correlations between certain pairs of the five constants for some of the larger male series. It will be seen that the coefficients for the same pair of characters do not differ with marked significance, while those for different pairs of character vary considerably. The results appear to be similar to those found in the case of variabilities. It might have been anticipated that since the arc and the subtense both provide a measure of the curvature of the glabella region they would be highly correlated with one another But in fact the highest correlation is found for the chord *np* and the corresponding arc. The coefficients range from .94 to .98 and they are appreciably higher than any others in the table. In other words, intra-racially the larger the chord is, the greater is its corresponding arc. A high but negative and spurious correlation is found between the two indices considered, simply due to the fact that both have a common component of the chord *np*.

VII. *Conclusions.* The metrical material dealt with in this paper is ample enough to show that racial types of cranium differ quite appreciably in both the size and shape of the glabella region. On the basis of the analysis given above some tentative conclusions in connection with this feature may be drawn as follows:

(1) For the subtense measurement and the index involving the subtense the sexual differences are large. This indicates that the glabella region of the frontal bone is, on the average, definitely more protruding in the male than in the female as is generally supposed. For the other characters considered the sex ratios are of the usual order.

(2) Judging from the few series available the male variation shows a tendency to be greater than the female.

(3) Of the characters considered the subtense-chord index is the most valuable racial character, and it shows many significant differences between different racial series; it makes several distinctions between family groups of races and it also distinguishes modern man from early prehistoric ones. It is of the same nature as skin colour, the nasal index, measures of prognathism, of the 'flatness' of the facial skeleton and certain measurements of the malar bones. Hence it is suggested that this index might be included with advantages in the routine descriptions of racial series of crania.

(4) The chord-arc index shows some significant differences between the means of racial series, but it fails to make clear distinctions between the different groups of races. It thus appears to be of little value for purposes of racial classification.

(5) The four absolute measurements, especially the subtense, seem to distinguish the racial types in much the same way as most of the usual cranial characters do. They are capable of giving clear and suggestive arrangement when the means are considered in pairs by constructing bivariate distributions.

(6) In the case of the variation and correlation there are no marked differences between the different groups of races compared.

Finally, the writer wishes to thank Dr. Morant of University College, London, for giving him many suggestions in connection with the technique of measurements.

Neue Instrumente fur die Umriss-Zeichnung von Hand und Fuss

von T. L. Woo

Methoden der Hand-und Fuss-Umrisszeichnung wurden schon vor langer Zeit von Broca,[1] Topinard,[2] Martin,[3] Hrdlička[4] u.a. beschrieben. Die von ihnen angewandten Instrumente und Methoden sind tatsächlich einfach, jedoch unzureichend: Hand oder Fuss des zu untersuchenden Individuums werden ausgestreckt auf ein Papier gelegt bezw. gestellt, und einige Messpunkte werden mit dem Bleistift markiert, von denen aus die weiteren Masse genommen werden können. Die entsprechenden Umrisse werden dann mit einem der Länge nach halbierten Bleistift, der mit der Hand oder einem Instrument senkrecht zu halten ist, nachgezogen. Abgesehen von der Unbequemlichkeit der Durchführung erscheinen auf diese Weise gewonnene Umrisse aus folgenden Gründen wenig genau zu sein:

(1) Es ist selbst für den erfahrenen Beobachter ziemlich schwierig, den Stift während des ganzen Zeichenprocesses hindurch vollkommen rechtwinklig zu dem Papier zu halten. Wird der Stift aber nur ein wenig einwärts oder auswärts geneigt, ergeben sich daraus gewisse Veränderungen für die Umrissform, und die von ihr genommenen Masse werden ungenau sein. Der von Martin gemachte Vorschlag, den halbierten Bleistift mit seiner Kante an den senkrechten Schenkel eines kleinen Holzwinkels zu befestigen und diesen senkrecht um das Objekt herumzuführen, garantiert wohl ein genaueres Bild, ist aber in der Handhabung des halbierten Stiftes noch zu unbequem, besonders bei der Zeichnung von Details von Hand und Fuss.

(2) Auf diese Weise gezeichnete Umrissbilder ermöglichen nur einige Markierungen der Umrisse, während andere in der Fläche gelegene wichtige Punkte wie Phalangien der Finger und Zehen, die End-(Scheitel-) Punkte der interdigitalen Spalträume von Hand und Fuss und andere wichtige Punkte gleicher Art auf dem Handrücken bezw. Fussrücken nur schwer exakt zu Lokalisieren sind, da Hand und Fuss direkt auf dem Papier ruhen.

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[1] Broca, P: Instructions générales pour les recherches anthropologiques à faire sur les vivants. Paris (1879).

[2] Topinard, P: Éléments d'Anthropologie générale. S. 1134–35 (1885).

[3] Martin, R.: Lehrbuch der Anthropologie. Erster Band. S. 49 (1928).

[4] Hrdlička, A: Anthropometry. S. 77–81 (1920).

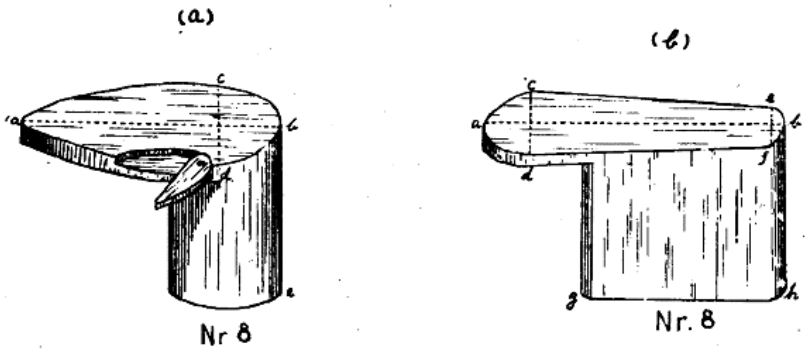
Um solche Schwierigkeiten zu vermeiden, werden einige verbesserte Instrumente für Umrisszeichnung der Glieder hier vorgeschlagen:

1. Handumrisszeichnung: Die Instrumente schliessen ein
   - *a*) Einen Satz von Handständern
   - *b*) Diagraphen, neue Form
   - *c*) Marmorplatte
2. Fussumrisszeichnung: Die Instrumente schliessen ein
   - *a*) Einen Satz von Fusständern.
   - *b*) und *c*) Diese Instrumente sind die gleichen wie unter 1.

In folgendem wird die Form der Instrumente beschrieben:

(1) Ein Satz von Handständern: Er besteht aus 8 verschieden grossen Ständern (Fig. I. a) die alle aus Hartholz hergestellt sind. Ihre Oberfläche ist oval, die Länge ihrer Longitudinalachse 4.5, 6.0, 7.5, 9.5, 11.5, 13.5, 15.5, und 17.5 cm. entsprechend den Handlängen der beobachteten Individuen verschiedenen Alters. Die Breiten des hinteren, die Handfläche tragenden Teiles sind 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 6.0 und 7.0 cm. (s. Fig. I. a, Linie c-d). Die Höhe der Ständer beträgt immer 6 cm. Das Vorderteil jedes Ständers besteht aus einem dünnen, hervorspringenden Brett, wodurch ermöglicht wird, dass der Arm des Diagraphen sich den Anforderungen entsprechend frei bewegen kann. An der (Medial-) Innenseite der ovalen Fläche befindet sich eine bewegliche Holzplatte, die durch eine Schraube nach aussen geschoben werden kann und den Daumen trägt.

Fig. I. (*a*) Ein Handständer und (*b*) Ein Fusständer.
(1/5 der natürlichen Grösse)

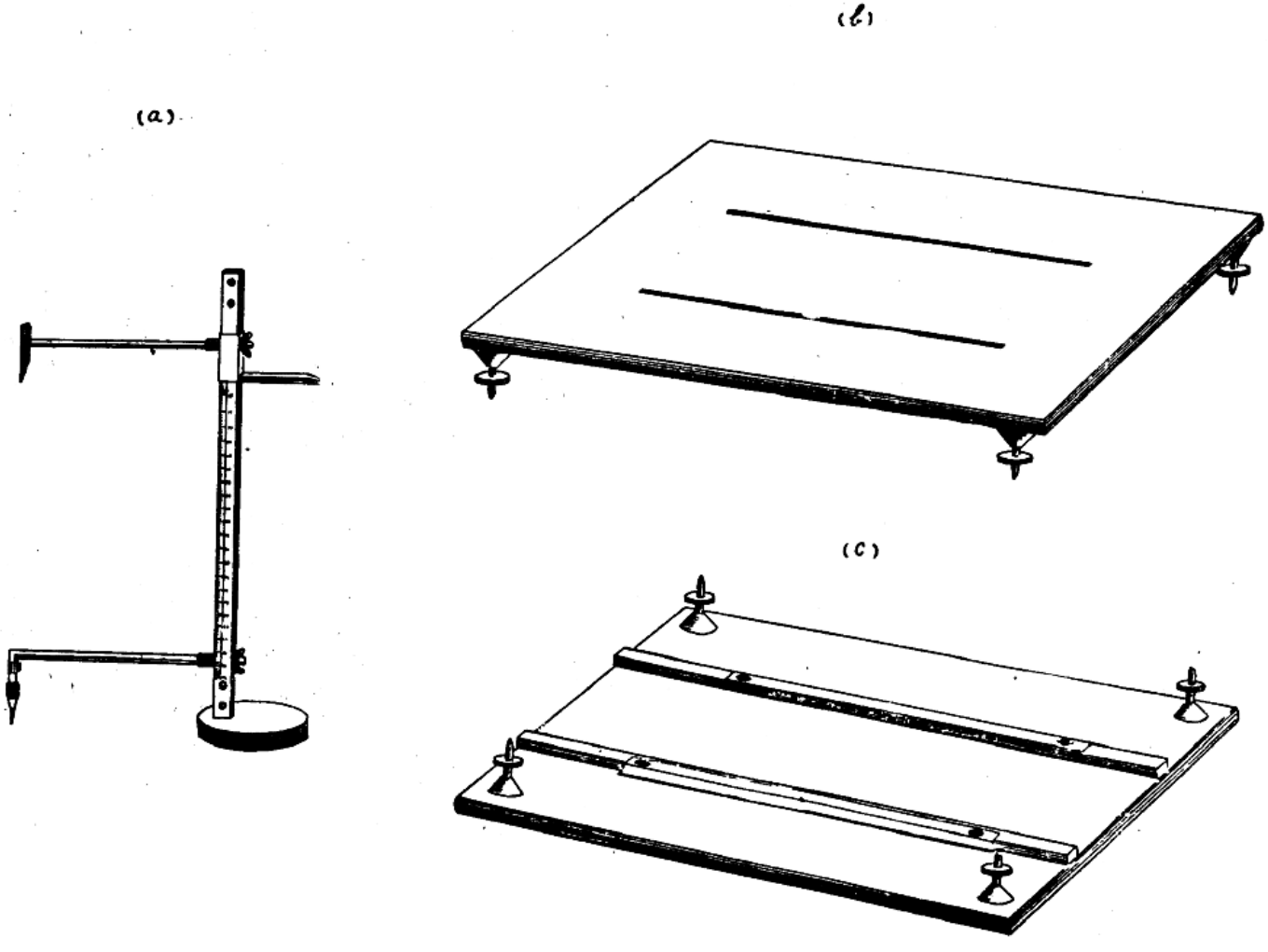


(2) Ein Satz von Fussständern: Für die Fussumrisszeichnung werden ebenfalls 8 Ständer gebraucht, deren Grösse jedoch von der der Handständer verschieden ist. Die Längen sind: 7, 9, 11, 13, 15, 17, 19, 21 cm. (S. Fig. I. b) für die Individuen verschiedener Altersklassen. Die Breite des vorderen Teiles variiert von 3.0 bis 7.2 cm., stufenweis 0.6 cm. zunehmend, während die Breite des für die Ferse bestimmter Teiles von 2.6 bis 5.4 cm. beträgt, sich jeweils um 0.4 cm. vergrössernd. Die Höhe ist die gleiche wie bei den Handständern. Ein Drittel der Länge wird von einer dünnen Platte gebildet, so dass der untere Arm des Diagraphen frei unter ihr hin und her bewegt werden kann, um die Spaltzwischenräume des Fusses und die Nagelform zu zeichnen.

(3) Der Diagraph in neuer Form: Seine Konstruktion hat gewisse Aehnlichkeit mit der des Martinschen,[1] jedoch ist der obere waagerechte Arm etwas anders konstruiert. Die Konstruktion des unteren Arms ist praktisch die gleiche wie bei Martin. Ein Ende hält den Zeichenstift, das andere ist beweglich mit dem Sockel des senkrechten Arms, der eine Skala trägt, verbunden, so dass es je nach Wunsch gehoben oder gesenkt werden kann. Wie schon erwähnt, ist der obere Arm anders als bei der Martinschen Konstruktion ausgeführt. Ein Ende ist ebenfalls mit dem senkrechten Arm verbunden und kann nach oben oder unten, parallel zum unteren Arm, verschoben werden. Am anderen, freien Ende ist eine 3 cm. lange dreikantige Säule befestigt, deren Aussenkante der Markierung der am weitesten nach aussen gelegenen Linien dient. Diese senkrechte Kante entspricht gerade dem Mittelpunkt des Zeichenstiftes; deshalb wird die Linie, die an der Aussenkante der prismatischen Säule vorbeiläuft, eine vollkommen entsprechende Linie auf dem Papier zeichnen. Im unteren, 1.5 cm. langen Ende läuft die dreikantige Säule in ein schiefes Prisma aus, wobei die Aussenkante der Säule ihre gerade Richtung beibehält. Es entsteht so eine gerade scharfe Nadel, die zur Markierung der Spaltzwischenräume gebraucht werden kann. Die entsprechende Nadel Martins ist ebenson wie der Perigraph Lissauers gebogen statt gerade und deshalb nicht für diesen Zweck geeignet, da sie nur bei gespreizter Hand die Spaltzwischenräume zeichnet. Der senkrechte Arm steht excentrisch auf seinem Sockel. Der Nullpunkt der Skala befindet sich an der Basis der senkrechten Säule. Eine sehr dünne Scheibe ist am oberen Arm so befestigt, dass ihre untere freie Kante als Zeiger an der Skala dient. Diese untere Kante entspricht genau der Spitze der am freien Endpunkt des oberen Arms befindlichen Nadel (schiefes Prisma); so dass die Entfernung

[1] s. (1) Martin, R.: Ueber einige neuere Instrumente und Hilfsmittel für den anthropologischen Unterricht, Correspondenzblatt der deutschen Gesellsch, für Anthropologie. Nr. 11, 1903. (2) Schlaginhaufen O.: Beschreibung und Handhabung von Rudolf Martin's diagraphen-technischen Apparaten, ibid., Nr. 15, 1907.

Fig. II. (*a*) Der Diagraph, neue Form. (*b*) Die Marmorplatte (Oberseite).
(*c*) Die Marmorplatte (Unterseite).



der Nadelspitze von der Basis auf der Skala an der senkrechten Säule abgelesen werden kann. Es ist also auch möglich, dieses Instrument zur Messung der Höhe oder Tiefe der Glieder zu benutzen, ohne auf Devenports[1] oder andere Tiefenmesser angewiesen zu sein Natürlich kann dieser Diagraph auch benutzt werden, um die Kontur auch anderer Körperteile und die Umrisse von Skelett-Teilen zu zeichnen. (s. Fig. II. a).

(4) Die anschraubbare Marmorplatte: Sie ist speciell für unsere Zwecke von ganz glänzendem Marmor hergestellt, jede Seite hat eine Länge von 50 cm. Sie wird an den 4 Ecken von vier Einstellschrauben getragen, die gestatten, sie in vollkommen waagerechter Lage zu halten. Die Marmorplatte wird von 2 parallelen Rinnen durchschnitten, jede ist 28 cm. lang und 2 mm. breit. Ihre Entfernung voneinander beträgt 14 cm. Ein Blatt gewöhnliches Schreibmaschinenpapier kannan beiden Seiten hineingesteckt werden. An der Unterseite der Platte sind innen neben den Rinnen 2 Holzstreifen angebracht, an deren Unterseite das umgebogene Zeichenpapier mit Reissnägeln befestigt werden kann. Fig. II *b* und *c* zeigen Ober-und Unterseite der Marmorplatte.

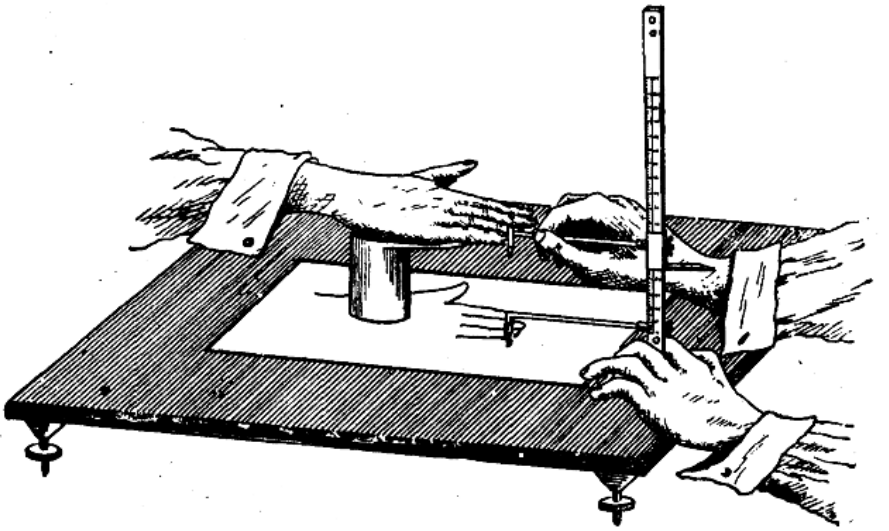
Der Zeichenvorgang

Der Zeichenprocess von Hand und Fussumrissen wird sehr vereinfacht bei richtiger Anwendung der oben besprochenen Instrumente. Beschreiben wir zuerst die Umrisszeichnung der Hand. Man stelle die Platte auf einen geeigneten Platz auf einen Tisch, an den sowohl 2 Beobachter als auch der Arm des zu untersuchenden Individuums leicht heranreichen können. Ehe man mit der Markierung beginnt, soll die Platte, d.h. ihre horizontale Oberfläche, mit Hilfe der Schrauben in eine genau horizontale Lage gebracht werden. Als geeigneter Handständer wird ein solcher ausgewählt, dessen Oberfläche ein wenig schmaler als die Hand des Individuums ist. Dieses wird unterwiesen, seine rechte Hand auf den Ständer zu legen und zwar mit dem Handrücken nach oben. Die Hand soll völlig ausgestreckt sein, die Längsachse des Mittelfingers die Fortsetzung des Unterarms bilden. Der Daumen wird so weit wie möglich abgespreizt und ruht auf der herausgeschobenen Platte des Ständers. Die übrigen 4 Finger sollen leicht geöffnet sein. Mehrere wichtige Punkte, wie Stylion radiale, Stylion ulnare, Metacarpale laterale und mediale, Phalangion und Daktylion der verschiedenen Finger, sowie Proxindicion, Distindicion und die Scheitelpunkte der Fingerspalten und andere wesentliche Stellen sollen zuerst von der Nadel des Diagraphen auf dem Papier markiert werden. Dann kann die Kontur der Hand, beginnend an einem Stylion, von der Aussen kante der dreikantigen Säule

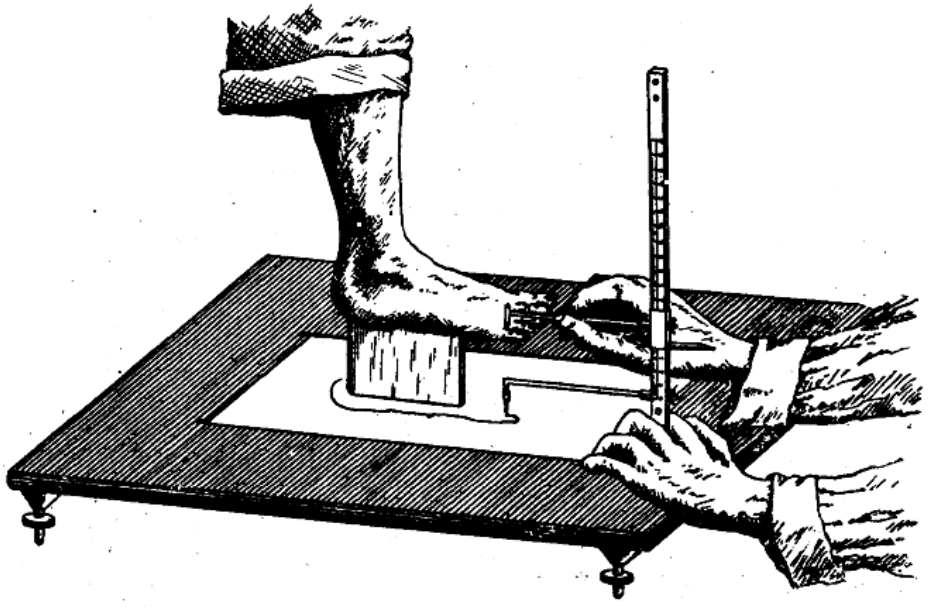
[1] s. Martinsches Lehrbuch; I Bd. S. 133, Fig. 55.

Fig. III. (*a*) Die Methode der Handumrisszeichnung.
(*b*) Die Methode der Fussumrisszeichnung.

(*a*)



(*b*)



aus gezogen werden. Die Kante soll gerade nur leicht berührt werden. Nach der Fertigstellung des Handumrisses wird der obere Arm des Diagraphen ein wenig höher geschraud. Mit der nach unten hängenden Nadel können dann die Spalträume, die Beugelinien der Gelenke und, wenn gewünscht, die Umrisse der Nägel leicht gezogen werden. Dann können noch, den Angaben der verschiedenen Autoren entsprechend, wichtige Masse von den gezeichneten Punkten aus genommen werden. Dasselbe Instrument kann auch für den Fall angewendet werden, dass der Handrücken nach unten, die Hand mit der Innenseite nach oben liegt. In dieser Lage wende man die Technik Hrdličkas für Messung von Länge und Breite an. Genau so geht der Vorgang der Umrisszeichnung des Fusses vor sich. Die Marmorplatte wird auf dem Fussboden mittels der Schrauben in horizontale Lage gebracht. Der rechte Fuss des Individuums ruht auf dem Stück Papier, das an dem Brett befestigt ist. Der rechte Unterschenkel befindet sich in einem rechten Winkel zur Marmorplatten-Ebene. Man mache mehrere Bleistiftpunkte, um die Lage folgender Punkte zu markieren: Acropodion, Pternion, Metatarsale laterale, Metatarsale mediale, die prominentesten Punkte der anderen 4 Zehen, den Anfangs-und Scheitelpunkt der Spalträume und den vordersten Punkt des inneren und äusseren Knöchels. Besonders muss beachtet werden, dass die Spaltzwischenräume des Fusses durch Uebereinanderlagerung der Zehen nicht so gut feststellbar sind wie die der Hand. Bei Erwachsenen ist die 2 Zehe manchmal etwas über die grosse oder die dritte Zehe gelagert. In diesen Fällen empfiehlt es sich, die Spaltzwischenräume so zu zeichnen, wie sie sich gerade dem Zeichenstift bieten, nur muss dabei bemerkt werden, ob die Begrenzung des oberen oder des unteren Spalträumes benutzt wurde. Die Nagelformen der Zehen können mit dem unteren Ende der Nadel genau gezogen werden. Die Dicke des Fusses vom Spherion aus oder die Höhe der Plantar Arch., d.h. die vertikale Entfernung von Auftrittsebene und dem obersten Punkt des os naviculare, können mithilfe dieses Diagraphen exakt gemessen werden, und die wesentlichen Fussmasse schliesslich von den markierten Punkten aus genommen werden. Bei der Untersuchung von Kindern oder Neugeborenen müssen einige Assistenten zugezogen werden, die Hände bezw. Füsse in der richtigen Lage festhalten. Die Methode der Umrisszeichnung für Hand und Fuss ist in Fig. III *a* und *b* wiedergegeben.

Ilustrierende Beispiele

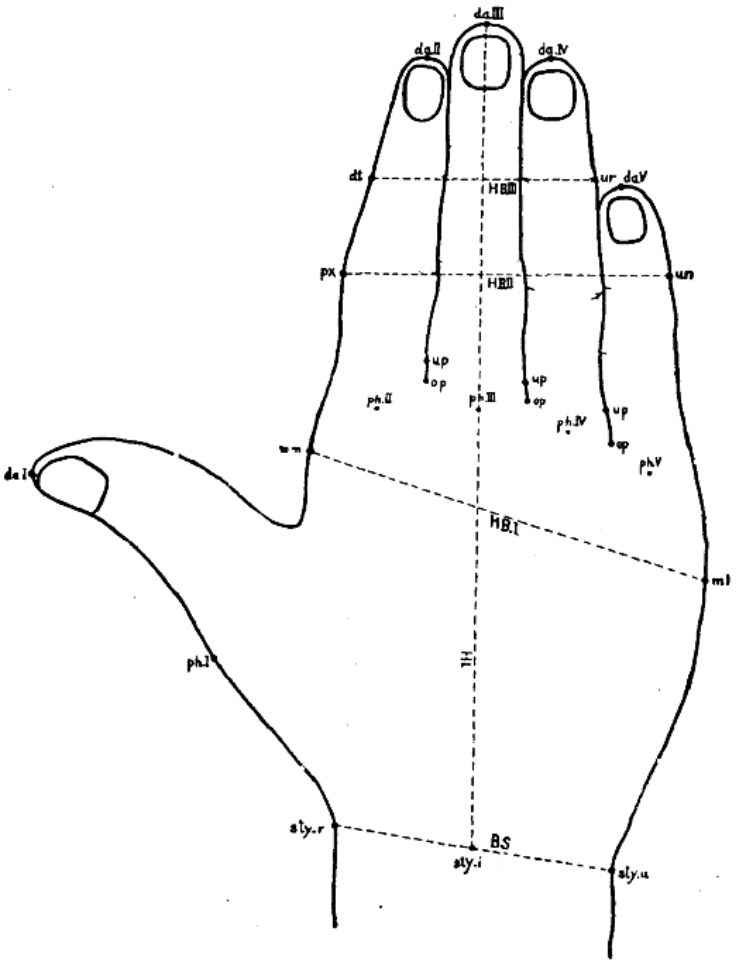
Richtlinien für die Auswahl des jeweils geeigneten Fuss oder Handständers für Individuen verschiedenen Alters sind nicht leicht zu geben, solange nicht die Altersanordnung und Variationsbreite der Hand und Fussmasse, besonders

Längen-und Breitenmasse, bekannt sind. In den Jahren 1935–1937 unternahm der Verfasser eine ausgedehnte Untersuchung der anthropologischen Merkmale chinesicher Schüler und Studenten beiderlei Geschlechts aller Altersklassen in Süd-Kiangsu. Unter den untersuchten Merkmalen befinden sich auch alle Längen-und Breitenmasse von Händen und Füssen. In der folgenden Tabelle I wird die Beziehung zwischen Altersgrenze und Nummer des Ständers für beide Extremitäten nach den Durchschnittsergebnissen der obigen Untersuchung angegeben. Es muss dabei bemerkt werden, dass die Variation jedes anthropologischen Merkmals gross ist, und die in der Tabelle angegebenen Altersgrenge der untersuchten Merkmale nur ein roher Anhalt sind. Zweifellos muss eine grosse Anzahl der zu untersuchenden Personen individuell in der Auswahl der Ständer den besonderen Massen ihrer Extremitäten entsprechend, behandelt werden. Um die Anwendung der hier angeführten Instrumente zu illustrieren, wurden 8 verschieden alte Chinesen aus verschiedenen Provinzen als Objekte ausgewählt; weger des beschränkten Raumes werden nur die Umrisse eines Individuums (Nr. 6) auf Figur IV und V gezeigt. Sie sind genau den oben angegebenen Richtlinien entsprechend gezeichnet. Die beigefügten Buchstaben geben die Messpunkte an, von denen bei der Zeichnung ausgegangen wurde. Einige wesentliche Masse, die von dem entsprechenden Umriss genommen werden können, sind schraffiert wiedergegeben. Die folgende Tabelle II zeigt die Besonderheiten der Individuen und Masswerte, wie sie die Kontur aufweist. Definitionen dieser Messungen und ihre quantitative Analyse werden in einer speziellen Arbeit des Verfassers über Hand—und Fussformen der Chinesen, die in Kürze erscheinen wird, besprochen werden.

Im Grossen und Ganzen scheinen die hier angeführten Instrumente für die Umrisszeichnung der Extremitäten besser zu sein als die von früheren Autoren benutzten Modelle. Zumindesten können 3 Vorteile bei ihrer Anwendung hervorgehoben werden:

1. Der Zeichenstift wird automatisch immer rechtwinklig zur Basis gehalten.
2. Die Instrumente können für die Nachzeichnung der Gliederformen im Detail dienen.
3. Auch die verschiedenen wichtigen Punkte, die innerhalb der Kontur liegen, können genau markiert werden.

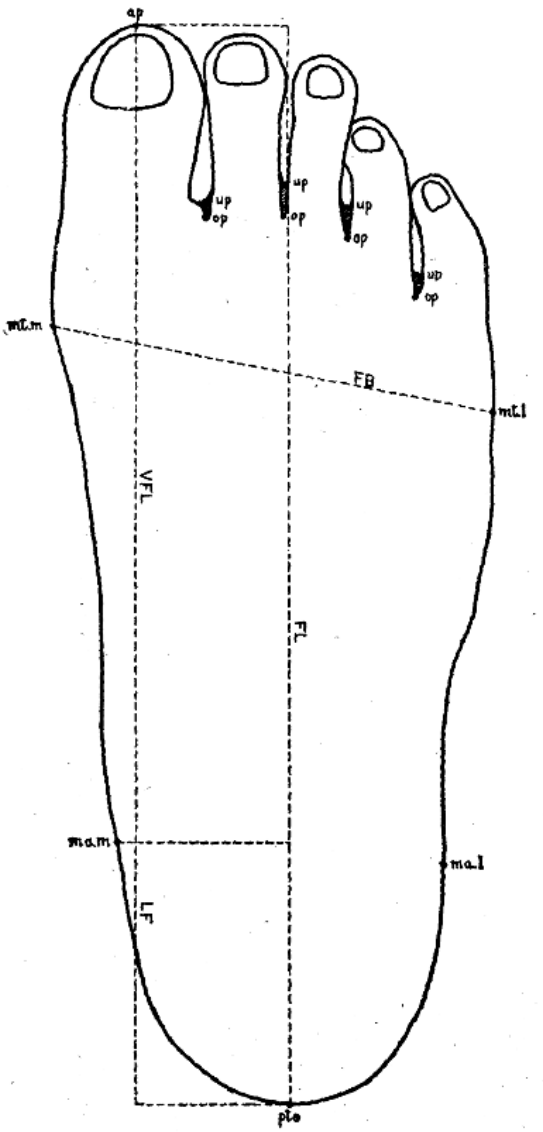
Fig. IV. Umriss einer rechten männlichen Hand.
Nr. 6, Tab. II. Alter: 10.8 Jahre.
(Nat. Gr.)



Messpunkte; sty. r = Stylion radiale, sty. u = Stylion ulnare, sty. i = Interstylion, da = Daktylion, ph = Phalangion, mm = Metacarpale mediale, ml = Metacarpale laterale, px = Proxindicion, dt = Distindicion, un = Ulnoquintion, ur = Ulnoquartion, op = Oberer Fingerspaltscheitelpunkt, up = Unterer Fingerspaltscheitelpunkt.

Masse: HL = Handlänge, HB. I = Handbreite I, HB. II = Handbreite II, HB. III = Handbreite III, BS = Breite zwischen den Stylia.

Fig. V. Umriss eines rechten männlichen Fusses.
Nr. 6, Tab. II. Alter: 10.8 Jahre.
(Nat. Gr.)



Messpunkte: ap = Acropodion, pte = Pternion, mt. m = Metatarsale mediale, mt. l = Metatarsale laterale, ma. m = Die Vertikalprojektion des vordersten Punktes des medialen Malleolus, ma. l = Die Vertikalprojektion des vordersten Punktes des lateralen Malleolus, *op* = Oberer Zehenspaltscheitelpunkt, up = Unterer Zehenspaltscheitelpunkt.

Masse: FL = Fusslänge, FB = Fussbreite, V. FL = Vordere Fusslänge, LF = Länge der Ferse.