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HAND ANTHROPOMETRY OF U.S. ARMY PERSONNEL

By
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13. ABSTRACT *(Maximum 200 words)*

This report presents the results of the analysis of data on the hand gathered during the 1987-1988 anthropometric survey of Army personnel. Data are presented in the form of summary statistics and percentile tables. In addition, correlations, regressions, analyses of variance and principal components for sex and racial groups, nonmetric trait frequencies, and observer error magnitudes are reported. These data summaries are presented for a subset of the actual data base (1003 men and 1304 women) that match the working data bases summarized in the Anthropometric Survey's Final Report. Therefore, the hand working data bases match the demographic characteristics of the June 1988 Army, and are comprised of individuals who are in the Anthropometric Survey's working data bases. The dimensions given in this report include 64 hand measurements that were obtained using a special photometric system. An additional 22 dimensions, obtained through direct measurement during the Anthropometric Survey, were added to the hand data base. Therefore, a total of 86 dimensions are presented in this report. Measurement descriptions, visual indices, and a glossary are included to aid readers in locating dimensions and in interpreting presentations.

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HAND ANTHROPOMETRY OF U.S. ARMY PERSONNEL

CHAPTER I

INTRODUCTION

> The difference between the hand of a monkey and the hand of a man may seem small when they are both placed on the dissecting table, but in that difference whatever it may be, lies the whole difference between an organ limited to the climbing of trees or the plucking of fruit, and an organ which is so correlated with man's inventive genius that by its aid the Earth is weighed and the distance of the Sun is measured.
>
> -- The Duke of Argyle
> [George Campbell, 1823-1900]

As an organ of the body, the hand fulfills many of the more important functions in the exploration and manipulation of the environment. Yet, in evolutionary terms the hand represents one of the most primitive body structures. By retaining five independent and mobile digits, the human hand has changed very little from the pattern of the earliest pentadactyl vertebrates (Lewis, 1977). It is because of this generalized morphology that the hand retains the manipulative capabilities associated with the development of tool use, tool making, and many of the other innovations of human culture. Thus, the hand is often thought of as one of the most distinctly human aspects of our anatomy.

Because of the uses and potential abuses of the hand, it is often necessary to provide gloves that will protect the hand without compromising too many of its functions. This can best be accomplished by designing handwear and hand operated equipment that fully appreciates the variety of sizes, shapes, and proportions of the hands of the potential user. This type of information is gathered best through an anthropometric survey of the hand that is sensitive to both the hand's structural complexity and to its size variations. This implies a set of measurements that approach the number of measurements used to describe the entire human body. The net effect of these requirements is that surveys of the hand have encompassed a large number of measurements on very few subjects (thus being comprehensive but potentially lacking in population variation) or a few measurements taken in the course of a larger anthropometric survey (thus incorporating population variation but lacking the ability to describe the hand's complexity).

During the course of the 1988 Anthropometric Survey of U.S. Army Personnel (Gordon, et al. 1989) special (collimated light) photographs of the hand were taken. These photographs were digitized to yield 64 hand dimensions for each

subject. These dimensions were joined with an additional 22 values to produce an anthropometric description of over 8000 subjects that span 86 hand related dimensions. Thus, a data base was created that addresses both the hand's complexity and its variations across a population. This volume reports the analysis of these hand data.

HISTORICAL REVIEW OF HAND SURVEYS:

Most investigations of hand anthropometry can be broken down into two categories: general surveys and application surveys. General surveys refer to attempts to describe hand variation across large populations. Because population description is the principal aim of these surveys, there is almost always a marked conflict between sample size and comprehensive measurement. Application surveys refer to data gathered with a specific product in mind. Accordingly, application surveys often refer to small but strictly defined populations, such as occupation groups. Thus, application surveys are more comprehensive but potentially less appropriate when generalizing to other populations. The utility of either type of data set depends upon specific research goals. The following discussion reviews some notable hand survey reports.

To date, one of the most sweeping reports on the hand is that of Robert White (1980). This report collates data from 27 different anthropometric surveys, and thereby reports data summaries based on over 75,000 subjects. However, few of the surveys used in this report were specific surveys of the hand, and so data are presented on only ten hand dimensions. Problems of different measuring techniques and population sample definitions complicate the comparability of data between surveys reported in this study.

Barter and Alexander (1956) present an early application survey with the aim of developing a glove sizing system. This report summarizes 18 hand dimensions based on 100 subjects. Although the number of dimensions seems low to comprise a truly comprehensive description of the hand, the reported dimensions were tailored to meet the needs of glove design. Therefore, this report includes data on hand dimensions that are not normally found in most hand surveys.

A report by Jones, et al. (1958) attempts to describe biomechanical characteristics of the hand using data derived from more general surveys. In this way, the report of Jones, et al. combines aspects of both a general and application survey. This report presents useful information on the correlation of hand dimensions and includes data on range of motion and grip position. Jones, et al. show that there is a poor relationship between the length and breadth dimensions of the hand. However, because the report combines data from different surveys, there is little opportunity to show the relationship between hand movements and hand dimensions.

Vicinus (1962) presents a comprehensive hand survey based on X-ray anthropometry of 253 male subjects. A total of 44 measurements were taken with the added benefit that data are presented for both the left and right hand. The comparison of right and left hands constitutes one of the unique contributions of this report. The report shows that there are statistically significant differences between the two hands. Vincinus's report shows that the right hand tends to be longer and wider than the left. In addition, the left hand shows greater variability in breadth, while the right hand shows greater variability in length. This report also confirms the generally poor correlation between hand length and breadth dimensions.

One of the more comprehensive general surveys is presented in two reports by Garrett (1970a; 1970b). These reports summarize 56 hand dimensions based on 211 women and 148 men. The data are comprehensive in that they describe a wide range of hand dimensions. However, the sample populations are rigidly defined, so that there may be limited application of these data to a more general population. The women in this survey were comprised solely of Women in the Air Force (WAF) Nurse and Biomedical Science Corps personnel. Similarly, the men in this survey were comprised solely of Air Force flight personnel. Since other investigations (outlined below) report significant differences in hand dimensions among ethnic and occupation groups, the data presented in Garrett's reports cannot be readily applied to more general populations.

Investigations conducted by Davies, et al. (1980) and Courtney (1984) were specifically designed to compare hand dimensions among ethnic groups. These two investigations report data on 23 hand dimensions for 91 and 100 subjects, respectively. In each case, the reports document significant differences among ethnic/racial groups. A report by Wagner (1988) explored the anthropometry of 127 male and 111 female pianists. Wagner was able to show that the hands of professional pianists, as a specialized occupational group, are unique in their anthropometric characteristics when compared with more general population surveys. These results definitively show that general population statements should not be drawn from application specific surveys.

The most recent general survey of the hand is reported by Gooderson, et al. (1982). This survey reports 62 dimensions of the left and right hand measured on 300 men and 187 women in the British Army. Data summaries are presented in addition to separate bivariate regression and correlation statistics for males and females. These presentations confirm the general lack of relationship between breadth and length measurements. However, no attempt is made to analyze the differences between men and women, or between right and left hands.

STRUCTURE OF THE HAND: AN ANATOMICAL REVIEW:

Valuable descriptions of the structure and function of the hand can be found in Brunnstrom (1966), Warfel (1974), Napier (1980) and Cartmill, et al. (1987). Knowledge of the anatomical arrangement of the hand, as well as the entire upper limb, is important for a full understanding of the system's mechanical function. Each bone represents a link in the kinematic chain of the hand system. Many of the muscles that move the hand and fingers are located in the forearm. Some of these muscles even cross, and therefore influence, the elbow. Therefore, it would be a mistake to exclude structures of the arm in an analysis of hand morphology. It is for this reason that some dimensions of the upper and lower arm are included in the data summary portion of this report.

The skeleton of the hand is comprised of five digital rays arising from the wrist. The thumb is counted as the first digit and the little finger as the fifth. In total the hand is comprised of 26 bones: 14 phalanges, 5 metacarpals, and 7 carpals (see Figure 1). Phalanx (plural phalanges) is the generic name for a finger bone. Excluding the thumb, each finger contains three phalanges, which from the fingertip down are: the distal phalanx, the medial phalanx, and the proximal phalanx. The thumb contains only two phalanges: the distal phalanx and the proximal phalanx. The palm of the hand is made up of five metacarpals, each of which is numbered along with its associated digit. Lastly, the wrist is made up of the carpal bones, each of which has a separate name. The carpals are arranged in two rows: the first row of four bones (trapezium, trapezoid, capitate, hamate, and pisiform), and the second row of three bones (scaphoid, lunate, and triquetral). The bones of the wrist are bound together by two tendinous sheaths, the flexor and extensor retinacula. All muscle tendons (except for palmaris longus), blood vessels and nerves pass beneath these tendons. The flexor retinaculum is useful as an indicator of the axis of rotation for flexion and extension of the wrist. The effect of this movement is noted on the skin by the formation of the distal wrist, or bracelet, crease (Moore, 1985). Not part of the hand, but important to its function, are the two bones of the forearm (radius and ulna) and the single bone on the upper arm (humerus).

The joints of the hand are named for their position and for the bones that comprise them. Thus, the joint between a finger's distal and medial phalanges is the distal interphalangeal joint, abbreviated as the DIP joint. Similarly, the joint between the proximal and medial phalanges is the proximal interphalangeal joint, abbreviated as the PIP joint. Because the thumb has only two phalanges, the joint between them is the interphalangeal (abbreviated IP) joint. Movement at all interphalangeal joints is limited to flexion and extension. The primary muscles responsible for finger flexion (bending) are flexor digitorum profundus and flexor digitorum superficialis. Flexor digitorum superficialis originates just above the elbow (on the medial epicondyle of the humerus) and by dividing into four tendons it inserts on the base of the medial phalanges of digits 2 through 5. This muscle flexes all the joints between the elbow and the PIP joints. Flexor digitorum profundus originates on the ulna, just below the elbow, and by dividing into four tendons

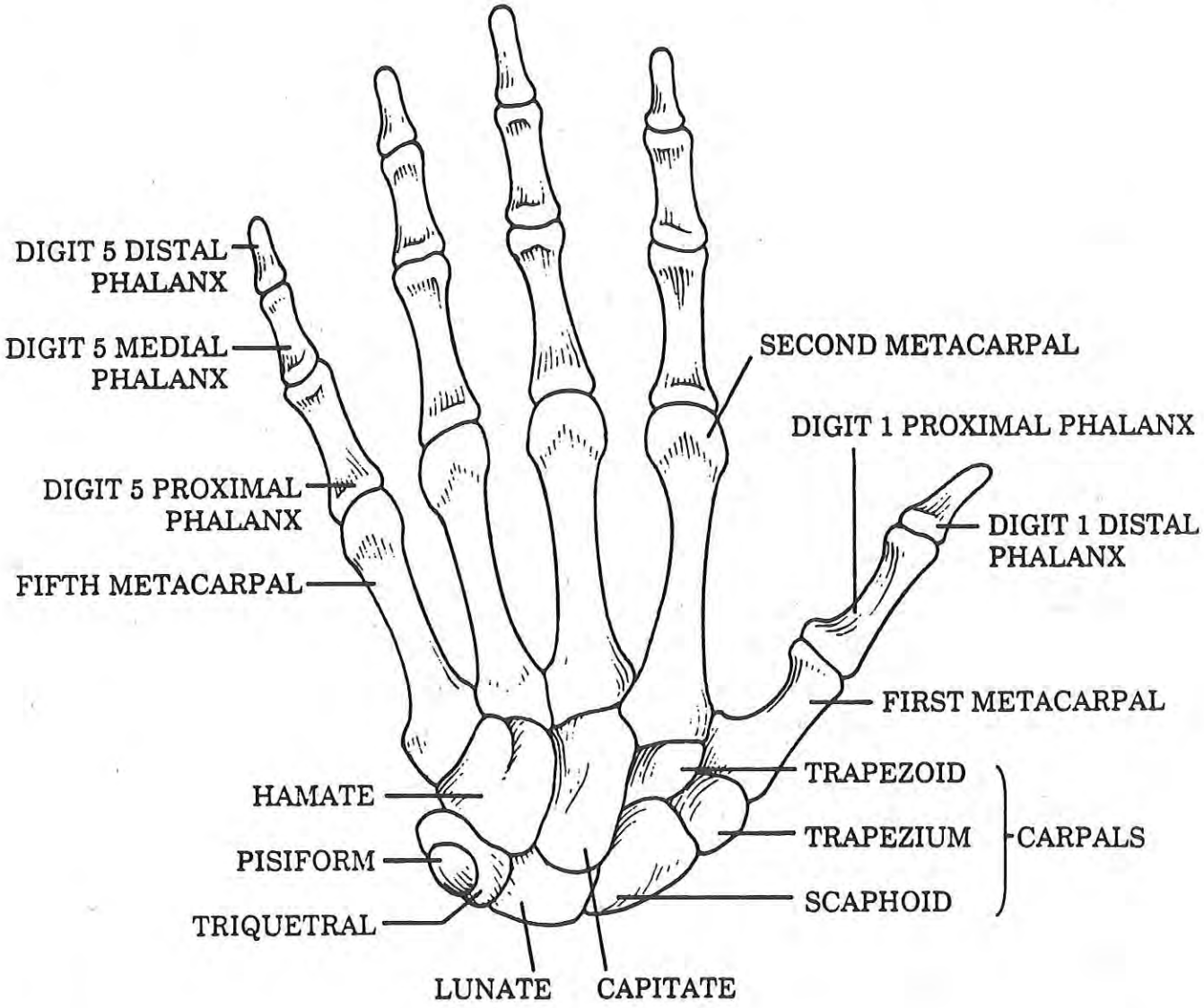


Figure 1. The Bones of the Hand.

inserts on the base of the distal phalanges of digits 2 through 5. This muscle, similarly, flexes all the joints between the wrist and DIP joint. These two muscles are opposed by a single muscle, extensor digitorum, which originates just above the elbow (lateral epicondyle of the humerus) and divides into four tendons that insert on the extensor expansion sheaths of digits 2 through 5. This muscle extends all the joints between the elbow and the DIP joints. The two flexor muscles, by inserting on different parts of the finger, have their power focused on two different interphalangeal joints. This arrangement adds to the power of grip by causing the distal phalanges to curve under a grasped object. However, it is also because these muscles act in concert on four digits that there is very little ability to flex and extend the digits independently. There are, however, two exceptions.

Extension of digit 2, the index finger, is aided by an independent muscle, extensor indicus. This muscle originates on the ulna and inserts on the expansion sheath of the second digit. As such, it can extend the wrist, but its primary function is to extend the index finger when the other fingers are flexed, a posture commonly adopted when pointing. Movements of the fifth finger are also aided by three muscles that are intrinsic to the hand (flexor digiti minimi, abductor digiti minimi and opponens digiti minimi, which collectively form the hypothenar muscle group) and one muscle in the forearm. Abductor digiti minimi and opponens digiti minimi both originate from carpal bones and insert on the base of the fifth digit's proximal phalanx. These muscles provide the fifth digit with the ability to move away from the hand (abduct) and to form a finger pad to finger pad grip (the precision grip) with the thumb through opposition. Extensor digiti minimi originates above the elbow (lateral epicondyle of the humerus) and inserts on the expansion sheath of the fifth digit. Like extensor indicus, extensor digit minimi's primary function is to extend the fifth digit when the other fingers are flexed.

The joints between the phalanges and the metacarpals are the metacarpo-phalangeal (MP) joints. At the MP joints the fingers are capable of flexion, extension, abduction, adduction and rotation. The remaining hypothenar muscle, flexor digiti minimi, originates on the hamate and inserts on digit 5's proximal phalanx. This muscle flexes the fifth digit at the MP joint. There are a series of four other intrinsic hand muscles, the lumbricals, that are uniquely positioned to act upon the finger joints. These muscles originate on the tendon of flexor digitorum profundus and insert on the tendon of extensor digitorum. By tensing the tendons of these muscles, the lumbricals simultaneously flex the metacarpo-phalangeal joints while extending the proximal and distal interphalangeal joints. The interosseous muscles are a series of eight muscles that lie between the metacarpals. As a group they insert on alternating sides of the bases of the proximal phalanges. Therefore, these muscles produce abduction (spreading the fingers out) and adduction (bringing the fingers together) at the MP joints. The combination of actions of flexion, abduction, extension and adduction cause the fingers to move in a circular pattern about the MP joint, which is called rotation.

A brief review of the muscular actions of digits 2 through 5 shows that when acting with strength, they must all act in concert. This is because movement in these digits is caused by the same primary muscles, which are located in the forearm. Only digits 2 and 5 have muscles that permit independent action. Digit flexion can occur separately at all the interphalangeal joints, but extension must occur at all joints simultaneously.

The thumb is the most independently active digit of the hand, and is associated with several distinct muscles. Four of these muscles are intrinsic to the hand and form the thenar eminence, which is commonly known as the ball of the hand. The thenar muscles all arise from carpal bones, and so act only upon the joints of the first digit. Flexor pollicis brevis inserts on the base of the proximal phalanx, and flexes the thumb at the MP joint. Adductor pollicis originates along the shaft of the third metacarpal down to the scaphoid bone. This muscle adducts the thumb, or brings the thumb in towards the center of the palm. Abductor pollicis brevis produces the opposite action. This muscle originates on the flexor retinaculum and inserts on the lateral side of the first phalanx. It is positioned to move the thumb away from the center of the palm, abduction. Opponens pollicis originates on the trapezium and inserts on the first metacarpal. This muscle moves the thumb out of the plane of the hand. This position, termed opposition, is important for forming the different gripping positions.

Stronger actions of the thumb are produced by muscles located in the forearm. Flexor pollicis longus originates on the radius and inserts on the distal phalanx of the first digit. As such, it is the only muscle capable of flexing the IP joint of the first digit. Abductor pollicis longus originates on the shaft of the ulna and inserts on the base of the first metacarpal. It is therefore positioned to abduct the thumb at the metacarpo-phalangeal joint. Extension of the thumb is produced by two muscles: extensor pollicis longus and extensor pollicis brevis. Extensor pollicis brevis originates along the shaft of the radius and inserts on the base of the proximal phalanx of the first digit. Extensor pollicis longus originates along the shaft of the ulna and inserts on the base of the distal phalanx of the first digit. Like the flexor muscles of the fingers, these extensor muscles provide a means of independently extending the thumb at the IP and MP joints. The combination of all the musculature of the first digit makes the thumb the most mobile of all the fingers. It is capable of flexion, extension, abduction, adduction, rotation and opposition; and all these actions can occur independent of the position of the other fingers.

Other important movements of the hand occur at the wrist joint. The wrist is capable of flexion, extension, abduction, adduction, and rotation. The finger flexor and extensor muscles act as important wrist muscles, but there are six other muscles primarily devoted to movement about the wrist. Palmaris longus originates above the elbow (medial epicondyle of the humerus) and inserts on the palmar aponeurosis. The palmar aponeurosis is a strong fibrous tissue that tightly binds the skin of the palm to the hand skeleton. Because of its central insertion, palmaris longus acts primarily to flex the wrist. On the medial side of the hand and forearm are two muscles, flexor carpi ulnaris

and extensor carpi ulnaris. When these two muscles act in concert they cause the wrist to adduct, or move towards the little finger side of the hand. There is a group of three muscles on the other side of the forearm that act in the opposite direction: flexor carpi radialis, extensor carpi radialis longus and extensor carpi radialis brevis. These muscles, when acting together, cause the wrist to abduct, or move towards the thumb side of the hand. Because the hand's position in relation to the body is so variable, these motions are often called ulnar and radial deviation. In addition, as the muscle names imply, when the carpal flexors act together they flex the wrist and when the carpal extensors act together they extend the wrist.

There are two other positions that are important to hand and arm function, although their movements occur at the elbow joint. These positions are supination and pronation. A supinated hand is one with the palm facing upward, and moving the forearm into this position is called supination. A pronated hand is one with the palm facing down, and moving into this position is called pronation. Pronation and supination occur through the rotation of the radius about the radial head. Pronation is produced by two muscles of the forearm, pronator teres and pronator quadratus. Pronator teres originates above the elbow (medial epicondyle of the humerus) while pronator quadratus originates on the shaft of the ulna, both muscles insert along the radial shaft. Supination is also produced by two muscles: supinator and biceps brachii. Supinator is a small muscle that extends from the ulnar shaft to the radial shaft. Biceps brachii originates on the scapula and inserts on the radial tuberosity. The "biceps" is a very strong muscle and is capable of powerfully flexing the elbow or supinating the forearm. It is because of the powerful supination of biceps brachii that screws are inserted in a clockwise direction; the action of inserting a screw is supination. Similarly, the reason pull up exercises (palms out) are so much harder than chin up exercises (palms in) is that in pull ups the forearm is kept in a position of forced pronation and so the power of biceps brachii cannot be used.

Although the hand is at the end of the upper limb, many of the important structures associated with it are located throughout the arm. For this reason the structures of the hand should never be considered in isolation from the rest of the body. The human body is an integrated system. To consider items that are designed to accommodate only one portion of the body runs the risk of disaccommodating important functions in other areas. The data presented in this report includes several dimensions from related parts of the body. More important, however, is that this survey of the hand was conducted in conjunction with an anthropometric survey of the entire body. Therefore, any use of these data should be made in consultation with the full survey report.

THE 1988 ANTHROPOMETRIC SURVEY:

The data in this report were gathered in conjunction with the 1988 Anthropometric Survey of U.S. Army Personnel. A full description of the aims and methods of that survey is presented by Gordon, et al. (1989), but a brief review is justified.

The survey was conducted between July 1987 and August 1988 at 11 different Army posts in the United States. Among the unique aspects of this survey include the goals of: 1) gathering data on both men and women, so that measuring techniques would be comparable between the sexes; 2) oversampling minority groups so that data bases could be constructed to reflect demographic shifts in racial and ethnic composition; and 3) using active error checking routines during the measuring process so that mistakes could be detected and corrected while the subject was still available. A total of 25,811 soldiers were screened for this survey. At each screening, soldiers were randomly selected to meet sampling objectives in terms of age, sex, race, and ethnicity. From this screening sample 8,997 soldiers were selected for full body measurements, which constitutes the anthropometric data pool. Stratified random samples were further drawn from this data pool to match the demographic characteristics of the June 1988 Army. These random samples constitute the two working data bases of 1,774 men and 2,208 women that were used to report summary statistics.

DATA COLLECTION METHODS: THE PHOTOBOX AND HAND DIGITIZATION:

During the survey, in addition to a number of hand related dimensions that were directly measured, special photographs were taken of the right hand of each subject using the hand photobox (see Figure 2). The hand digitizing system was designed and built by Vance A. Deason of Deason Electro-Optics, under contract to Anthropology Research Project, Inc. The associated computer software (Hand.C, and related files, written using the Microsoft QuickC compiler) was developed by Kurt Wagner in association with Vance Deason. A full description of the development and validation of this device is presented by Zehner, et al. (1987). Therefore, only a brief description of the process will be presented here.

Collecting hand data was a two-step process that required two special devices, the hand photobox and the hand digitizing/dimensioning system. The purpose of the hand photobox was to produce two images of the hand of each subject on 35 mm negative film strips. Figure 3 shows a schematic outline of the hand photobox. The two images consisted of a palm photograph, made with ordinary light, and a hand silhouette formed using collimated light rays. The palm photograph was used to identify anthropometric landmarks on the hand of each subject, while the hand silhouette was used to digitize and then calculate the actual hand dimensions.

The collimated light silhouette constitutes the unique aspect of this system. The lenses within the photobox produce a collimated beam of light that shines down upon the hand of the subject. Collimated light rays are parallel light rays, and as such produce a crisp edge to the hand silhouette images. Normal, uncollimated, light moves out in random directions from its source. This means that when these light rays strike an object, and thus produce a silhouette or shadow, the edge of that shadow is fuzzy. This fuzziness, known

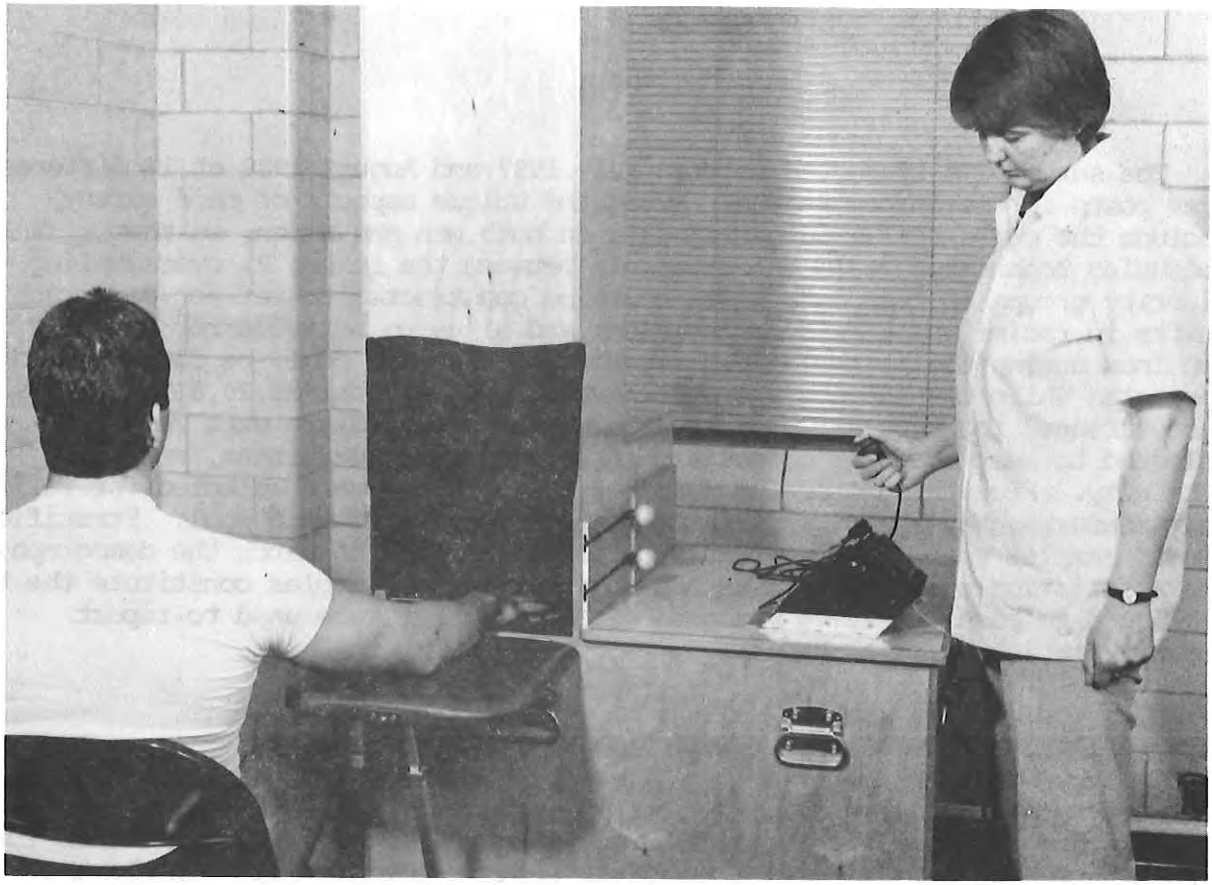


Figure 2. Person Seated at the Hand Photobox.

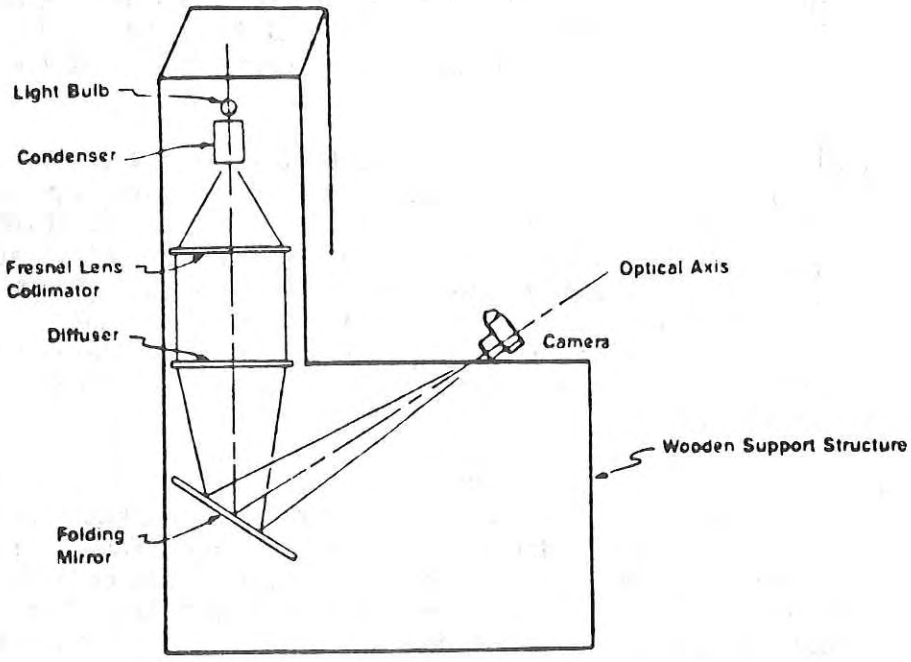


Figure 3. Schematic of the Hand Photobox.

as parallax distortion, is the result of light striking the object from various angles. Because the uncollimated light is not completely obstructed at the beginning of a shadow, the edge of the shadow becomes gradually darker until the light source is totally blocked. Thus, it is difficult to judge the exact position of the edge of an object based upon an analysis of its uncollimated light silhouette. Collimated light rays, however, all strike an object at the same angle. This means that a shadow produced by collimated light has a crisp, well defined, edge. If the light is perfectly collimated there will be no gradient from light to dark at the shadow's edge. Instead, the shadow's edge will be well defined by an abrupt shift from light to dark. Thus a collimated light silhouette photograph represents a true reproduction of the size of a subject's hand, and therefore serves as a permanent data record. Hand dimensions were calculated from these silhouettes using the hand digitizing/dimensioning system.

The hand digitizing/dimensioning system (see Figure 4) acquires dimensional information from 35 mm negative filmstrips. The system consists of a series of mirrors and beam splitters (see Figure 5), which present images that are picked up by a video camera. This video image is sent to an AT personal computer equipped with a video frame grab board. The hand images are then projected onto a high resolution video monitor. The system operator uses a computer mouse to locate anthropometric landmarks on the projected hand photograph. The system then optically superimposes the hand photograph and hand silhouette, so that the location of these landmarks can be translated to the silhouette image. Because the hand photograph is not a dimensionally exact representation of the hand, the computer program that drives the digitization process positions hand landmarks at the nearest edge of the hand silhouette. In this way, hand landmarks are placed onto the true dimensional representation of the hand. Each point is read in an X,Y coordinate system, and distances between selected points are calculated.

The right hand of each subject in the survey was evaluated using this system. The use of the hand photobox system reduced the amount of time it would have normally taken to gather comparable amounts of data on the hand of each subject. In addition, each hand was digitized by a single system operator. This resulted in the added benefit of eliminating interobserver error in the measuring process. Presumably, the use of this system eliminates tissue compression that would be associated with traditional caliper measurements. The relative impact of this phenomenon would vary from dimension to dimension, depending on the amount of associated soft tissue that might be compressed by a caliper or the proximity of skeletal landmarks. However, the effect of tissue compression can be demonstrated by contrasting the reported values for HAND BREADTH DIGITIZER with HAND BREADTH MEASURED. The means for these two dimensions are significantly different, and, as expected, the digitized dimension is consistently larger than the caliper measured dimension.

Toward the end of the anthropometric survey, finger circumferences were measured in addition to the hand photographs and standard measurements (digit 1 circumferences measured on 543 men and 571 women, digits 2 through 5 circumferences were measured on 283 men and 554 women). The digitized finger

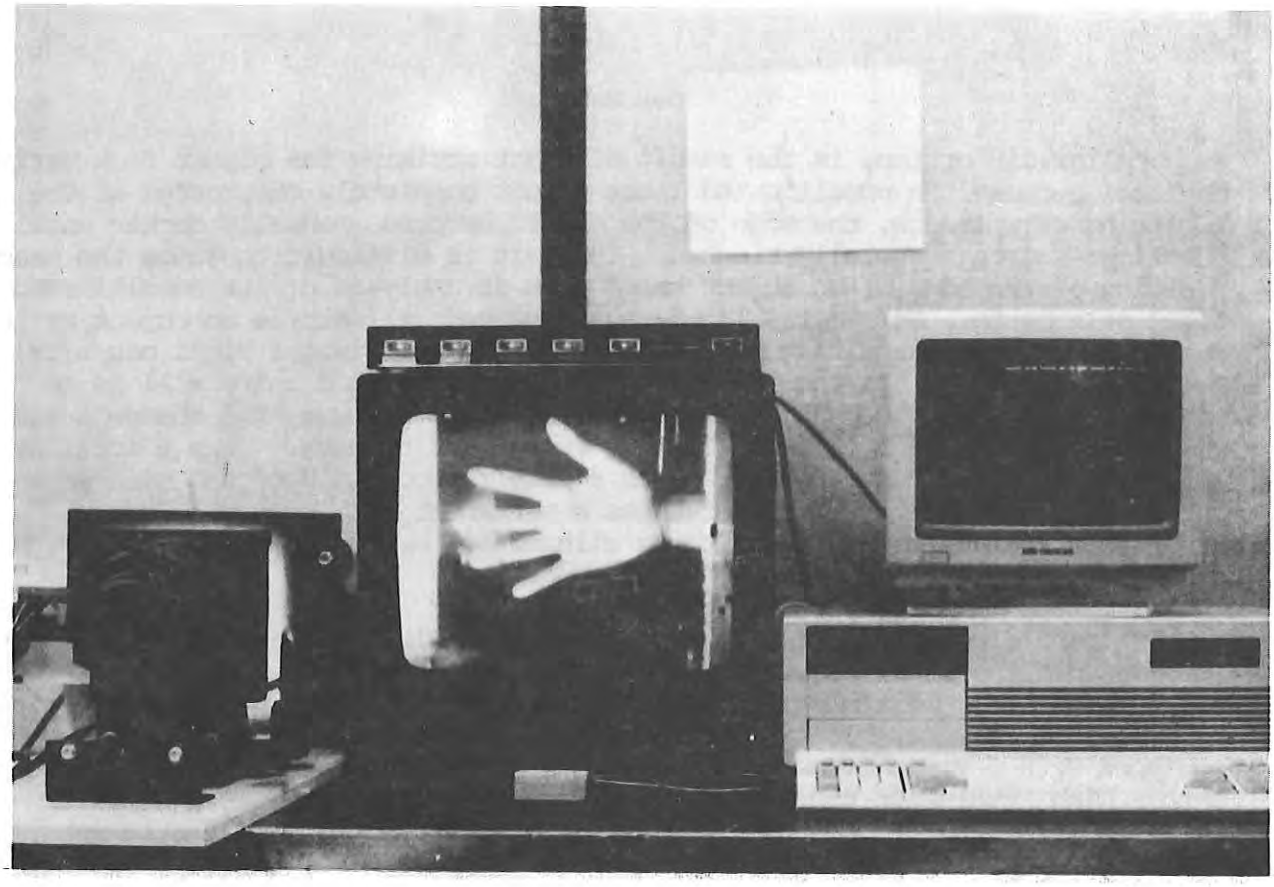


Figure 4. The Hand Digitizing/Dimensioning System.

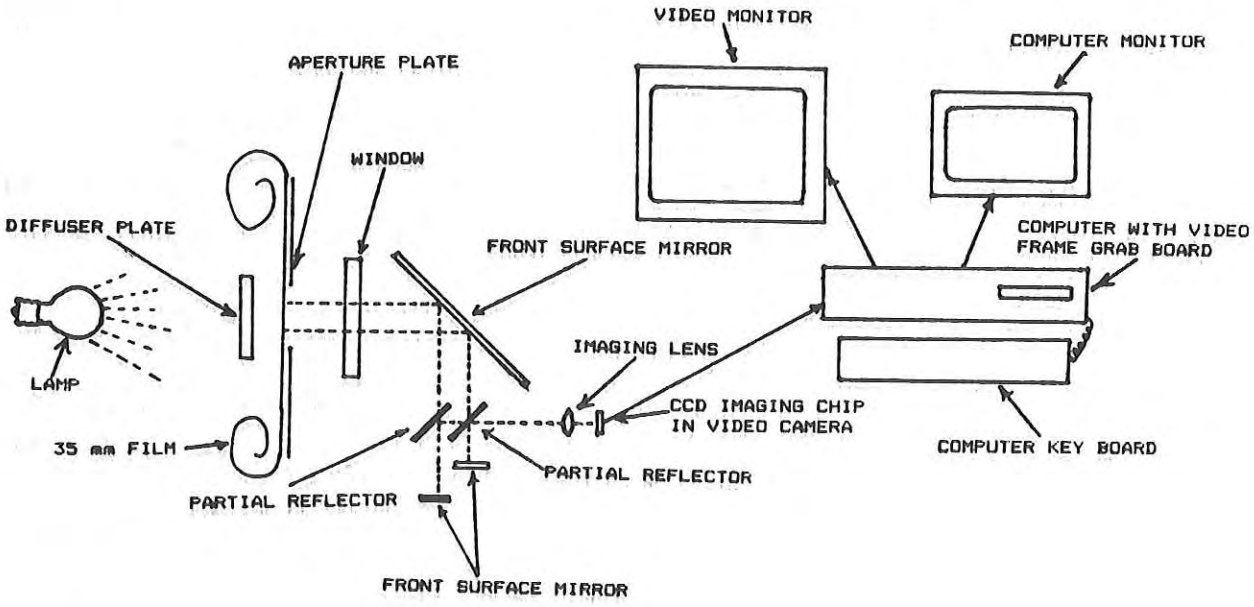


Figure 5. Schematic of the Hand Digitizing/Dimensioning System.

widths of these subjects were matched to their finger circumference values to produce separate regression equations for males and females that would predict finger circumference from finger width. Those regression equations were used to calculate finger circumference values for all the subjects in the hand data pool. These regression equations, along with their appropriate statistics, are presented along with the data summaries of the circumference dimensions in chapter two.

THE HAND WORKING DATA BASE:

A total of 8,053 hands were photographed and digitized for this project. This data pool reflects the survey goals of oversampling minority groups to provide an ability to match demographic changes within the population. Therefore, this data pool was used as a source from which subjects were drawn to create a working data base that reflects the demographic characteristics of the June 1988 Army. Two such working data bases were developed, one of men and one of women, and this process is fully described by Gordon, et al. (1989).

The working data bases developed for the hand data reflect the same goals of matching the demographic characteristics of the 1988 Army for men and women. There was an added desire to create working data bases that were comprised of the same individuals that were used to develop the summary statistics reported in the Anthropometric Survey's Final Report (Gordon, et al. 1989). This matching will facilitate future research questions that seek to correlate hand measurements with measurements of other parts of the body. Problems of incomplete data, or missing hand photographs, reduced the number of subjects in the hand data base and prevented a perfect one-to-one correspondence between the hand and the full body working data bases. Therefore, the hand working data bases were built by drawing subjects that were also represented in the full body working data base. Subjects were drawn from this matched data set to construct working data bases for the hand that mirrored the June 1988 demographics in the same fashion as the full body working data bases. Tables 1 through 4 show the construction of the male and female hand working data bases as compared to the full body working data bases. Although the sample sizes are smaller, all subjects in the hand working data bases also appear in the full body working data bases.

Tables 5 and 6 present the demographic characteristics of the hand working data bases. The summary statistics presented in this report reflect values derived from these working data bases. In cases where statements of racial variation were the aim of the statistical analysis a larger data base was used (1,108 males and 1,746 females), which comprised all the subjects in the data pool that had no missing anthropometric values.

Table 1.
Full Body Working Data Base Cell Sizes, Males

(N=1174)

Age	Whites	Blacks	Hispanics	Asian/ Pacific Islanders	American Indians	Others
≤20	224	67	10	4	2	5
21-24	318	123	16	6	2	9
25-30	273	136	19	7	2	11
≥31	357	132	23	11	6	11

(From: Gordon, et al. 1989)

Table 2.
Hand Working Data Base Cell Sizes, Males

(N=1003)

Age	Whites	Blacks	Hispanics	Asian/ Pacific Islanders	American Indians	Others
≤20	127	38	6	2	1	2
21-24	180	70	9	3	1	5
25-30	155	77	11	4	1	6
≥31	202	75	13	6	3	6

Table 3.
Full Body Working Data Base Cell Sizes, Females

(N=2208)

Age	Whites	Blacks	Hispanics	Asian/ Pacific Islanders	American Indians	Others
≤20	209	130	10	5	3	6
21-24	341	276	16	8	5	13
25-30	332	331	18	9	3	13
≥31	258	185	14	10	3	10

(From: Gordon, et al. 1989)

Table 4.
Hand Working Data Base Cell Sizes, Females

(N=1304)

Age	Whites	Blacks	Hispanics	Asian/ Pacific Islanders	American Indians	Others
≤20	123	77	6	3	2	4
21-24	201	163	9	5	3	8
25-30	196	195	11	5	2	8
≥31	152	109	8	6	4	6

Table 5.
Age Distribution of the Hand Working Data Base

	Males		Females	
Age	Frequency	Percent	Frequency	Percent
18	8	0.8	27	2.1
19	74	7.4	77	5.9
20	94	9.4	111	8.5
21	70	7.0	99	7.6
22	85	8.5	86	6.6
23	53	5.3	93	7.1
24	60	6.0	111	8.5
25	49	4.9	81	6.2
26	55	5.5	93	7.1
27	39	3.9	82	6.3
28	38	3.8	61	4.7
29	31	3.1	56	4.3
30	42	4.2	44	3.4
31	31	3.1	43	3.3
32	31	3.1	51	3.9
33	33	3.3	35	2.7
34	25	2.5	31	2.4
35	22	2.2	23	1.8
36	22	2.2	24	1.8
37	31	3.1	23	1.8
38	22	2.2	11	0.8
39	23	2.3	8	0.6
40	17	1.7	8	0.6
41	18	1.8	6	0.5
42	10	1.0	5	0.4
43	6	0.6	3	0.2
44	6	0.6	4	0.3
45	3	0.3	3	0.2
46	1	0.1	2	0.2
47	2	0.2	2	0.2
48	2	0.2	0	0.0
49	0	0.0	1	0.1
Total	1003	100.3	1304	100.1

Table 6.
Race Distribution of the Hand Working Data Base

	Males		Females	
	Frequency	Percent	Frequency	Percent
Whites	664	66.2	672	51.5
Blacks	260	25.9	544	41.7
Hispanics	39	3.9	34	2.6
Asian/Pacific Islanders	15	1.5	19	1.5
American Indian	6	0.6	9	0.7
Mixed/Other	19	1.9	26	2.0
Total	1003	100.0	1304	100.0

REPORT SYNOPSIS:

The major aim of this report was to produce a primary source of information on anthropometric variation of the human hand. To meet that end, this report presents five sections of data analysis and summarization.

Chapter II reports landmark and measurement definitions, data summary statistics and percentile tables. The calculation of percentile values used a program developed by Edmund Churchill (adapted for use at US Army Natick by Sarah Donelson), which was specifically designed for summarizing anthropometric data. This program calculates percentile values by interpolation within the cumulative frequency distribution. The values are then smoothed by calculating normal deviates from a fourth-degree polynomial. This process is described in detail by Hertzberg, et al. (1963).

Chapter III presents correlation matrices and regression tables. Correlations, presented separately for males and females, describe the relationships among the dimensions included in this report. Regression equations, also presented separately for males and females, are also included to provide a method of predicting the various dimensions of the hand. Four types of regression equations are provided: a multivariate equation that uses measured hand length and measured hand breadth as predictor variables, and three bivariate equations that use, in turn, measured hand length, digitized hand length, and measured hand breadth as predictors.

Chapter IV analyzes the variation among sex and racial groups by presenting Race by Sex ANOVA's and Scheffe's post-hoc analyses of racial variation. These

tests are useful in identifying differences in individual dimensions, but make no statement of overall group relationships. The results of a principal components analysis are presented to address questions of group relationship.

Chapter V presents data on nonmetric traits associated with the hand. Information is presented on handedness as well as the incidence of palm flexion crease patterns that have been associated with genetic anomalies. An analysis of the variation of these traits among sex and race groups is also presented.

Chapter VI presents data on observer error. Although all the hands were digitized by one person, changes in the positioning of landmarks on the hand photographs still presented a potential source of intra-observer error. This information may also prove useful as a comparison of the accuracy of computer-aided measuring systems versus traditional, caliper, methods.

Finally, a glossary of terms related to hand anthropometry is presented to help readers understand the terminology in this report.

CHAPTER II

HAND DATA SUMMARY

Sixty-four hand dimensions were acquired using the hand digitizing/dimensioning system. An additional 22 dimensions from the 1988 Anthropometric Survey of US Army Personnel were added to form the hand data bases reported here. For all subjects, measurements were taken from the right side of the body. The side of the body must be emphasized because a casual glance at documentation of the hand system will appear to show that left hands are being analyzed. This is an erroneous assumption. Images are shifted by the digitizing system so that they appear to be left hands, but only right hands were photographed and measured during the survey. The hand digitizing/dimension system recorded all values to the nearest millimeter. Directly measured dimension values were also all recorded to the nearest millimeter, except for weight which was recorded to the nearest 0.1 kilogram.

Summary statistics, including means, standard deviations, and percentile values for males and females are presented in the following tables. Brief descriptions of measurement calculations, or direct measurement methods, are provided along with the statistics on each measurement. Appropriate descriptions of the directly measured values, including measuring methods, can be found in the Measurer's Handbook (Clauser, et al. 1988). Any appropriate comment on calculation methods or measurement relationships are also presented along with the measurement descriptions.

A detailed description of the landmarks used during the digitization process follows (see Figure 6). This is, in turn, followed by a visual index, designed to aid readers in locating specific dimensions. Data summary tables are then presented to complete the chapter. The numbering system associated with each dimension is retained throughout this report.

STANDARDS FOR LANDMARK LOCATIONS AND COMMENTS ON THEIR USES:

1. Stylion. This point is the origin in the coordinate system used by the digitizer. The stylion landmark was not used to calculate hand dimensions in the digitization process.

2. Ulnar Edge of the Distal Wrist Crease. Located at the projection of the distal wrist crease to the ulnar edge of the wrist. This landmark was used, along with point 38, to calculate the breadth of the wrist and to establish a base line that approximates the axis of rotation for the wrist. This baseline is used to calculate crotch and finger heights as well as palm link lengths.

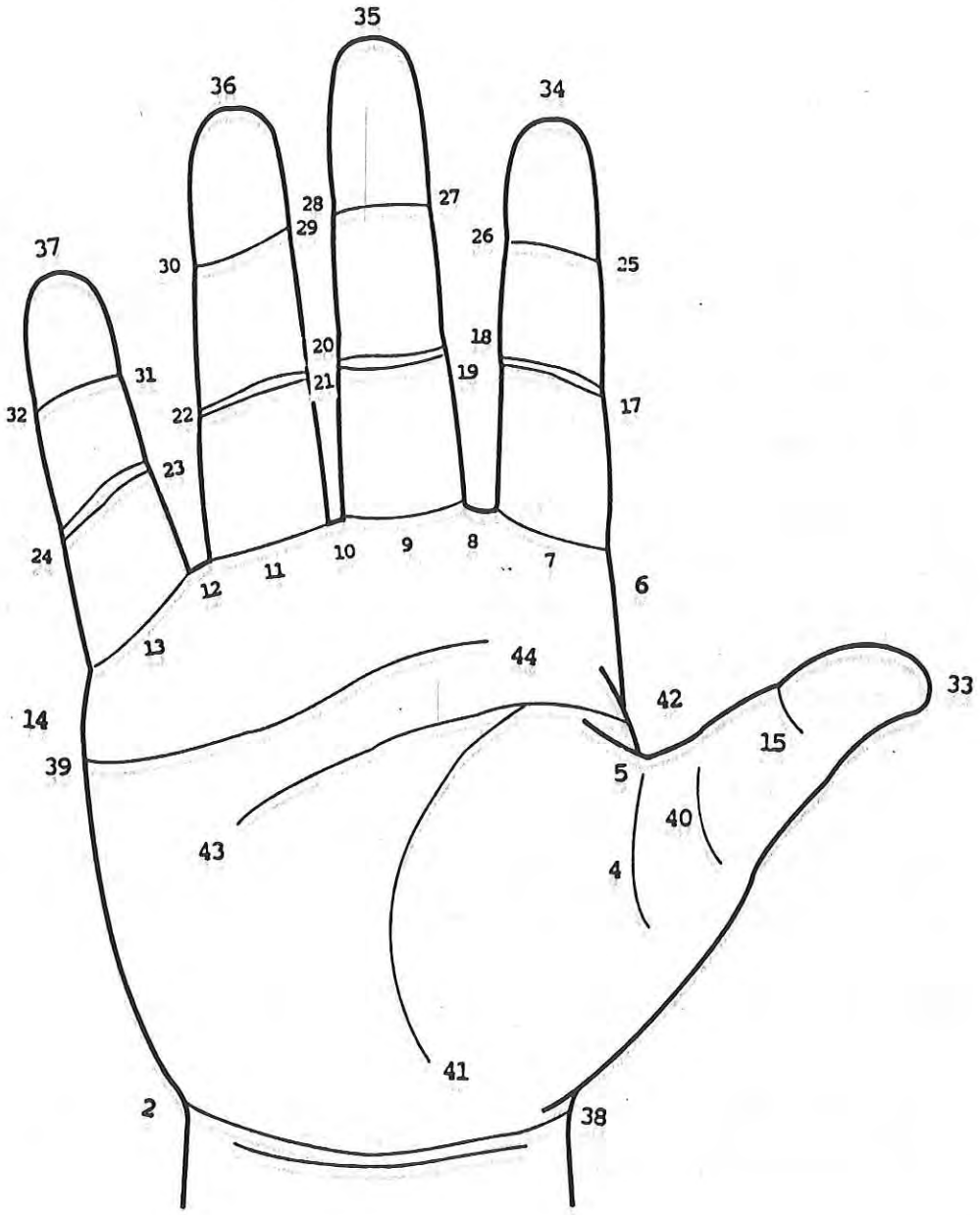


Figure 6. The Hand Landmarks.

3. Skipped. This number was dropped during early revisions of the hand digitizing software. The number was retained to maintain consistency with the hand digitizing system. No landmark, however, is associated with this number.

4. The Base of Digit 1. This point was used to calculate the anatomical length of the thumb. It is located on the proximal flexion crease of the metacarpo-phalangeal joint of the thumb.

5. Crotch 1. Located at the deepest indentation of the space between the first and second digits. This point was used solely to calculate the crotch height.

6. Palm Breadth - Radial Edge. This landmark was used to calculate the breadth of the palm along with point 14. The landmark is located at the point closest to the second metacarpo-phalangeal joint (Metacarpale II) that will produce the widest palm breadth value.

7. The Base of Digit 2. This landmark was used to calculate the anatomical length of the index finger. It is located at the center of the finger on the proximal (closest to the arm) flexion crease. If the crease was faint on the hand photo, the finger crotches were used to guide the location of this point.

8. Crotch 2. Located at the deepest indentation of the space between the second and third digits. This point was used solely to calculate the crotch height.

9. The Base of Digit 3. This landmark was used to calculate the anatomical length of the middle finger. It is located at the center of the finger on the proximal flexion crease. If the crease was faint on the hand photo, the finger crotches were used to guide the location of this point.

10. Crotch 3. Located at the deepest indentation of the space between the third and fourth digits. This point is used solely to calculate the crotch height.

11. The Base of Digit 4. This landmark is used to calculate the anatomical length of the ring finger. It is located at the center of the finger on the proximal flexion crease. If the crease was faint on the hand photo, the finger crotches were used to guide the location of this point.

12. Crotch 4. Located at the deepest indentation of the space between the fourth and fifth digits. This point is used solely to calculate the crotch height.

13. The Base of Digit V. This landmark is used to calculate the anatomical length of the little finger. It is located at the center of the finger on the proximal flexion crease. If the crease was faint on the hand photo, the finger crotches were used to guide the location of this point.

14. Palm Breadth - Ulnar Edge. This landmark is used to calculate the breadth of the palm along with point 6. Therefore, this landmark is located at the point closest to the fifth metacarpo-phalangeal joint (Metacarpale V) that will produce the widest palm breadth value.

15. Digit 1 Interphalangeal Joint. Located at the center of the thumb's interphalangeal joint crease. This landmark is used to calculate the link length of thumb segments.

16. Skipped. This number was dropped during early revisions of the hand digitizing software. The number was retained to maintain consistency with the hand digitizing system. No landmark, however, is associated with this number.

17. Digit 2 Proximal Interphalangeal Joint - Radial. Located at the projection of the proximal interphalangeal joint crease to the radial edge of the index finger. If, as was usual, more than one distinct flexion crease was found at this location, the proximal most crease was used to guide the position of the landmark. This point is used, along with point 18, to calculate the breadth of the finger at the proximal interphalangeal joint. If the crease could not be seen in the hand photograph, the landmark was placed at the point in the crease area that would produce the greatest value for the breadth of the finger.

18. Digit 2 Proximal Interphalangeal Joint - Ulnar. Located at the projection of the proximal interphalangeal joint crease to the ulnar edge of the index finger. See comments for point 17.

19. Digit 3 Proximal Interphalangeal Joint - Radial. Located at the projection of the proximal interphalangeal joint crease to the radial edge of the middle finger. If, as was usual, more than one distinct flexion crease was found at this location, the most proximal crease was used to guide the position of the landmark. This point is used, along with point 20, to calculate the breadth of the finger at the proximal interphalangeal joint. If the crease could not be seen in the hand photograph, the landmark was placed at the point in the crease area that would produce the greatest value for the breadth of the finger.

20. Digit 3 Proximal Interphalangeal Joint - Ulnar. Located at the projection of the proximal interphalangeal joint crease to the ulnar edge of the middle finger. See comments for point 19.

21. Digit 4 Proximal Interphalangeal Joint - Radial. Located at the projection of the proximal interphalangeal joint crease to the radial edge of the ring finger. If, as was usual, more than one distinct flexion crease was found at this location, the most proximal crease was used to guide the position of the landmark. This point is used, along with point 22, to calculate the breadth of the finger at the proximal interphalangeal joint. If the crease could not be seen in the hand

photograph, the landmark was placed at the point in the crease area that would produce the greatest value for the breadth of the finger.

22. Digit 4 Proximal Interphalangeal Joint - Ulnar. Located at the projection of the proximal interphalangeal joint crease to the ulnar edge of the ring finger. See comments for point 21.

23. Digit 5 Proximal Interphalangeal Joint - Radial. Located at the projection of the proximal interphalangeal joint crease to the radial edge of the little finger. If, as was usual, more than one distinct flexion crease was found at this location, the most proximal crease was used to guide the position of the landmark. This point is used, along with point 24, to calculate the breadth of the finger at the proximal interphalangeal joint. If the crease could not be seen in the hand photograph, the landmark was placed at the point in the crease area that would produce the greatest value for the breadth of the finger.

24. Digit 5 Proximal Interphalangeal Joint - Ulnar. Located at the projection of the proximal interphalangeal joint crease to the ulnar edge of the little finger. See comments for point 23.

25. Digit 2 Distal Interphalangeal Joint - Radial. Located at the projection of the distal interphalangeal joint crease to the radial edge of the index finger. If more than one distinct flexion crease was found at this location, the most proximal crease was used to guide the position of the landmark. This point is used, along with point 26, to calculate the breadth of the finger at the distal interphalangeal joint. If the crease could not be seen in the hand photograph, the landmark was placed at the point in the crease area that would produce the greatest value for the breadth of the finger.

26. Digit 2 Distal Interphalangeal Joint - Ulnar. Located at the projection of the distal interphalangeal joint crease to the ulnar edge of the index finger. See comments for point 25.

27. Digit 3 Distal Interphalangeal Joint - Radial. Located at the projection of the crease of the distal interphalangeal joint to the radial edge of the middle finger. If more than one distinct flexion crease was found at this location, the most proximal crease was used to guide the position of the landmark. This point is used, along with point 28, to calculate the breadth of the finger at the distal interphalangeal joint. If the crease could not be seen in the hand photograph, the landmark was placed at the point in the crease area that would produce the greatest value for the breadth of the finger.

28. Digit 3 Distal Interphalangeal Joint - Ulnar. Located at the projection of the distal interphalangeal joint crease to the ulnar edge of the middle finger. See comments for point 27.

29. Digit 4 Distal Interphalangeal Joint - Radial. Located at the projection of the distal interphalangeal joint crease to the radial edge of the ring finger. If more than one distinct flexion crease was found at this location, the most proximal crease was used to guide the position of the landmark. This point is used, along with point 30, to calculate the breadth of the finger at the distal interphalangeal joint. If the crease could not be seen in the hand photograph, the landmark was placed at the point in the crease area that would produce the greatest value for the breadth of the finger.

30. Digit 4 Distal Interphalangeal Joint - Ulnar. Located at the projection of the distal interphalangeal joint crease to the ulnar edge of the ring finger. See comments for point 29.

31. Digit 5 Distal Interphalangeal Joint - Radial. Located at the projection of the distal interphalangeal joint crease to the radial edge of the little finger. If more than one distinct flexion crease was found at this location, the most proximal crease was used to guide the position of the landmark. This point is used, along with point 32, to calculate the breadth of the finger at the distal interphalangeal joint. If the crease could not be seen in the hand photograph, the landmark was placed at the point in the crease area that would produce the greatest value for the breadth of the finger.

32. Digit 5 Distal Interphalangeal Joint - Ulnar. Located at the projection of the distal interphalangeal joint crease to the ulnar edge of the little finger. See comments for point 31.

33. The Tip of Digit 1. Located at the most distal point of the thumb. This point is used to calculate the various lengths of the finger.

34. The Tip of Digit 2. Located at the most distal point of the index finger. This point is used to calculate the various lengths of the finger.

35. The Tip of Digit 3. Located at the most distal point of the middle finger. This point is used to calculate the various lengths of the finger.

36. The Tip of Digit 4. Located at the most distal point of the ring finger. This point is used to calculate the various lengths of the finger.

37. The Tip of Digit 5. Located at the most distal point of the little finger. This point is used to calculate the various lengths of the finger.

38. Radial Edge of the Distal Wrist Crease. Located at the projection of the distal wrist crease to the radial edge of the wrist. This landmark was used, along with point 2, to calculate the breadth of the wrist and to

establish a base line that approximates the axis of rotation for the wrist. This baseline is used to calculate crotch and finger heights as well as palm link lengths. Theoretically, this point should be equivalent to the stylion landmark (Moore 1985).

39. Distal Transverse Palm Crease - Ulnar. Located at the intersection of the distal transverse palm crease with the ulnar edge of the palm. This point is used, along with point 44, to locate the distal transverse palm crease. This crease serves as the best approximation for the location of the centers of rotation for the metacarpo-phalangeal joints of digits 3 through 5 (Popich and Smith 1970; Napier 1980; Moore 1985).

40. Head of the First Metacarpal. Located at the center of the distal crease of the first metacarpo-phalangeal joint. This point is used to evaluate the digit 1 link lengths.

41. Base of the First Metacarpal. Located on the thenar crease at the base of the thenar eminence. This point is used to evaluate digit 1 link lengths.

42. Proximal Transverse Palm Crease - Radial. Located at the intersection of the proximal transverse palm crease with the radial edge of the palm. This point is used, along with point 43, to located the proximal transverse palm crease. This crease serves as the best approximation for the location of the centers of rotation for the metacarpo-phalangeal joint of digit 1 (Popich and Smith 1970; Napier 1980; Moore 1985).

43. Termination of the Proximal Transverse Crease. Located at the end of the proximal transverse palm crease. See comments for point 42.

44. Termination of the Distal Transverse Crease. Located at the end of the distal transverse palm crease, or the point where the distal crease takes a distinct distal bend. See comments for point 39.

DESCRIPTION OF HAND MEASUREMENTS:

In the digitization process, hand landmark locations were recorded as a series of X,Y coordinates. These coordinate values were then used to calculate the different digitized hand measurements to the nearest millimeter. Several dimensions were calculated in reference to the Wrist Crease Baseline. This baseline is defined by points 2 and 38, and represents the center of rotation of the wrist joint that would be indicated by the distal wrist crease. Some other dimensions were calculated in reference to the axis of a digit. This axis is defined as the line passing through the a finger's tip and base points, e.g. the axis of digit 2 passes through points 7 and 34. Several dimensions, those marked with an asterisk (*) in the list below, were measured directly during the survey, and therefore were not calculated from digitizer coordinate data. A visual index of all of the measurements can be found following the written descriptions.

1. Digit 1 Length - The distance between points 4 and 33.

2. Digit 1 Height - The perpendicular distance from point 33 to the wrist crease base line.

3. Digit 1 Tip to Wrist Crease Length - The distance from point 33 to the wrist crease base line measured along the axis of the digit.

4.* Digit 1 Interphalangeal Joint Breadth - Measured directly during the survey as "Thumb Breadth."

5.* Digit 1 Interphalangeal Joint Circumference - Calculated using a regression equation that uses Digit 1 Interphalangeal Joint Breadth.

6. Digit 1 Link Length - The distance between points 33 and 41.

7. Digit 1 Metacarpal Link Length - The distance between points 40 and 41.

8. Digit 1 Proximal Phalanx Link Length - The distance between points 40 and 15.

9. Digit 1 Distal Phalanx Link Length - The distance between points 33 and 15.

10. Digit 2 Length - The distance between points 7 and 34.

11. Digit 2 Height - The perpendicular distance from point 34 to the wrist crease base line.

12. Digit 2 Tip to Wrist Crease Length - The distance from point 34 to the wrist crease base line measured along the axis of the digit.

13. Digit 2 Proximal Interphalangeal Joint Breadth - The distance between points 17 and 18.

14.* Digit 2 Proximal Interphalangeal Joint Circumference - Calculated from a regression equation that uses the breadths of the finger at the proximal and distal interphalangeal joints.

15. Digit 2 Distal Interphalangeal Joint Breadth - The distance between points 25 and 26.

16.* Digit 2 Distal Interphalangeal Joint Circumference - Calculated from a regression equation that uses the breadths of the finger at the proximal and distal interphalangeal joints.

17. Digit 2 Link Length - The distance from point 34 to the proximal transverse palm crease measured along the axis of the digit.

18. Digit 2 Metacarpal Link Length - The distance from the proximal transverse palm crease to the wrist crease baseline measured along the axis of the digit.

19. Digit 2 Distal Phalanx Link Length - The distance from point 34 to the center of the distal interphalangeal joint measured along the axis of the digit.

20. Digit 2 Medial Phalanx Link Length - The distance between the centers of the proximal and distal interphalangeal joints measured along the axis of the digit.

21. Digit 2 Proximal Phalanx Link Length - The distance from the center of the proximal interphalangeal joint to the proximal transverse palm crease measured along the axis of the digit.

22. Digit 3 Length - The distance between points 9 and 35.

23. Digit 3 Height - The perpendicular distance from point 35 to the wrist crease base line.

24. Digit 3 Tip to Wrist Crease Length - The distance from point 35 to the wrist crease base line measured along the axis of the digit.

25. Digit 3 Proximal Interphalangeal Joint Breadth - The distance between points 19 and 20.

26.* Digit 3 Proximal Interphalangeal Joint Circumference - Calculated from a regression equation that uses the breadths of the finger at the proximal and distal interphalangeal joints.

27. Digit 3 Distal Interphalangeal Joint Breadth - The distance between points 27 and 28.

28.* Digit 3 Distal Interphalangeal Joint Circumference - Calculated from a regression equation that uses the breadths of the finger at the proximal and distal interphalangeal joints.

29. Digit 3 Link Length - The distance from point 35 to the distal transverse palm crease measured along the axis of the digit.

30. Digit 3 Metacarpal Link Length - The distance from the distal transverse palm crease to the wrist crease baseline measured along the axis of the digit.

31. Digit 3 Distal Phalanx Link Length - The distance from point 35 to the center of the distal interphalangeal joint measured along the axis of the digit.

32. Digit 3 Medial Phalanx Link Length - The distance between the centers of the proximal and distal interphalangeal joints measured along the axis of the digit.

33. Digit 3 Proximal Phalanx Link Length - The distance from the center of the proximal interphalangeal joint to the distal transverse palm crease measured along the axis of the digit.

34. Digit 4 Length - The distance between points 11 and 36.

35. Digit 4 Height - The perpendicular distance from point 36 to the wrist crease base line.

36. Digit 4 Tip to Wrist Crease Length - The distance from point 36 to the wrist crease base line measured along the axis of the digit.

37. Digit 4 Proximal Interphalangeal Joint Breadth - The distance between points 21 and 22.

38.* Digit 4 Proximal Interphalangeal Joint Circumference - Calculated from a regression equation that uses the breadths of the finger at the proximal and distal interphalangeal joints.

39. Digit 4 Distal Interphalangeal Joint Breadth - The distance between points 29 and 30.

40.* Digit 4 Distal Interphalangeal Joint Circumference - Calculated from a regression equation that uses the breadths of the finger at the proximal and distal interphalangeal joints.

41. Digit 4 Link Length - The distance from point 36 to the distal transverse palm crease measured along the axis of the digit.

42. Digit 4 Metacarpal Link Length - The distance from the distal transverse palm crease to the wrist crease baseline measured along the axis of the digit.

43. Digit 4 Distal Phalanx Link Length - The distance from point 36 to the center of the distal interphalangeal joint measured along the axis of the digit.

44. Digit 4 Medial Phalanx Link Length - The distance between the centers of the proximal and distal interphalangeal joints measured along the axis of the digit.

45. Digit 4 Proximal Phalanx Link Length - The distance from the center of the proximal interphalangeal joint to the distal transverse palm crease measured along the axis of the digit.

46. Digit 5 Length - The distance between points 13 and 37.

47. Digit 5 Height - The perpendicular distance from point 37 to the wrist crease base line.

48. Digit 5 Tip to Wrist Crease Length - The distance from point 37 to the wrist crease base line measured along the axis of the digit.

49. Digit 5 Proximal Interphalangeal Joint Breadth - The distance between points 23 and 24.

50.* Digit 5 Proximal Interphalangeal Joint Circumference - Calculated from a regression equation that uses the breadths of the finger at the proximal and distal interphalangeal joints.

51. Digit 5 Distal Interphalangeal Joint Breadth - The distance between points 31 and 32.

52.* Digit 5 Distal Interphalangeal Joint Circumference - Calculated from a regression equation that uses the breadths of the finger at the proximal and distal interphalangeal joints.

53. Digit 5 Link Length - The distance from point 37 to the distal transverse palm crease measured along the axis of the digit.

54. Digit 5 Metacarpal Link Length - The distance from the distal transverse palm crease to the wrist crease baseline measured along the axis of the digit.

55. Digit 5 Distal Phalanx Link Length - The distance from point 37 to the center of the distal interphalangeal joint measured along the axis of the digit.

56. Digit 5 Medial Phalanx Link Length - The distance between the centers of the proximal and distal interphalangeal joints measured along the axis of the digit.

57. Digit 5 Proximal Phalanx Link Length - The distance from the center of the proximal interphalangeal joint to the distal transverse palm crease measured along the axis of the digit.

58. Hand Length from Digitizer - The perpendicular distance from point 35 to the wrist crease base line. This dimension is identical to measurement 23 (Digit 3 Height).

59.* Hand Length Measured - Measured directly during the survey.

60.* Hand Circumference - Measured directly during the survey.

61. Palm Length - The perpendicular distance from point 9 to the wrist crease base line.

62. Hand Breadth from Digitizer - The distance from point 6 to point 14.

63.* Hand Breadth Measured - Measured directly during the survey.

64. Wrist Breadth - The distance from point 38 to point 2.

65.* Wrist Circumference - Measured directly during the survey.

66.* Wrist-Center of Grip Length - Measured directly during the survey.

67.* Wrist-Index Finger Length - Measured directly during the survey.

68.* Wrist-Thumbtip Length - Measured directly during the survey.

69. Crotch 1 Height - The perpendicular distance from point 5 to the wrist crease base line.

70. Crotch 2 Height - The perpendicular distance from point 8 to the wrist crease base line.

71. Crotch 3 Height - The perpendicular distance from point 10 to the wrist crease base line.

72. Crotch 4 Height - The perpendicular distance from point 12 to the wrist crease base line.

73.* Forearm-Hand Length - Measured directly during the survey.

74.* Elbow-Wrist Length - Calculated from survey dimensions

75.* Elbow-Center of Grip Length - Calculated from survey dimensions.

76.* Radiale-Stylion Length - Measured directly during the survey.

77.* Forearm Circumference, Flexed - Measured directly during the survey.

78.* Biceps Circumference, Flexed - Measured directly during the survey.

79.* Arm Length - Calculated from survey dimensions.

80.* Shoulder-Elbow Length - Measured directly during the survey.

81.* Acromion-Radiale Length - Measured directly during the survey.

82.* Thumbtip Reach - Measured directly during the survey.

83.* Wrist Wall Length - Measured directly during the survey.

84.* Wrist Wall Length, Extended - Measured directly during the survey.

85.* Stature - Measured directly during the survey.

86.* Weight - Measured directly during the survey.

VISUAL INDEX:

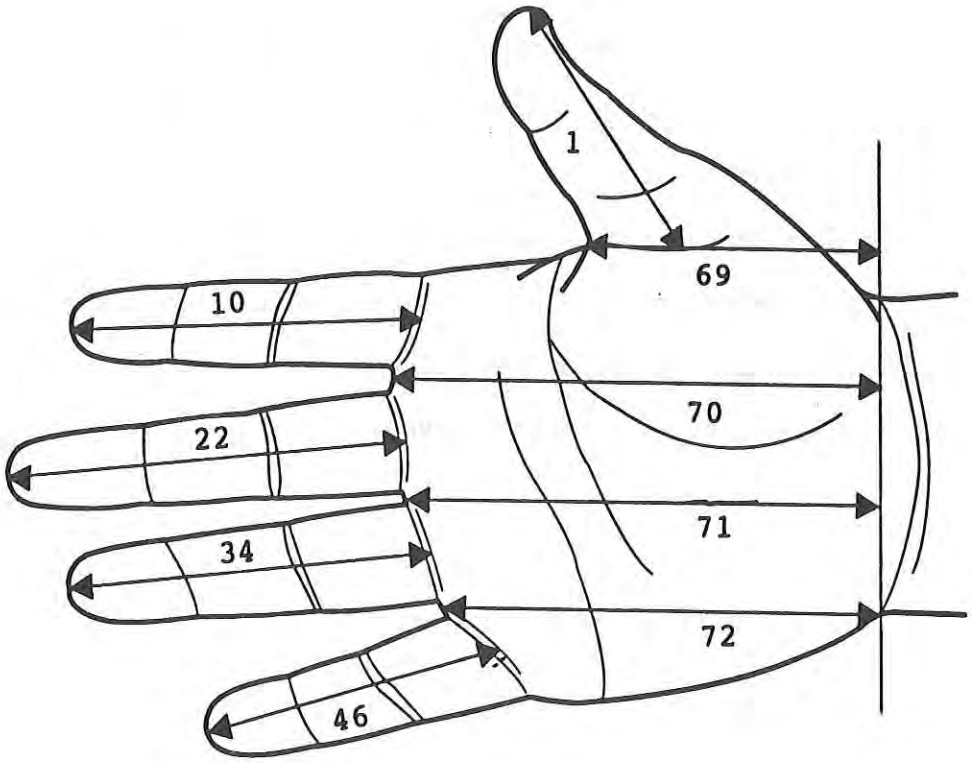


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(22) DIGIT 3 LENGTH p. 84
(34) DIGIT 4 LENGTH p. 108
(46) DIGIT 5 LENGTH p. 132
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(70) CROTCH 2 HEIGHT p. 180
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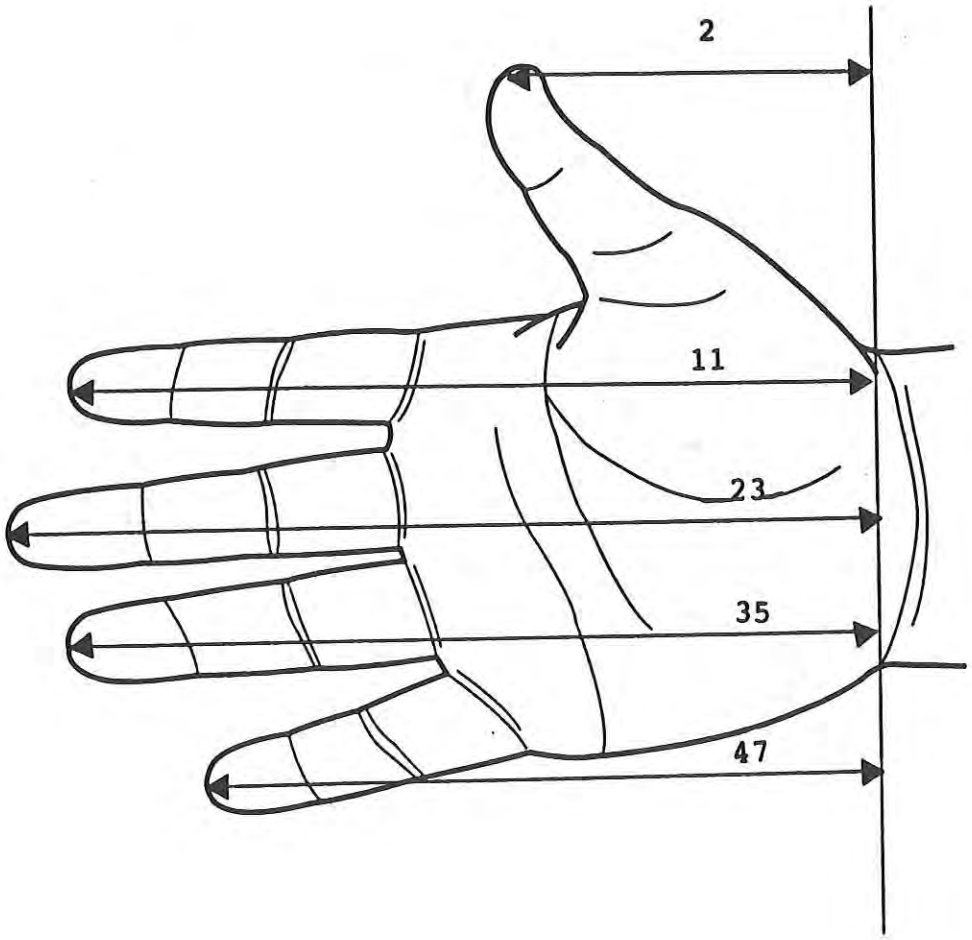


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(35) DIGIT 4 HEIGHT p. 110
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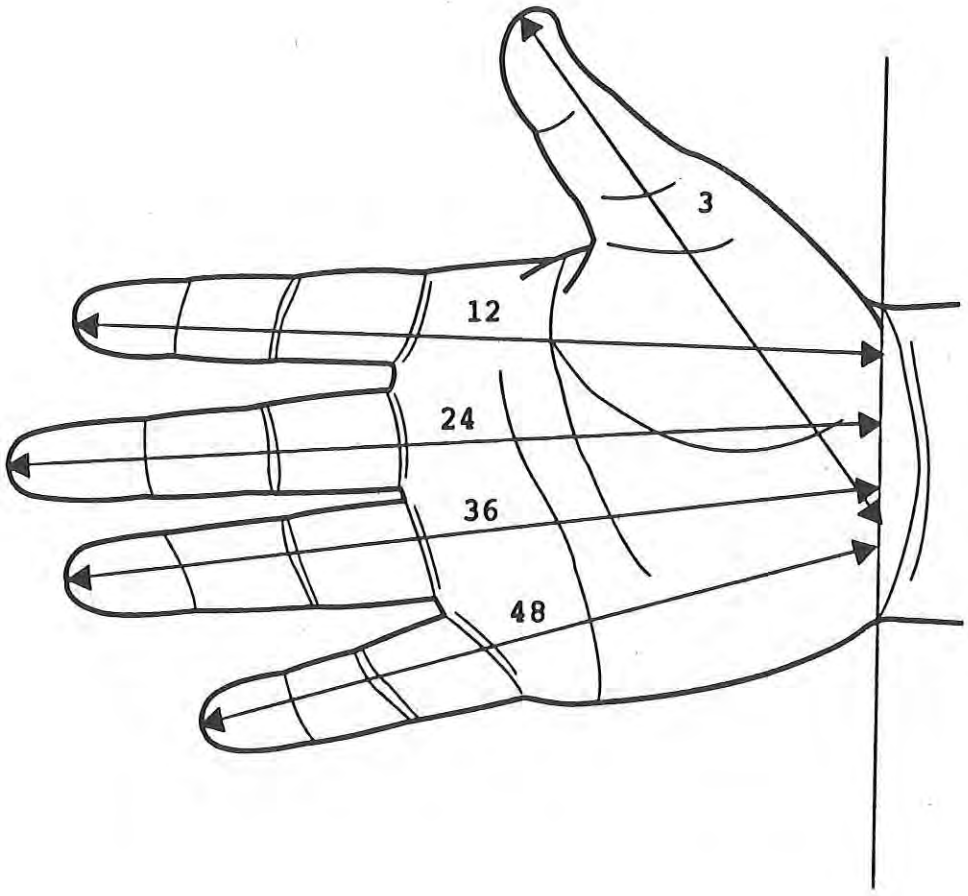


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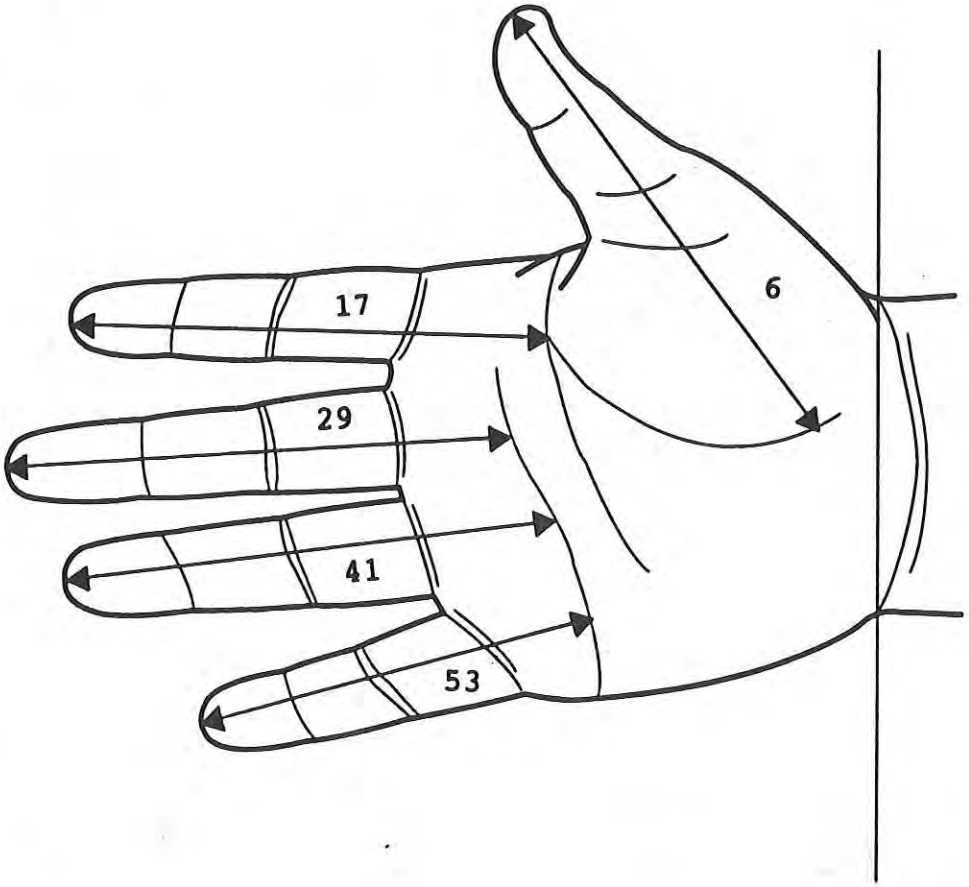


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(6) DIGIT 1 LINK LENGTH p. 52
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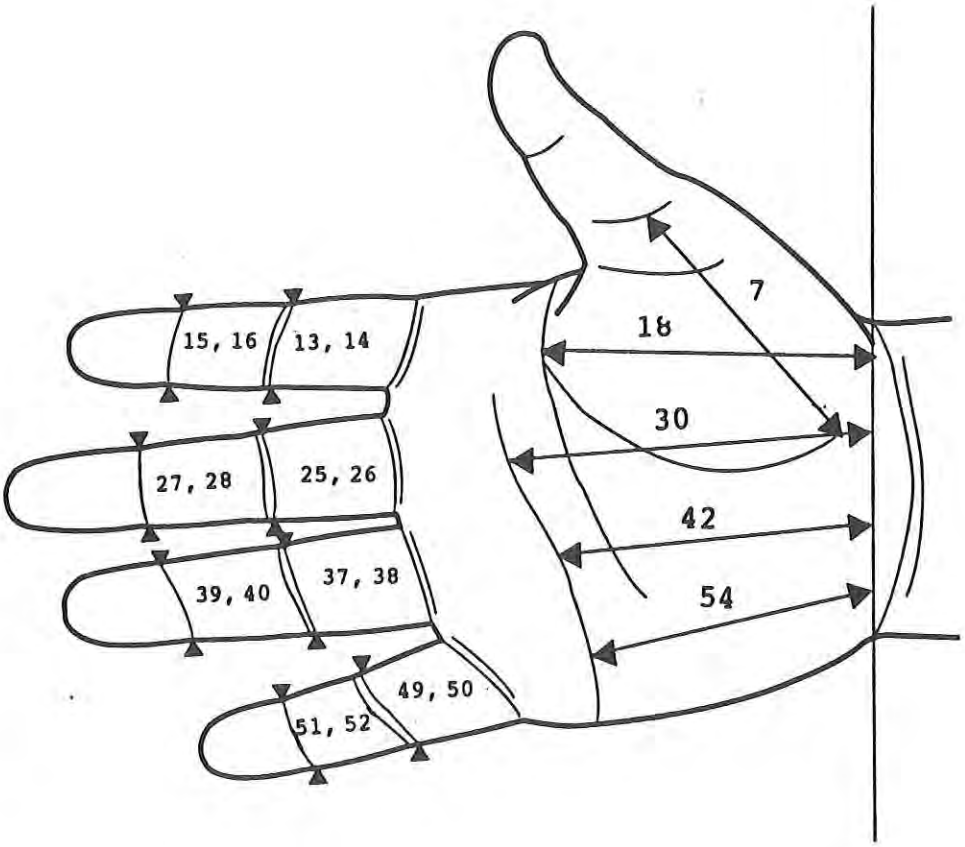


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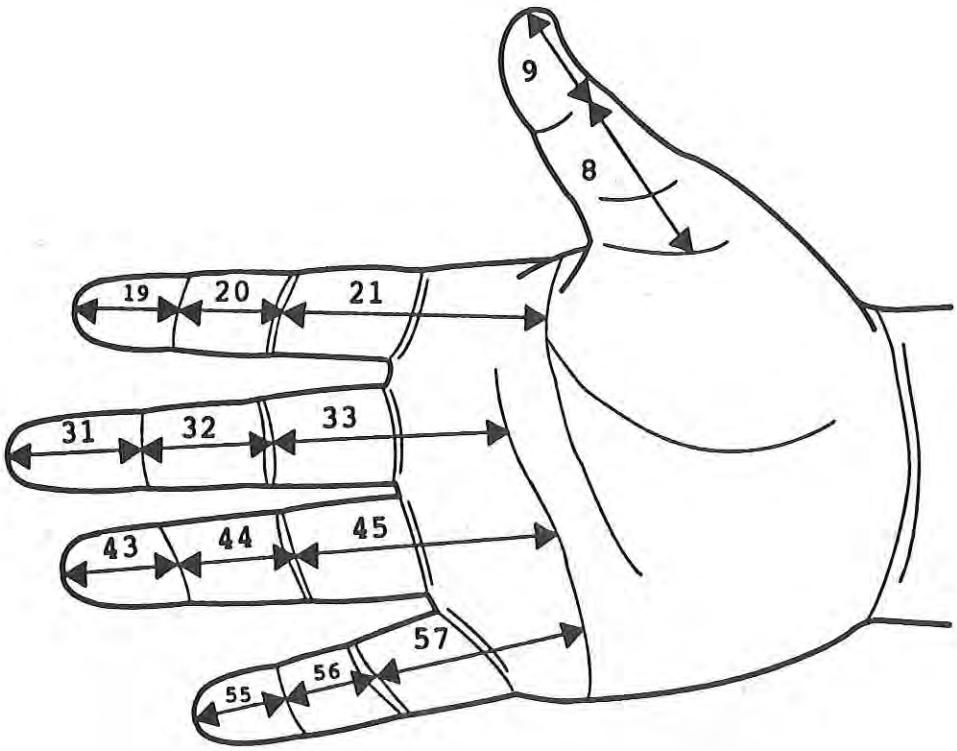


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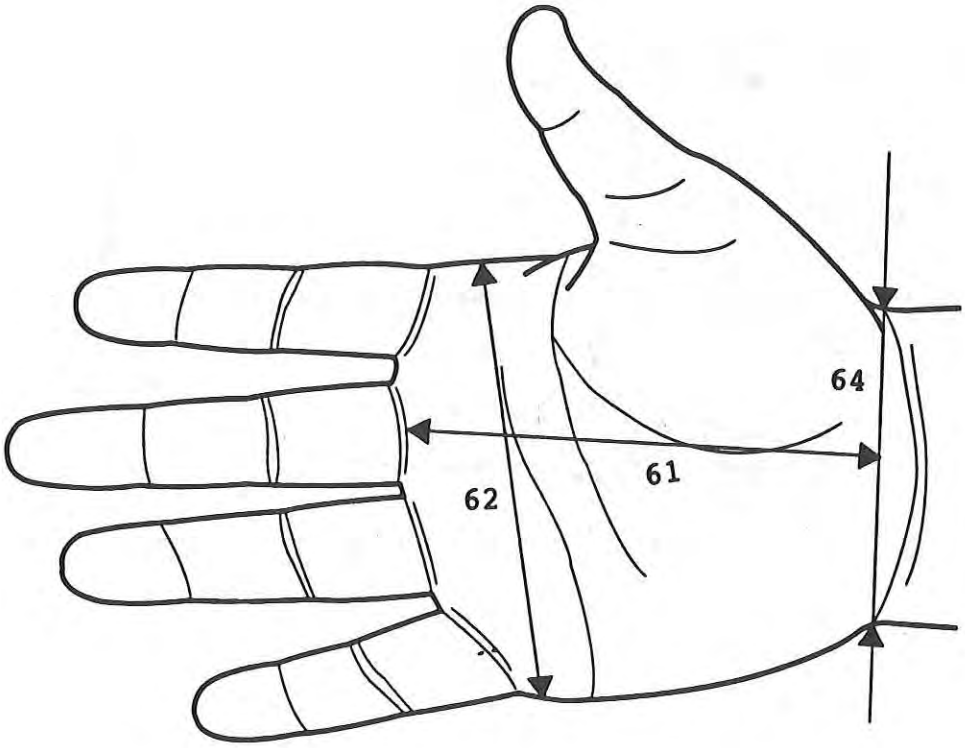


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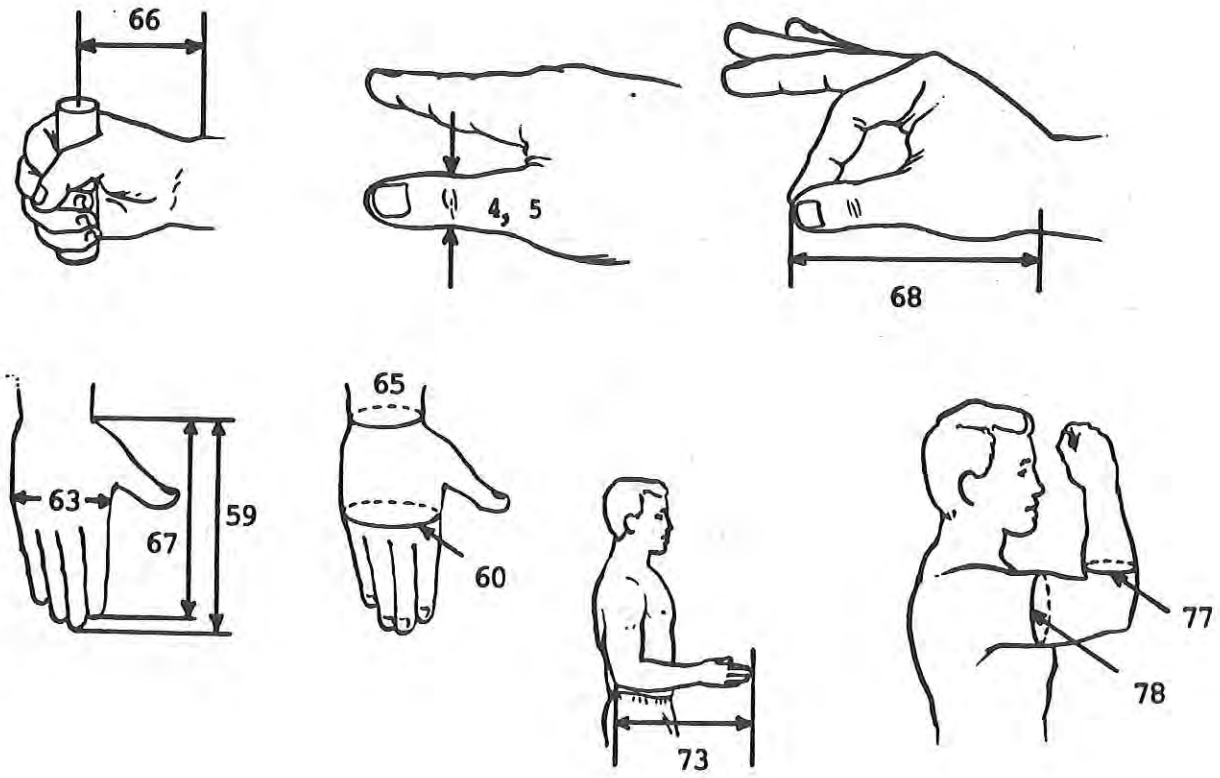


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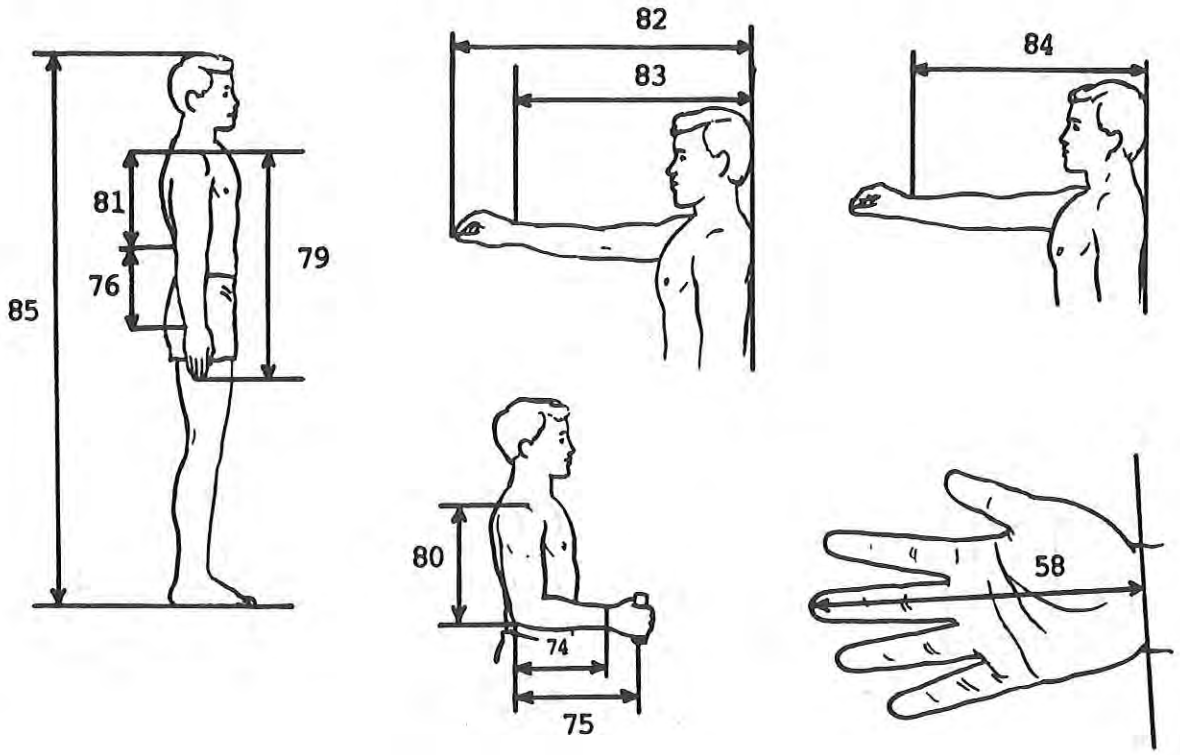


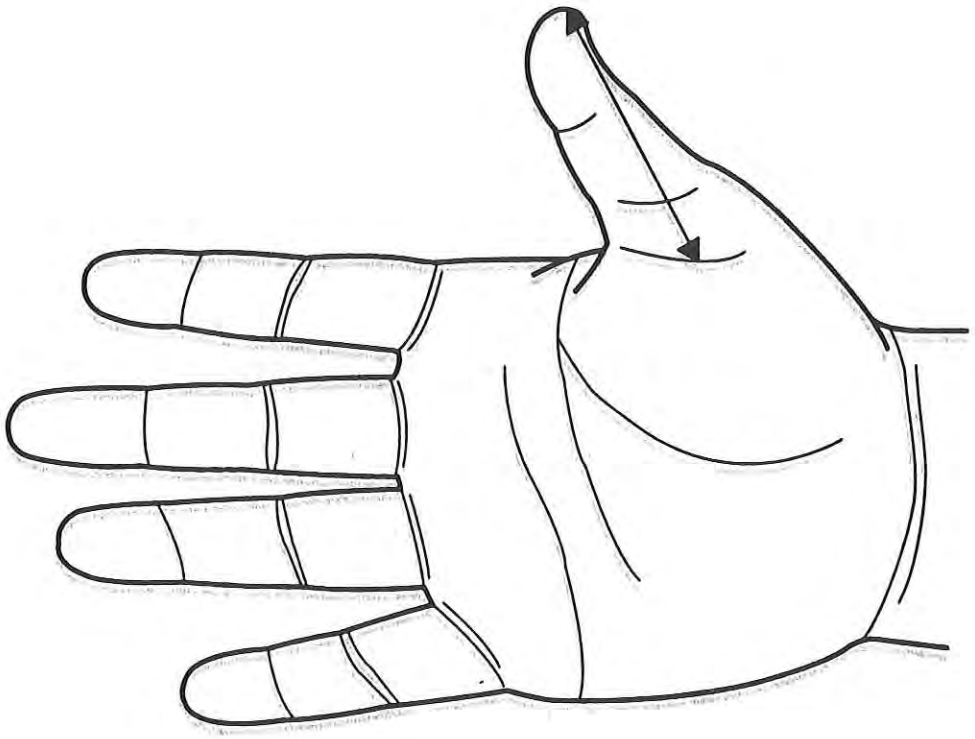
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SUMMARY STATISTICS AND PERCENTILES

1 -- DIGIT 1 LENGTH

The length of the first digit measured from its tip (point 33) to its base (point 4).



1--DIGIT 1 LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
6.35	MEAN	2.50
0.01	SE(MEAN)	0.01
0.48	ST DEV	0.19
0.01	SE(SD)	0.00
4.90	MINIMUM	1.93
8.00	MAXIMUM	3.15
COEFF. OF VARIATION		7.6%
SYMMETRY----BETA I		0.17
KURTOSIS----BETA II		3.07
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
5.22	1ST	2.06
5.37	2ND	2.11
5.46	3RD	2.15
5.58	5TH	2.20
5.75	10TH	2.26
5.86	15TH	2.31
5.94	20TH	2.34
6.02	25TH	2.37
6.09	30TH	2.40
6.15	35TH	2.42
6.21	40TH	2.44
6.27	45TH	2.47
6.33	50TH	2.49
6.39	55TH	2.51
6.45	60TH	2.54
6.51	65TH	2.56
6.58	70TH	2.59
6.66	75TH	2.62
6.74	80TH	2.66
6.84	85TH	2.69
6.97	90TH	2.75
7.17	95TH	2.82
7.30	97TH	2.87
7.39	98TH	2.91
7.53	99TH	2.96

MALES

THE SUMMARY STATISTICS

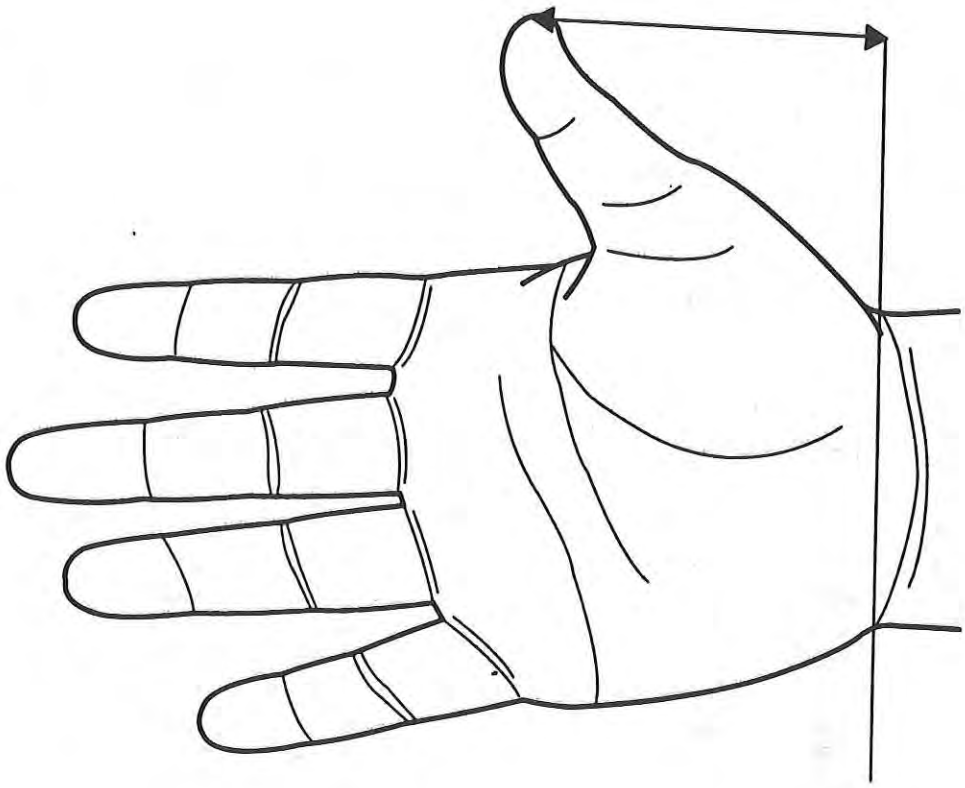
CENTIMETERS		INCHES
6.97	MEAN	2.74
0.02	SE(MEAN)	0.01
0.48	ST DEV	0.19
0.01	SE(SD)	0.00
5.50	MINIMUM	2.17
8.60	MAXIMUM	3.39
COEFF. OF VARIATION		6.8%
SYMMETRY----BETA I		0.12
KURTOSIS----BETA II		2.99
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
5.96	1ST	2.35
6.05	2ND	2.38
6.11	3RD	2.40
6.20	5TH	2.44
6.36	10TH	2.50
6.47	15TH	2.55
6.56	20TH	2.58
6.64	25TH	2.61
6.71	30TH	2.64
6.78	35TH	2.67
6.84	40TH	2.69
6.90	45TH	2.72
6.97	50TH	2.74
7.03	55TH	2.77
7.09	60TH	2.79
7.15	65TH	2.82
7.22	70TH	2.84
7.29	75TH	2.87
7.37	80TH	2.90
7.46	85TH	2.94
7.58	90TH	2.98
7.75	95TH	3.05
7.87	97TH	3.10
7.96	98TH	3.13
8.11	99TH	3.19

2--DIGIT 1 HEIGHT

The perpendicular distance from the tip of digit 1 (point 33) to the wrist crease base line.



2--DIGIT 1 HEIGHT

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
9.26	MEAN	3.65
0.02	SE(MEAN)	0.01
0.73	ST DEV	0.29
0.01	SE(SD)	0.01
7.20	MINIMUM	2.83
11.50	MAXIMUM	4.53
COEFF. OF VARIATION		7.9%
SYMMETRY----BETA I		0.12
KURTOSIS----BETA II		2.84
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
7.66	1ST	3.02
7.82	2ND	3.08
7.92	3RD	3.12
8.07	5TH	3.18
8.32	10TH	3.27
8.49	15TH	3.34
8.63	20TH	3.40
8.75	25TH	3.45
8.86	30TH	3.49
8.97	35TH	3.53
9.06	40TH	3.57
9.16	45TH	3.60
9.25	50TH	3.64
9.34	55TH	3.68
9.43	60TH	3.71
9.53	65TH	3.75
9.63	70TH	3.79
9.74	75TH	3.84
9.87	80TH	3.88
10.01	85TH	3.94
10.19	90TH	4.01
10.47	95TH	4.12
10.66	97TH	4.20
10.80	98TH	4.25
11.04	99TH	4.34

MALES

THE SUMMARY STATISTICS

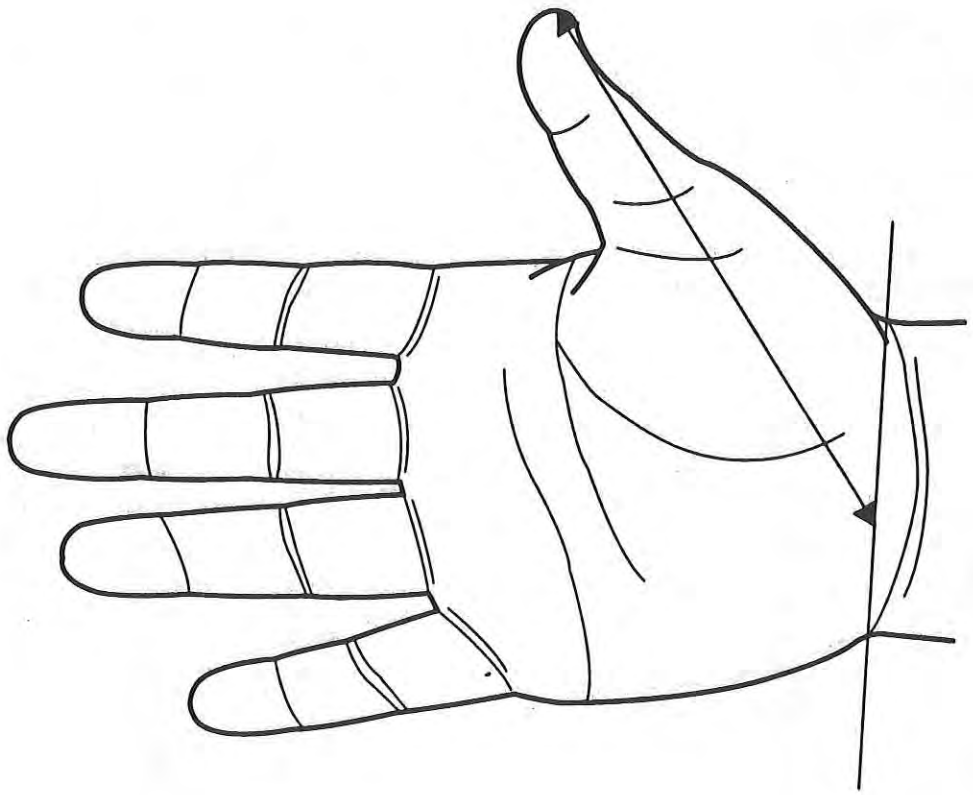
CENTIMETERS		INCHES
10.03	MEAN	3.95
0.02	SE(MEAN)	0.01
0.74	ST DEV	0.29
0.02	SE(SD)	0.01
7.60	MINIMUM	2.99
12.60	MAXIMUM	4.96
COEFF. OF VARIATION		7.4%
SYMMETRY----BETA I		0.03
KURTOSIS----BETA II		3.23
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
8.30	1ST	3.27
8.51	2ND	3.35
8.64	3RD	3.40
8.82	5TH	3.47
9.09	10TH	3.58
9.28	15TH	3.65
9.42	20TH	3.71
9.54	25TH	3.76
9.65	30TH	3.80
9.75	35TH	3.84
9.85	40TH	3.88
9.94	45TH	3.91
10.03	50TH	3.95
10.12	55TH	3.98
10.21	60TH	4.02
10.30	65TH	4.06
10.40	70TH	4.09
10.51	75TH	4.14
10.63	80TH	4.18
10.77	85TH	4.24
10.95	90TH	4.31
11.24	95TH	4.43
11.45	97TH	4.51
11.60	98TH	4.57
11.87	99TH	4.67

3--DIGIT 1 TIP TO WRIST CREASE LENGTH

The distance from the tip of digit 1 (point 33) to the wrist crease base line measured along the digit's central axis.



3--DIGIT 1 TIP TO WRIST CREASE LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
12.57	MEAN	4.95
0.02	SE(MEAN)	0.01
0.87	ST DEV	0.34
0.02	SE(SD)	0.01
10.30	MINIMUM	4.06
15.40	MAXIMUM	6.06
COEFF. OF VARIATION		7.0%
SYMMETRY----BETA I		0.25
KURTOSIS----BETA II		2.87
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
10.76	1ST	4.23
10.92	2ND	4.30
11.03	3RD	4.34
11.19	5TH	4.41
11.46	10TH	4.51
11.65	15TH	4.59
11.81	20TH	4.65
11.95	25TH	4.70
12.07	30TH	4.75
12.19	35TH	4.80
12.31	40TH	4.85
12.42	45TH	4.89
12.53	50TH	4.93
12.65	55TH	4.98
12.76	60TH	5.02
12.88	65TH	5.07
13.01	70TH	5.12
13.15	75TH	5.18
13.31	80TH	5.24
13.50	85TH	5.31
13.73	90TH	5.41
14.08	95TH	5.54
14.31	97TH	5.63
14.47	98TH	5.70
14.73	99TH	5.80

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
13.79	MEAN	5.43
0.03	SE(MEAN)	0.01
0.87	ST DEV	0.34
0.02	SE(SD)	0.01
11.20	MINIMUM	4.41
17.00	MAXIMUM	6.69
COEFF. OF VARIATION		6.3%
SYMMETRY----BETA I		0.29
KURTOSIS----BETA II		3.15
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
12.00	1ST	4.72
12.15	2ND	4.78
12.26	3RD	4.83
12.42	5TH	4.89
12.69	10TH	5.00
12.88	15TH	5.07
13.04	20TH	5.13
13.18	25TH	5.19
13.30	30TH	5.24
13.42	35TH	5.28
13.53	40TH	5.33
13.64	45TH	5.37
13.75	50TH	5.41
13.86	55TH	5.46
13.97	60TH	5.50
14.09	65TH	5.55
14.21	70TH	5.60
14.35	75TH	5.65
14.50	80TH	5.71
14.68	85TH	5.78
14.92	90TH	5.87
15.28	95TH	6.02
15.52	97TH	6.11
15.71	98TH	6.19
16.02	99TH	6.31

4--DIGIT 1 INTERPHALANGEAL JOINT BREADTH

The maximum breadth of digit 1 measured perpendicular to its long axis, measured directly during the survey with a Holtain caliper. See Gordon, et al. (1989) pages 282-83.

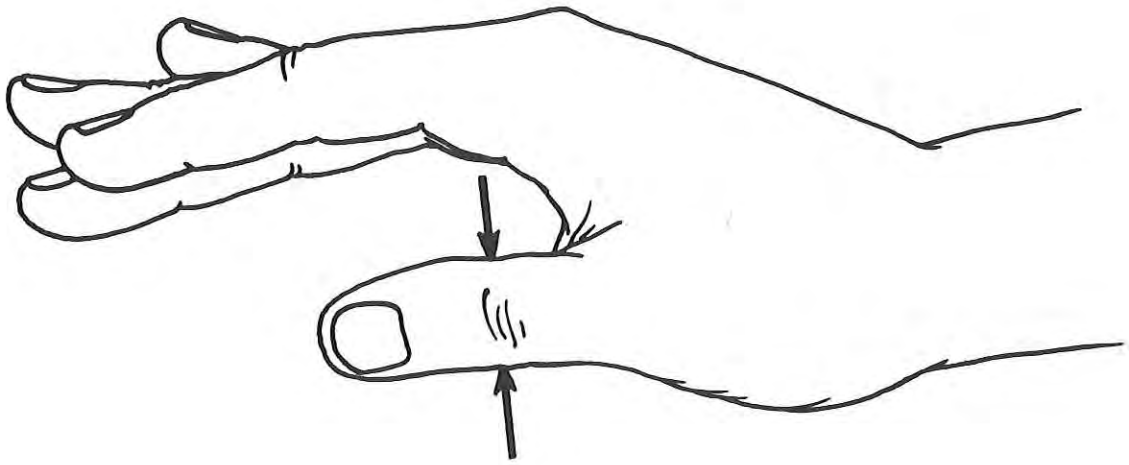




Illustration adapted from Gordon, et al. (1989).

4--DIGIT 1 INTERPHALANGEAL JOINT BREADTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.06	MEAN	0.81
0.00	SE(MEAN)	0.00
0.13	ST DEV	0.05
0.00	SE(SD)	0.00
1.70	MINIMUM	0.67
2.50	MAXIMUM	0.98

COEFF. OF VARIATION	6.1%
SYMMETRY----BETA I	0.21
KURTOSIS----BETA II	2.89
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
1.78	1ST	0.70
1.82	2ND	0.72
1.84	3RD	0.72
1.86	5TH	0.73
1.90	10TH	0.75
1.93	15TH	0.76
1.95	20TH	0.77
1.97	25TH	0.78
1.99	30TH	0.78
2.01	35TH	0.79
2.02	40TH	0.80
2.04	45TH	0.80
2.06	50TH	0.81
2.07	55TH	0.82
2.09	60TH	0.82
2.11	65TH	0.83
2.13	70TH	0.84
2.15	75TH	0.85
2.18	80TH	0.86
2.20	85TH	0.87
2.24	90TH	0.88
2.29	95TH	0.90
2.31	97TH	0.91
2.33	98TH	0.92
2.35	99TH	0.93

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.40	MEAN	0.94
0.00	SE(MEAN)	0.00
0.13	ST DEV	0.05
0.00	SE(SD)	0.00
2.00	MINIMUM	0.79
2.80	MAXIMUM	1.10

COEFF. OF VARIATION	5.6%
SYMMETRY----BETA I	0.17
KURTOSIS----BETA II	2.94
NUMBER OF SUBJECTS	1003

PERCENTILES

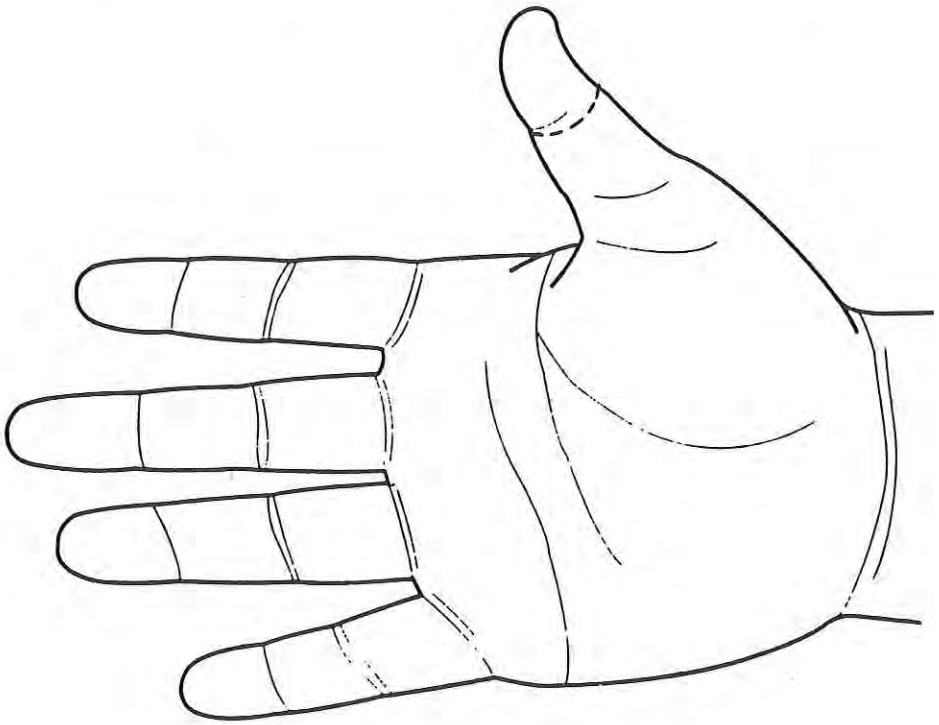
CENTIMETERS		INCHES
2.09	1ST	0.82
2.13	2ND	0.84
2.15	3RD	0.85
2.19	5TH	0.86
2.23	10TH	0.88
2.26	15TH	0.89
2.29	20TH	0.90
2.31	25TH	0.91
2.33	30TH	0.92
2.34	35TH	0.92
2.36	40TH	0.93
2.38	45TH	0.94
2.39	50TH	0.94
2.41	55TH	0.95
2.43	60TH	0.96
2.45	65TH	0.96
2.47	70TH	0.97
2.49	75TH	0.98
2.51	80TH	0.99
2.54	85TH	1.00
2.58	90TH	1.02
2.64	95TH	1.04
2.67	97TH	1.05
2.69	98TH	1.06
2.73	99TH	1.08

5--DIGIT 1 INTERPHALANGEAL JOINT CIRCUMFERENCE

Dimension was calculated from regression equations based upon survey measurement of Digit 1 Breadth (D1BRTH). Separate equations were derived for the two sexes, based on the measurements of 543 men and 571 women.

All equation values are in millimeters.

MALES:	D1CIRC = 2.20 D1BRTH + 19.47	SEE=2.13	R=.61
FEMALES:	D1CIRC = 1.96 D1BRTH + 22.60	SEE=2.04	R=.56



5--DIGIT 1 INTERPHALANGEAL JOINT CIRCUMFERENCE

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
6.30	MEAN	2.48
0.01	SE(MEAN)	0.00
0.25	ST DEV	0.10
0.00	SE(SD)	0.00
5.60	MINIMUM	2.20
7.20	MAXIMUM	2.83

COEFF. OF VARIATION	3.9%
SYMMETRY----BETA I	0.21
KURTOSIS----BETA II	2.89
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
5.76	1ST	2.27
5.83	2ND	2.30
5.88	3RD	2.31
5.93	5TH	2.33
6.01	10TH	2.37
6.06	15TH	2.39
6.11	20TH	2.40
6.15	25TH	2.42
6.18	30TH	2.43
6.22	35TH	2.45
6.25	40TH	2.46
6.28	45TH	2.47
6.31	50TH	2.49
6.35	55TH	2.50
6.38	60TH	2.51
6.42	65TH	2.53
6.46	70TH	2.54
6.50	75TH	2.56
6.55	80TH	2.58
6.60	85TH	2.60
6.67	90TH	2.62
6.75	95TH	2.66
6.80	97TH	2.68
6.83	98TH	2.69
6.86	99TH	2.70

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
7.23	MEAN	2.85
0.01	SE(MEAN)	0.00
0.29	ST DEV	0.12
0.01	SE(SD)	0.00
6.30	MINIMUM	2.48
8.10	MAXIMUM	3.19

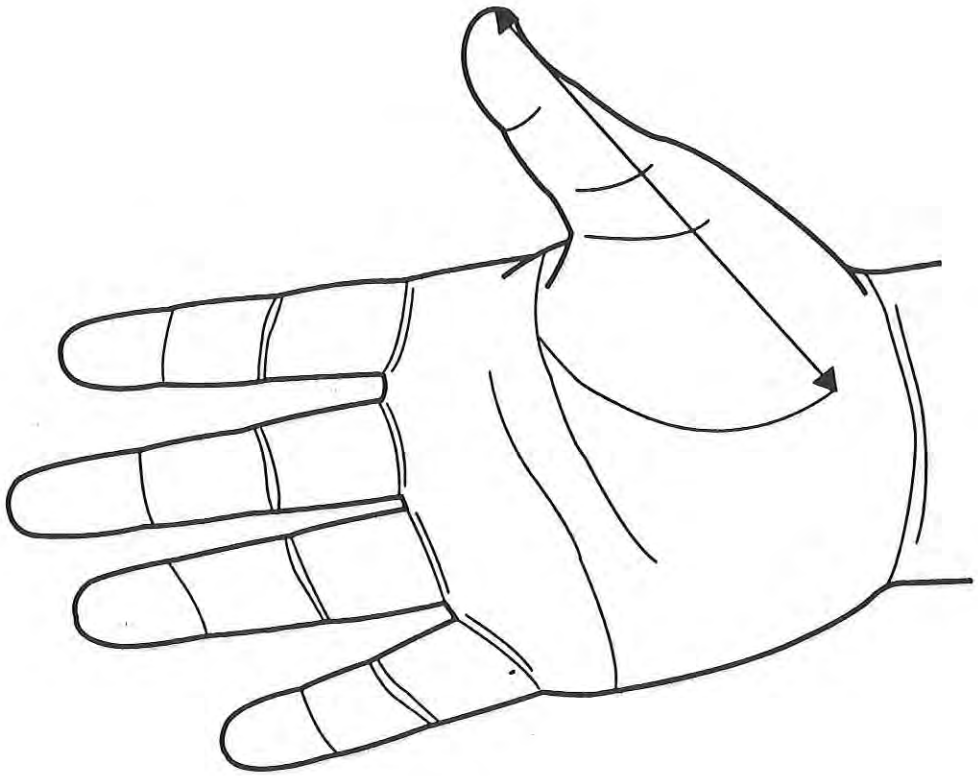
COEFF. OF VARIATION	4.1%
SYMMETRY-----BETA I	0.17
KURTOSIS----BETA II	2.94
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
6.57	1ST	2.59
6.67	2ND	2.63
6.73	3RD	2.65
6.79	5TH	2.67
6.88	10TH	2.71
6.93	15TH	2.73
6.97	20TH	2.74
7.01	25TH	2.76
7.04	30TH	2.77
7.07	35TH	2.79
7.11	40TH	2.80
7.14	45TH	2.81
7.17	50TH	2.82
7.21	55TH	2.84
7.25	60TH	2.85
7.29	65TH	2.87
7.34	70TH	2.89
7.39	75TH	2.91
7.45	80TH	2.93
7.52	85TH	2.96
7.61	90TH	3.00
7.75	95TH	3.05
7.83	97TH	3.08
7.88	98TH	3.10
7.96	99TH	3.13

6--DIGIT 1 LINK LENGTH

The functional length of the first digit calculated as the distance between the tip of the digit (point 33) and the base of the first metacarpal, as approximated by the thenar crease (point 41).



6--DIGIT 1 LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
11.05	MEAN	4.35
0.02	SE(MEAN)	0.01
0.69	ST DEV	0.27
0.01	SE(SD)	0.01
9.10	MINIMUM	3.58
13.20	MAXIMUM	5.20
COEFF. OF VARIATION		6.2%
SYMMETRY----BETA I		0.09
KURTOSIS----BETA II		2.89
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
9.47	1ST	3.73
9.66	2ND	3.80
9.78	3RD	3.85
9.94	5TH	3.91
10.18	10TH	4.01
10.34	15TH	4.07
10.47	20TH	4.12
10.58	25TH	4.17
10.68	30TH	4.20
10.77	35TH	4.24
10.86	40TH	4.28
10.95	45TH	4.31
11.04	50TH	4.34
11.12	55TH	4.38
11.21	60TH	4.41
11.31	65TH	4.45
11.40	70TH	4.49
11.51	75TH	4.53
11.63	80TH	4.58
11.77	85TH	4.64
11.95	90TH	4.71
12.22	95TH	4.81
12.39	97TH	4.88
12.51	98TH	4.92
12.69	99TH	5.00

MALES

THE SUMMARY STATISTICS

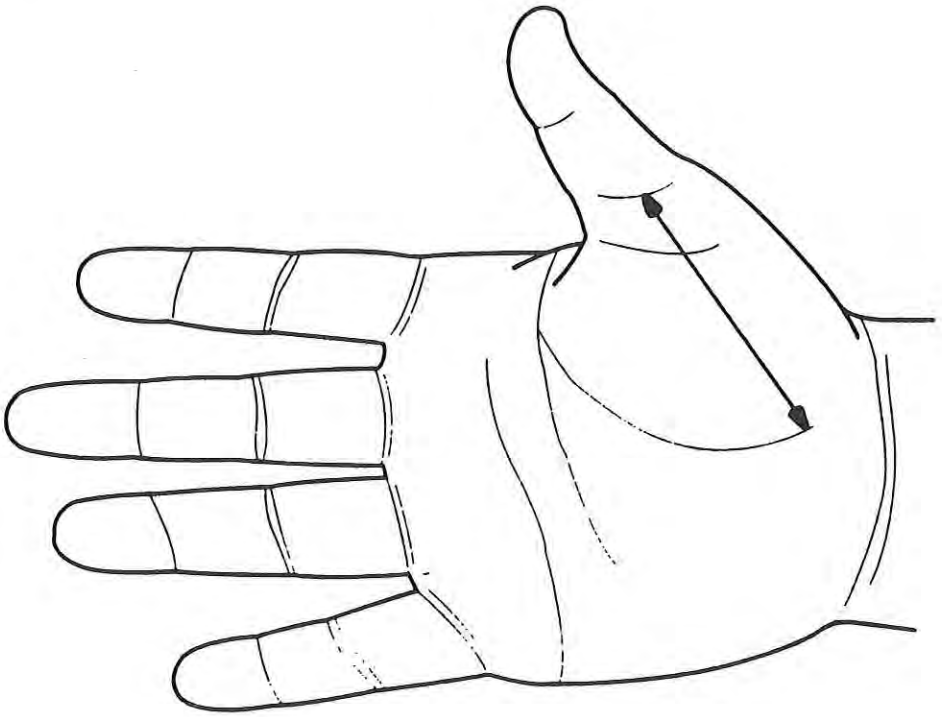
CENTIMETERS		INCHES
12.34	MEAN	4.86
0.02	SE(MEAN)	0.01
0.72	ST DEV	0.28
0.02	SE(SD)	0.01
10.30	MINIMUM	4.06
14.60	MAXIMUM	5.75
COEFF. OF VARIATION		5.8%
SYMMETRY----BETA I		0.19
KURTOSIS----BETA II		2.95
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
10.72	1ST	4.22
10.92	2ND	4.30
11.04	3RD	4.35
11.20	5TH	4.41
11.44	10TH	4.50
11.60	15TH	4.57
11.73	20TH	4.62
11.84	25TH	4.66
11.95	30TH	4.70
12.04	35TH	4.74
12.13	40TH	4.78
12.22	45TH	4.81
12.31	50TH	4.85
12.40	55TH	4.88
12.49	60TH	4.92
12.59	65TH	4.96
12.69	70TH	5.00
12.81	75TH	5.04
12.93	80TH	5.09
13.09	85TH	5.15
13.28	90TH	5.23
13.57	95TH	5.34
13.75	97TH	5.41
13.89	98TH	5.47
14.10	99TH	5.55

7--DIGIT 1 METACARPAL LINK LENGTH

An approximation of the palmar link length of the first digit, calculated as the distance between the head (point 40) and base (point 41) of the first metacarpal.



7--DIGIT 1 METACARPAL LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
7.57	MEAN	2.98
0.02	SE(MEAN)	0.01
0.70	ST DEV	0.28
0.01	SE(SD)	0.01
5.70	MINIMUM	2.24
9.90	MAXIMUM	3.90

COEFF. OF VARIATION	9.2%
SYMMETRY----BETA I	0.40
KURTOSIS----BETA II	3.13
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
6.13	1ST	2.41
6.28	2ND	2.47
6.37	3RD	2.51
6.50	5TH	2.56
6.71	10TH	2.64
6.86	15TH	2.70
6.98	20TH	2.75
7.08	25TH	2.79
7.18	30TH	2.82
7.26	35TH	2.86
7.35	40TH	2.89
7.44	45TH	2.93
7.52	50TH	2.96
7.61	55TH	3.00
7.70	60TH	3.03
7.79	65TH	3.07
7.90	70TH	3.11
8.01	75TH	3.15
8.14	80TH	3.20
8.29	85TH	3.27
8.50	90TH	3.35
8.81	95TH	3.47
9.03	97TH	3.56
9.20	98TH	3.62
9.47	99TH	3.73

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
8.23	MEAN	3.24
0.02	SE(MEAN)	0.01
0.71	ST DEV	0.28
0.02	SE(SD)	0.01
6.10	MINIMUM	2.40
11.00	MAXIMUM	4.33

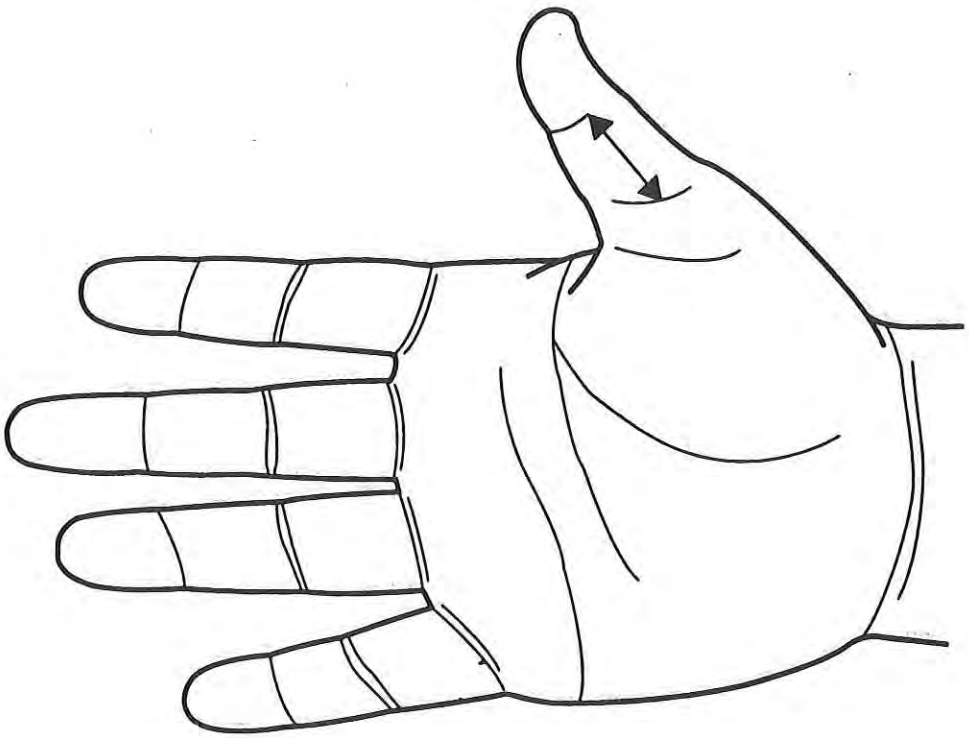
COEFF. OF VARIATION	8.6%
SYMMETRY----BETA I	0.43
KURTOSIS----BETA II	3.37
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
6.83	1ST	2.69
6.95	2ND	2.73
7.03	3RD	2.77
7.15	5TH	2.81
7.35	10TH	2.90
7.50	15TH	2.95
7.62	20TH	3.00
7.73	25TH	3.04
7.83	30TH	3.08
7.92	35TH	3.12
8.01	40TH	3.15
8.10	45TH	3.19
8.18	50TH	3.22
8.27	55TH	3.26
8.36	60TH	3.29
8.46	65TH	3.33
8.56	70TH	3.37
8.67	75TH	3.41
8.80	80TH	3.46
8.95	85TH	3.52
9.15	90TH	3.60
9.45	95TH	3.72
9.67	97TH	3.81
9.83	98TH	3.87
10.10	99TH	3.98

8--DIGIT 1 PROXIMAL PHALANX LINK LENGTH

An approximation of the link length of the proximal phalanx of the first digit, calculated as the distance between the metacarpo-phalangeal joint (point 40) and the interphalangeal joint (point 15) of the first digit.



8--DIGIT 1 PROXIMAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
1.92	MEAN	0.76
0.01	SE(MEAN)	0.00
0.29	ST DEV	0.11
0.01	SE(SD)	0.00
1.00	MINIMUM	0.39
2.90	MAXIMUM	1.14
COEFF. OF VARIATION		14.8%
SYMMETRY----BETA I		0.18
KURTOSIS----BETA II		2.99
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
1.31	1ST	0.52
1.37	2ND	0.54
1.41	3RD	0.55
1.47	5TH	0.58
1.56	10TH	0.61
1.62	15TH	0.64
1.68	20TH	0.66
1.72	25TH	0.68
1.77	30TH	0.70
1.81	35TH	0.71
1.84	40TH	0.73
1.88	45TH	0.74
1.92	50TH	0.75
1.95	55TH	0.77
1.99	60TH	0.78
2.03	65TH	0.80
2.07	70TH	0.81
2.11	75TH	0.83
2.16	80TH	0.85
2.22	85TH	0.87
2.29	90TH	0.90
2.41	95TH	0.95
2.48	97TH	0.98
2.54	98TH	1.00
2.64	99TH	1.04

MALES

THE SUMMARY STATISTICS

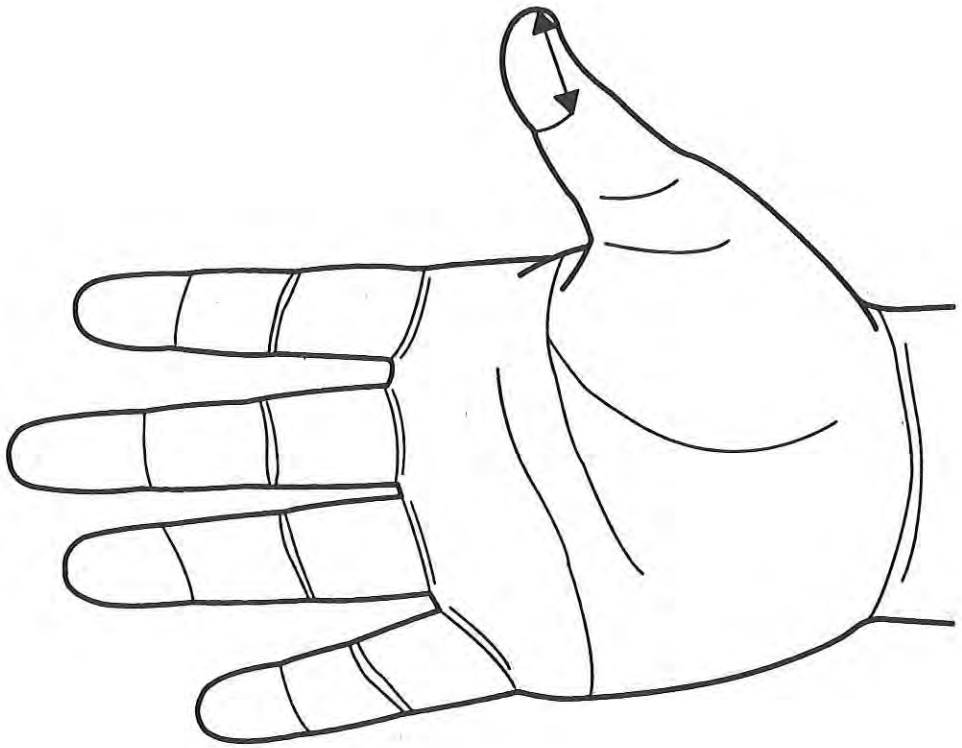
CENTIMETERS		INCHES
2.11	MEAN	0.83
0.01	SE(MEAN)	0.00
0.30	ST DEV	0.12
0.01	SE(SD)	0.00
1.20	MINIMUM	0.47
3.10	MAXIMUM	1.22
COEFF. OF VARIATION		14.2%
SYMMETRY----BETA I		0.10
KURTOSIS----BETA II		3.13
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
1.41	1ST	0.56
1.50	2ND	0.59
1.55	3RD	0.61
1.62	5TH	0.64
1.73	10TH	0.68
1.80	15TH	0.71
1.86	20TH	0.73
1.91	25TH	0.75
1.96	30TH	0.77
2.00	35TH	0.79
2.03	40TH	0.80
2.07	45TH	0.82
2.11	50TH	0.83
2.14	55TH	0.84
2.18	60TH	0.86
2.22	65TH	0.87
2.26	70TH	0.89
2.31	75TH	0.91
2.36	80TH	0.93
2.42	85TH	0.95
2.50	90TH	0.98
2.62	95TH	1.03
2.71	97TH	1.07
2.77	98TH	1.09
2.88	99TH	1.13

9--DIGIT 1 DISTAL PHALANX LINK LENGTH

An approximation of the link length of the distal phalanx of the first digit, calculated as the distance between the interphalangeal joint (point 15) and the tip (point 33) of the first digit.



9--DIGIT 1 DISTAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
3.08	MEAN	1.21
0.01	SE(MEAN)	0.00
0.24	ST DEV	0.10
0.00	SE(SD)	0.00
2.20	MINIMUM	0.87
4.10	MAXIMUM	1.61
COEFF. OF VARIATION		7.9%
SYMMETRY----BETA I		0.18
KURTOSIS----BETA II		3.37
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
2.53	1ST	1.00
2.60	2ND	1.02
2.64	3RD	1.04
2.69	5TH	1.06
2.77	10TH	1.09
2.83	15TH	1.11
2.87	20TH	1.13
2.91	25TH	1.15
2.94	30TH	1.16
2.98	35TH	1.17
3.01	40TH	1.18
3.04	45TH	1.20
3.07	50TH	1.21
3.10	55TH	1.22
3.13	60TH	1.23
3.16	65TH	1.25
3.20	70TH	1.26
3.24	75TH	1.27
3.28	80TH	1.29
3.33	85TH	1.31
3.39	90TH	1.34
3.49	95TH	1.37
3.55	97TH	1.40
3.59	98TH	1.41
3.66	99TH	1.44

MALES

THE SUMMARY STATISTICS

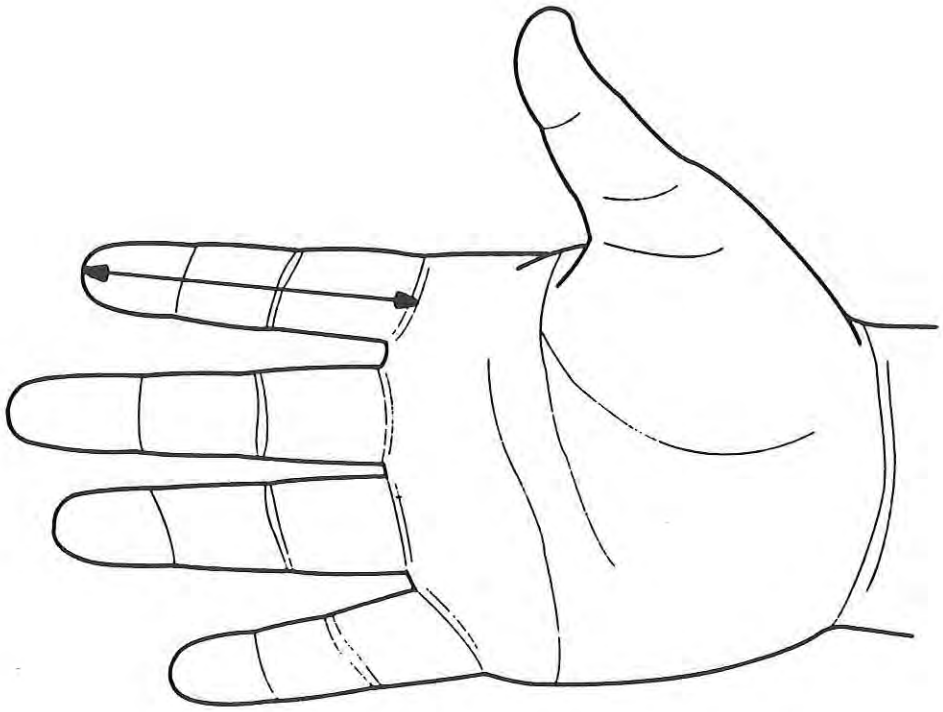
CENTIMETERS		INCHES
3.45	MEAN	1.36
0.01	SE(MEAN)	0.00
0.26	ST DEV	0.10
0.01	SE(SD)	0.00
2.70	MINIMUM	1.06
4.50	MAXIMUM	1.77
COEFF. OF VARIATION		7.6%
SYMMETRY----BETA I		0.19
KURTOSIS----BETA II		3.43
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
2.82	1ST	1.11
2.91	2ND	1.14
2.96	3RD	1.16
3.03	5TH	1.19
3.12	10TH	1.23
3.19	15TH	1.25
3.23	20TH	1.27
3.28	25TH	1.29
3.31	30TH	1.30
3.35	35TH	1.32
3.38	40TH	1.33
3.41	45TH	1.34
3.44	50TH	1.35
3.47	55TH	1.37
3.50	60TH	1.38
3.54	65TH	1.39
3.57	70TH	1.41
3.61	75TH	1.42
3.66	80TH	1.44
3.71	85TH	1.46
3.78	90TH	1.49
3.90	95TH	1.53
3.97	97TH	1.56
4.03	98TH	1.59
4.13	99TH	1.63

10--DIGIT 2 LENGTH

The length of the second digit calculated as the distance between the digit's tip (point 34) and its base (point 7).



10--DIGIT 2 LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
6.96	MEAN	2.74
0.01	SE(MEAN)	0.01
0.46	ST DEV	0.18
0.01	SE(SD)	0.00
5.60	MINIMUM	2.20
8.40	MAXIMUM	3.31
COEFF. OF VARIATION		6.7%
SYMMETRY----BETA I		0.09
KURTOSIS----BETA II		2.94
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
5.89	1ST	2.32
6.01	2ND	2.37
6.08	3RD	2.39
6.19	5TH	2.44
6.36	10TH	2.50
6.47	15TH	2.55
6.56	20TH	2.58
6.64	25TH	2.61
6.71	30TH	2.64
6.77	35TH	2.67
6.83	40TH	2.69
6.89	45TH	2.71
6.95	50TH	2.74
7.01	55TH	2.76
7.07	60TH	2.78
7.13	65TH	2.81
7.19	70TH	2.83
7.26	75TH	2.86
7.34	80TH	2.89
7.43	85TH	2.93
7.55	90TH	2.97
7.73	95TH	3.04
7.85	97TH	3.09
7.95	98TH	3.13
8.11	99TH	3.19

MALES

THE SUMMARY STATISTICS

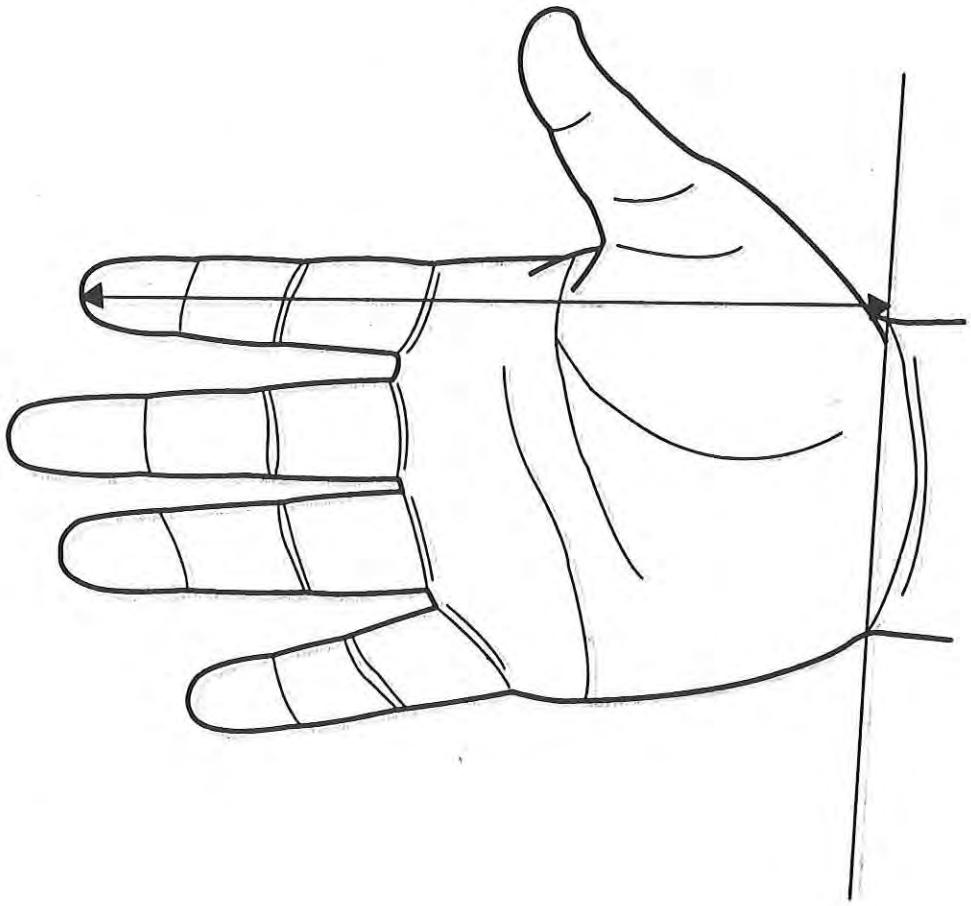
CENTIMETERS		INCHES
7.53	MEAN	2.96
0.02	SE(MEAN)	0.01
0.49	ST DEV	0.19
0.01	SE(SD)	0.00
5.80	MINIMUM	2.28
9.20	MAXIMUM	3.62
COEFF. OF VARIATION		6.5%
SYMMETRY-----BETA I		0.10
KURTOSIS----BETA II		3.09
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
6.44	1ST	2.54
6.56	2ND	2.58
6.64	3RD	2.61
6.74	5TH	2.65
6.91	10TH	2.72
7.02	15TH	2.77
7.12	20TH	2.80
7.20	25TH	2.83
7.27	30TH	2.86
7.33	35TH	2.89
7.40	40TH	2.91
7.46	45TH	2.94
7.52	50TH	2.96
7.58	55TH	2.98
7.64	60TH	3.01
7.71	65TH	3.03
7.78	70TH	3.06
7.85	75TH	3.09
7.94	80TH	3.12
8.03	85TH	3.16
8.16	90TH	3.21
8.35	95TH	3.29
8.48	97TH	3.34
8.57	98TH	3.38
8.73	99TH	3.44

11--DIGIT 2 HEIGHT

The perpendicular distance from the tip of digit 2 (point 34) to the wrist crease base line.



11--DIGIT 2 HEIGHT

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
16.51	MEAN	6.50
0.02	SE(MEAN)	0.01
0.90	ST DEV	0.36
0.02	SE(SD)	0.01
13.50	MINIMUM	5.31
19.60	MAXIMUM	7.72
COEFF. OF VARIATION		5.5%
SYMMETRY----BETA I		0.14
KURTOSIS----BETA II		3.07
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
14.48	1ST	5.70
14.71	2ND	5.79
14.86	3RD	5.85
15.06	5TH	5.93
15.37	10TH	6.05
15.58	15TH	6.13
15.75	20TH	6.20
15.90	25TH	6.26
16.03	30TH	6.31
16.15	35TH	6.36
16.27	40TH	6.40
16.38	45TH	6.45
16.49	50TH	6.49
16.60	55TH	6.54
16.72	60TH	6.58
16.84	65TH	6.63
16.97	70TH	6.68
17.11	75TH	6.73
17.26	80TH	6.80
17.45	85TH	6.87
17.69	90TH	6.96
18.04	95TH	7.10
18.28	97TH	7.20
18.46	98TH	7.27
18.75	99TH	7.38

MALES

THE SUMMARY STATISTICS

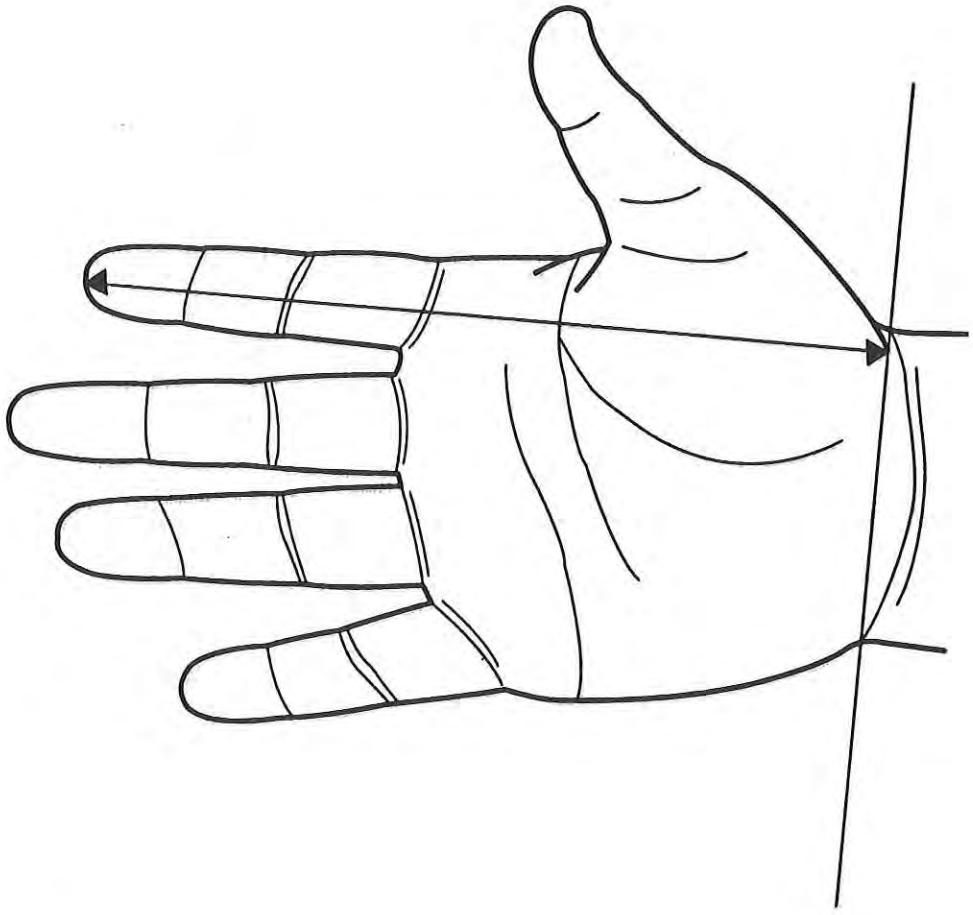
CENTIMETERS		INCHES
18.00	MEAN	7.09
0.03	SE(MEAN)	0.01
0.95	ST DEV	0.37
0.02	SE(SD)	0.01
13.90	MINIMUM	5.47
21.00	MAXIMUM	8.27
COEFF. OF VARIATION		5.3%
SYMMETRY----BETA I		0.04
KURTOSIS----BETA II		3.58
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
15.96	1ST	6.28
16.17	2ND	6.37
16.31	3RD	6.42
16.51	5TH	6.50
16.82	10TH	6.62
17.04	15TH	6.71
17.21	20TH	6.78
17.36	25TH	6.84
17.50	30TH	6.89
17.63	35TH	6.94
17.75	40TH	6.99
17.86	45TH	7.03
17.98	50TH	7.08
18.10	55TH	7.12
18.22	60TH	7.17
18.34	65TH	7.22
18.47	70TH	7.27
18.61	75TH	7.33
18.78	80TH	7.39
18.97	85TH	7.47
19.21	90TH	7.56
19.60	95TH	7.72
19.86	97TH	7.82
20.06	98TH	7.90
20.40	99TH	8.03

12--DIGIT 2 TIP TO WRIST CREASE LENGTH

The distance from the tip of digit 2 (point 34) to the wrist crease base line measured along the digit's central axis.



12--DIGIT 2 TIP TO WRIST CREASE LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
16.99	MEAN	6.69
0.03	SE(MEAN)	0.01
0.93	ST DEV	0.37
0.02	SE(SD)	0.01
14.00	MINIMUM	5.51
20.30	MAXIMUM	7.99
COEFF. OF VARIATION		5.5%
SYMMETRY----BETA I		0.16
KURTOSIS----BETA II		3.11
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
14.88	1ST	5.86
15.14	2ND	5.96
15.29	3RD	6.02
15.50	5TH	6.10
15.82	10TH	6.23
16.03	15TH	6.31
16.20	20TH	6.38
16.35	25TH	6.44
16.48	30TH	6.49
16.60	35TH	6.54
16.72	40TH	6.58
16.84	45TH	6.63
16.95	50TH	6.67
17.07	55TH	6.72
17.19	60TH	6.77
17.31	65TH	6.82
17.44	70TH	6.87
17.59	75TH	6.93
17.76	80TH	6.99
17.95	85TH	7.07
18.20	90TH	7.17
18.59	95TH	7.32
18.84	97TH	7.42
19.03	98TH	7.49
19.33	99TH	7.61

MALES

THE SUMMARY STATISTICS

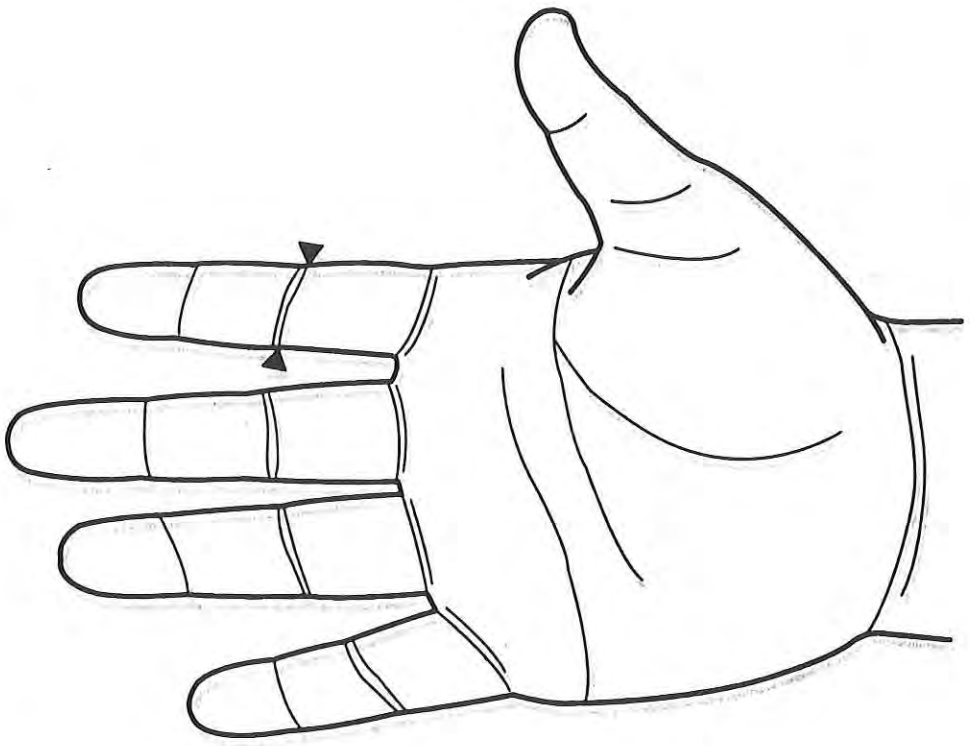
CENTIMETERS		INCHES
18.52	MEAN	7.29
0.03	SE(MEAN)	0.01
0.99	ST DEV	0.39
0.02	SE(SD)	0.01
14.40	MINIMUM	5.67
22.50	MAXIMUM	8.86
COEFF. OF VARIATION		5.3%
SYMMETRY----BETA I		0.12
KURTOSIS----BETA II		3.80
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
16.27	1ST	6.40
16.56	2ND	6.52
16.74	3RD	6.59
16.98	5TH	6.68
17.32	10TH	6.82
17.54	15TH	6.91
17.72	20TH	6.98
17.87	25TH	7.04
18.00	30TH	7.09
18.13	35TH	7.14
18.25	40TH	7.18
18.36	45TH	7.23
18.48	50TH	7.28
18.60	55TH	7.32
18.72	60TH	7.37
18.85	65TH	7.42
18.98	70TH	7.47
19.13	75TH	7.53
19.30	80TH	7.60
19.51	85TH	7.68
19.77	90TH	7.78
20.17	95TH	7.94
20.45	97TH	8.05
20.65	98TH	8.13
20.98	99TH	8.26

13--DIGIT 2 PROXIMAL INTERPHALANGEAL JOINT BREADTH

The breadth of the proximal interphalangeal joint calculated as the distance between points 17 and 18.



13--DIGIT 2 PROXIMAL INTERPHALANGEAL JOINT BREADTH

FEMALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
1.99	MEAN	0.78
0.00	SE(MEAN)	0.00
0.13	ST DEV	0.05
0.00	SE(SD)	0.00
1.60	MINIMUM	0.63
2.40	MAXIMUM	0.94
COEFF. OF VARIATION		6.4%
SYMMETRY----BETA I		0.22
KURTOSIS----BETA II		3.15
NUMBER OF SUBJECTS		1304

PERCENTILES		
CENTIMETERS		INCHES
1.70	1ST	0.67
1.73	2ND	0.68
1.75	3RD	0.69
1.78	5TH	0.70
1.83	10TH	0.72
1.86	15TH	0.73
1.88	20TH	0.74
1.90	25TH	0.75
1.92	30TH	0.75
1.93	35TH	0.76
1.95	40TH	0.77
1.97	45TH	0.77
1.98	50TH	0.78
2.00	55TH	0.79
2.01	60TH	0.79
2.03	65TH	0.80
2.05	70TH	0.81
2.07	75TH	0.81
2.09	80TH	0.82
2.12	85TH	0.83
2.15	90TH	0.85
2.20	95TH	0.87
2.24	97TH	0.88
2.27	98TH	0.89
2.31	99TH	0.91

MALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
2.30	MEAN	0.90
0.01	SE(MEAN)	0.00
0.16	ST DEV	0.06
0.00	SE(SD)	0.00
1.90	MINIMUM	0.75
2.80	MAXIMUM	1.10
COEFF. OF VARIATION		7.1%
SYMMETRY----BETA I		0.25
KURTOSIS----BETA II		3.28
NUMBER OF SUBJECTS		1003

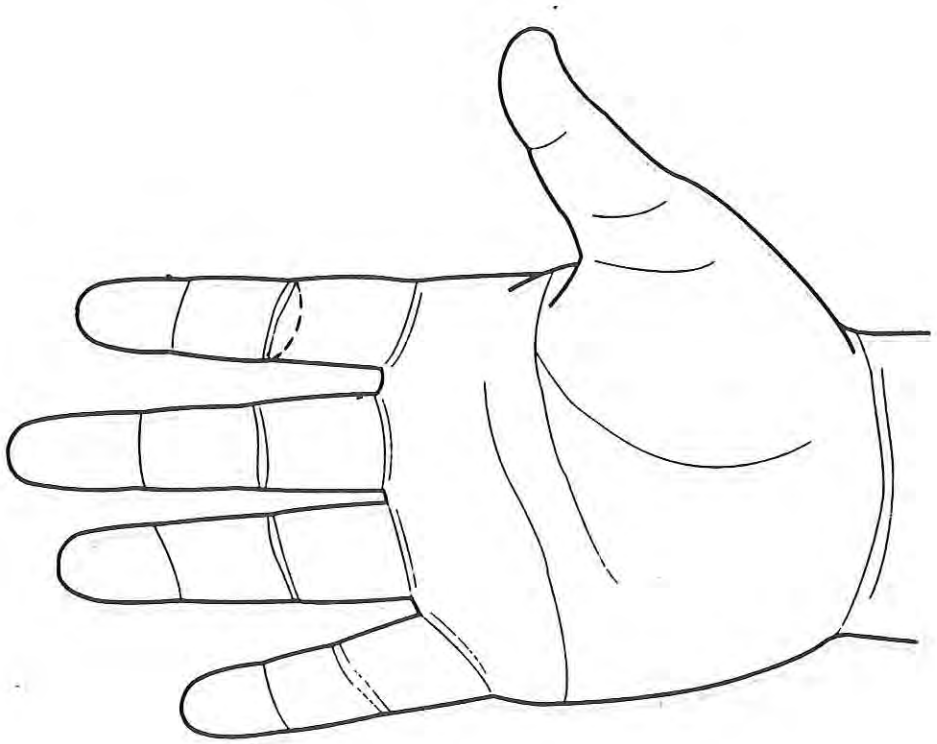
PERCENTILES		
CENTIMETERS		INCHES
1.90	1ST	0.75
1.96	2ND	0.77
2.00	3RD	0.79
2.04	5TH	0.80
2.10	10TH	0.83
2.13	15TH	0.84
2.16	20TH	0.85
2.19	25TH	0.86
2.21	30TH	0.87
2.23	35TH	0.88
2.25	40TH	0.89
2.27	45TH	0.89
2.29	50TH	0.90
2.31	55TH	0.91
2.33	60TH	0.92
2.35	65TH	0.92
2.37	70TH	0.93
2.40	75TH	0.94
2.43	80TH	0.96
2.46	85TH	0.97
2.51	90TH	0.99
2.58	95TH	1.02
2.63	97TH	1.04
2.67	98TH	1.05
2.72	99TH	1.07

14--DIGIT 2 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Dimension was calculated from multivariate regression equations based upon calculated values for Digit 2 Proximal Interphalangeal Joint Breadth (D2PIP) and Digit 2 Distal Interphalangeal Joint Breadth (D2DIP). Separate equations were derived for the two sexes, based on the measurements of 283 men and 554 women.

All equation values are in millimeters.

MALES:	DP2CIRC = 0.71 D2PIP + 0.48 D2DIP + 42.87	SEE=2.67	R^2=.28
FEMALES:	DP2CIRC = 0.91 D2PIP + 0.89 D2DIP + 27.72	SEE=2.34	R^2=.41



14--DIGIT 2 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
6.12	MEAN	2.41
0.01	SE(MEAN)	0.00
0.20	ST DEV	0.08
0.00	SE(SD)	0.00
5.60	MINIMUM	2.20
6.80	MAXIMUM	2.68
COEFF. OF VARIATION		3.2%
SYMMETRY----BETA I		0.18
KURTOSIS----BETA II		3.08
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
5.66	1ST	2.23
5.71	2ND	2.25
5.74	3RD	2.26
5.78	5TH	2.27
5.84	10TH	2.30
5.89	15TH	2.32
5.93	20TH	2.33
5.96	25TH	2.35
5.99	30TH	2.36
6.02	35TH	2.37
6.05	40TH	2.38
6.08	45TH	2.39
6.11	50TH	2.40
6.14	55TH	2.42
6.17	60TH	2.43
6.20	65TH	2.44
6.23	70TH	2.45
6.26	75TH	2.47
6.30	80TH	2.48
6.35	85TH	2.50
6.41	90TH	2.52
6.49	95TH	2.56
6.54	97TH	2.58
6.58	98TH	2.59
6.63	99TH	2.61

MALES

THE SUMMARY STATISTICS

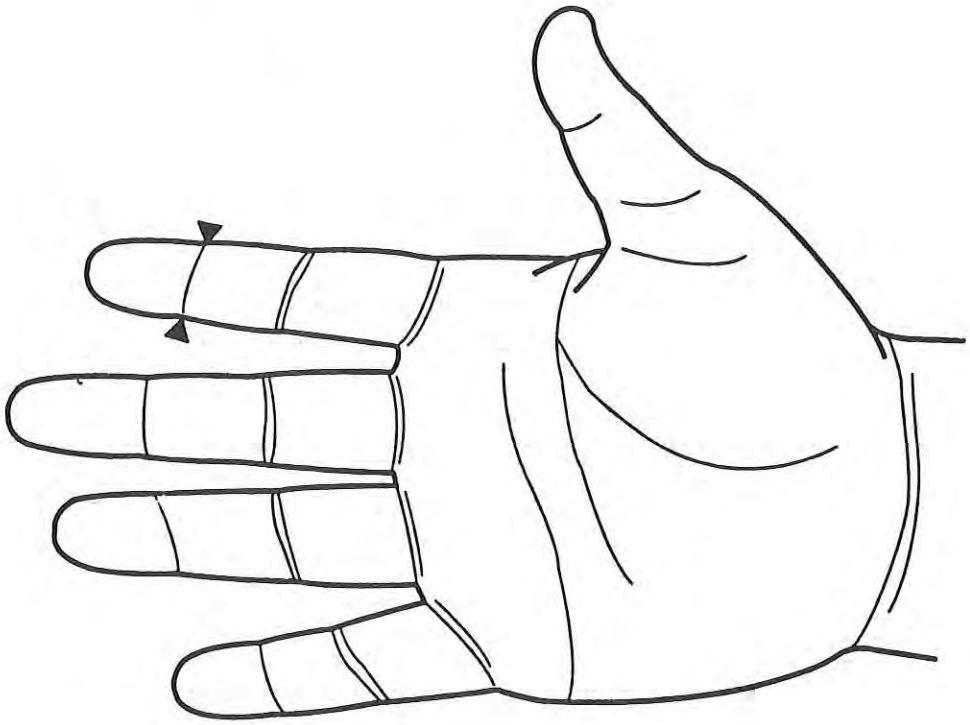
CENTIMETERS		INCHES
6.84	MEAN	2.69
0.01	SE(MEAN)	0.00
0.18	ST DEV	0.07
0.00	SE(SD)	0.00
6.40	MINIMUM	2.52
7.40	MAXIMUM	2.91
COEFF. OF VARIATION		2.6%
SYMMETRY----BETA I		0.24
KURTOSIS----BETA II		3.33
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
6.41	1ST	2.52
6.48	2ND	2.55
6.52	3RD	2.57
6.56	5TH	2.58
6.63	10TH	2.61
6.67	15TH	2.62
6.70	20TH	2.64
6.72	25TH	2.65
6.75	30TH	2.66
6.77	35TH	2.67
6.79	40TH	2.67
6.81	45TH	2.68
6.83	50TH	2.69
6.85	55TH	2.70
6.87	60TH	2.71
6.90	65TH	2.72
6.92	70TH	2.73
6.95	75TH	2.74
6.98	80TH	2.75
7.02	85TH	2.76
7.07	90TH	2.78
7.15	95TH	2.82
7.21	97TH	2.84
7.25	98TH	2.85
7.31	99TH	2.88

15--DIGIT 2 DISTAL INTERPHALANGEAL JOINT BREADTH

The breadth of the distal interphalangeal joint calculated as the distance between points 25 and 26.



15--DIGIT 2 DISTAL INTERPHALANGEAL JOINT BREADTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
1.73	MEAN	0.68
0.00	SE(MEAN)	0.00
0.12	ST DEV	0.05
0.00	SE(SD)	0.00
1.40	MINIMUM	0.55
2.30	MAXIMUM	0.91
COEFF. OF VARIATION		6.9%
SYMMETRY----BETA I		0.38
KURTOSIS----BETA II		3.50
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
1.46	1ST	0.57
1.49	2ND	0.59
1.51	3RD	0.60
1.54	5TH	0.61
1.58	10TH	0.62
1.61	15TH	0.63
1.63	20TH	0.64
1.65	25TH	0.65
1.66	30TH	0.65
1.68	35TH	0.66
1.69	40TH	0.67
1.71	45TH	0.67
1.72	50TH	0.68
1.74	55TH	0.68
1.75	60TH	0.69
1.77	65TH	0.70
1.79	70TH	0.70
1.81	75TH	0.71
1.83	80TH	0.72
1.86	85TH	0.73
1.89	90TH	0.74
1.94	95TH	0.77
1.98	97TH	0.78
2.01	98TH	0.79
2.05	99TH	0.81

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.01	MEAN	0.79
0.00	SE(MEAN)	0.00
0.15	ST DEV	0.06
0.00	SE(SD)	0.00
1.60	MINIMUM	0.63
2.50	MAXIMUM	0.98
COEFF. OF VARIATION		7.6%
SYMMETRY----BETA I		0.29
KURTOSIS----BETA II		3.18
NUMBER OF SUBJECTS		1003

PERCENTILES

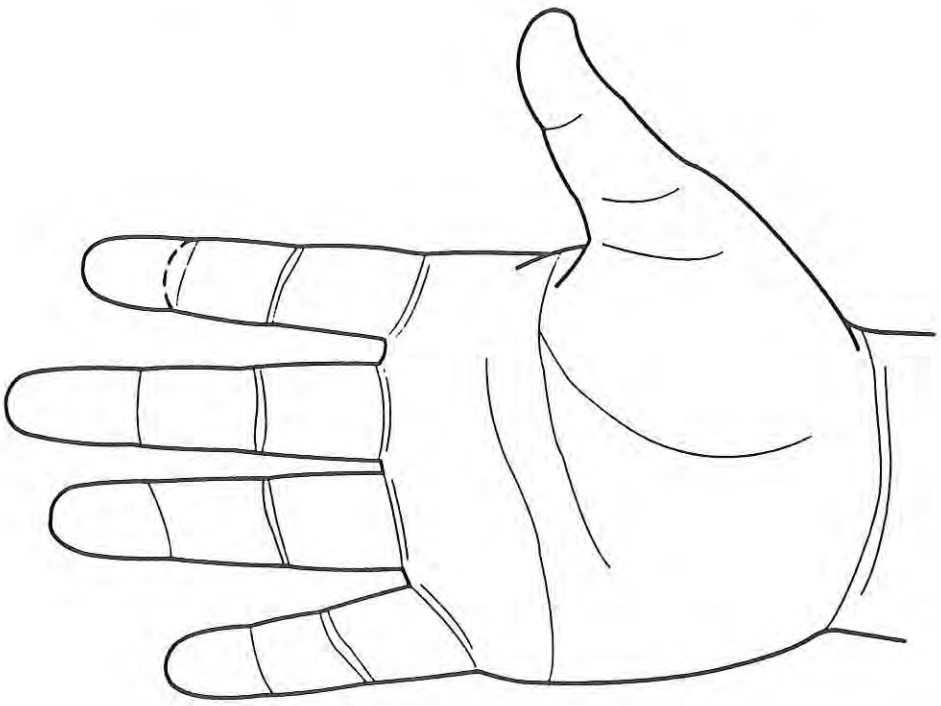
CENTIMETERS		INCHES
1.66	1ST	0.65
1.70	2ND	0.67
1.73	3RD	0.68
1.77	5TH	0.70
1.82	10TH	0.72
1.85	15TH	0.73
1.88	20TH	0.74
1.90	25TH	0.75
1.92	30TH	0.76
1.94	35TH	0.76
1.96	40TH	0.77
1.98	45TH	0.78
2.00	50TH	0.79
2.02	55TH	0.79
2.04	60TH	0.80
2.06	65TH	0.81
2.08	70TH	0.82
2.11	75TH	0.83
2.13	80TH	0.84
2.17	85TH	0.85
2.21	90TH	0.87
2.28	95TH	0.90
2.32	97TH	0.91
2.35	98TH	0.93
2.41	99TH	0.95

16--DIGIT 2 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Dimension was calculated from multivariate regression equations based upon calculated values for Digit 2 Proximal Interphalangeal Joint Breadth (D2PIP) and Digit 2 Distal Interphalangeal Joint Breadth (D2DIP). Separate equations were derived for the two sexes, based on the measurements of 283 men and 554 women.

All equation values are in millimeters.

MALES:	D2DCIRC = 0.33 D2PIP + 0.79 D2DIP + 33.94	SEE=2.52	R^2=.28
FEMALES:	D2DCIRC = 0.62 D2PIP + 1.07 D2DIP + 19.97	SEE=2.03	R^2=.44



16--DIGIT 2 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
5.08	MEAN	2.00
0.01	SE(MEAN)	0.00
0.19	ST DEV	0.07
0.00	SE(SD)	0.00
4.50	MINIMUM	1.77
5.80	MAXIMUM	2.28

COEFF. OF VARIATION	3.6%
SYMMETRY----BETA I	0.22
KURTOSIS----BETA II	3.14
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
4.68	1ST	1.84
4.71	2ND	1.85
4.73	3RD	1.86
4.77	5TH	1.88
4.84	10TH	1.90
4.88	15TH	1.92
4.92	20TH	1.94
4.96	25TH	1.95
4.99	30TH	1.96
5.01	35TH	1.97
5.04	40TH	1.98
5.06	45TH	1.99
5.09	50TH	2.00
5.11	55TH	2.01
5.14	60TH	2.02
5.16	65TH	2.03
5.19	70TH	2.04
5.21	75TH	2.05
5.24	80TH	2.06
5.28	85TH	2.08
5.33	90TH	2.10
5.40	95TH	2.12
5.44	97TH	2.14
5.48	98TH	2.16
5.54	99TH	2.18

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
5.74	MEAN	2.26
0.01	SE(MEAN)	0.00
0.16	ST DEV	0.06
0.00	SE(SD)	0.00
5.30	MINIMUM	2.09
6.30	MAXIMUM	2.48

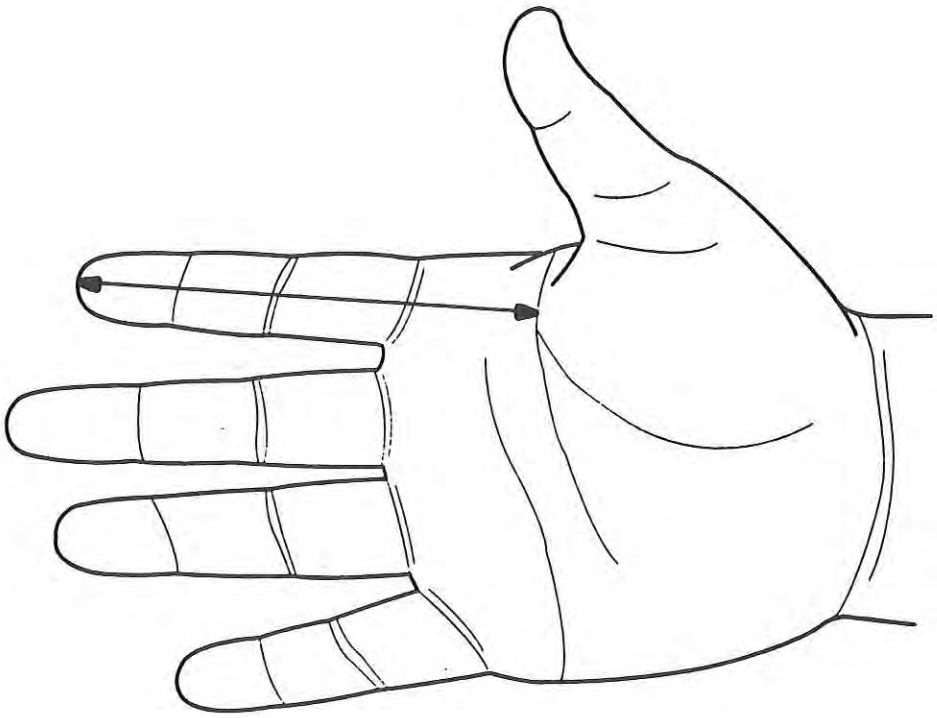
COEFF. OF VARIATION	2.9%
SYMMETRY----BETA I	0.26
KURTOSIS----BETA II	3.26
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
5.36	1ST	2.11
5.41	2ND	2.13
5.44	3RD	2.14
5.48	5TH	2.16
5.53	10TH	2.18
5.57	15TH	2.19
5.59	20TH	2.20
5.62	25TH	2.21
5.64	30TH	2.22
5.66	35TH	2.23
5.68	40TH	2.24
5.70	45TH	2.25
5.72	50TH	2.25
5.74	55TH	2.26
5.77	60TH	2.27
5.79	65TH	2.28
5.81	70TH	2.29
5.84	75TH	2.30
5.87	80TH	2.31
5.91	85TH	2.33
5.96	90TH	2.34
6.03	95TH	2.37
6.07	97TH	2.39
6.10	98TH	2.40
6.15	99TH	2.42

17--DIGIT 2 LINK LENGTH

The functional length of the second digit calculated as the distance between the tip of the digit (point 34) and the center of rotation of the first metacarpo-phalangeal joint, approximated by the proximal transverse palm crease.



17--DIGIT 2 LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
10.02	MEAN	3.95
0.02	SE(MEAN)	0.01
0.64	ST DEV	0.25
0.01	SE(SD)	0.00
8.10	MINIMUM	3.19
12.40	MAXIMUM	4.88
COEFF. OF VARIATION		6.4%
SYMMETRY----BETA I		0.16
KURTOSIS----BETA II		3.31
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
8.49	1ST	3.34
8.71	2ND	3.43
8.84	3RD	3.48
9.00	5TH	3.54
9.24	10TH	3.64
9.39	15TH	3.70
9.51	20TH	3.74
9.61	25TH	3.78
9.69	30TH	3.82
9.78	35TH	3.85
9.85	40TH	3.88
9.93	45TH	3.91
10.01	50TH	3.94
10.08	55TH	3.97
10.16	60TH	4.00
10.24	65TH	4.03
10.33	70TH	4.07
10.43	75TH	4.10
10.54	80TH	4.15
10.67	85TH	4.20
10.85	90TH	4.27
11.12	95TH	4.38
11.31	97TH	4.45
11.45	98TH	4.51
11.68	99TH	4.60

MALES

THE SUMMARY STATISTICS

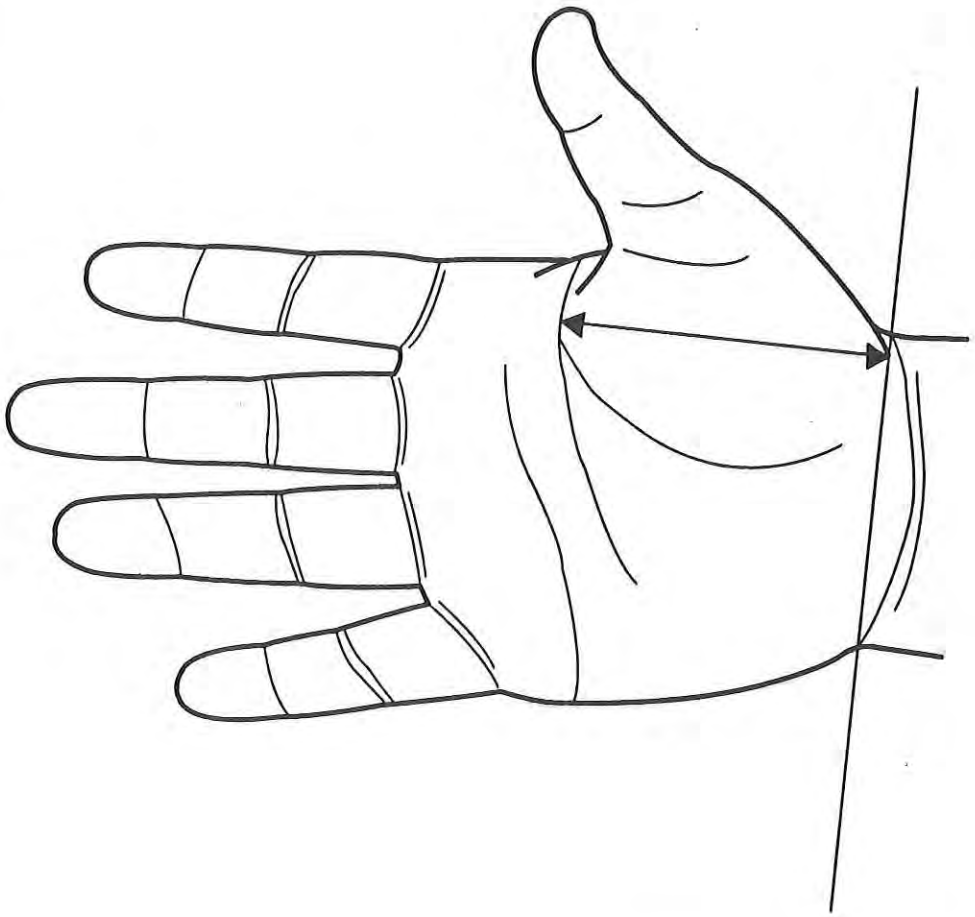
CENTIMETERS		INCHES
10.83	MEAN	4.26
0.02	SE(MEAN)	0.01
0.69	ST DEV	0.27
0.02	SE(SD)	0.01
8.60	MINIMUM	3.39
13.50	MAXIMUM	5.31
COEFF. OF VARIATION		6.4%
SYMMETRY----BETA I		0.17
KURTOSIS----BETA II		3.24
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
9.25	1ST	3.64
9.46	2ND	3.72
9.58	3RD	3.77
9.75	5TH	3.84
9.98	10TH	3.93
10.14	15TH	3.99
10.26	20TH	4.04
10.37	25TH	4.08
10.46	30TH	4.12
10.55	35TH	4.15
10.64	40TH	4.19
10.72	45TH	4.22
10.81	50TH	4.25
10.89	55TH	4.29
10.98	60TH	4.32
11.07	65TH	4.36
11.17	70TH	4.40
11.28	75TH	4.44
11.41	80TH	4.49
11.55	85TH	4.55
11.74	90TH	4.62
12.01	95TH	4.73
12.19	97TH	4.80
12.31	98TH	4.85
12.49	99TH	4.92

18--DIGIT 2 METACARPAL LINK LENGTH

An approximation of the palmar link length of the second digit, calculated as the distance, along the axis of the digit, from the center of rotation of the metacarpo-phalangeal joint (approximated by the proximal transverse palm crease) to the wrist crease baseline.



18--DIGIT 2 METACARPAL LINK LENGTH

FEMALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
6.96	MEAN	2.74
0.01	SE(MEAN)	0.01
0.49	ST DEV	0.19
0.01	SE(SD)	0.00
5.40	MINIMUM	2.13
9.00	MAXIMUM	3.54
COEFF. OF VARIATION		7.0%
SYMMETRY----BETA I		0.36
KURTOSIS----BETA II		3.36
NUMBER OF SUBJECTS		1304

PERCENTILES CENTIMETERS		INCHES
5.95	1ST	2.34
6.06	2ND	2.38
6.13	3RD	2.41
6.22	5TH	2.45
6.37	10TH	2.51
6.47	15TH	2.55
6.55	20TH	2.58
6.62	25TH	2.61
6.69	30TH	2.63
6.75	35TH	2.66
6.81	40TH	2.68
6.87	45TH	2.70
6.93	50TH	2.73
6.99	55TH	2.75
7.05	60TH	2.78
7.12	65TH	2.80
7.19	70TH	2.83
7.27	75TH	2.86
7.36	80TH	2.90
7.46	85TH	2.94
7.60	90TH	2.99
7.82	95TH	3.08
7.97	97TH	3.14
8.08	98TH	3.18
8.26	99TH	3.25

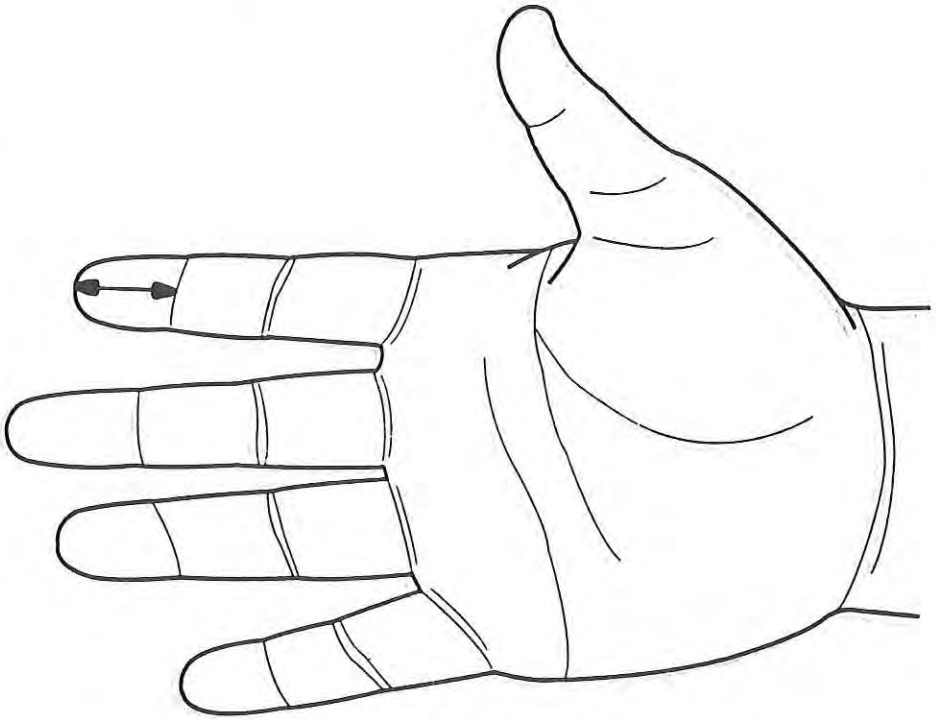
MALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
7.68	MEAN	3.02
0.02	SE(MEAN)	0.01
0.48	ST DEV	0.19
0.01	SE(SD)	0.00
5.50	MINIMUM	2.17
9.50	MAXIMUM	3.74
COEFF. OF VARIATION		6.2%
SYMMETRY----BETA I		0.30
KURTOSIS----BETA II		3.86
NUMBER OF SUBJECTS		1003

PERCENTILES CENTIMETERS		INCHES
6.73	1ST	2.65
6.81	2ND	2.68
6.87	3RD	2.70
6.96	5TH	2.74
7.10	10TH	2.80
7.21	15TH	2.84
7.29	20TH	2.87
7.36	25TH	2.90
7.43	30TH	2.92
7.49	35TH	2.95
7.55	40TH	2.97
7.60	45TH	2.99
7.66	50TH	3.02
7.72	55TH	3.04
7.77	60TH	3.06
7.83	65TH	3.08
7.90	70TH	3.11
7.97	75TH	3.14
8.05	80TH	3.17
8.15	85TH	3.21
8.28	90TH	3.26
8.50	95TH	3.34
8.65	97TH	3.41
8.78	98TH	3.46
9.01	99TH	3.55

19--DIGIT 2 DISTAL PHALANX LINK LENGTH

An approximation of the link length of the distal phalanx of the second digit, calculated as the distance between the middle of the distal interphalangeal joint (points 25 and 26) to the tip of the digit (point 34).



19--DIGIT 2 DISTAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.55	MEAN	1.00
0.01	SE(MEAN)	0.00
0.21	ST DEV	0.08
0.00	SE(SD)	0.00
1.90	MINIMUM	0.75
3.20	MAXIMUM	1.26
COEFF. OF VARIATION		8.2%
SYMMETRY----BETA I		0.08
KURTOSIS----BETA II		2.90
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
2.07	1ST	0.82
2.13	2ND	0.84
2.16	3RD	0.85
2.20	5TH	0.87
2.28	10TH	0.90
2.33	15TH	0.92
2.37	20TH	0.93
2.40	25TH	0.95
2.44	30TH	0.96
2.47	35TH	0.97
2.49	40TH	0.98
2.52	45TH	0.99
2.55	50TH	1.00
2.57	55TH	1.01
2.60	60TH	1.02
2.63	65TH	1.04
2.66	70TH	1.05
2.69	75TH	1.06
2.73	80TH	1.07
2.77	85TH	1.09
2.82	90TH	1.11
2.90	95TH	1.14
2.95	97TH	1.16
2.99	98TH	1.18
3.05	99TH	1.20

MALES

THE SUMMARY STATISTICS

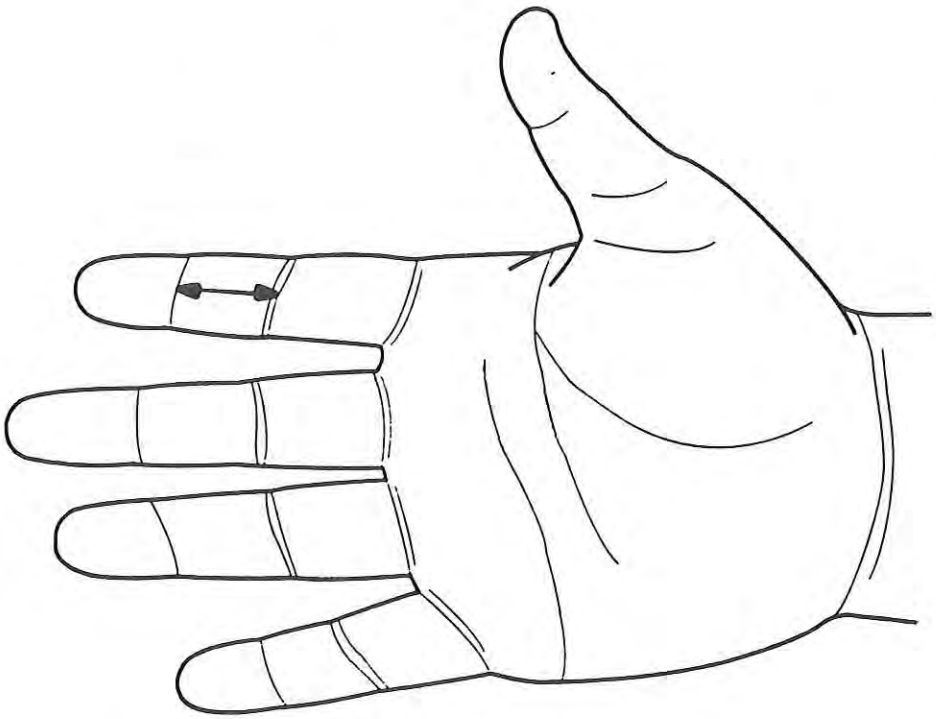
CENTIMETERS		INCHES
2.84	MEAN	1.12
0.01	SE(MEAN)	0.00
0.23	ST DEV	0.09
0.01	SE(SD)	0.00
2.10	MINIMUM	0.83
3.60	MAXIMUM	1.42
COEFF. OF VARIATION		8.2%
SYMMETRY----BETA I		-0.01
KURTOSIS----BETA II		3.03
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
2.29	1ST	0.90
2.35	2ND	0.93
2.39	3RD	0.94
2.45	5TH	0.96
2.54	10TH	1.00
2.59	15TH	1.02
2.64	20TH	1.04
2.68	25TH	1.06
2.72	30TH	1.07
2.75	35TH	1.08
2.78	40TH	1.10
2.81	45TH	1.11
2.84	50TH	1.12
2.87	55TH	1.13
2.90	60TH	1.14
2.93	65TH	1.15
2.96	70TH	1.17
2.99	75TH	1.18
3.03	80TH	1.19
3.08	85TH	1.21
3.13	90TH	1.23
3.22	95TH	1.27
3.27	97TH	1.29
3.32	98TH	1.31
3.39	99TH	1.33

20--DIGIT 2 MEDIAL PHALANX LINK LENGTH

An approximation of the link length of the medial phalanx of the second digit, calculated as the distance between the middle of the distal interphalangeal joint (points 25 and 26) and the middle of the proximal interphalangeal joint (points 17 and 18).



20--DIGIT 2 MEDIAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.11	MEAN	0.83
0.01	SE(MEAN)	0.00
0.22	ST DEV	0.09
0.00	SE(SD)	0.00
1.40	MINIMUM	0.55
2.80	MAXIMUM	1.10
COEFF. OF VARIATION		10.3%
SYMMETRY----BETA I		0.26
KURTOSIS----BETA II		3.10
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
1.62	1ST	0.64
1.68	2ND	0.66
1.72	3RD	0.68
1.77	5TH	0.70
1.84	10TH	0.72
1.89	15TH	0.74
1.92	20TH	0.76
1.96	25TH	0.77
1.99	30TH	0.78
2.02	35TH	0.79
2.04	40TH	0.80
2.07	45TH	0.81
2.10	50TH	0.83
2.12	55TH	0.84
2.15	60TH	0.85
2.18	65TH	0.86
2.22	70TH	0.87
2.25	75TH	0.89
2.29	80TH	0.90
2.34	85TH	0.92
2.40	90TH	0.95
2.50	95TH	0.98
2.55	97TH	1.01
2.60	98TH	1.02
2.66	99TH	1.05

MALES

THE SUMMARY STATISTICS

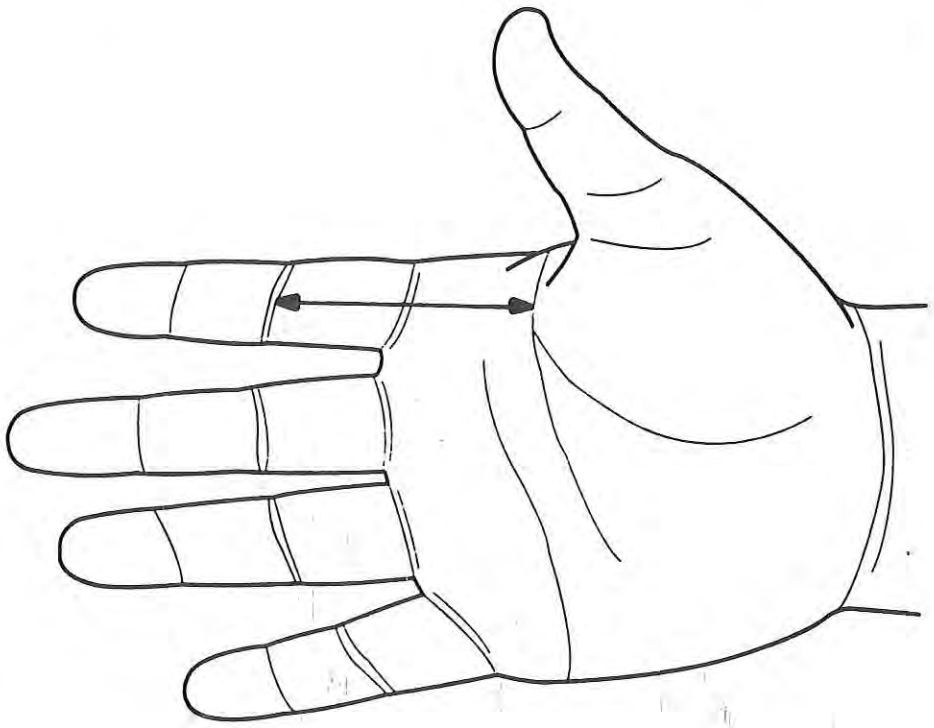
CENTIMETERS		INCHES
2.26	MEAN	0.89
0.01	SE(MEAN)	0.00
0.24	ST DEV	0.10
0.01	SE(SD)	0.00
1.60	MINIMUM	0.63
3.20	MAXIMUM	1.26
COEFF. OF VARIATION		10.8%
SYMMETRY----BETA I		0.38
KURTOSIS----BETA II		3.39
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
1.74	1ST	0.69
1.79	2ND	0.70
1.82	3RD	0.72
1.87	5TH	0.74
1.95	10TH	0.77
2.01	15TH	0.79
2.05	20TH	0.81
2.09	25TH	0.82
2.12	30TH	0.84
2.16	35TH	0.85
2.19	40TH	0.86
2.22	45TH	0.87
2.25	50TH	0.88
2.28	55TH	0.90
2.31	60TH	0.91
2.34	65TH	0.92
2.37	70TH	0.93
2.41	75TH	0.95
2.45	80TH	0.96
2.50	85TH	0.99
2.57	90TH	1.01
2.68	95TH	1.06
2.76	97TH	1.09
2.83	98TH	1.11
2.94	99TH	1.16

21--DIGIT 2 PROXIMAL PHALANX LINK LENGTH

An approximation of the link length of the proximal phalanx of the second digit, calculated as the distance between the middle of the proximal interphalangeal joint (points 17 and 18) and the center of rotation of the metacarpo-phalangeal joint (approximated by the proximal transverse palm crease), measured along the axis of the digit.



21--DIGIT 2 PROXIMAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
5.65	MEAN	2.22
0.01	SE(MEAN)	0.01
0.53	ST DEV	0.21
0.01	SE(SD)	0.00
4.10	MINIMUM	1.61
8.00	MAXIMUM	3.15
COEFF. OF VARIATION		9.4%
SYMMETRY----BETA I		0.53
KURTOSIS----BETA II		3.76
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
4.51	1ST	1.77
4.67	2ND	1.84
4.76	3RD	1.87
4.87	5TH	1.92
5.03	10TH	1.98
5.13	15TH	2.02
5.21	20TH	2.05
5.29	25TH	2.08
5.35	30TH	2.11
5.41	35TH	2.13
5.47	40TH	2.15
5.53	45TH	2.18
5.60	50TH	2.20
5.66	55TH	2.23
5.73	60TH	2.25
5.80	65TH	2.28
5.88	70TH	2.31
5.97	75TH	2.35
6.07	80TH	2.39
6.20	85TH	2.44
6.36	90TH	2.50
6.62	95TH	2.61
6.79	97TH	2.67
6.91	98TH	2.72
7.11	99TH	2.80

MALES

THE SUMMARY STATISTICS

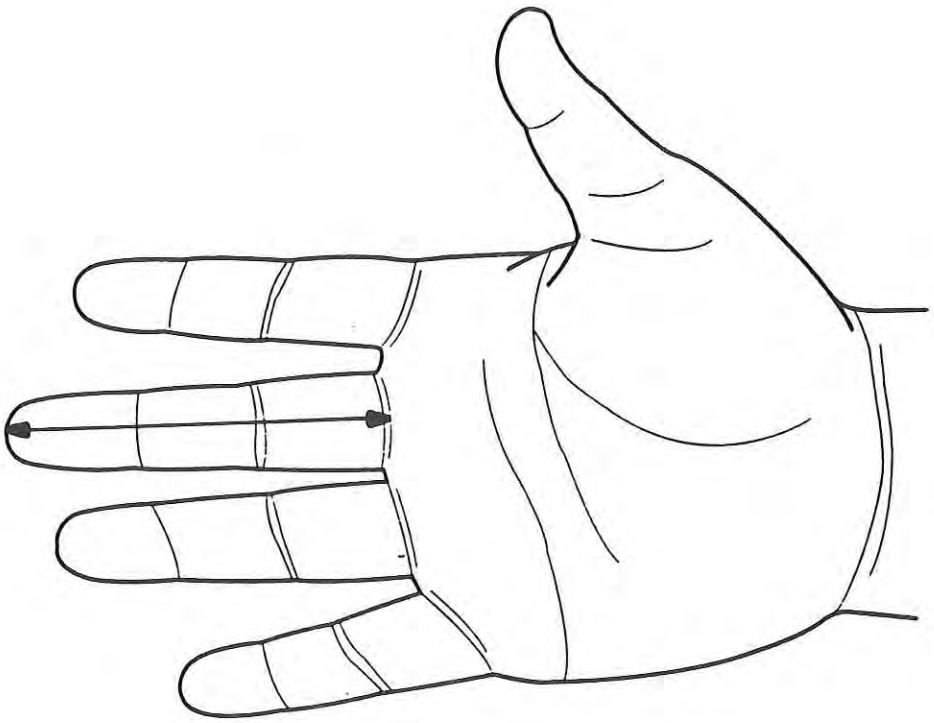
CENTIMETERS		INCHES
6.08	MEAN	2.39
0.02	SE(MEAN)	0.01
0.59	ST DEV	0.23
0.01	SE(SD)	0.01
4.60	MINIMUM	1.81
10.00	MAXIMUM	3.94
COEFF. OF VARIATION		9.7%
SYMMETRY----BETA I		0.69
KURTOSIS----BETA II		5.35
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
4.88	1ST	1.92
4.99	2ND	1.97
5.07	3RD	2.00
5.18	5TH	2.04
5.36	10TH	2.11
5.49	15TH	2.16
5.59	20TH	2.20
5.68	25TH	2.24
5.76	30TH	2.27
5.83	35TH	2.30
5.91	40TH	2.33
5.98	45TH	2.35
6.05	50TH	2.38
6.12	55TH	2.41
6.19	60TH	2.44
6.27	65TH	2.47
6.35	70TH	2.50
6.44	75TH	2.54
6.54	80TH	2.58
6.67	85TH	2.62
6.83	90TH	2.69
7.08	95TH	2.79
7.26	97TH	2.86
7.39	98TH	2.91
7.62	99TH	3.00

22--DIGIT 3 LENGTH

The length of the third digit calculated as the distance between the digit's tip (point 35) and its base (point 9).



22--DIGIT 3 LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
7.72	MEAN	3.04
0.01	SE(MEAN)	0.01
0.51	ST DEV	0.20
0.01	SE(SD)	0.00
6.20	MINIMUM	0.55
9.60	MAXIMUM	3.78

COEFF. OF VARIATION	6.6%
SYMMETRY----BETA I	0.16
KURTOSIS----BETA II	3.08
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
6.57	1ST	2.59
6.71	2ND	2.64
6.79	3RD	2.67
6.91	5TH	2.72
7.08	10TH	2.79
7.20	15TH	2.83
7.29	20TH	2.87
7.37	25TH	2.90
7.44	30TH	2.93
7.51	35TH	2.96
7.58	40TH	2.98
7.64	45TH	3.01
7.71	50TH	3.03
7.77	55TH	3.06
7.84	60TH	3.09
7.91	65TH	3.11
7.98	70TH	3.14
8.06	75TH	3.17
8.15	80TH	3.21
8.25	85TH	3.25
8.39	90TH	3.30
8.59	95TH	3.38
8.71	97TH	3.43
8.80	98TH	3.47
8.94	99TH	3.52

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
8.38	MEAN	3.30
0.02	SE(MEAN)	0.01
0.54	ST DEV	0.21
0.01	SE(SD)	0.00
6.40	MINIMUM	2.52
10.50	MAXIMUM	4.13

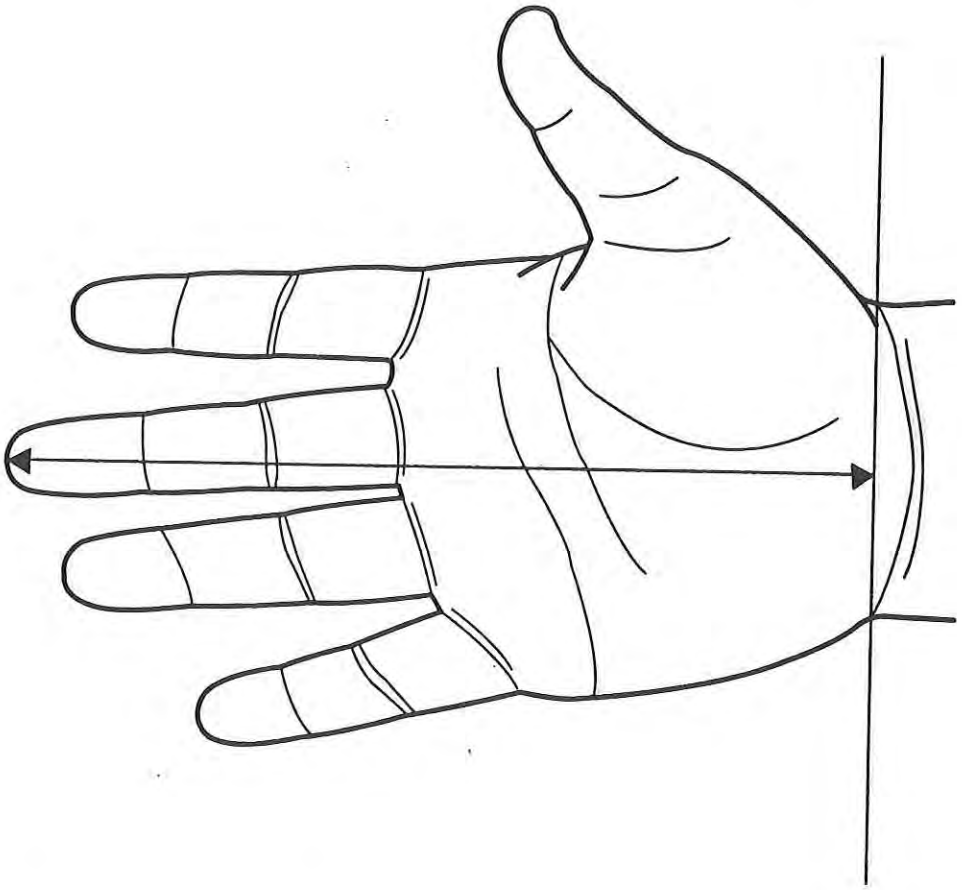
COEFF. OF VARIATION	6.5%
SYMMETRY----BETA I	0.15
KURTOSIS----BETA II	3.29
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
7.18	1ST	2.83
7.31	2ND	2.88
7.40	3RD	2.91
7.52	5TH	2.96
7.70	10TH	3.03
7.82	15TH	3.08
7.92	20TH	3.12
8.01	25TH	3.15
8.09	30TH	3.18
8.16	35TH	3.21
8.23	40TH	3.24
8.30	45TH	3.27
8.37	50TH	3.29
8.44	55TH	3.32
8.51	60TH	3.35
8.58	65TH	3.38
8.66	70TH	3.41
8.74	75TH	3.44
8.84	80TH	3.48
8.95	85TH	3.52
9.09	90TH	3.58
9.29	95TH	3.66
9.42	97TH	3.71
9.52	98TH	3.75
9.67	99TH	3.81

23--DIGIT 3 HEIGHT

The perpendicular distance from the tip of digit 3 (point 35) to the wrist crease base line.



23--DIGIT 3 HEIGHT

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
17.79	MEAN	7.00
0.03	SE(MEAN)	0.01
0.98	ST DEV	0.39
0.02	SE(SD)	0.01
14.50	MINIMUM	5.71
21.30	MAXIMUM	8.39
COEFF. OF VARIATION		5.5%
SYMMETRY----BETA I		0.19
KURTOSIS----BETA II		3.12
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
15.68	1ST	6.17
15.91	2ND	6.26
16.06	3RD	6.32
16.26	5TH	6.40
16.57	10TH	6.52
16.79	15TH	6.61
16.96	20TH	6.68
17.11	25TH	6.74
17.25	30TH	6.79
17.38	35TH	6.84
17.51	40TH	6.89
17.63	45TH	6.94
17.75	50TH	6.99
17.88	55TH	7.04
18.00	60TH	7.09
18.14	65TH	7.14
18.28	70TH	7.20
18.43	75TH	7.26
18.61	80TH	7.33
18.82	85TH	7.41
19.08	90TH	7.51
19.48	95TH	7.67
19.74	97TH	7.77
19.93	98TH	7.85
20.24	99TH	7.97

MALES

THE SUMMARY STATISTICS

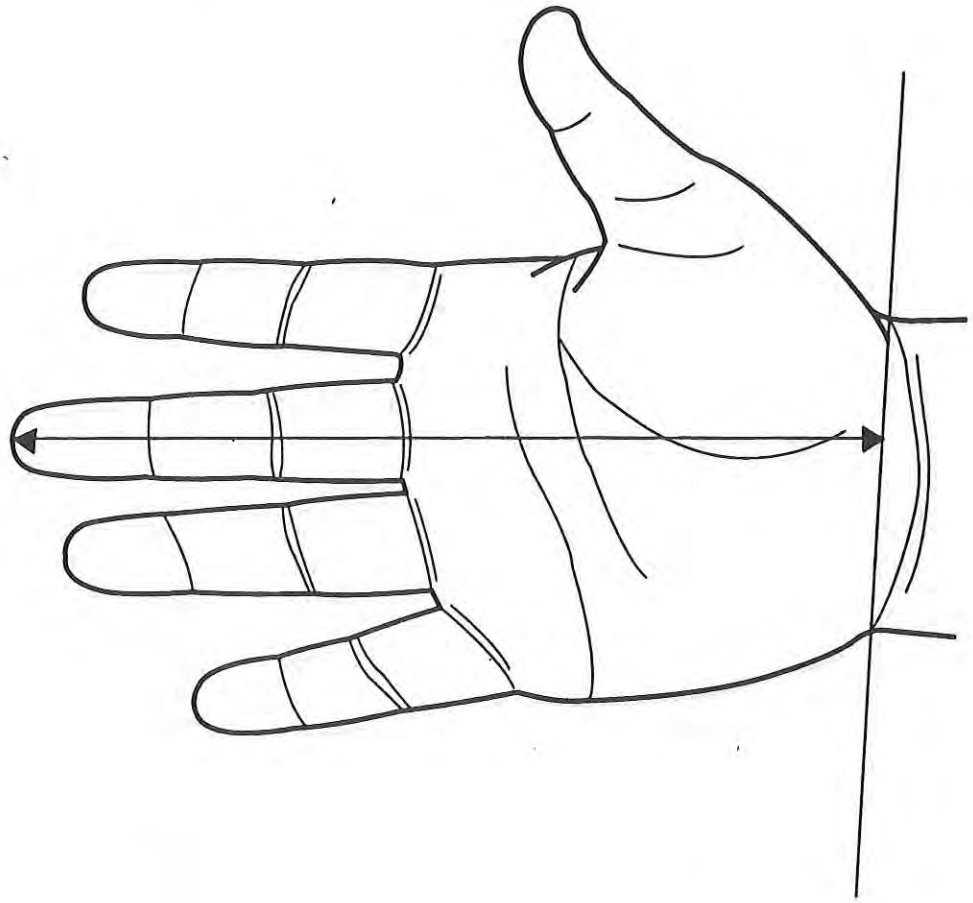
CENTIMETERS		INCHES
19.41	MEAN	7.64
0.03	SE(MEAN)	0.01
1.03	ST DEV	0.40
0.02	SE(SD)	0.01
14.40	MINIMUM	5.67
23.10	MAXIMUM	9.09
COEFF. OF VARIATION		5.3%
SYMMETRY----BETA I		0.13
KURTOSIS----BETA II		3.98
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
17.21	1ST	6.78
17.48	2ND	6.88
17.64	3RD	6.94
17.85	5TH	7.03
18.18	10TH	7.16
18.40	15TH	7.24
18.58	20TH	7.31
18.73	25TH	7.37
18.87	30TH	7.43
19.00	35TH	7.48
19.12	40TH	7.53
19.24	45TH	7.58
19.36	50TH	7.62
19.49	55TH	7.67
19.62	60TH	7.72
19.75	65TH	7.78
19.89	70TH	7.83
20.05	75TH	7.89
20.23	80TH	7.97
20.45	85TH	8.05
20.73	90TH	8.16
21.17	95TH	8.33
21.46	97TH	8.45
21.68	98TH	8.54
22.04	99TH	8.68

24--DIGIT 3 TIP TO WRIST CREASE LENGTH

The distance from the tip of digit 3 (point 35) to the wrist crease base line measured along the digit's central axis.



24--DIGIT 3 TIP TO WRIST CREASE LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
17.84	MEAN	7.02
0.03	SE(MEAN)	0.01
0.98	ST DEV	0.39
0.02	SE(SD)	0.01
14.60	MINIMUM	5.75
21.30	MAXIMUM	8.39
COEFF. OF VARIATION		5.5%
SYMMETRY----BETA I		0.18
KURTOSIS----BETA II		3.12
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
15.70	1ST	6.18
15.95	2ND	6.28
16.10	3RD	6.34
16.31	5TH	6.42
16.62	10TH	6.54
16.84	15TH	6.63
17.01	20TH	6.70
17.16	25TH	6.76
17.30	30TH	6.81
17.42	35TH	6.86
17.55	40TH	6.91
17.67	45TH	6.96
17.79	50TH	7.01
17.92	55TH	7.05
18.04	60TH	7.10
18.18	65TH	7.16
18.32	70TH	7.21
18.48	75TH	7.28
18.66	80TH	7.35
18.87	85TH	7.43
19.13	90TH	7.53
19.53	95TH	7.69
19.79	97TH	7.79
19.98	98TH	7.87
20.27	99TH	7.98

MALES

THE SUMMARY STATISTICS

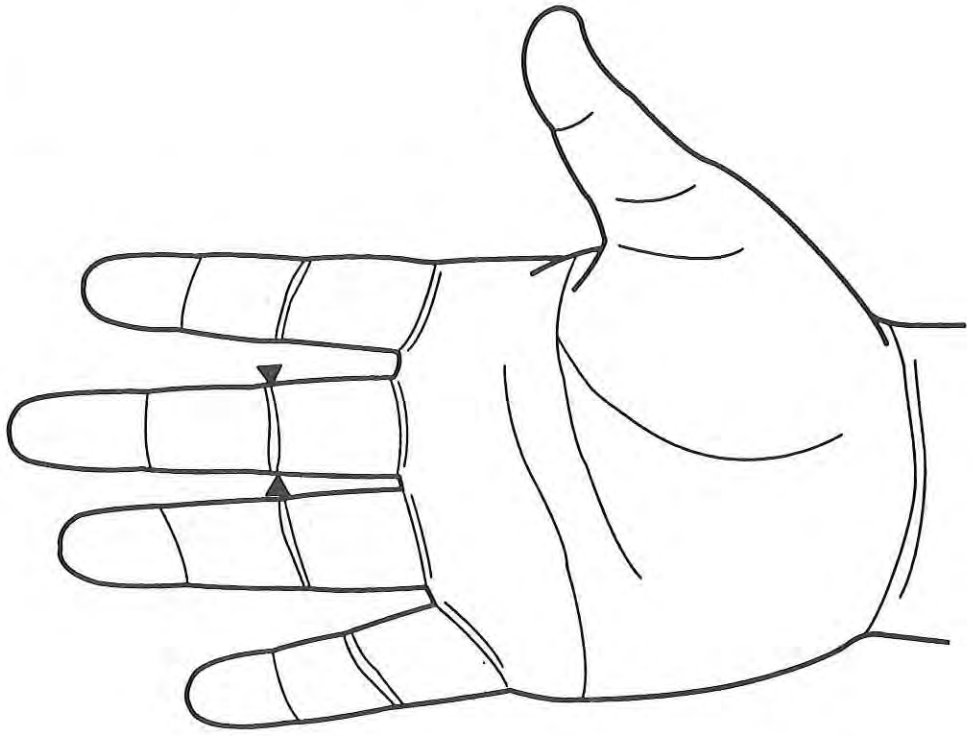
CENTIMETERS		INCHES
19.45	MEAN	7.66
0.03	SE(MEAN)	0.01
1.03	ST DEV	0.41
0.02	SE(SD)	0.01
14.40	MINIMUM	5.67
23.20	MAXIMUM	9.13
COEFF. OF VARIATION		5.3%
SYMMETRY----BETA I		0.13
KURTOSIS----BETA II		4.00
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
17.22	1ST	6.78
17.48	2ND	6.88
17.65	3RD	6.95
17.87	5TH	7.03
18.20	10TH	7.17
18.43	15TH	7.26
18.61	20TH	7.33
18.76	25TH	7.39
18.90	30TH	7.44
19.03	35TH	7.49
19.15	40TH	7.54
19.28	45TH	7.59
19.40	50TH	7.64
19.52	55TH	7.69
19.65	60TH	7.74
19.78	65TH	7.79
19.92	70TH	7.84
20.08	75TH	7.91
20.26	80TH	7.98
20.48	85TH	8.06
20.76	90TH	8.17
21.20	95TH	8.35
21.50	97TH	8.46
21.73	98TH	8.55
22.10	99TH	8.70

25--DIGIT 3 PROXIMAL INTERPHALANGEAL JOINT BREADTH

The breadth of the proximal interphalangeal joint calculated as the distance between points 19 and 20.



25--DIGIT 3 PROXIMAL INTERPHALANGEAL JOINT BREADTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
1.93	MEAN	0.76
0.00	SE(MEAN)	0.00
0.13	ST DEV	0.05
0.00	SE(SD)	0.00
1.60	MINIMUM	0.55
2.40	MAXIMUM	0.94
COEFF. OF VARIATION		6.5%
SYMMETRY----BETA I		0.20
KURTOSIS----BETA II		3.21
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
1.65	1ST	0.65
1.68	2ND	0.66
1.70	3RD	0.67
1.73	5TH	0.68
1.77	10TH	0.70
1.80	15TH	0.71
1.83	20TH	0.72
1.85	25TH	0.73
1.87	30TH	0.73
1.88	35TH	0.74
1.90	40TH	0.75
1.92	45TH	0.75
1.93	50TH	0.76
1.95	55TH	0.77
1.96	60TH	0.77
1.98	65TH	0.78
2.00	70TH	0.79
2.02	75TH	0.79
2.04	80TH	0.80
2.07	85TH	0.81
2.10	90TH	0.83
2.15	95TH	0.85
2.19	97TH	0.86
2.21	98TH	0.87
2.26	99TH	0.89

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.25	MEAN	0.88
0.00	SE(MEAN)	0.00
0.16	ST DEV	0.06
0.00	SE(SD)	0.00
1.80	MINIMUM	0.71
2.90	MAXIMUM	1.14
COEFF. OF VARIATION		7.0%
SYMMETRY----BETA I		0.29
KURTOSIS----BETA II		3.49
NUMBER OF SUBJECTS		1003

PERCENTILES

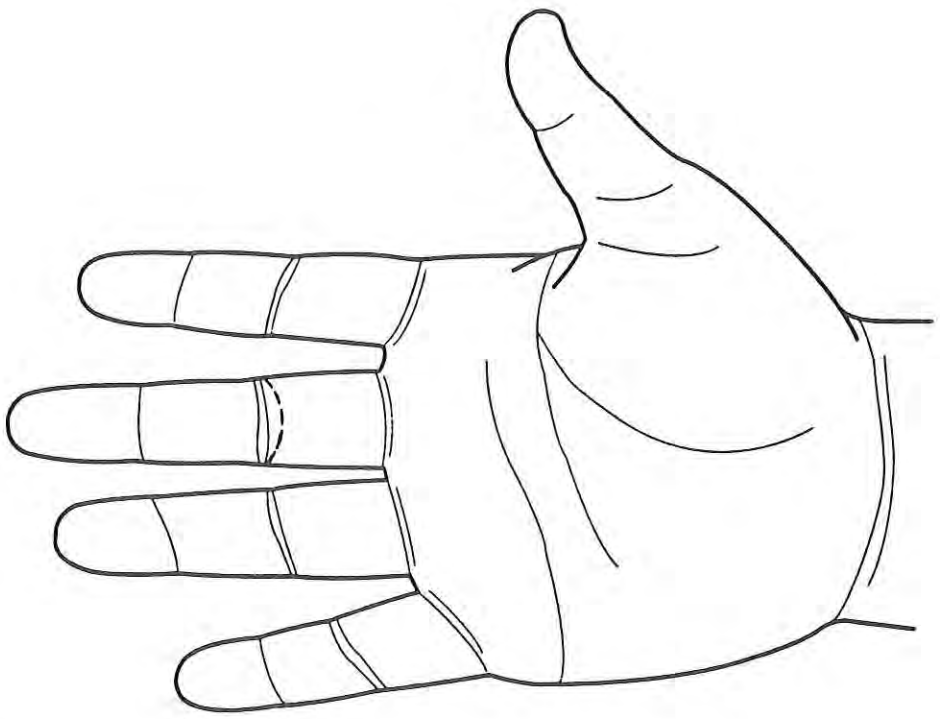
CENTIMETERS		INCHES
1.90	1ST	0.75
1.94	2ND	0.76
1.96	3RD	0.77
1.99	5TH	0.79
2.05	10TH	0.81
2.09	15TH	0.82
2.12	20TH	0.83
2.14	25TH	0.84
2.16	30TH	0.85
2.18	35TH	0.86
2.20	40TH	0.87
2.22	45TH	0.88
2.24	50TH	0.88
2.26	55TH	0.89
2.28	60TH	0.90
2.30	65TH	0.91
2.32	70TH	0.91
2.35	75TH	0.92
2.37	80TH	0.93
2.40	85TH	0.95
2.45	90TH	0.96
2.52	95TH	0.99
2.57	97TH	1.01
2.61	98TH	1.03
2.68	99TH	1.05

26--DIGIT 3 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Dimension was calculated from multivariate regression equations based upon calculated values for digit 3 Proximal Interphalangeal Joint Breadth (D3PIP) and digit 3 Distal Interphalangeal Joint Breadth (D3DIP). Separate equations were derived for the two sexes, based on the measurements of 283 men and 554 women.

All equation values are in millimeters.

MALES:	DP3CIRC = 0.92 D3PIP + 0.46 D3DIP + 39.85	SEE=2.76	R^2=.34
FEMALES:	DP3CIRC = 1.14 D3PIP + 0.53 D3DIP + 30.22	SEE=2.24	R^2=.43



26--DIGIT 3 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

FEMALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
6.13	MEAN	2.41
0.01	SE(MEAN)	0.00
0.19	ST DEV	0.07
0.00	SE(SD)	0.00
5.60	MINIMUM	1.81
6.80	MAXIMUM	2.68
COEFF. OF VARIATION		3.1%
SYMMETRY----BETA I		0.21
KURTOSIS----BETA II		3.25
NUMBER OF SUBJECTS		1304

PERCENTILES		
CENTIMETERS		INCHES
5.72	1ST	2.25
5.76	2ND	2.27
5.79	3RD	2.28
5.83	5TH	2.29
5.89	10TH	2.32
5.93	15TH	2.34
5.97	20TH	2.35
6.00	25TH	2.36
6.03	30TH	2.37
6.05	35TH	2.38
6.08	40TH	2.39
6.10	45TH	2.40
6.13	50TH	2.41
6.15	55TH	2.42
6.18	60TH	2.43
6.20	65TH	2.44
6.23	70TH	2.45
6.26	75TH	2.47
6.30	80TH	2.48
6.34	85TH	2.49
6.39	90TH	2.52
6.47	95TH	2.55
6.52	97TH	2.57
6.56	98TH	2.58
6.63	99TH	2.61

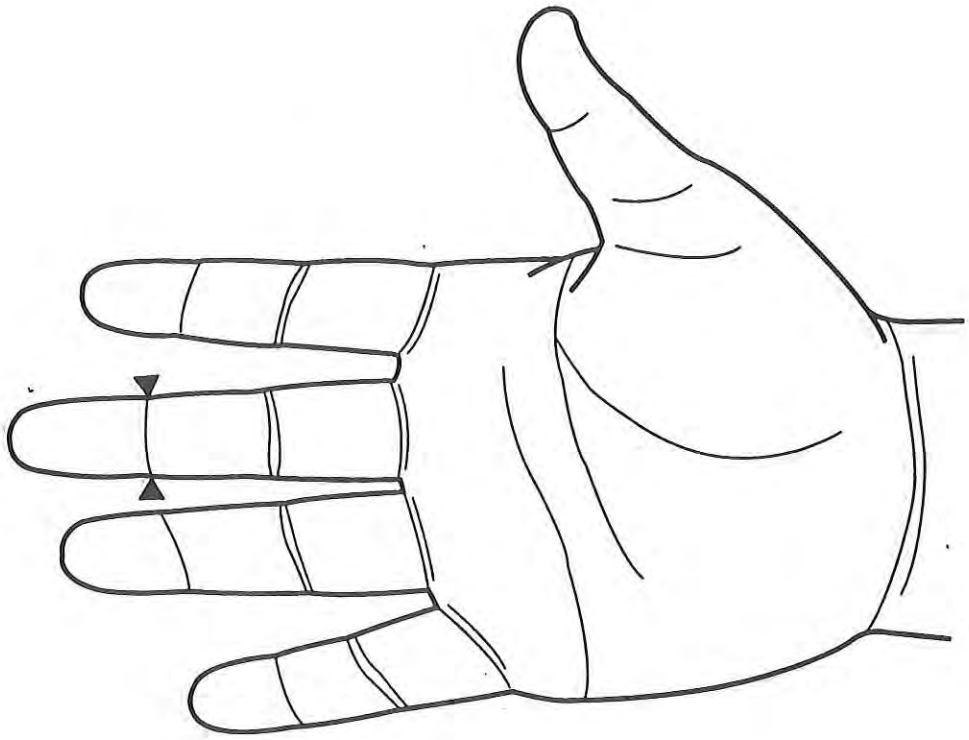
MALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
6.96	MEAN	2.74
0.01	SE(MEAN)	0.00
0.20	ST DEV	0.08
0.00	SE(SD)	0.00
6.40	MINIMUM	2.52
7.70	MAXIMUM	3.03
COEFF. OF VARIATION		2.9%
SYMMETRY----BETA I		0.25
KURTOSIS----BETA II		3.39
NUMBER OF SUBJECTS		1003

PERCENTILES		
CENTIMETERS		INCHES
6.53	1ST	2.57
6.57	2ND	2.59
6.60	3RD	2.60
6.64	5TH	2.61
6.71	10TH	2.64
6.75	15TH	2.66
6.79	20TH	2.67
6.82	25TH	2.68
6.85	30TH	2.70
6.87	35TH	2.71
6.90	40TH	2.72
6.93	45TH	2.73
6.95	50TH	2.74
6.98	55TH	2.75
7.00	60TH	2.76
7.03	65TH	2.77
7.06	70TH	2.78
7.09	75TH	2.79
7.13	80TH	2.81
7.17	85TH	2.82
7.23	90TH	2.85
7.31	95TH	2.88
7.37	97TH	2.90
7.41	98TH	2.92
7.48	99TH	2.94

27--DIGIT 3 DISTAL INTERPHALANGEAL JOINT BREADTH

The breadth of the distal interphalangeal joint calculated as the distance between points 27 and 28.



27--DIGIT 3 DISTAL INTERPHALANGEAL JOINT BREADTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
1.71	MEAN	0.67
0.00	SE(MEAN)	0.00
0.11	ST DEV	0.05
0.00	SE(SD)	0.00
1.40	MINIMUM	2.44
2.10	MAXIMUM	0.83
COEFF. OF VARIATION		6.7%
SYMMETRY----BETA I		0.24
KURTOSIS----BETA II		3.16
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
1.45	1ST	0.57
1.48	2ND	0.58
1.49	3RD	0.59
1.52	5TH	0.60
1.56	10TH	0.61
1.59	15TH	0.62
1.61	20TH	0.63
1.63	25TH	0.64
1.64	30TH	0.65
1.66	35TH	0.65
1.68	40TH	0.66
1.69	45TH	0.67
1.71	50TH	0.67
1.72	55TH	0.68
1.74	60TH	0.68
1.75	65TH	0.69
1.77	70TH	0.70
1.78	75TH	0.70
1.80	80TH	0.71
1.83	85TH	0.72
1.86	90TH	0.73
1.91	95TH	0.75
1.94	97TH	0.77
1.97	98TH	0.78
2.02	99TH	0.80

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
1.98	MEAN	0.78
0.00	SE(MEAN)	0.00
0.14	ST DEV	0.06
0.00	SE(SD)	0.00
1.60	MINIMUM	0.63
2.40	MAXIMUM	0.94
COEFF. OF VARIATION		7.3%
SYMMETRY----BETA I		0.20
KURTOSIS----BETA II		3.13
NUMBER OF SUBJECTS		1003

PERCENTILES

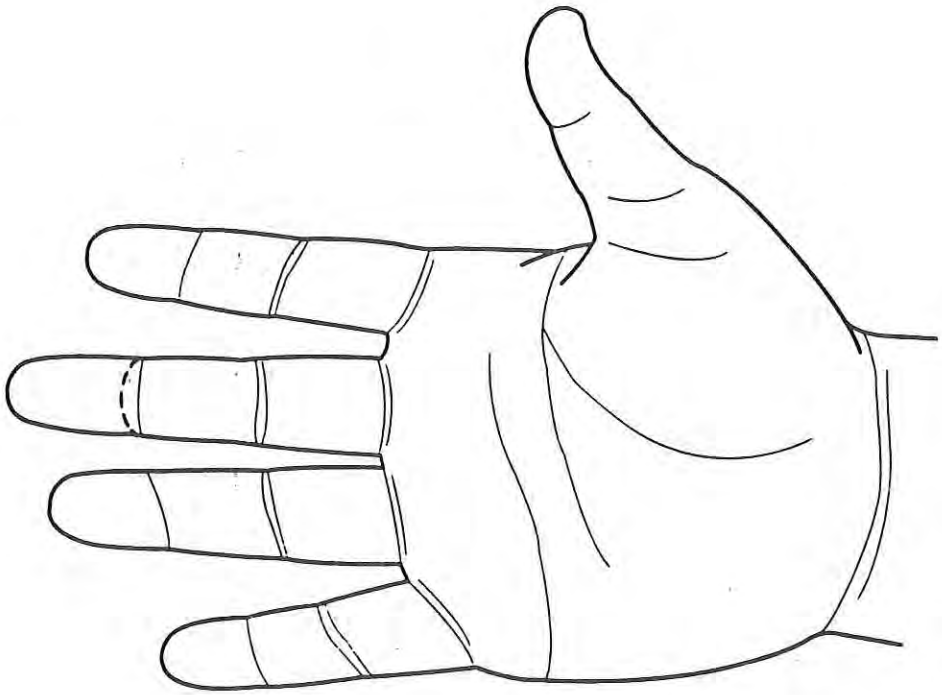
CENTIMETERS		INCHES
1.64	1ST	0.65
1.69	2ND	0.66
1.71	3RD	0.67
1.74	5TH	0.69
1.79	10TH	0.71
1.83	15TH	0.72
1.85	20TH	0.73
1.88	25TH	0.74
1.90	30TH	0.75
1.92	35TH	0.75
1.93	40TH	0.76
1.95	45TH	0.77
1.97	50TH	0.78
1.99	55TH	0.78
2.01	60TH	0.79
2.03	65TH	0.80
2.05	70TH	0.81
2.07	75TH	0.81
2.10	80TH	0.83
2.13	85TH	0.84
2.17	90TH	0.85
2.23	95TH	0.88
2.27	97TH	0.89
2.30	98TH	0.91
2.35	99TH	0.92

28--DIGIT 3 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Dimension was calculated from multivariate regression equations based upon calculated values for digit 3 Proximal Interphalangeal Joint Breadth (D3PIP) and digit 3 Distal Interphalangeal Joint Breadth (D3DIP). Separate equations were derived for the two sexes, based on the measurements of 283 men and 554 women.

All equation values are in millimeters.

MALES:	D3DCIRC = 0.25 D3PIP + 0.86 D3DIP + 35.23	SEE=2.76	R^2=.34
FEMALES:	D3DCIRC = 0.60 D3PIP + 0.92 D3DIP + 25.57	SEE=2.01	R^2=.41



28--DIGIT 3 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

FEMALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
5.09	MEAN	2.00
0.00	SE(MEAN)	0.00
0.17	ST DEV	0.07
0.00	SE(SD)	0.00
4.60	MINIMUM	1.81
5.70	MAXIMUM	2.24
COEFF. OF VARIATION		3.3%
SYMMETRY----BETA I		0.22
KURTOSIS----BETA II		3.23
NUMBER OF SUBJECTS		1304

PERCENTILES CENTIMETERS		INCHES
4.73	1ST	1.86
4.76	2ND	1.87
4.78	3RD	1.88
4.82	5TH	1.90
4.88	10TH	1.92
4.92	15TH	1.94
4.95	20TH	1.95
4.98	25TH	1.96
5.01	30TH	1.97
5.03	35TH	1.98
5.05	40TH	1.99
5.08	45TH	2.00
5.10	50TH	2.01
5.12	55TH	2.01
5.14	60TH	2.02
5.16	65TH	2.03
5.18	70TH	2.04
5.21	75TH	2.05
5.24	80TH	2.06
5.27	85TH	2.07
5.31	90TH	2.09
5.38	95TH	2.12
5.44	97TH	2.14
5.48	98TH	2.16
5.55	99TH	2.19

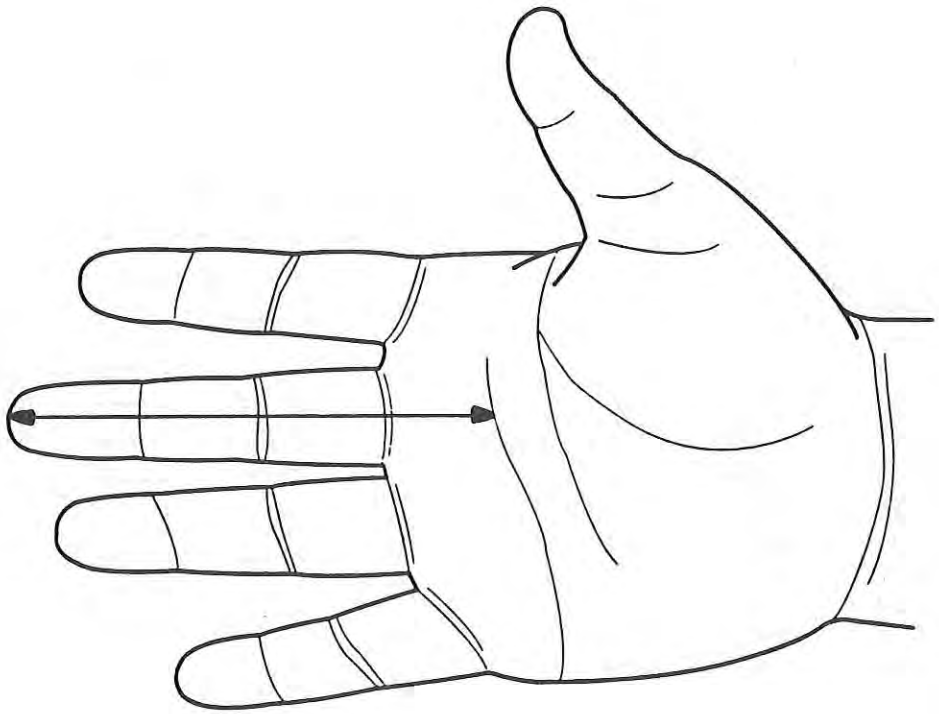
MALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
5.78	MEAN	2.28
0.00	SE(MEAN)	0.00
0.16	ST DEV	0.06
0.00	SE(SD)	0.00
5.30	MINIMUM	2.09
6.30	MAXIMUM	2.48
COEFF. OF VARIATION		2.7%
SYMMETRY----BETA I		0.20
KURTOSIS----BETA II		3.20
NUMBER OF SUBJECTS		1003

PERCENTILES CENTIMETERS		INCHES
5.44	1ST	2.14
5.48	2ND	2.16
5.50	3RD	2.17
5.54	5TH	2.18
5.59	10TH	2.20
5.62	15TH	2.21
5.65	20TH	2.23
5.68	25TH	2.23
5.70	30TH	2.24
5.72	35TH	2.25
5.74	40TH	2.26
5.76	45TH	2.27
5.77	50TH	2.27
5.79	55TH	2.28
5.81	60TH	2.29
5.83	65TH	2.30
5.85	70TH	2.30
5.88	75TH	2.31
5.90	80TH	2.32
5.94	85TH	2.34
5.98	90TH	2.35
6.05	95TH	2.38
6.10	97TH	2.40
6.14	98TH	2.42
6.21	99TH	2.44

29--DIGIT 3 LINK LENGTH

The functional length of the third digit calculated as the distance between the tip of the digit (point 35) and the center of rotation of the first metacarpo-phalangeal joint, approximated by the distal transverse palm crease, measured along the axis of the digit



29--DIGIT 3 LINK LENGTH

FEMALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
10.03	MEAN	3.95
0.02	SE(MEAN)	0.01
0.64	ST DEV	0.25
0.01	SE(SD)	0.00
8.00	MINIMUM	3.15
12.30	MAXIMUM	4.84
COEFF. OF VARIATION		6.3%
SYMMETRY----BETA I		0.20
KURTOSIS----BETA II		3.07
NUMBER OF SUBJECTS		1304

PERCENTILES		
CENTIMETERS		INCHES
8.63	1ST	3.40
8.79	2ND	3.46
8.89	3RD	3.50
9.02	5TH	3.55
9.24	10TH	3.64
9.38	15TH	3.69
9.50	20TH	3.74
9.60	25TH	3.78
9.69	30TH	3.81
9.77	35TH	3.85
9.85	40TH	3.88
9.93	45TH	3.91
10.01	50TH	3.94
10.09	55TH	3.97
10.17	60TH	4.00
10.25	65TH	4.04
10.34	70TH	4.07
10.44	75TH	4.11
10.55	80TH	4.15
10.68	85TH	4.20
10.85	90TH	4.27
11.11	95TH	4.37
11.29	97TH	4.44
11.42	98TH	4.50
11.65	99TH	4.58

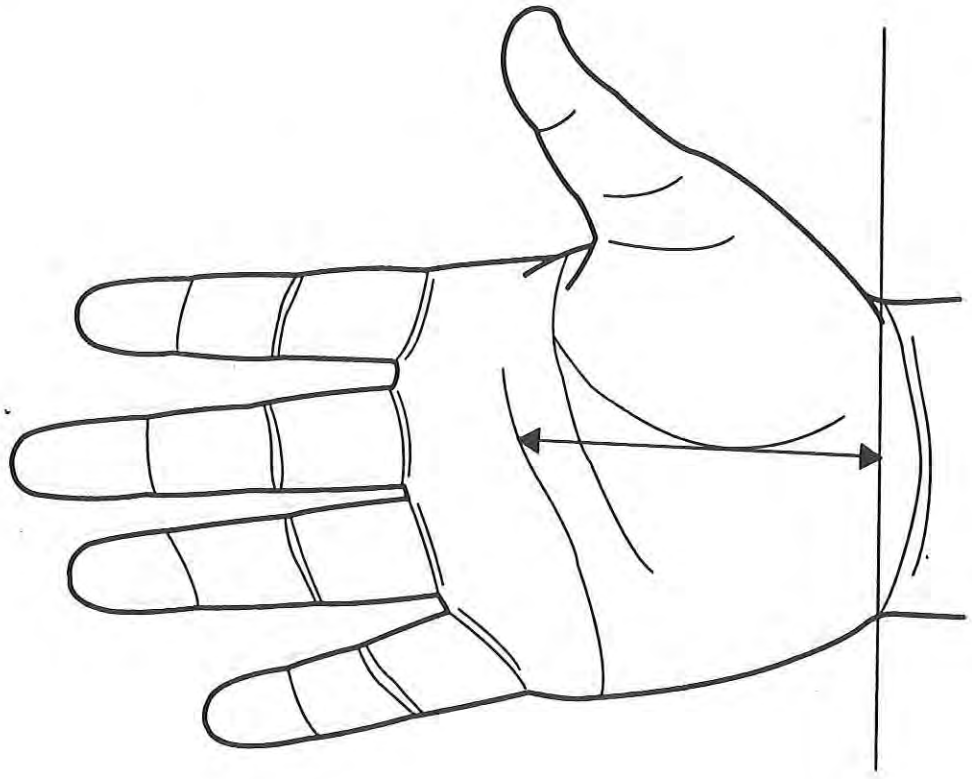
MALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
10.99	MEAN	4.32
0.02	SE(MEAN)	0.01
0.70	ST DEV	0.28
0.02	SE(SD)	0.01
8.20	MINIMUM	3.23
13.20	MAXIMUM	5.20
COEFF. OF VARIATION		6.4%
SYMMETRY----BETA I		0.10
KURTOSIS----BETA II		3.27
NUMBER OF SUBJECTS		1003

PERCENTILES		
CENTIMETERS		INCHES
9.48	1ST	3.73
9.64	2ND	3.79
9.74	3RD	3.83
9.88	5TH	3.89
10.11	10TH	3.98
10.26	15TH	4.04
10.39	20TH	4.09
10.50	25TH	4.14
10.60	30TH	4.18
10.70	35TH	4.21
10.79	40TH	4.25
10.88	45TH	4.28
10.97	50TH	4.32
11.05	55TH	4.35
11.14	60TH	4.39
11.24	65TH	4.42
11.34	70TH	4.46
11.45	75TH	4.51
11.57	80TH	4.55
11.71	85TH	4.61
11.89	90TH	4.68
12.16	95TH	4.79
12.34	97TH	4.86
12.48	98TH	4.91
12.68	99TH	4.99

30--DIGIT 3 METACARPAL LINK LENGTH

An approximation of the palmar link length of the third digit, calculated as the distance, along the axis of the digit, from the center of rotation of the metacarpo-phalangeal joint (approximated by the distal transverse palm crease) to the wrist crease baseline.



30--DIGIT 3 METACARPAL LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
7.81	MEAN	3.07
0.02	SE(MEAN)	0.01
0.56	ST DEV	0.22
0.01	SE(SD)	0.00
5.80	MINIMUM	2.28
9.80	MAXIMUM	3.86

COEFF. OF VARIATION	7.1%
SYMMETRY----BETA I	0.21
KURTOSIS----BETA II	3.30
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
6.56	1ST	2.58
6.74	2ND	2.65
6.84	3RD	2.69
6.96	5TH	2.74
7.14	10TH	2.81
7.26	15TH	2.86
7.35	20TH	2.89
7.43	25TH	2.92
7.50	30TH	2.95
7.57	35TH	2.98
7.64	40TH	3.01
7.70	45TH	3.03
7.77	50TH	3.06
7.84	55TH	3.09
7.91	60TH	3.11
7.99	65TH	3.14
8.07	70TH	3.18
8.16	75TH	3.21
8.26	80TH	3.25
8.39	85TH	3.30
8.54	90TH	3.36
8.78	95TH	3.46
8.93	97TH	3.51
9.03	98TH	3.56
9.19	99TH	3.62

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
8.46	MEAN	3.33
0.02	SE(MEAN)	0.01
0.60	ST DEV	0.24
0.01	SE(SD)	0.01
6.20	MINIMUM	2.44
10.40	MAXIMUM	4.09

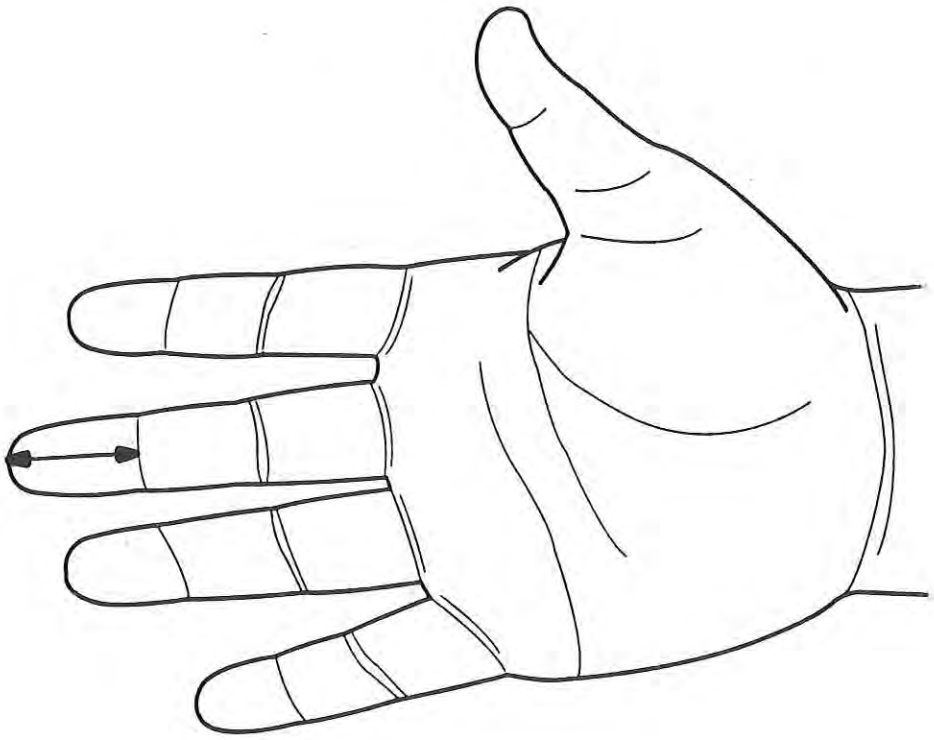
COEFF. OF VARIATION	7.1%
SYMMETRY----BETA I	0.03
KURTOSIS----BETA II	3.49
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
6.95	1ST	2.74
7.19	2ND	2.83
7.32	3RD	2.88
7.49	5TH	2.95
7.73	10TH	3.04
7.87	15TH	3.10
7.98	20TH	3.14
8.08	25TH	3.18
8.16	30TH	3.21
8.23	35TH	3.24
8.31	40TH	3.27
8.38	45TH	3.30
8.45	50TH	3.33
8.52	55TH	3.35
8.59	60TH	3.38
8.67	65TH	3.41
8.75	70TH	3.44
8.84	75TH	3.48
8.95	80TH	3.52
9.07	85TH	3.57
9.23	90TH	3.64
9.49	95TH	3.74
9.66	97TH	3.80
9.79	98TH	3.85
9.99	99TH	3.93

31--DIGIT 3 DISTAL PHALANX LINK LENGTH

An approximation of the link length of the distal phalanx of the third digit, calculated as the distance between the middle of the distal interphalangeal joint (points 27 and 28) to the tip of the digit (point 35).



31--DIGIT 3 DISTAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.55	MEAN	1.00
0.01	SE(MEAN)	0.00
0.21	ST DEV	0.08
0.00	SE(SD)	0.00
2.10	MINIMUM	0.83
3.40	MAXIMUM	1.34
COEFF. OF VARIATION		8.2%
SYMMETRY----BETA I		0.08
KURTOSIS----BETA II		2.90
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
2.07	1ST	0.82
2.13	2ND	0.84
2.16	3RD	0.85
2.20	5TH	0.87
2.28	10TH	0.90
2.33	15TH	0.92
2.37	20TH	0.93
2.40	25TH	0.95
2.44	30TH	0.96
2.47	35TH	0.97
2.49	40TH	0.98
2.52	45TH	0.99
2.55	50TH	1.00
2.57	55TH	1.01
2.60	60TH	1.02
2.63	65TH	1.04
2.66	70TH	1.05
2.69	75TH	1.06
2.73	80TH	1.07
2.77	85TH	1.09
2.82	90TH	1.11
2.90	95TH	1.14
2.95	97TH	1.16
2.99	98TH	1.18
3.05	99TH	1.20

MALES

THE SUMMARY STATISTICS

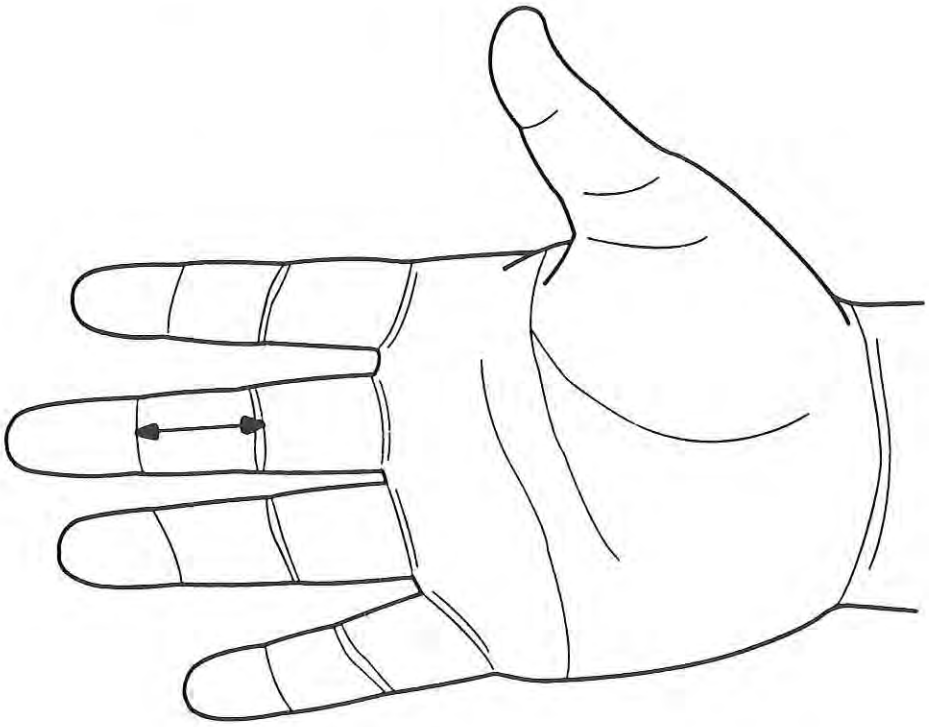
CENTIMETERS		INCHES
2.84	MEAN	1.12
0.01	SE(MEAN)	0.00
0.23	ST DEV	0.09
0.01	SE(SD)	0.00
2.20	MINIMUM	0.87
4.10	MAXIMUM	1.61
COEFF. OF VARIATION		8.2%
SYMMETRY----BETA I		-0.01
KURTOSIS----BETA II		3.03
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
2.29	1ST	0.90
2.35	2ND	0.93
2.39	3RD	0.94
2.45	5TH	0.96
2.54	10TH	1.00
2.59	15TH	1.02
2.64	20TH	1.04
2.68	25TH	1.06
2.72	30TH	1.07
2.75	35TH	1.08
2.78	40TH	1.10
2.81	45TH	1.11
2.84	50TH	1.12
2.87	55TH	1.13
2.90	60TH	1.14
2.93	65TH	1.15
2.96	70TH	1.17
2.99	75TH	1.18
3.03	80TH	1.19
3.08	85TH	1.21
3.13	90TH	1.23
3.22	95TH	1.27
3.27	97TH	1.29
3.32	98TH	1.31
3.39	99TH	1.33

32--DIGIT 3 MEDIAL PHALANX LINK LENGTH

An approximation of the link length of the medial phalanx of the third digit, calculated as the distance between the middle of the distal interphalangeal joint (points 27 and 28) and the middle of the proximal interphalangeal joint (points 19 and 20).



32--DIGIT 3 MEDIAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.51	MEAN	0.99
0.01	SE(MEAN)	0.00
0.27	ST DEV	0.11
0.01	SE(SD)	0.00
1.70	MINIMUM	0.67
3.60	MAXIMUM	1.42

COEFF. OF VARIATION	10.9%
SYMMETRY----BETA I	0.37
KURTOSIS----BETA II	3.31
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
1.92	1ST	0.76
1.99	2ND	0.78
2.03	3RD	0.80
2.09	5TH	0.82
2.17	10TH	0.86
2.23	15TH	0.88
2.28	20TH	0.90
2.32	25TH	0.91
2.36	30TH	0.93
2.39	35TH	0.94
2.43	40TH	0.96
2.46	45TH	0.97
2.49	50TH	0.98
2.53	55TH	1.00
2.56	60TH	1.01
2.60	65TH	1.02
2.64	70TH	1.04
2.68	75TH	1.06
2.73	80TH	1.08
2.79	85TH	1.10
2.87	90TH	1.13
2.99	95TH	1.18
3.07	97TH	1.21
3.13	98TH	1.23
3.23	99TH	1.27

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.64	MEAN	1.04
0.01	SE(MEAN)	0.00
0.28	ST DEV	0.11
0.01	SE(SD)	0.00
1.90	MINIMUM	0.75
3.70	MAXIMUM	1.46

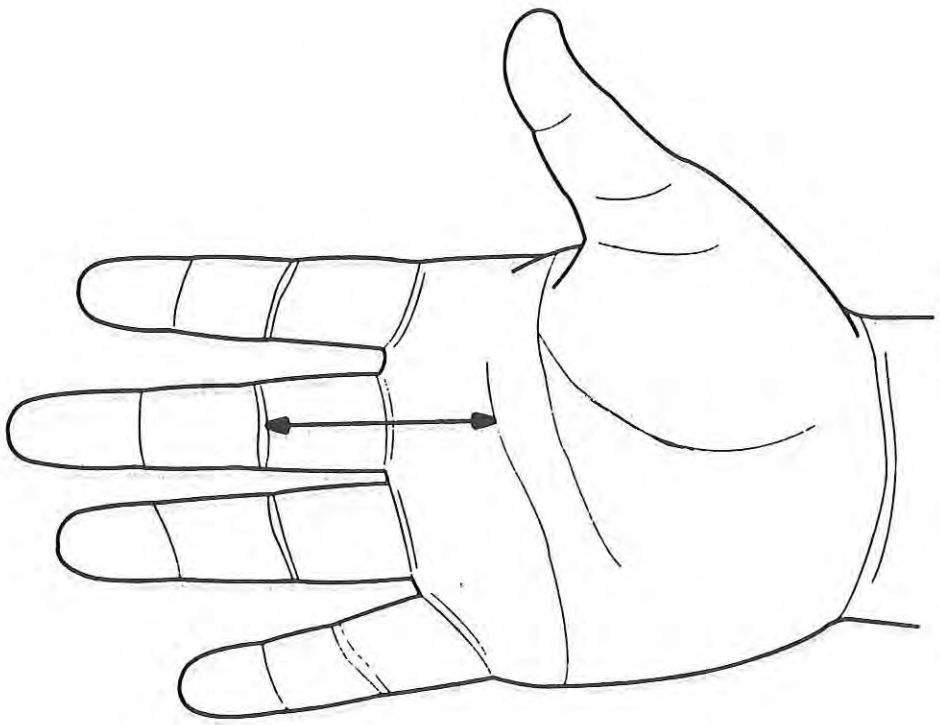
COEFF. OF VARIATION	10.8%
SYMMETRY----BETA I	0.28
KURTOSIS----BETA II	3.22
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
2.00	1ST	0.79
2.08	2ND	0.82
2.13	3RD	0.84
2.19	5TH	0.86
2.29	10TH	0.90
2.35	15TH	0.92
2.40	20TH	0.94
2.44	25TH	0.96
2.48	30TH	0.98
2.52	35TH	0.99
2.55	40TH	1.01
2.59	45TH	1.02
2.62	50TH	1.03
2.66	55TH	1.05
2.69	60TH	1.06
2.73	65TH	1.08
2.77	70TH	1.09
2.82	75TH	1.11
2.87	80TH	1.13
2.93	85TH	1.15
3.01	90TH	1.19
3.13	95TH	1.23
3.21	97TH	1.27
3.27	98TH	1.29
3.37	99TH	1.33

33--DIGIT 3 PROXIMAL PHALANX LINK LENGTH

An approximation of the link length of the proximal phalanx of the third digit, calculated as the distance between the middle of the proximal interphalangeal joint (points 19 and 20) and the center or rotation of the metacarpo-phalangeal joint (approximated by the distal transverse palm crease), measured along the axis of the digit.



33--DIGIT 3 PROXIMAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
4.97	MEAN	1.96
0.01	SE(MEAN)	0.00
0.44	ST DEV	0.17
0.01	SE(SD)	0.00
3.70	MINIMUM	1.46
7.00	MAXIMUM	2.76
COEFF. OF VARIATION		8.8%
SYMMETRY----BETA I		0.43
KURTOSIS----BETA II		4.34
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
3.95	1ST	1.55
4.09	2ND	1.61
4.18	3RD	1.65
4.29	5TH	1.69
4.45	10TH	1.75
4.56	15TH	1.79
4.63	20TH	1.82
4.70	25TH	1.85
4.76	30TH	1.87
4.81	35TH	1.89
4.86	40TH	1.91
4.91	45TH	1.93
4.95	50TH	1.95
5.00	55TH	1.97
5.05	60TH	1.99
5.10	65TH	2.01
5.16	70TH	2.03
5.22	75TH	2.06
5.30	80TH	2.09
5.39	85TH	2.12
5.51	90TH	2.17
5.72	95TH	2.25
5.88	97TH	2.31
6.01	98TH	2.36
6.23	99TH	2.45

MALES

THE SUMMARY STATISTICS

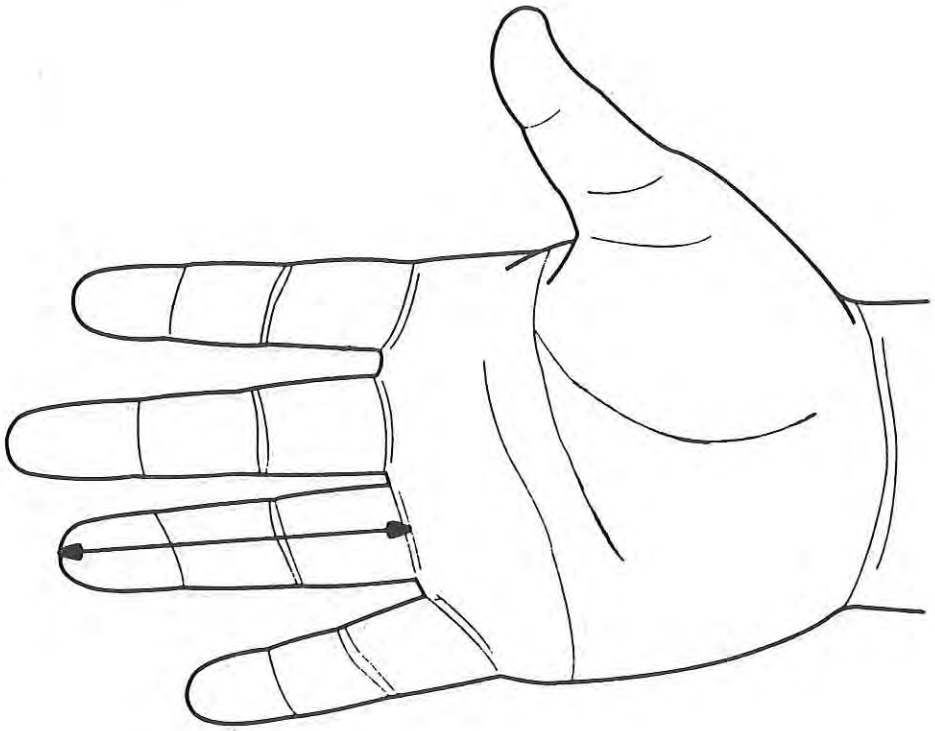
CENTIMETERS		INCHES
5.48	MEAN	2.16
0.02	SE(MEAN)	0.01
0.50	ST DEV	0.20
0.01	SE(SD)	0.00
4.00	MINIMUM	1.57
7.90	MAXIMUM	3.11
COEFF. OF VARIATION		9.1%
SYMMETRY----BETA I		0.46
KURTOSIS----BETA II		4.13
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
4.40	1ST	1.73
4.52	2ND	1.78
4.60	3RD	1.81
4.71	5TH	1.85
4.87	10TH	1.92
4.98	15TH	1.96
5.07	20TH	2.00
5.15	25TH	2.03
5.22	30TH	2.05
5.28	35TH	2.08
5.34	40TH	2.10
5.40	45TH	2.13
5.46	50TH	2.15
5.51	55TH	2.17
5.57	60TH	2.19
5.64	65TH	2.22
5.71	70TH	2.25
5.78	75TH	2.28
5.87	80TH	2.31
5.97	85TH	2.35
6.11	90TH	2.40
6.33	95TH	2.49
6.49	97TH	2.55
6.61	98TH	2.60
6.83	99TH	2.69

34--DIGIT 4 LENGTH

The length of the fourth digit calculated as the distance between the digit's tip (point 36) and its base (point 11)..



34--DIGIT 4 LENGTH

FEMALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
7.22	MEAN	2.84
0.01	SE(MEAN)	0.01
0.50	ST DEV	0.20
0.01	SE(SD)	0.00
5.50	MINIMUM	2.17
9.00	MAXIMUM	3.54
COEFF. OF VARIATION		6.9%
SYMMETRY----BETA I		0.16
KURTOSIS----BETA II		2.97
NUMBER OF SUBJECTS		1304

PERCENTILES		
CENTIMETERS		INCHES
6.16	1ST	2.42
6.26	2ND	2.46
6.32	3RD	2.49
6.42	5TH	2.53
6.58	10TH	2.59
6.70	15TH	2.64
6.79	20TH	2.67
6.87	25TH	2.71
6.95	30TH	2.74
7.02	35TH	2.76
7.08	40TH	2.79
7.15	45TH	2.81
7.21	50TH	2.84
7.27	55TH	2.86
7.34	60TH	2.89
7.41	65TH	2.92
7.48	70TH	2.94
7.55	75TH	2.97
7.64	80TH	3.01
7.74	85TH	3.05
7.87	90TH	3.10
8.06	95TH	3.17
8.19	97TH	3.22
8.28	98TH	3.26
8.43	99TH	3.32

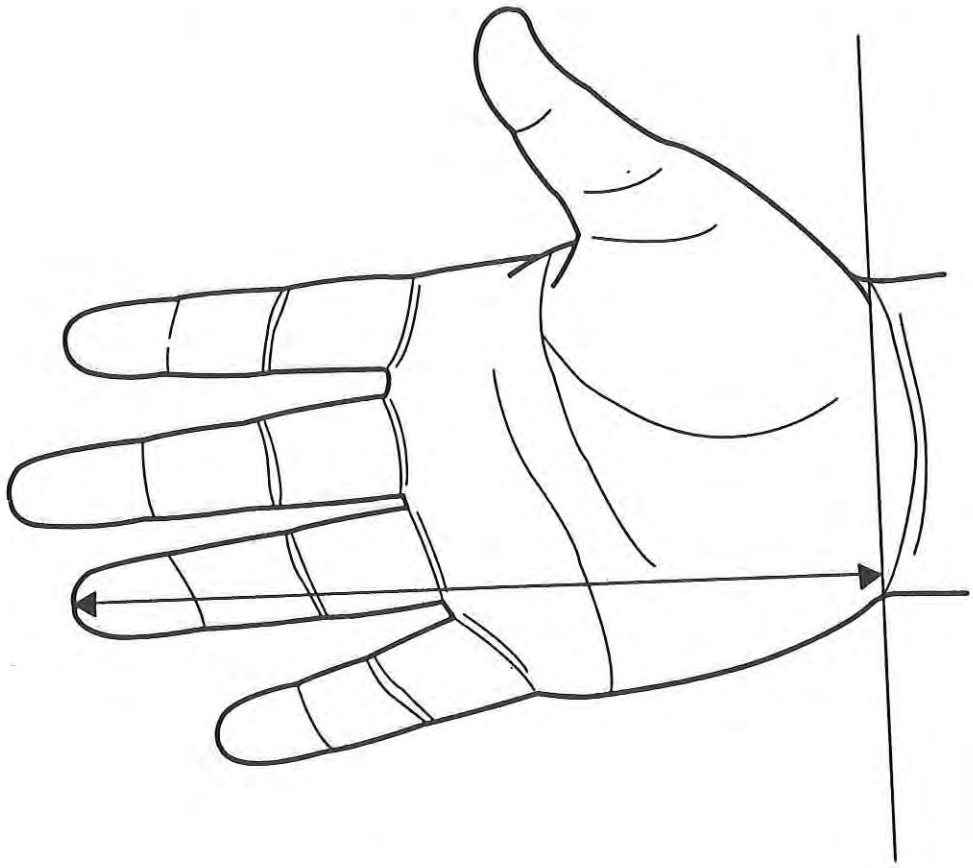
MALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
7.92	MEAN	3.12
0.02	SE(MEAN)	0.01
0.52	ST DEV	0.21
0.01	SE(SD)	0.00
6.20	MINIMUM	2.44
10.30	MAXIMUM	4.06
COEFF. OF VARIATION		6.6%
SYMMETRY----BETA I		0.19
KURTOSIS----BETA II		3.42
NUMBER OF SUBJECTS		1003

PERCENTILES		
CENTIMETERS		INCHES
6.75	1ST	2.66
6.89	2ND	2.71
6.97	3RD	2.75
7.09	5TH	2.79
7.26	10TH	2.86
7.38	15TH	2.91
7.48	20TH	2.94
7.56	25TH	2.98
7.64	30TH	3.01
7.71	35TH	3.03
7.77	40TH	3.06
7.84	45TH	3.09
7.90	50TH	3.11
7.97	55TH	3.14
8.04	60TH	3.16
8.11	65TH	3.19
8.18	70TH	3.22
8.26	75TH	3.25
8.36	80TH	3.29
8.46	85TH	3.33
8.60	90TH	3.38
8.80	95TH	3.46
8.92	97TH	3.51
9.01	98TH	3.55
9.15	99TH	3.60

35--DIGIT 4 HEIGHT

The perpendicular distance from the tip of digit 4 (point 36) to the wrist crease base line.



35--DIGIT 4 HEIGHT

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
16.46	MEAN	6.48
0.03	SE(MEAN)	0.01
0.96	ST DEV	0.38
0.02	SE(SD)	0.01
13.00	MINIMUM	5.11
19.70	MAXIMUM	7.76
COEFF. OF VARIATION		5.8%
SYMMETRY----BETA I		0.17
KURTOSIS----BETA II		3.16
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
14.44	1ST	5.69
14.65	2ND	5.77
14.78	3RD	5.82
14.97	5TH	5.89
15.27	10TH	6.01
15.48	15TH	6.09
15.65	20TH	6.16
15.80	25TH	6.22
15.93	30TH	6.27
16.06	35TH	6.32
16.18	40TH	6.37
16.30	45TH	6.42
16.42	50TH	6.47
16.54	55TH	6.51
16.67	60TH	6.56
16.80	65TH	6.61
16.93	70TH	6.67
17.08	75TH	6.73
17.25	80TH	6.79
17.45	85TH	6.87
17.71	90TH	6.97
18.09	95TH	7.12
18.34	97TH	7.22
18.53	98TH	7.30
18.83	99TH	7.41

MALES

THE SUMMARY STATISTICS

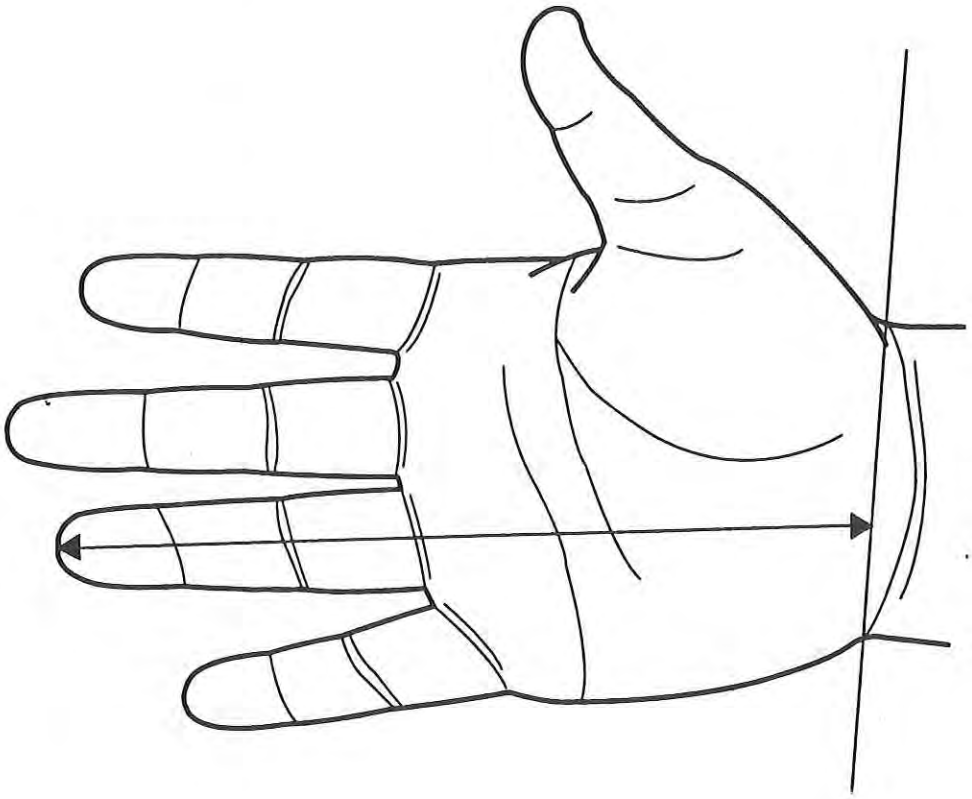
CENTIMETERS		INCHES
18.02	MEAN	7.09
0.03	SE(MEAN)	0.01
1.01	ST DEV	0.40
0.02	SE(SD)	0.01
13.20	MINIMUM	5.20
22.30	MAXIMUM	8.78
COEFF. OF VARIATION		5.6%
SYMMETRY----BETA I		0.21
KURTOSIS----BETA II		4.20
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
15.72	1ST	6.19
16.07	2ND	6.33
16.27	3RD	6.41
16.51	5TH	6.50
16.84	10TH	6.63
17.05	15TH	6.71
17.21	20TH	6.78
17.35	25TH	6.83
17.48	30TH	6.88
17.60	35TH	6.93
17.72	40TH	6.97
17.83	45TH	7.02
17.95	50TH	7.07
18.07	55TH	7.11
18.20	60TH	7.16
18.33	65TH	7.22
18.48	70TH	7.27
18.64	75TH	7.34
18.83	80TH	7.41
19.05	85TH	7.50
19.34	90TH	7.62
19.78	95TH	7.79
20.06	97TH	7.90
20.26	98TH	7.97
20.55	99TH	8.09

36--DIGIT 4 TIP TO WRIST CREASE LENGTH

The distance from the tip of digit 4 (point 36) to the wrist crease base line measured along the digit's central axis.



36--DIGIT 4 TIP TO WRIST CREASE LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
16.89	MEAN	6.65
0.03	SE(MEAN)	0.01
0.98	ST DEV	0.38
0.02	SE(SD)	0.01
13.80	MINIMUM	5.43
20.30	MAXIMUM	7.99
COEFF. OF VARIATION		5.8%
SYMMETRY----BETA I		0.23
KURTOSIS----BETA II		3.13
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
14.83	1ST	5.84
15.05	2ND	5.93
15.19	3RD	5.98
15.38	5TH	6.06
15.69	10TH	6.18
15.89	15TH	6.26
16.06	20TH	6.32
16.21	25TH	6.38
16.35	30TH	6.44
16.47	35TH	6.49
16.60	40TH	6.53
16.72	45TH	6.58
16.84	50TH	6.63
16.96	55TH	6.68
17.09	60TH	6.73
17.22	65TH	6.78
17.37	70TH	6.84
17.53	75TH	6.90
17.70	80TH	6.97
17.92	85TH	7.05
18.19	90TH	7.16
18.59	95TH	7.32
18.86	97TH	7.42
19.05	98TH	7.50
19.36	99TH	7.62

MALES

THE SUMMARY STATISTICS

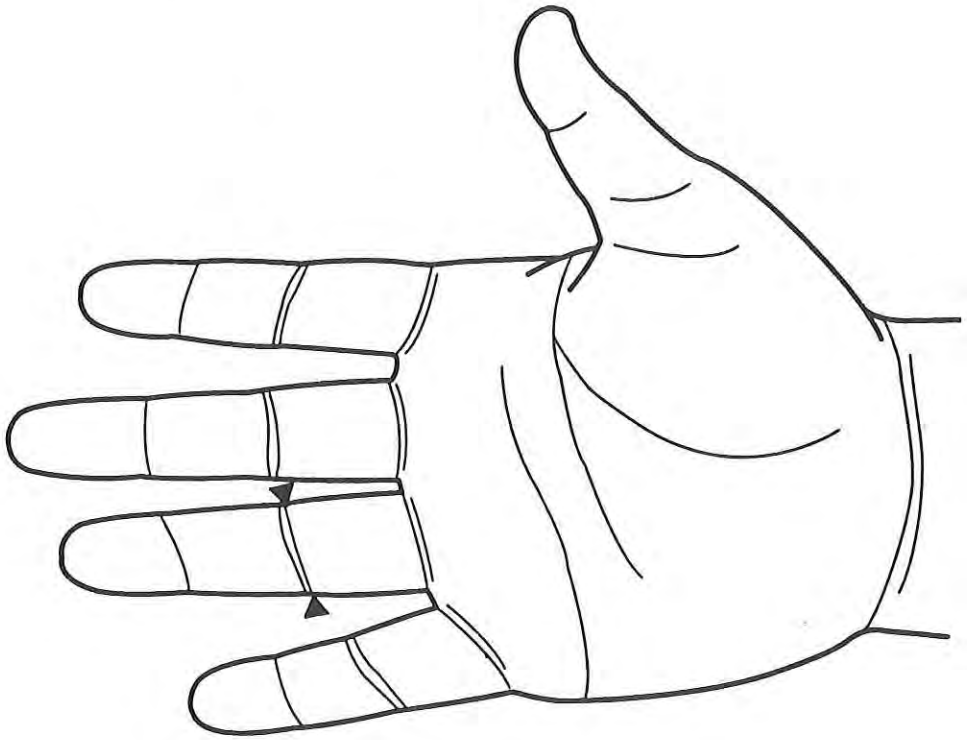
CENTIMETERS		INCHES
18.50	MEAN	7.28
0.03	SE(MEAN)	0.01
1.02	ST DEV	0.40
0.02	SE(SD)	0.01
14.30	MINIMUM	5.63
22.70	MAXIMUM	8.94
COEFF. OF VARIATION		5.5%
SYMMETRY----BETA I		0.27
KURTOSIS----BETA II		3.74
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
16.26	1ST	6.40
16.57	2ND	6.52
16.75	3RD	6.59
16.98	5TH	6.68
17.30	10TH	6.81
17.51	15TH	6.89
17.68	20TH	6.96
17.82	25TH	7.02
17.95	30TH	7.07
18.07	35TH	7.12
18.19	40TH	7.16
18.31	45TH	7.21
18.43	50TH	7.26
18.55	55TH	7.30
18.68	60TH	7.36
18.82	65TH	7.41
18.96	70TH	7.47
19.13	75TH	7.53
19.31	80TH	7.60
19.54	85TH	7.69
19.83	90TH	7.81
20.27	95TH	7.98
20.55	97TH	8.09
20.76	98TH	8.17
21.08	99TH	8.30

37--DIGIT 4 PROXIMAL INTERPHALANGEAL JOINT BREADTH

The breadth of the proximal interphalangeal joint calculated as the distance between points 21 and 22.



37--DIGIT 4 PROXIMAL INTERPHALANGEAL JOINT BREADTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
1.84	MEAN	0.72
0.00	SE(MEAN)	0.00
0.12	ST DEV	0.05
0.00	SE(SD)	0.00
1.50	MINIMUM	0.59
2.30	MAXIMUM	0.91

COEFF. OF VARIATION	6.7%
SYMMETRY----BETA I	0.44
KURTOSIS----BETA II	3.56
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
1.57	1ST	0.62
1.60	2ND	0.63
1.62	3RD	0.64
1.64	5TH	0.65
1.69	10TH	0.66
1.71	15TH	0.67
1.74	20TH	0.68
1.75	25TH	0.69
1.77	30TH	0.70
1.79	35TH	0.70
1.80	40TH	0.71
1.82	45TH	0.72
1.83	50TH	0.72
1.85	55TH	0.73
1.86	60TH	0.73
1.88	65TH	0.74
1.90	70TH	0.75
1.91	75TH	0.75
1.94	80TH	0.76
1.96	85TH	0.77
2.00	90TH	0.79
2.06	95TH	0.81
2.10	97TH	0.83
2.13	98TH	0.84
2.19	99TH	0.86

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.14	MEAN	0.84
0.00	SE(MEAN)	0.00
0.15	ST DEV	0.06
0.00	SE(SD)	0.00
1.70	MINIMUM	0.67
2.60	MAXIMUM	1.02

COEFF. OF VARIATION	6.9%
SYMMETRY----BETA I	0.29
KURTOSIS----BETA II	3.08
NUMBER OF SUBJECTS	1003

PERCENTILES

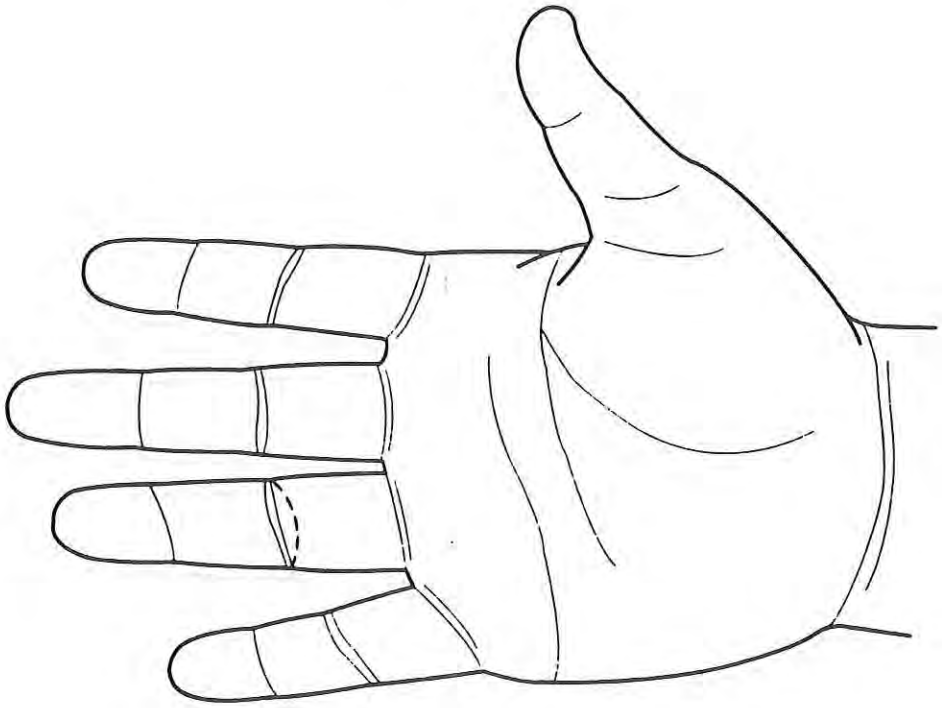
CENTIMETERS		INCHES
1.81	1ST	0.71
1.85	2ND	0.73
1.88	3RD	0.74
1.91	5TH	0.75
1.96	10TH	0.77
1.99	15TH	0.78
2.01	20TH	0.79
2.04	25TH	0.80
2.06	30TH	0.81
2.08	35TH	0.82
2.09	40TH	0.82
2.11	45TH	0.83
2.13	50TH	0.84
2.15	55TH	0.85
2.17	60TH	0.85
2.19	65TH	0.86
2.21	70TH	0.87
2.24	75TH	0.88
2.26	80TH	0.89
2.30	85TH	0.90
2.34	90TH	0.92
2.41	95TH	0.95
2.45	97TH	0.96
2.48	98TH	0.98
2.53	99TH	1.00

38--DIGIT 4 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Dimension was calculated from multivariate regression equations based upon calculated values for digit 4 Proximal Interphalangeal Joint Breadth (D4PIP) and digit 4 Distal Interphalangeal Joint Breadth (D4DIP). Separate equations were derived for the two sexes, based on the measurements of 283 men and 554 women.

All equation values are in millimeters.

MALES:	DP4CIRC = 0.95 D4PIP + 0.44 D4DIP + 36.42	SEE=2.83	R^2=.33
FEMALES:	DP4CIRC = 1.10 D4PIP + 0.68 D4DIP + 24.40	SEE=2.27	R^2=.42



38--DIGIT 4 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
5.74	MEAN	2.26
0.01	SE(MEAN)	0.00
0.19	ST DEV	0.08
0.00	SE(SD)	0.00
5.20	MINIMUM	2.05
6.50	MAXIMUM	2.26
COEFF. OF VARIATION		3.4%
SYMMETRY----BETA I		0.39
KURTOSIS----BETA II		3.51
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
5.36	1ST	2.11
5.39	2ND	2.12
5.40	3RD	2.13
5.43	5TH	2.14
5.49	10TH	2.16
5.53	15TH	2.18
5.56	20TH	2.19
5.59	25TH	2.20
5.62	30TH	2.21
5.65	35TH	2.22
5.67	40TH	2.23
5.70	45TH	2.24
5.72	50TH	2.25
5.74	55TH	2.26
5.77	60TH	2.27
5.80	65TH	2.28
5.83	70TH	2.29
5.86	75TH	2.31
5.89	80TH	2.32
5.94	85TH	2.34
5.99	90TH	2.36
6.08	95TH	2.39
6.14	97TH	2.42
6.19	98TH	2.44
6.27	99TH	2.47

MALES

THE SUMMARY STATISTICS

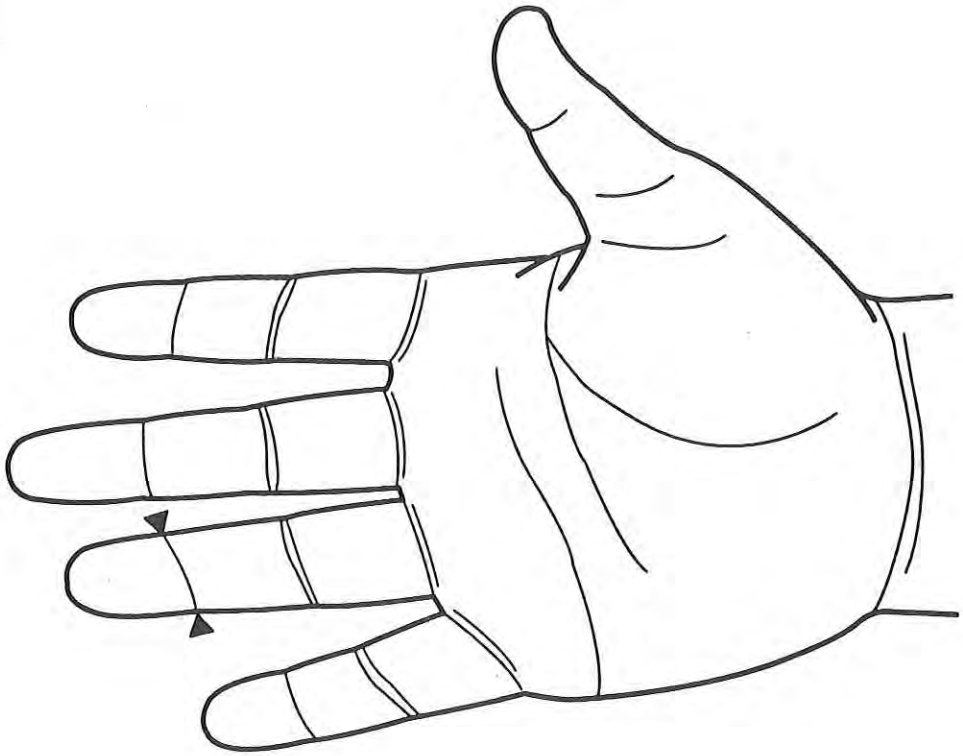
CENTIMETERS		INCHES
6.49	MEAN	2.55
0.01	SE(MEAN)	0.00
0.19	ST DEV	0.07
0.00	SE(SD)	0.00
5.90	MINIMUM	2.32
7.20	MAXIMUM	2.83
COEFF. OF VARIATION		2.9%
SYMMETRY----BETA I		0.26
KURTOSIS----BETA II		3.18
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
6.09	1ST	2.40
6.13	2ND	2.41
6.16	3RD	2.42
6.19	5TH	2.44
6.25	10TH	2.46
6.29	15TH	2.47
6.32	20TH	2.49
6.35	25TH	2.50
6.37	30TH	2.51
6.40	35TH	2.52
6.42	40TH	2.53
6.45	45TH	2.54
6.47	50TH	2.55
6.50	55TH	2.56
6.53	60TH	2.57
6.55	65TH	2.58
6.58	70TH	2.59
6.62	75TH	2.61
6.65	80TH	2.62
6.70	85TH	2.64
6.75	90TH	2.66
6.83	95TH	2.69
6.87	97TH	2.71
6.90	98TH	2.72
6.94	99TH	2.73

39--DIGIT 4 DISTAL INTERPHALANGEAL JOINT BREADTH

The breadth of the distal interphalangeal joint calculated as the distance between points 29 and 30.



39--DIGIT 4 DISTAL INTERPHALANGEAL JOINT BREADTH

FEMALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
1.58	MEAN	0.62
0.00	SE(MEAN)	0.00
0.11	ST DEV	0.05
0.00	SE(SD)	0.00
1.30	MINIMUM	0.51
2.10	MAXIMUM	0.83
COEFF. OF VARIATION		7.3%
SYMMETRY----BETA I		0.45
KURTOSIS----BETA II		3.79
NUMBER OF SUBJECTS		1304

PERCENTILES CENTIMETERS		INCHES
1.33	1ST	0.52
1.35	2ND	0.53
1.37	3RD	0.54
1.39	5TH	0.55
1.43	10TH	0.56
1.46	15TH	0.57
1.48	20TH	0.58
1.50	25TH	0.59
1.51	30TH	0.60
1.53	35TH	0.60
1.54	40TH	0.61
1.56	45TH	0.61
1.57	50TH	0.62
1.59	55TH	0.62
1.60	60TH	0.63
1.62	65TH	0.64
1.63	70TH	0.64
1.65	75TH	0.65
1.67	80TH	0.66
1.69	85TH	0.67
1.73	90TH	0.68
1.78	95TH	0.70
1.82	97TH	0.72
1.85	98TH	0.73
1.90	99TH	0.75

MALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
1.85	MEAN	0.73
0.00	SE(MEAN)	0.00
0.14	ST DEV	0.06
0.00	SE(SD)	0.00
1.30	MINIMUM	0.51
2.40	MAXIMUM	0.94
COEFF. OF VARIATION		7.8%
SYMMETRY----BETA I		0.33
KURTOSIS----BETA II		3.71
NUMBER OF SUBJECTS		1003

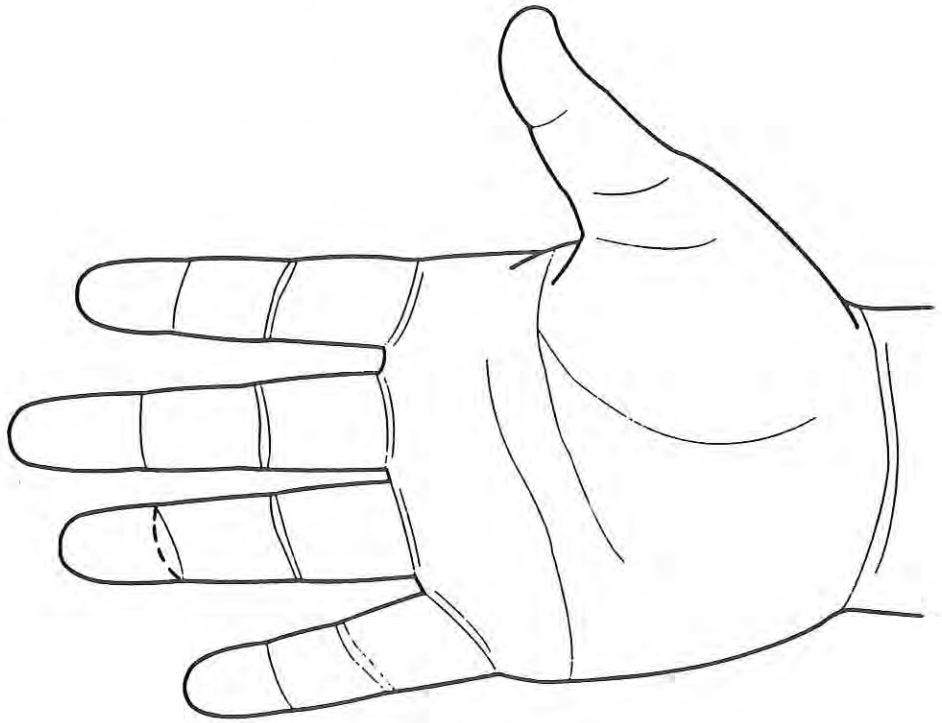
PERCENTILES CENTIMETERS		INCHES
1.52	1ST	0.60
1.56	2ND	0.61
1.58	3RD	0.62
1.62	5TH	0.64
1.67	10TH	0.66
1.70	15TH	0.67
1.73	20TH	0.68
1.75	25TH	0.69
1.77	30TH	0.70
1.79	35TH	0.70
1.81	40TH	0.71
1.82	45TH	0.72
1.84	50TH	0.72
1.86	55TH	0.73
1.88	60TH	0.74
1.89	65TH	0.75
1.91	70TH	0.75
1.94	75TH	0.76
1.96	80TH	0.77
1.99	85TH	0.78
2.03	90TH	0.80
2.10	95TH	0.83
2.15	97TH	0.85
2.19	98TH	0.86
2.26	99TH	0.89

40--DIGIT 4 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Dimension was calculated from multivariate regression equations based upon calculated values for digit 4 Proximal Interphalangeal Joint Breadth (D4PIP) and digit 4 Distal Interphalangeal Joint Breadth (D4DIP). Separate equations were derived for the two sexes, based on the measurements of 283 men and 554 women.

All equation values are in millimeters.

MALES:	D4DCIRC = 0.30 D4PIP + 0.68 D4DIP + 34.83	SEE=2.57	R^2=.22
FEMALES:	D4DCIRC = 0.57 D4PIP + 0.95 D4DIP + 21.36	SEE=2.02	R^2=.38



40--DIGIT 4 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

FEMALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
4.68	MEAN	1.84
0.00	SE(MEAN)	0.00
0.16	ST DEV	0.06
0.00	SE(SD)	0.00
4.20	MINIMUM	1.65
5.30	MAXIMUM	2.07
COEFF. OF VARIATION		3.4%
SYMMETRY----BETA I		0.39
KURTOSIS----BETA II		3.57
NUMBER OF SUBJECTS		1304

PERCENTILES CENTIMETERS		INCHES
4.32	1ST	1.70
4.36	2ND	1.71
4.38	3RD	1.72
4.41	5TH	1.74
4.47	10TH	1.76
4.50	15TH	1.77
4.53	20TH	1.79
4.56	25TH	1.80
4.59	30TH	1.81
4.61	35TH	1.81
4.63	40TH	1.82
4.65	45TH	1.83
4.67	50TH	1.84
4.69	55TH	1.85
4.71	60TH	1.85
4.73	65TH	1.86
4.75	70TH	1.87
4.78	75TH	1.88
4.80	80TH	1.89
4.84	85TH	1.90
4.88	90TH	1.92
4.95	95TH	1.95
5.01	97TH	1.97
5.05	98TH	1.99
5.13	99TH	2.02

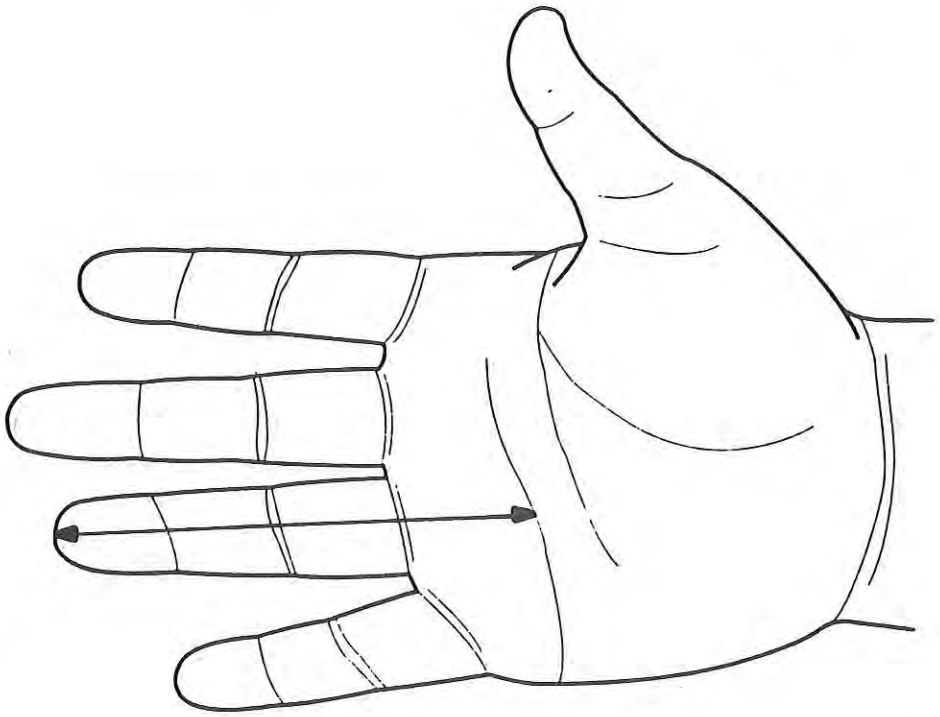
MALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
5.38	MEAN	2.12
0.00	SE(MEAN)	0.00
0.13	ST DEV	0.05
0.00	SE(SD)	0.00
4.90	MINIMUM	1.93
5.90	MAXIMUM	2.32
COEFF. OF VARIATION		2.5%
SYMMETRY----BETA I		0.27
KURTOSIS----BETA II		3.43
NUMBER OF SUBJECTS		1003

PERCENTILES CENTIMETERS		INCHES
5.06	1ST	1.99
5.10	2ND	2.01
5.12	3RD	2.02
5.15	5TH	2.03
5.20	10TH	2.05
5.23	15TH	2.06
5.26	20TH	2.07
5.28	25TH	2.08
5.30	30TH	2.09
5.32	35TH	2.09
5.33	40TH	2.10
5.35	45TH	2.11
5.37	50TH	2.11
5.39	55TH	2.12
5.40	60TH	2.13
5.42	65TH	2.13
5.44	70TH	2.14
5.46	75TH	2.15
5.49	80TH	2.16
5.52	85TH	2.17
5.56	90TH	2.19
5.62	95TH	2.21
5.66	97TH	2.23
5.69	98TH	2.24
5.73	99TH	2.26

41--DIGIT 4 LINK LENGTH

The functional length of the fourth digit calculated as the distance between the tip of the digit (point 36) and the center of rotation of the first metacarpo-phalangeal joint, approximated by the distal transverse palm crease, measured along the axis of the digit.



41--DIGIT 4 LINK LENGTH

FEMALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
9.73	MEAN	3.83
0.02	SE(MEAN)	0.01
0.59	ST DEV	0.23
0.01	SE(SD)	0.00
7.90	MINIMUM	1.90
11.90	MAXIMUM	4.69
COEFF. OF VARIATION		6.1%
SYMMETRY----BETA I		0.23
KURTOSIS----BETA II		2.99
NUMBER OF SUBJECTS		1304

PERCENTILES CENTIMETERS		INCHES
8.50	1ST	3.34
8.61	2ND	3.39
8.68	3RD	3.42
8.80	5TH	3.46
8.98	10TH	3.54
9.11	15TH	3.59
9.22	20TH	3.63
9.32	25TH	3.67
9.40	30TH	3.70
9.48	35TH	3.73
9.56	40TH	3.76
9.64	45TH	3.79
9.71	50TH	3.82
9.79	55TH	3.85
9.86	60TH	3.88
9.94	65TH	3.91
10.03	70TH	3.95
10.12	75TH	3.98
10.22	80TH	4.03
10.35	85TH	4.07
10.50	90TH	4.14
10.74	95TH	4.23
10.90	97TH	4.29
11.02	98TH	4.34
11.22	99TH	4.42

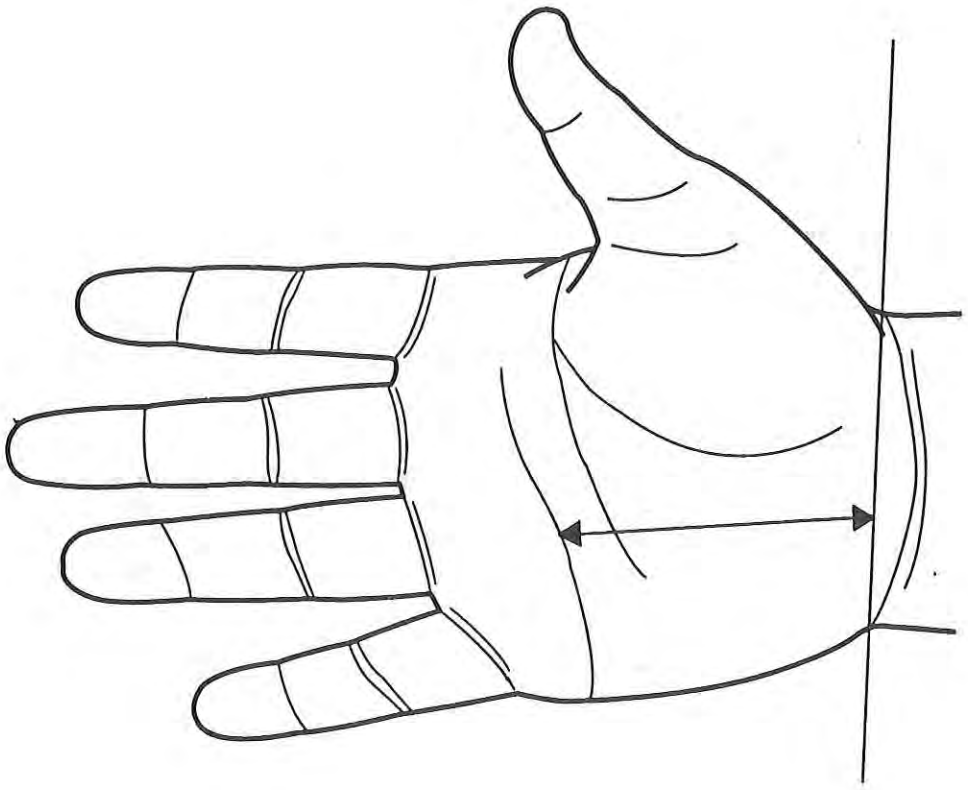
MALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
10.69	MEAN	4.21
0.02	SE(MEAN)	0.01
0.65	ST DEV	0.25
0.01	SE(SD)	0.01
8.30	MINIMUM	3.27
13.50	MAXIMUM	5.31
COEFF. OF VARIATION		6.1%
SYMMETRY----BETA I		0.17
KURTOSIS----BETA II		3.43
NUMBER OF SUBJECTS		1003

PERCENTILES CENTIMETERS		INCHES
9.28	1ST	3.65
9.43	2ND	3.71
9.53	3RD	3.75
9.67	5TH	3.81
9.88	10TH	3.89
10.03	15TH	3.95
10.15	20TH	3.99
10.25	25TH	4.04
10.34	30TH	4.07
10.43	35TH	4.11
10.51	40TH	4.14
10.59	45TH	4.17
10.67	50TH	4.20
10.75	55TH	4.23
10.84	60TH	4.27
10.92	65TH	4.30
11.01	70TH	4.33
11.11	75TH	4.37
11.22	80TH	4.42
11.35	85TH	4.47
11.52	90TH	4.53
11.77	95TH	4.63
11.94	97TH	4.70
12.07	98TH	4.75
12.27	99TH	4.83

42--DIGIT 4 METACARPAL LINK LENGTH

An approximation of the palmar link length of the fourth digit, calculated as the distance, along the axis of the digit, from the center of rotation of the metacarpo-phalangeal joint (approximated by the distal transverse palm crease) to the wrist crease baseline.



42--DIGIT 4 METACARPAL LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
7.16	MEAN	2.82
0.01	SE(MEAN)	0.01
0.53	ST DEV	0.21
0.01	SE(SD)	0.00
5.20	MINIMUM	1.10
9.00	MAXIMUM	3.54

COEFF. OF VARIATION	7.5%
SYMMETRY----BETA I	0.21
KURTOSIS----BETA II	3.17
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
5.99	1ST	2.36
6.14	2ND	2.42
6.23	3RD	2.45
6.34	5TH	2.50
6.51	10TH	2.56
6.62	15TH	2.61
6.71	20TH	2.64
6.79	25TH	2.67
6.87	30TH	2.70
6.93	35TH	2.73
7.00	40TH	2.76
7.06	45TH	2.78
7.13	50TH	2.81
7.20	55TH	2.83
7.26	60TH	2.86
7.34	65TH	2.89
7.42	70TH	2.92
7.50	75TH	2.95
7.60	80TH	2.99
7.72	85TH	3.04
7.87	90TH	3.10
8.10	95TH	3.19
8.25	97TH	3.25
8.35	98TH	3.29
8.52	99TH	3.35

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
7.81	MEAN	3.08
0.02	SE(MEAN)	0.01
0.56	ST DEV	0.22
0.01	SE(SD)	0.00
5.90	MINIMUM	2.32
9.70	MAXIMUM	3.82

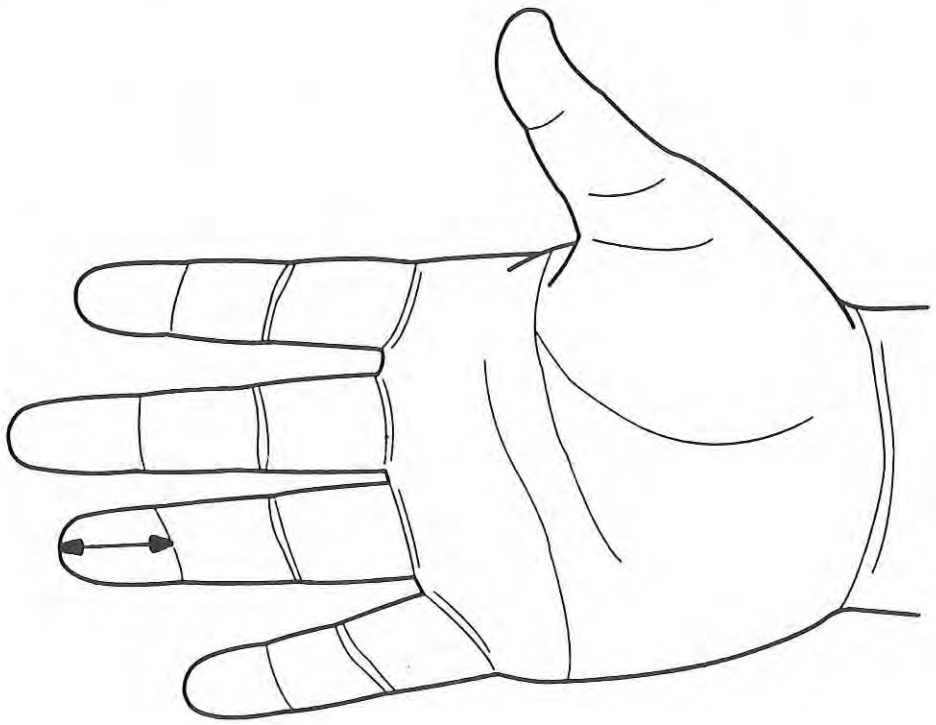
COEFF. OF VARIATION	7.2%
SYMMETRY----BETA I	0.11
KURTOSIS----BETA II	3.16
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
6.49	1ST	2.56
6.67	2ND	2.63
6.78	3RD	2.67
6.92	5TH	2.72
7.12	10TH	2.80
7.25	15TH	2.85
7.35	20TH	2.89
7.43	25TH	2.93
7.51	30TH	2.96
7.58	35TH	2.99
7.65	40TH	3.01
7.72	45TH	3.04
7.79	50TH	3.07
7.86	55TH	3.09
7.93	60TH	3.12
8.01	65TH	3.15
8.09	70TH	3.19
8.18	75TH	3.22
8.28	80TH	3.26
8.40	85TH	3.31
8.56	90TH	3.37
8.79	95TH	3.46
8.93	97TH	3.52
9.04	98TH	3.56
9.20	99TH	3.62

43--DIGIT 4 DISTAL PHALANX LINK LENGTH

An approximation of the link length of the distal phalanx of the fourth digit, calculated as the distance between the middle of the distal interphalangeal joint (points 29 and 30) to the tip of the digit (point 36).



43--DIGIT 4 DISTAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.61	MEAN	1.03
0.01	SE(MEAN)	0.00
0.22	ST DEV	0.09
0.00	SE(SD)	0.00
1.90	MINIMUM	0.75
3.30	MAXIMUM	1.30
COEFF. OF VARIATION		8.4%
SYMMETRY----BETA I		0.12
KURTOSIS----BETA II		3.23
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
2.09	1ST	0.82
2.16	2ND	0.85
2.20	3RD	0.86
2.25	5TH	0.89
2.33	10TH	0.92
2.38	15TH	0.94
2.42	20TH	0.95
2.46	25TH	0.97
2.49	30TH	0.98
2.52	35TH	0.99
2.55	40TH	1.00
2.58	45TH	1.01
2.60	50TH	1.02
2.63	55TH	1.04
2.66	60TH	1.05
2.68	65TH	1.06
2.72	70TH	1.07
2.75	75TH	1.08
2.79	80TH	1.10
2.83	85TH	1.11
2.89	90TH	1.14
2.98	95TH	1.17
3.03	97TH	1.19
3.08	98TH	1.21
3.15	99TH	1.24

MALES

THE SUMMARY STATISTICS

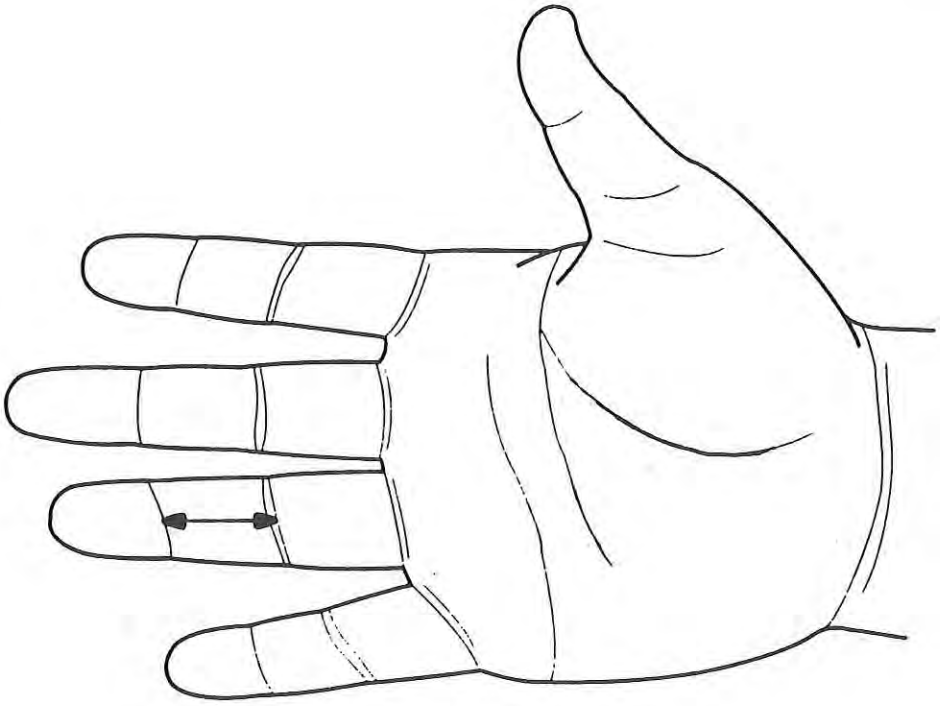
CENTIMETERS		INCHES
2.96	MEAN	1.17
0.01	SE(MEAN)	0.00
0.24	ST DEV	0.10
0.01	SE(SD)	0.00
1.90	MINIMUM	0.75
3.80	MAXIMUM	1.50
COEFF. OF VARIATION		8.2%
SYMMETRY----BETA I		-0.14
KURTOSIS----BETA II		3.37
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
2.36	1ST	0.93
2.44	2ND	0.96
2.49	3RD	0.98
2.56	5TH	1.01
2.65	10TH	1.04
2.72	15TH	1.07
2.76	20TH	1.09
2.81	25TH	1.10
2.84	30TH	1.12
2.88	35TH	1.13
2.91	40TH	1.14
2.94	45TH	1.16
2.97	50TH	1.17
3.00	55TH	1.18
3.03	60TH	1.19
3.06	65TH	1.20
3.09	70TH	1.22
3.12	75TH	1.23
3.16	80TH	1.24
3.21	85TH	1.26
3.26	90TH	1.29
3.35	95TH	1.32
3.41	97TH	1.34
3.45	98TH	1.36
3.52	99TH	1.38

44--DIGIT 4 MEDIAL PHALANX LINK LENGTH

An approximation of the link length of the medial phalanx of the fourth digit, calculated as the distance between the middle of the distal interphalangeal joint (points 29 and 30) and the middle of the proximal interphalangeal joint (points 21 and 22).



44--DIGIT 4 MEDIAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.28	MEAN	0.90
0.01	SE(MEAN)	0.00
0.26	ST DEV	0.10
0.01	SE(SD)	0.00
1.60	MINIMUM	0.63
3.50	MAXIMUM	1.38
COEFF. OF VARIATION		11.6%
SYMMETRY----BETA I		0.42
KURTOSIS----BETA II		3.56
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
1.71	1ST	0.67
1.77	2ND	0.70
1.82	3RD	0.71
1.87	5TH	0.74
1.96	10TH	0.77
2.01	15TH	0.79
2.06	20TH	0.81
2.10	25TH	0.83
2.13	30TH	0.84
2.17	35TH	0.85
2.20	40TH	0.87
2.23	45TH	0.88
2.26	50TH	0.89
2.30	55TH	0.90
2.33	60TH	0.92
2.37	65TH	0.93
2.40	70TH	0.95
2.44	75TH	0.96
2.49	80TH	0.98
2.55	85TH	1.00
2.63	90TH	1.03
2.74	95TH	1.08
2.82	97TH	1.11
2.88	98TH	1.14
2.98	99TH	1.17

MALES

THE SUMMARY STATISTICS

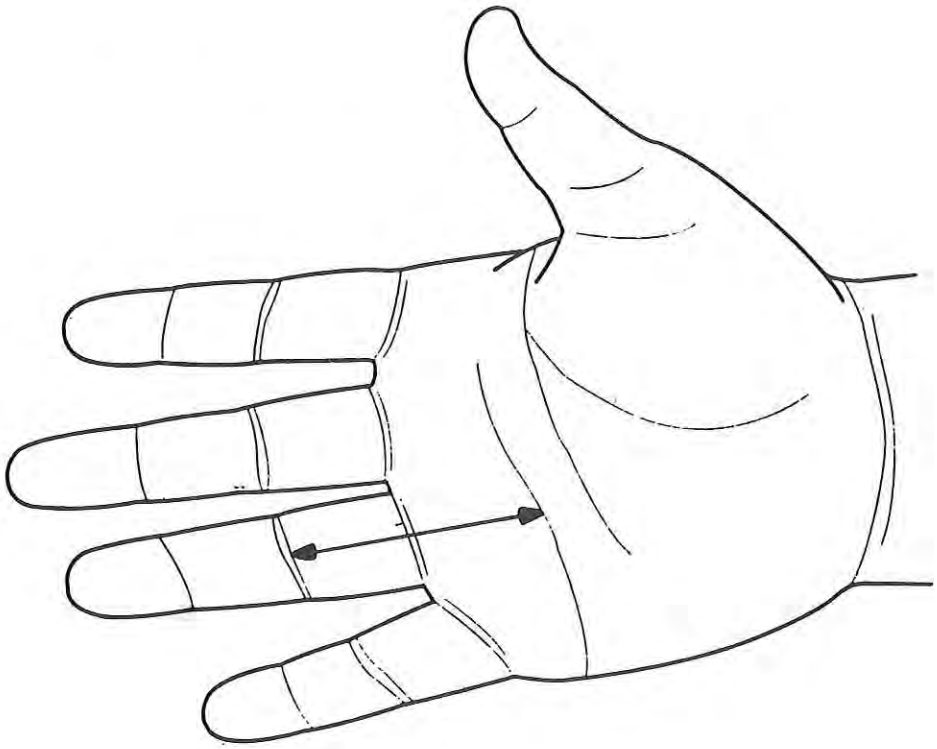
CENTIMETERS		INCHES
2.43	MEAN	0.96
0.01	SE(MEAN)	0.00
0.26	ST DEV	0.10
0.01	SE(SD)	0.00
1.60	MINIMUM	0.63
3.50	MAXIMUM	1.38
COEFF. OF VARIATION		10.9%
SYMMETRY----BETA I		0.30
KURTOSIS----BETA II		3.54
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
1.84	1ST	0.72
1.91	2ND	0.75
1.95	3RD	0.77
2.01	5TH	0.79
2.10	10TH	0.83
2.16	15TH	0.85
2.21	20TH	0.87
2.25	25TH	0.89
2.28	30TH	0.90
2.32	35TH	0.91
2.35	40TH	0.93
2.38	45TH	0.94
2.42	50TH	0.95
2.45	55TH	0.96
2.48	60TH	0.98
2.51	65TH	0.99
2.55	70TH	1.00
2.59	75TH	1.02
2.64	80TH	1.04
2.69	85TH	1.06
2.77	90TH	1.09
2.88	95TH	1.13
2.96	97TH	1.16
3.02	98TH	1.19
3.12	99TH	1.23

45--DIGIT 4 PROXIMAL PHALANX LINK LENGTH

An approximation of the link length of the proximal phalanx of the fourth digit, calculated as the distance between the middle of the proximal interphalangeal joint (points 21 and 22) and the center or rotation of the metacarpo-phalangeal joint (approximated by the distal transverse palm crease).



45--DIGIT 4 PROXIMAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
4.84	MEAN	1.91
0.01	SE(MEAN)	0.00
0.34	ST DEV	0.13
0.01	SE(SD)	0.00
3.70	MINIMUM	0.39
6.00	MAXIMUM	2.36

COEFF. OF VARIATION	7.1%
SYMMETRY----BETA I	0.17
KURTOSIS----BETA II	3.08
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
4.06	1ST	1.60
4.17	2ND	1.64
4.23	3RD	1.66
4.31	5TH	1.70
4.42	10TH	1.74
4.50	15TH	1.77
4.56	20TH	1.79
4.61	25TH	1.81
4.66	30TH	1.83
4.70	35TH	1.85
4.74	40TH	1.87
4.78	45TH	1.88
4.83	50TH	1.90
4.87	55TH	1.92
4.91	60TH	1.93
4.96	65TH	1.95
5.01	70TH	1.97
5.06	75TH	1.99
5.13	80TH	2.02
5.20	85TH	2.05
5.29	90TH	2.08
5.43	95TH	2.14
5.51	97TH	2.17
5.57	98TH	2.19
5.66	99TH	2.23

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
5.29	MEAN	2.08
0.01	SE(MEAN)	0.00
0.40	ST DEV	0.16
0.01	SE(SD)	0.00
4.00	MINIMUM	1.57
6.80	MAXIMUM	2.68

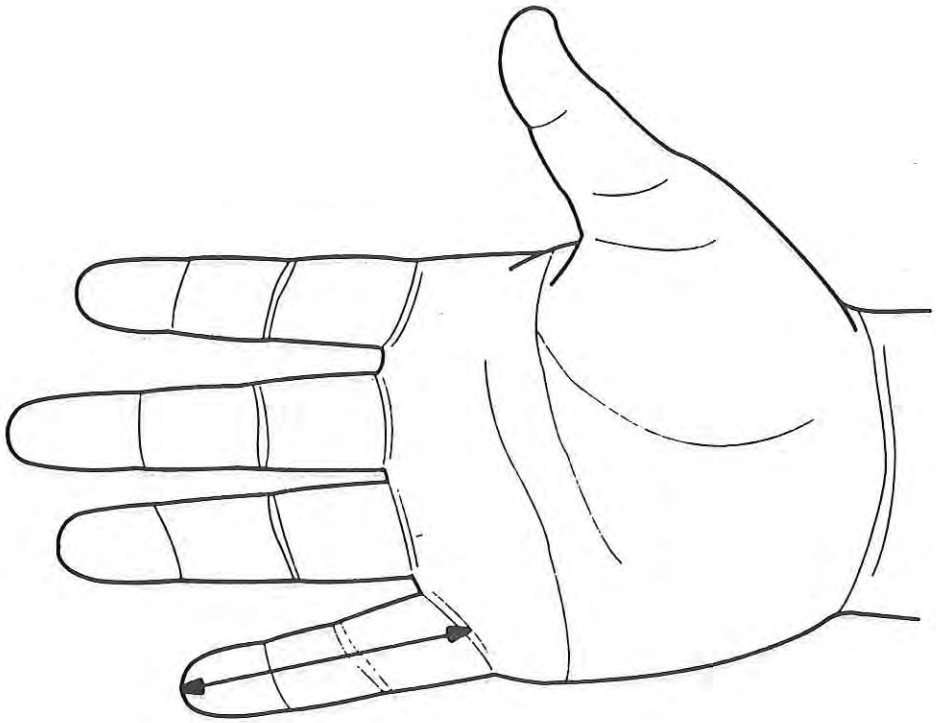
COEFF. OF VARIATION	7.5%
SYMMETRY----BETA I	0.19
KURTOSIS----BETA II	3.15
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
4.44	1ST	1.75
4.53	2ND	1.78
4.58	3RD	1.80
4.66	5TH	1.84
4.79	10TH	1.89
4.88	15TH	1.92
4.95	20TH	1.95
5.02	25TH	1.98
5.08	30TH	2.00
5.13	35TH	2.02
5.18	40TH	2.04
5.23	45TH	2.06
5.28	50TH	2.08
5.33	55TH	2.10
5.38	60TH	2.12
5.44	65TH	2.14
5.49	70TH	2.16
5.55	75TH	2.19
5.62	80TH	2.21
5.70	85TH	2.25
5.81	90TH	2.29
5.96	95TH	2.35
6.06	97TH	2.39
6.14	98TH	2.42
6.26	99TH	2.46

46--DIGIT 5 LENGTH

The length of the fourth digit calculated as the distance between the digit's tip (point 37) and its base (point 13)..



46--DIGIT 5 LENGTH

FEMALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
5.83	MEAN	2.30
0.01	SE(MEAN)	0.00
0.46	ST DEV	0.18
0.01	SE(SD)	0.00
4.10	MINIMUM	1.61
7.30	MAXIMUM	2.87
COEFF. OF VARIATION		7.8%
SYMMETRY----BETA I		0.03
KURTOSIS----BETA II		3.22
NUMBER OF SUBJECTS		1304

PERCENTILES		
CENTIMETERS		INCHES
4.77	1ST	1.88
4.89	2ND	1.92
4.97	3RD	1.96
5.08	5TH	2.00
5.25	10TH	2.07
5.37	15TH	2.11
5.46	20TH	2.15
5.53	25TH	2.18
5.60	30TH	2.21
5.66	35TH	2.23
5.72	40TH	2.25
5.78	45TH	2.28
5.83	50TH	2.30
5.89	55TH	2.32
5.95	60TH	2.34
6.00	65TH	2.36
6.06	70TH	2.39
6.13	75TH	2.41
6.20	80TH	2.44
6.29	85TH	2.48
6.40	90TH	2.52
6.58	95TH	2.59
6.70	97TH	2.64
6.80	98TH	2.68
6.96	99TH	2.74

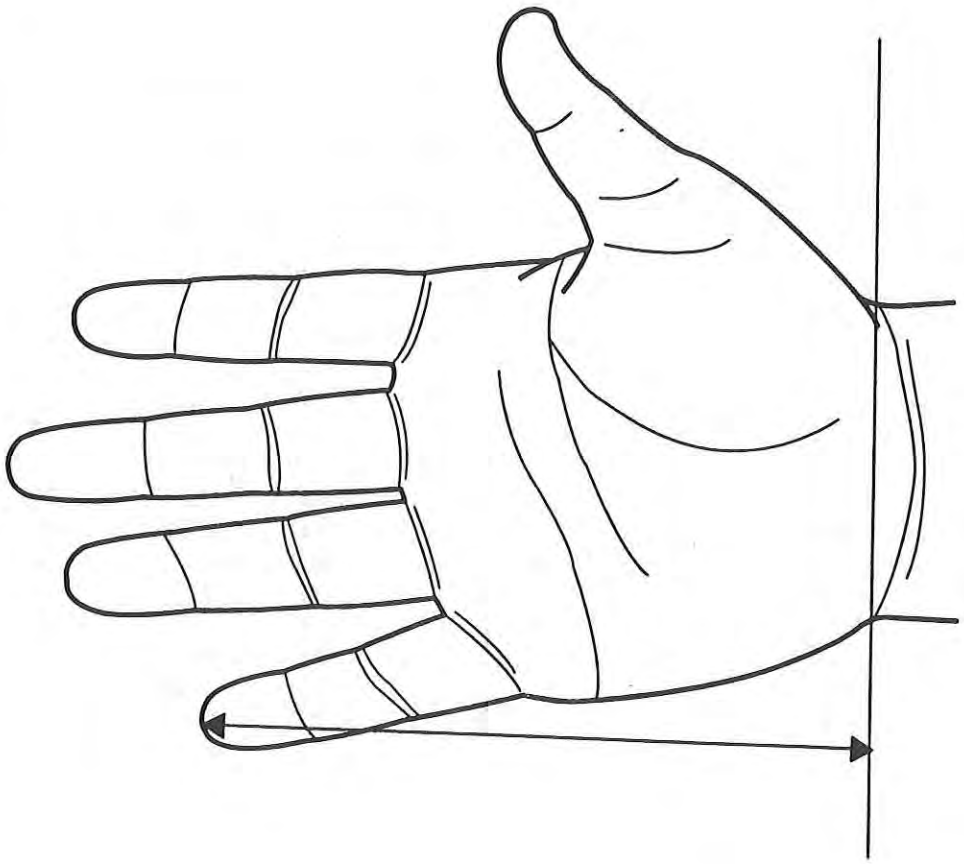
MALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
6.47	MEAN	2.55
0.02	SE(MEAN)	0.01
0.49	ST DEV	0.19
0.01	SE(SD)	0.00
5.10	MINIMUM	2.01
8.30	MAXIMUM	3.27
COEFF. OF VARIATION		7.6%
SYMMETRY----BETA I		0.11
KURTOSIS----BETA II		3.13
NUMBER OF SUBJECTS		1003

PERCENTILES		
CENTIMETERS		INCHES
5.35	1ST	2.11
5.47	2ND	2.15
5.55	3RD	2.18
5.66	5TH	2.23
5.84	10TH	2.30
5.96	15TH	2.35
6.06	20TH	2.38
6.14	25TH	2.42
6.21	30TH	2.45
6.28	35TH	2.47
6.35	40TH	2.50
6.41	45TH	2.52
6.47	50TH	2.55
6.53	55TH	2.57
6.59	60TH	2.60
6.66	65TH	2.62
6.72	70TH	2.65
6.80	75TH	2.68
6.88	80TH	2.71
6.97	85TH	2.74
7.09	90TH	2.79
7.28	95TH	2.87
7.41	97TH	2.92
7.51	98TH	2.96
7.67	99TH	3.02

47--DIGIT 5 HEIGHT

The perpendicular distance from the tip of digit 5 (point 37) to the wrist crease base line.



47--DIGIT 5 HEIGHT

FEMALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
13.21	MEAN	5.20
0.02	SE(MEAN)	0.01
0.88	ST DEV	0.35
0.02	SE(SD)	0.01
9.80	MINIMUM	3.86
16.20	MAXIMUM	6.38
COEFF. OF VARIATION		6.7%
SYMMETRY----BETA I		0.04
KURTOSIS----BETA II		3.18
NUMBER OF SUBJECTS		1304

PERCENTILES CENTIMETERS		INCHES
11.11	1ST	4.37
11.40	2ND	4.49
11.57	3RD	4.55
11.79	5TH	4.64
12.11	10TH	4.77
12.32	15TH	4.85
12.48	20TH	4.91
12.62	25TH	4.97
12.75	30TH	5.02
12.86	35TH	5.06
12.98	40TH	5.11
13.08	45TH	5.15
13.19	50TH	5.19
13.30	55TH	5.24
13.41	60TH	5.28
13.53	65TH	5.33
13.65	70TH	5.37
13.79	75TH	5.43
13.94	80TH	5.49
14.12	85TH	5.56
14.35	90TH	5.65
14.68	95TH	5.78
14.90	97TH	5.87
15.06	98TH	5.93
15.30	99TH	6.02

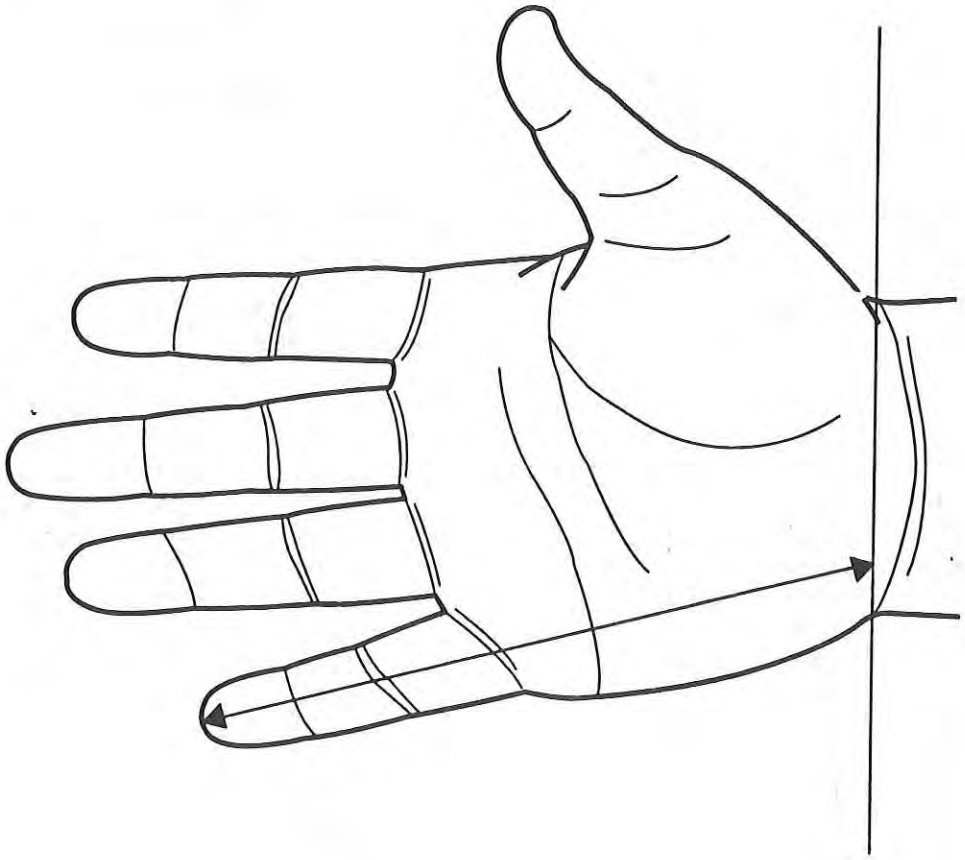
MALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
14.54	MEAN	5.72
0.03	SE(MEAN)	0.01
0.94	ST DEV	0.37
0.02	SE(SD)	0.01
10.50	MINIMUM	4.13
18.40	MAXIMUM	7.24
COEFF. OF VARIATION		6.5%
SYMMETRY----BETA I		0.15
KURTOSIS----BETA II		3.72
NUMBER OF SUBJECTS		1003

PERCENTILES CENTIMETERS		INCHES
12.42	1ST	4.89
12.69	2ND	5.00
12.86	3RD	5.06
13.07	5TH	5.15
13.39	10TH	5.27
13.60	15TH	5.35
13.76	20TH	5.42
13.91	25TH	5.47
14.03	30TH	5.53
14.15	35TH	5.57
14.27	40TH	5.62
14.38	45TH	5.66
14.50	50TH	5.71
14.61	55TH	5.75
14.73	60TH	5.80
14.85	65TH	5.85
14.99	70TH	5.90
15.13	75TH	5.96
15.30	80TH	6.02
15.50	85TH	6.10
15.76	90TH	6.20
16.14	95TH	6.36
16.40	97TH	6.46
16.59	98TH	6.53
16.89	99TH	6.65

48--DIGIT 5 TIP TO WRIST CREASE LENGTH

The distance from the tip of digit 5 (point 37) to the wrist crease base line measured along the digit's central axis.



48--DIGIT 5 TIP TO WRIST CREASE LENGTH

FEMALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
14.55	MEAN	5.73
0.03	SE(MEAN)	0.01
0.94	ST DEV	0.37
0.02	SE(SD)	0.01
11.40	MINIMUM	4.49
18.00	MAXIMUM	7.09
COEFF. OF VARIATION		6.5%
SYMMETRY----BETA I		0.17
KURTOSIS----BETA II		3.15
NUMBER OF SUBJECTS		1304

PERCENTILES CENTIMETERS		INCHES
12.40	1ST	4.88
12.70	2ND	5.00
12.87	3RD	5.07
13.09	5TH	5.15
13.40	10TH	5.28
13.61	15TH	5.36
13.77	20TH	5.42
13.91	25TH	5.48
14.04	30TH	5.53
14.16	35TH	5.57
14.28	40TH	5.62
14.39	45TH	5.67
14.51	50TH	5.71
14.62	55TH	5.76
14.75	60TH	5.81
14.88	65TH	5.86
15.01	70TH	5.91
15.17	75TH	5.97
15.34	80TH	6.04
15.55	85TH	6.12
15.81	90TH	6.22
16.19	95TH	6.38
16.44	97TH	6.47
16.61	98TH	6.54
16.87	99TH	6.64

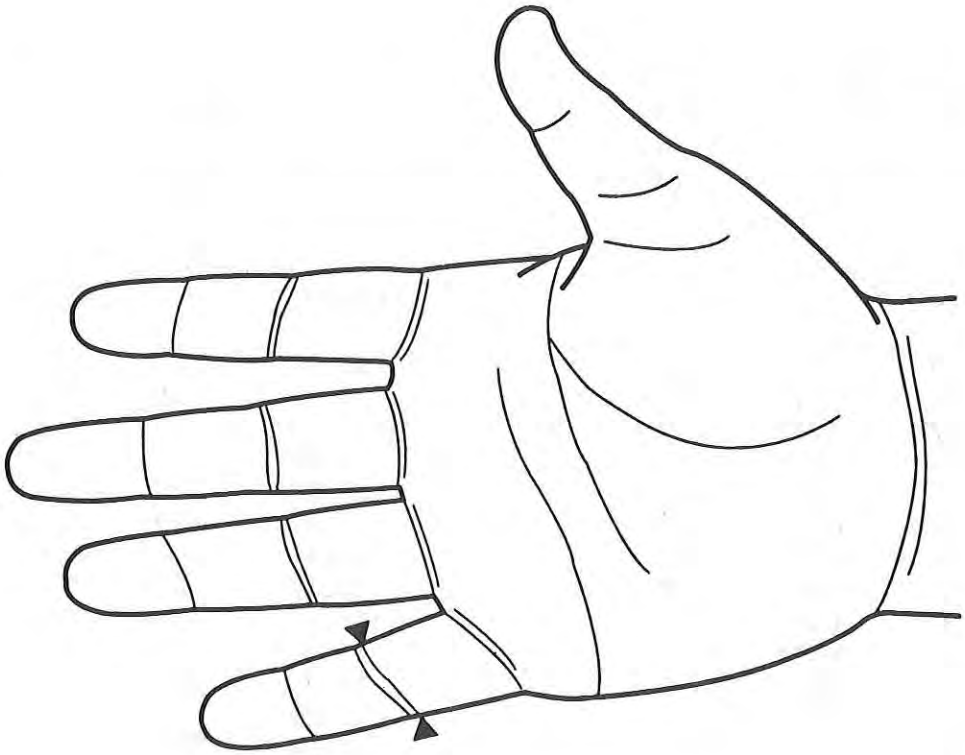
MALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
15.99	MEAN	6.30
0.03	SE(MEAN)	0.01
0.98	ST DEV	0.38
0.02	SE(SD)	0.01
13.00	MINIMUM	5.12
20.10	MAXIMUM	7.91
COEFF. OF VARIATION		6.1%
SYMMETRY----BETA I		0.30
KURTOSIS----BETA II		3.27
NUMBER OF SUBJECTS		1003

PERCENTILES CENTIMETERS		INCHES
13.84	1ST	5.45
14.10	2ND	5.55
14.26	3RD	5.61
14.47	5TH	5.70
14.79	10TH	5.82
15.00	15TH	5.91
15.17	20TH	5.97
15.32	25TH	6.03
15.45	30TH	6.08
15.58	35TH	6.13
15.70	40TH	6.18
15.82	45TH	6.23
15.94	50TH	6.27
16.06	55TH	6.32
16.19	60TH	6.37
16.32	65TH	6.42
16.46	70TH	6.48
16.62	75TH	6.54
16.80	80TH	6.61
17.01	85TH	6.70
17.28	90TH	6.80
17.69	95TH	6.97
17.96	97TH	7.07
18.16	98TH	7.15
18.46	99TH	7.27

49--DIGIT 5 PROXIMAL INTERPHALANGEAL JOINT BREADTH

The breadth of the proximal interphalangeal joint calculated as the distance between points 23 and 24.



49--DIGIT 5 PROXIMAL INTERPHALANGEAL JOINT BREADTH

FEMALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
1.65	MEAN	0.65
0.00	SE(MEAN)	0.00
0.11	ST DEV	0.04
0.00	SE(SD)	0.00
1.30	MINIMUM	0.51
2.00	MAXIMUM	0.79
COEFF. OF VARIATION		6.8%
SYMMETRY----BETA I		0.13
KURTOSIS----BETA II		3.13
NUMBER OF SUBJECTS		1304

PERCENTILES CENTIMETERS		INCHES
1.37	1ST	0.54
1.41	2ND	0.56
1.43	3RD	0.56
1.46	5TH	0.58
1.51	10TH	0.59
1.53	15TH	0.60
1.56	20TH	0.61
1.57	25TH	0.62
1.59	30TH	0.63
1.61	35TH	0.63
1.62	40TH	0.64
1.63	45TH	0.64
1.65	50TH	0.65
1.66	55TH	0.65
1.68	60TH	0.66
1.69	65TH	0.67
1.71	70TH	0.67
1.73	75TH	0.68
1.75	80TH	0.69
1.77	85TH	0.70
1.80	90TH	0.71
1.85	95TH	0.73
1.88	97TH	0.74
1.90	98TH	0.75
1.94	99TH	0.76

MALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
1.92	MEAN	0.75
0.00	SE(MEAN)	0.00
0.13	ST DEV	0.05
0.00	SE(SD)	0.00
1.50	MINIMUM	0.59
2.40	MAXIMUM	0.94
COEFF. OF VARIATION		6.8%
SYMMETRY----BETA I		0.20
KURTOSIS----BETA II		3.21
NUMBER OF SUBJECTS		1003

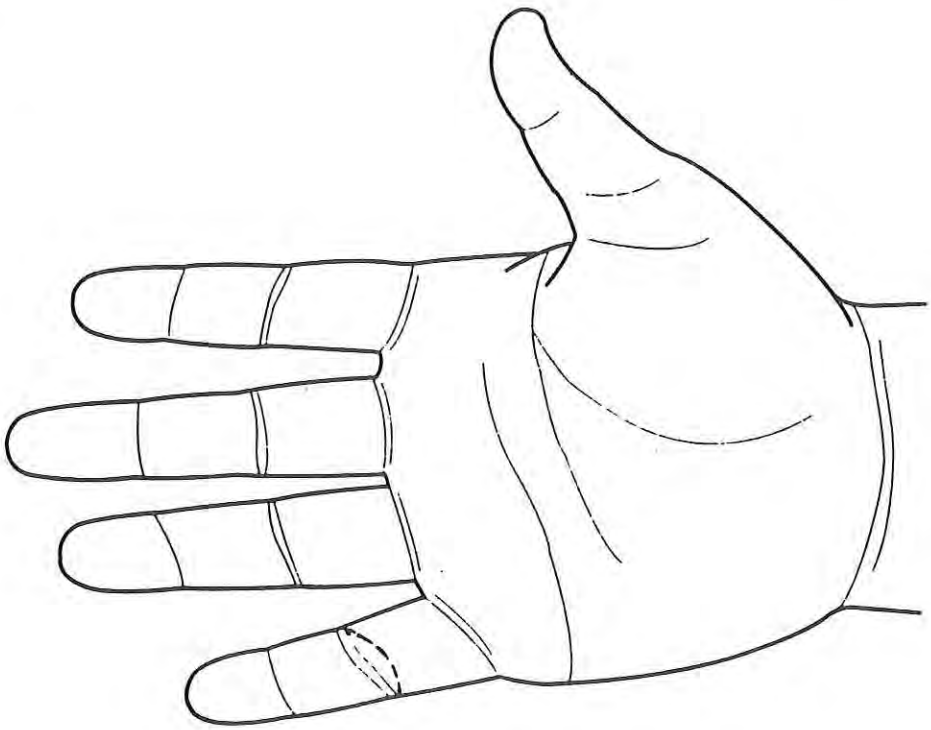
PERCENTILES CENTIMETERS		INCHES
1.62	1ST	0.64
1.66	2ND	0.65
1.68	3RD	0.66
1.71	5TH	0.67
1.75	10TH	0.69
1.78	15TH	0.70
1.80	20TH	0.71
1.82	25TH	0.72
1.84	30TH	0.73
1.86	35TH	0.73
1.88	40TH	0.74
1.89	45TH	0.75
1.91	50TH	0.75
1.93	55TH	0.76
1.94	60TH	0.77
1.96	65TH	0.77
1.98	70TH	0.78
2.00	75TH	0.79
2.03	80TH	0.80
2.05	85TH	0.81
2.09	90TH	0.82
2.14	95TH	0.84
2.18	97TH	0.86
2.20	98TH	0.87
2.24	99TH	0.88

50--DIGIT 5 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Dimension was calculated from multivariate regression equations based upon calculated values for digit 5 Proximal Interphalangeal Joint Breadth (D5PIP) and digit 5 Distal Interphalangeal Joint Breadth (D5DIP). Separate equations were derived for the two sexes, based on the measurements of 283 men and 554 women.

All equation values are in millimeters.

MALES:	DP5CIRC = 1.22 D5PIP + 0.27 D5DIP + 29.75	SEE=2.50	R^2=.37
FEMALES:	DP5CIRC = 1.16 D5PIP + 0.52 D5DIP + 23.79	SEE=2.11	R^2=.40



50--DIGIT 5 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
5.06	MEAN	1.99
0.00	SE(MEAN)	0.00
0.17	ST DEV	0.07
0.00	SE(SD)	0.00
4.50	MINIMUM	1.77
5.70	MAXIMUM	2.24
COEFF. OF VARIATION		3.4%
SYMMETRY----BETA I		0.17
KURTOSIS----BETA II		3.20
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
4.65	1ST	1.83
4.70	2ND	1.85
4.73	3RD	1.86
4.78	5TH	1.88
4.84	10TH	1.91
4.88	15TH	1.92
4.92	20TH	1.94
4.94	25TH	1.95
4.97	30TH	1.96
4.99	35TH	1.97
5.01	40TH	1.97
5.03	45TH	1.98
5.05	50TH	1.99
5.08	55TH	2.00
5.10	60TH	2.01
5.12	65TH	2.01
5.14	70TH	2.02
5.17	75TH	2.03
5.19	80TH	2.05
5.23	85TH	2.06
5.28	90TH	2.08
5.36	95TH	2.11
5.41	97TH	2.13
5.46	98TH	2.15
5.54	99TH	2.18

MALES

THE SUMMARY STATISTICS

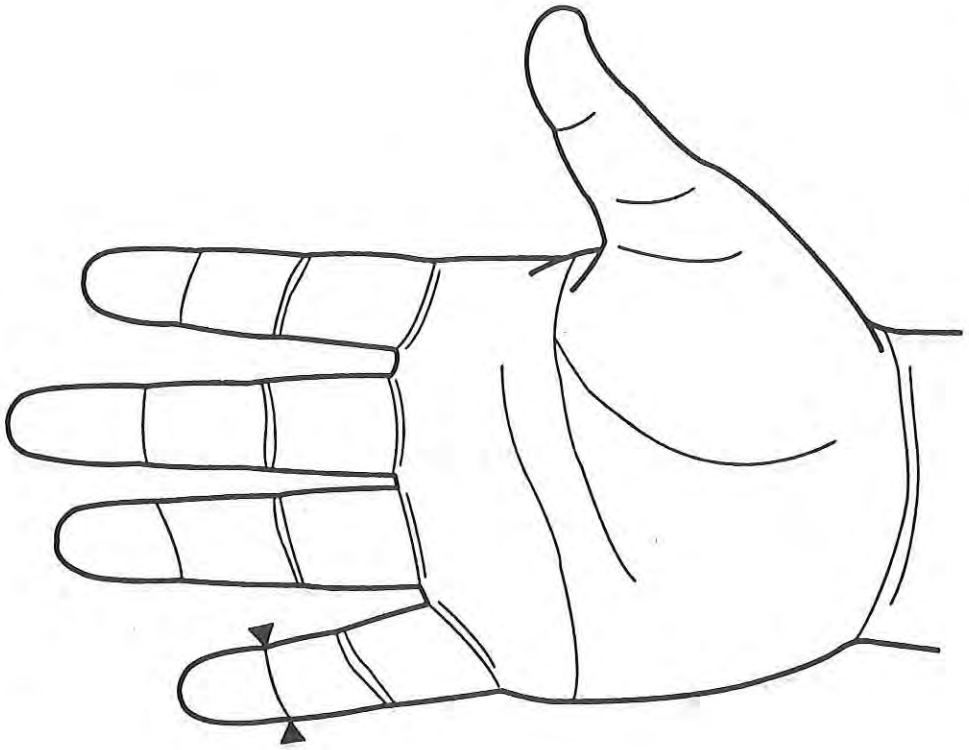
CENTIMETERS		INCHES
5.78	MEAN	2.28
0.01	SE(MEAN)	0.00
0.18	ST DEV	0.07
0.00	SE(SD)	0.00
5.20	MINIMUM	2.05
6.50	MAXIMUM	2.56
COEFF. OF VARIATION		3.2%
SYMMETRY----BETA I		0.20
KURTOSIS----BETA II		3.29
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
5.36	1ST	2.11
5.42	2ND	2.13
5.45	3RD	2.15
5.50	5TH	2.16
5.56	10TH	2.19
5.60	15TH	2.21
5.63	20TH	2.22
5.66	25TH	2.23
5.69	30TH	2.24
5.71	35TH	2.25
5.73	40TH	2.26
5.76	45TH	2.27
5.78	50TH	2.28
5.80	55TH	2.29
5.83	60TH	2.29
5.85	65TH	2.30
5.88	70TH	2.32
5.91	75TH	2.33
5.94	80TH	2.34
5.98	85TH	2.36
6.04	90TH	2.38
6.11	95TH	2.41
6.16	97TH	2.42
6.19	98TH	2.44
6.24	99TH	2.46

51 --DIGIT 5 DISTAL INTERPHALANGEAL JOINT BREADTH

The breadth of the distal interphalangeal joint calculated as the distance between points 31 and 32.



51--DIGIT 5 DISTAL INTERPHALANGEAL JOINT BREADTH

FEMALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
1.47	MEAN	0.58
0.00	SE(MEAN)	0.00
0.11	ST DEV	0.04
0.00	SE(SD)	0.00
1.20	MINIMUM	0.47
1.90	MAXIMUM	0.75
COEFF. OF VARIATION		7.3%
SYMMETRY----BETA I		0.23
KURTOSIS----BETA II		3.20
NUMBER OF SUBJECTS		1304

PERCENTILES CENTIMETERS		INCHES
1.23	1ST	0.48
1.25	2ND	0.49
1.27	3RD	0.50
1.29	5TH	0.51
1.33	10TH	0.52
1.36	15TH	0.53
1.38	20TH	0.54
1.39	25TH	0.55
1.41	30TH	0.56
1.42	35TH	0.56
1.44	40TH	0.57
1.45	45TH	0.57
1.47	50TH	0.58
1.48	55TH	0.58
1.49	60TH	0.59
1.51	65TH	0.59
1.53	70TH	0.60
1.54	75TH	0.61
1.56	80TH	0.61
1.58	85TH	0.62
1.61	90TH	0.64
1.66	95TH	0.65
1.69	97TH	0.66
1.71	98TH	0.67
1.75	99TH	0.69

MALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
1.74	MEAN	0.68
0.00	SE(MEAN)	0.00
0.13	ST DEV	0.05
0.00	SE(SD)	0.00
1.30	MINIMUM	0.51
2.10	MAXIMUM	0.83
COEFF. OF VARIATION		7.4%
SYMMETRY----BETA I		0.09
KURTOSIS----BETA II		3.23
NUMBER OF SUBJECTS		1003

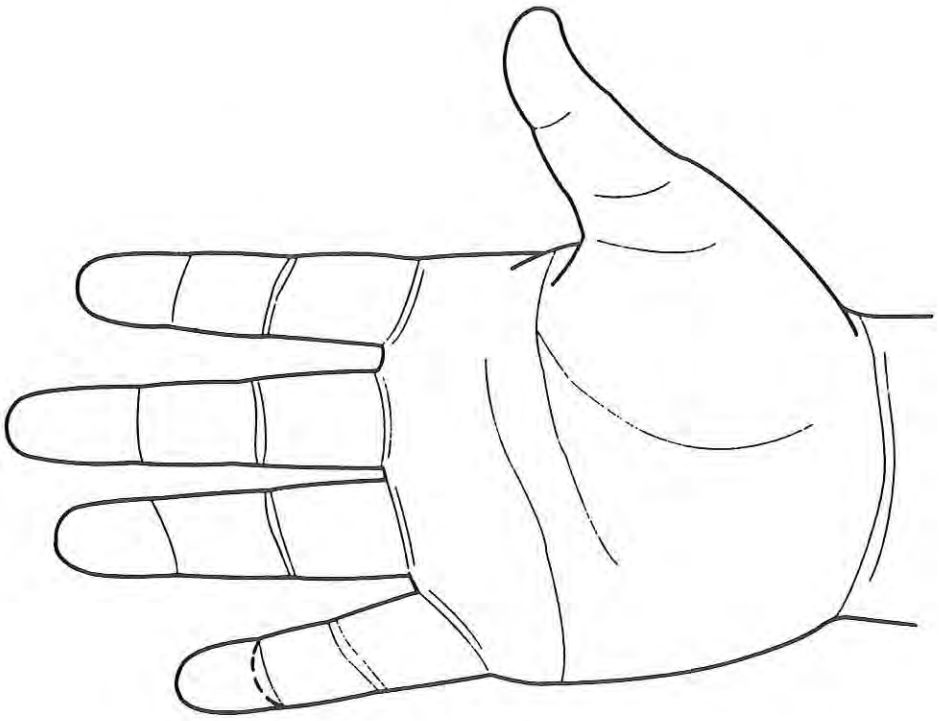
PERCENTILES CENTIMETERS		INCHES
1.42	1ST	0.56
1.47	2ND	0.58
1.49	3RD	0.59
1.53	5TH	0.60
1.57	10TH	0.62
1.61	15TH	0.63
1.63	20TH	0.64
1.65	25TH	0.65
1.67	30TH	0.66
1.68	35TH	0.66
1.70	40TH	0.67
1.72	45TH	0.68
1.73	50TH	0.68
1.75	55TH	0.69
1.76	60TH	0.69
1.78	65TH	0.70
1.80	70TH	0.71
1.82	75TH	0.72
1.84	80TH	0.73
1.87	85TH	0.74
1.91	90TH	0.75
1.96	95TH	0.77
2.00	97TH	0.79
2.02	98TH	0.80
2.06	99TH	0.81

52--DIGIT 5 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Dimension was calculated from multivariate regression equations based upon calculated values for digit 5 Proximal Interphalangeal Joint Breadth (D5PIP) and digit 5 Distal Interphalangeal Joint Breadth (D5DIP). Separate equations were derived for the two sexes, based on the measurements of 283 men and 554 women.

All equation values are in millimeters.

MALES:	D5DCIRC = 0.73 D5PIP + 0.59 D5DIP + 24.93	SEE=2.16	R^2=.36
FEMALES:	D5DCIRC = 0.66 D5PIP + 0.86 D5DIP + 18.97	SEE=1.80	R^2=.41



52--DIGIT 5 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
4.25	MEAN	1.67
0.00	SE(MEAN)	0.00
0.15	ST DEV	0.06
0.00	SE(SD)	0.00
3.80	MINIMUM	1.50
4.90	MAXIMUM	1.93
COEFF. OF VARIATION		3.5%
SYMMETRY----BETA I		0.21
KURTOSIS----BETA II		3.24
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
3.87	1ST	1.53
3.94	2ND	1.55
3.97	3RD	1.56
4.01	5TH	1.58
4.07	10TH	1.60
4.10	15TH	1.62
4.13	20TH	1.63
4.15	25TH	1.63
4.17	30TH	1.64
4.19	35TH	1.65
4.21	40TH	1.66
4.22	45TH	1.66
4.24	50TH	1.67
4.26	55TH	1.68
4.28	60TH	1.68
4.30	65TH	1.69
4.32	70TH	1.70
4.35	75TH	1.71
4.37	80TH	1.72
4.41	85TH	1.74
4.45	90TH	1.75
4.51	95TH	1.78
4.56	97TH	1.79
4.58	98TH	1.80
4.62	99TH	1.82

MALES

THE SUMMARY STATISTICS

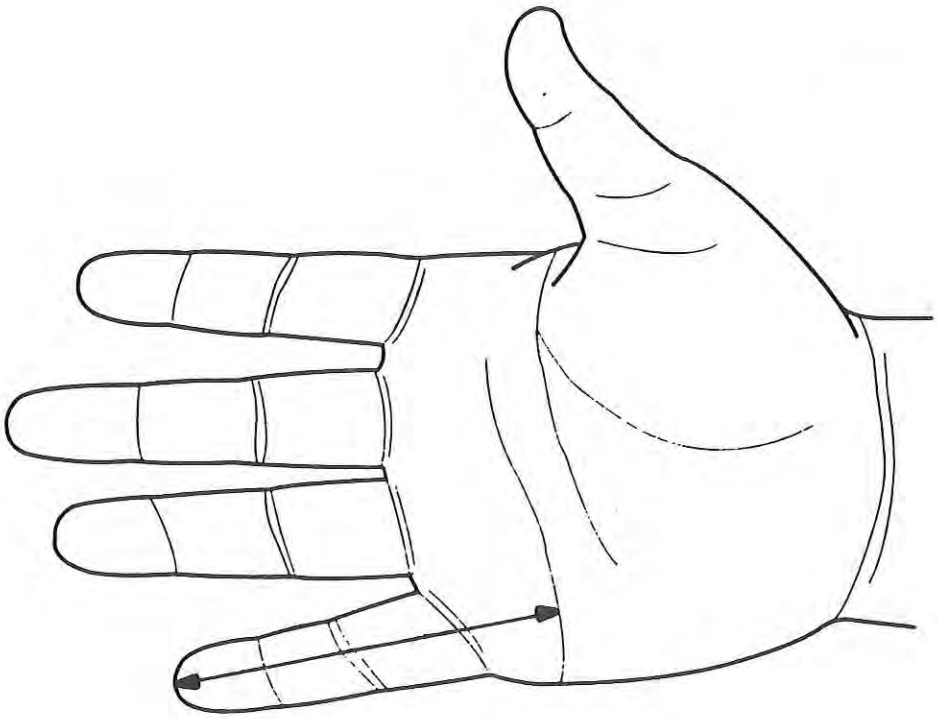
CENTIMETERS		INCHES
4.92	MEAN	1.94
0.00	SE(MEAN)	0.00
0.16	ST DEV	0.06
0.00	SE(SD)	0.00
4.40	MINIMUM	1.73
5.50	MAXIMUM	2.17
COEFF. OF VARIATION		3.2%
SYMMETRY----BETA I		0.18
KURTOSIS----BETA II		3.36
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
4.54	1ST	1.79
4.60	2ND	1.81
4.63	3RD	1.82
4.68	5TH	1.84
4.73	10TH	1.86
4.77	15TH	1.88
4.80	20TH	1.89
4.82	25TH	1.90
4.84	30TH	1.91
4.86	35TH	1.91
4.88	40TH	1.92
4.89	45TH	1.93
4.91	50TH	1.93
4.93	55TH	1.94
4.95	60TH	1.95
4.97	65TH	1.96
4.99	70TH	1.96
5.01	75TH	1.97
5.04	80TH	1.98
5.07	85TH	2.00
5.12	90TH	2.01
5.18	95TH	2.04
5.23	97TH	2.06
5.26	98TH	2.07
5.31	99TH	2.09

53--DIGIT 5 LINK LENGTH

The functional length of the fifth digit calculated as the distance between the tip of the digit (point 37) and the center of rotation of the first metacarpo-phalangeal joint, approximated by the distal transverse palm crease.



53--DIGIT 5 LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
7.76	MEAN	3.05
0.01	SE(MEAN)	0.01
0.54	ST DEV	0.21
0.01	SE(SD)	0.00
6.00	MINIMUM	2.36
9.70	MAXIMUM	3.82

COEFF. OF VARIATION	6.9%
SYMMETRY----BETA I	0.10
KURTOSIS----BETA II	3.01
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
6.59	1ST	2.59
6.70	2ND	2.64
6.78	3RD	2.67
6.89	5TH	2.71
7.07	10TH	2.78
7.20	15TH	2.83
7.30	20TH	2.87
7.39	25TH	2.91
7.47	30TH	2.94
7.54	35TH	2.97
7.61	40TH	3.00
7.68	45TH	3.02
7.75	50TH	3.05
7.82	55TH	3.08
7.89	60TH	3.11
7.96	65TH	3.13
8.03	70TH	3.16
8.12	75TH	3.20
8.21	80TH	3.23
8.31	85TH	3.27
8.45	90TH	3.33
8.65	95TH	3.41
8.79	97TH	3.46
8.89	98TH	3.50
9.05	99TH	3.56

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
8.60	MEAN	3.39
0.02	SE(MEAN)	0.01
0.59	ST DEV	0.23
0.01	SE(SD)	0.01
6.90	MINIMUM	2.72
11.20	MAXIMUM	4.41

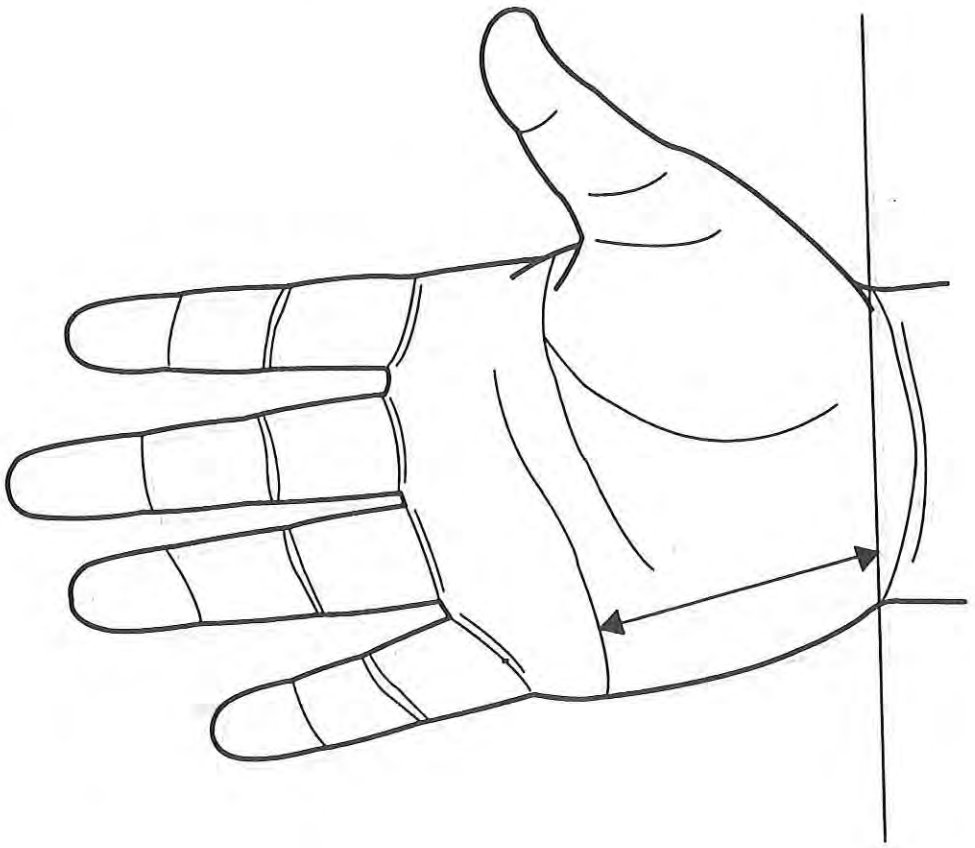
COEFF. OF VARIATION	6.9%
SYMMETRY----BETA I	0.19
KURTOSIS----BETA II	3.27
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
7.23	1ST	2.85
7.40	2ND	2.91
7.51	3RD	2.96
7.65	5TH	3.01
7.85	10TH	3.09
7.99	15TH	3.15
8.10	20TH	3.19
8.20	25TH	3.23
8.28	30TH	3.26
8.36	35TH	3.29
8.43	40TH	3.32
8.51	45TH	3.35
8.58	50TH	3.38
8.66	55TH	3.41
8.73	60TH	3.44
8.81	65TH	3.47
8.90	70TH	3.50
8.99	75TH	3.54
9.09	80TH	3.58
9.21	85TH	3.63
9.37	90TH	3.69
9.60	95TH	3.78
9.75	97TH	3.84
9.86	98TH	3.88
10.02	99TH	3.95

54--DIGIT 5 METACARPAL LINK LENGTH

An approximation of the palmar link length of the fifth digit, calculated as the distance, along the axis of the digit, from the center of rotation of the metacarpo-phalangeal joint (approximated by the distal transverse palm crease) to the wrist crease baseline.



54--DIGIT 5 METACARPAL LINK LENGTH

FEMALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
6.79	MEAN	2.67
0.02	SE(MEAN)	0.01
0.59	ST DEV	0.23
0.01	SE(SD)	0.00
4.80	MINIMUM	1.89
9.00	MAXIMUM	3.54
COEFF. OF VARIATION		8.6%
SYMMETRY----BETA I		0.24
KURTOSIS----BETA II		3.14
NUMBER OF SUBJECTS		1304

PERCENTILES		
CENTIMETERS		INCHES
5.58	1ST	2.20
5.68	2ND	2.24
5.75	3RD	2.27
5.86	5TH	2.31
6.05	10TH	2.38
6.18	15TH	2.43
6.29	20TH	2.48
6.39	25TH	2.51
6.47	30TH	2.55
6.55	35TH	2.58
6.63	40TH	2.61
6.70	45TH	2.64
6.78	50TH	2.67
6.85	55TH	2.70
6.92	60TH	2.73
7.00	65TH	2.76
7.08	70TH	2.79
7.17	75TH	2.82
7.27	80TH	2.86
7.39	85TH	2.91
7.55	90TH	2.97
7.79	95TH	3.07
7.96	97TH	3.13
8.09	98TH	3.19
8.32	99TH	3.27

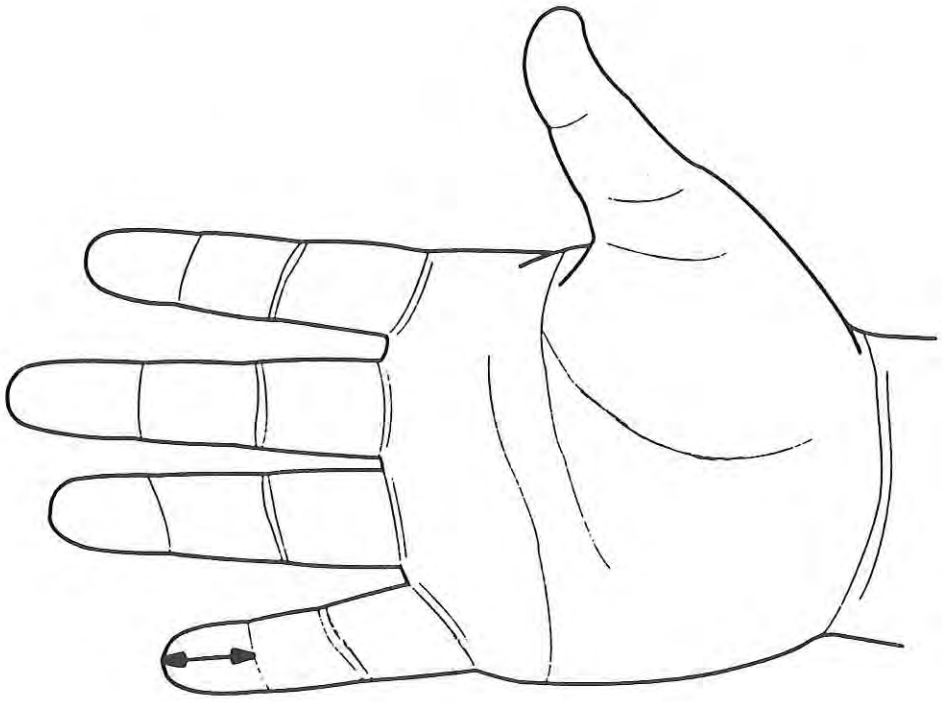
MALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
7.39	MEAN	2.91
0.02	SE(MEAN)	0.01
0.60	ST DEV	0.24
0.01	SE(SD)	0.01
5.70	MINIMUM	2.24
9.40	MAXIMUM	3.70
COEFF. OF VARIATION		8.1%
SYMMETRY----BETA I		0.19
KURTOSIS----BETA II		3.03
NUMBER OF SUBJECTS		1003

PERCENTILES		
CENTIMETERS		INCHES
6.05	1ST	2.38
6.22	2ND	2.45
6.32	3RD	2.49
6.45	5TH	2.54
6.65	10TH	2.62
6.79	15TH	2.67
6.89	20TH	2.71
6.99	25TH	2.75
7.07	30TH	2.78
7.15	35TH	2.81
7.22	40TH	2.84
7.30	45TH	2.87
7.37	50TH	2.90
7.44	55TH	2.93
7.52	60TH	2.96
7.60	65TH	2.99
7.68	70TH	3.03
7.78	75TH	3.06
7.88	80TH	3.10
8.01	85TH	3.15
8.17	90TH	3.22
8.41	95TH	3.31
8.57	97TH	3.38
8.69	98TH	3.42
8.88	99TH	3.50

55--DIGIT 5 DISTAL PHALANX LINK LENGTH

An approximation of the link length of the distal phalanx of the fifth digit, calculated as the distance between the middle of the distal interphalangeal joint (points 31 and 32) to the tip of the digit (point 37).



55---DIGIT 5 DISTAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
2.37	MEAN	0.93
0.01	SE(MEAN)	0.00
0.20	ST DEV	0.08
0.00	SE(SD)	0.00
1.60	MINIMUM	0.63
3.00	MAXIMUM	1.18
COEFF. OF VARIATION		8.6%
SYMMETRY-----BETA I		0.02
KURTOSIS-----BETA II		3.11
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
1.91	1ST	0.75
1.96	2ND	0.77
1.99	3RD	0.78
2.03	5TH	0.80
2.11	10TH	0.83
2.15	15TH	0.85
2.19	20TH	0.86
2.23	25TH	0.88
2.26	30TH	0.89
2.29	35TH	0.90
2.32	40TH	0.91
2.34	45TH	0.92
2.37	50TH	0.93
2.39	55TH	0.94
2.42	60TH	0.95
2.45	65TH	0.96
2.47	70TH	0.97
2.51	75TH	0.99
2.54	80TH	1.00
2.58	85TH	1.02
2.63	90TH	1.04
2.71	95TH	1.07
2.76	97TH	1.08
2.79	98TH	1.10
2.85	99TH	1.12

MALES

THE SUMMARY STATISTICS

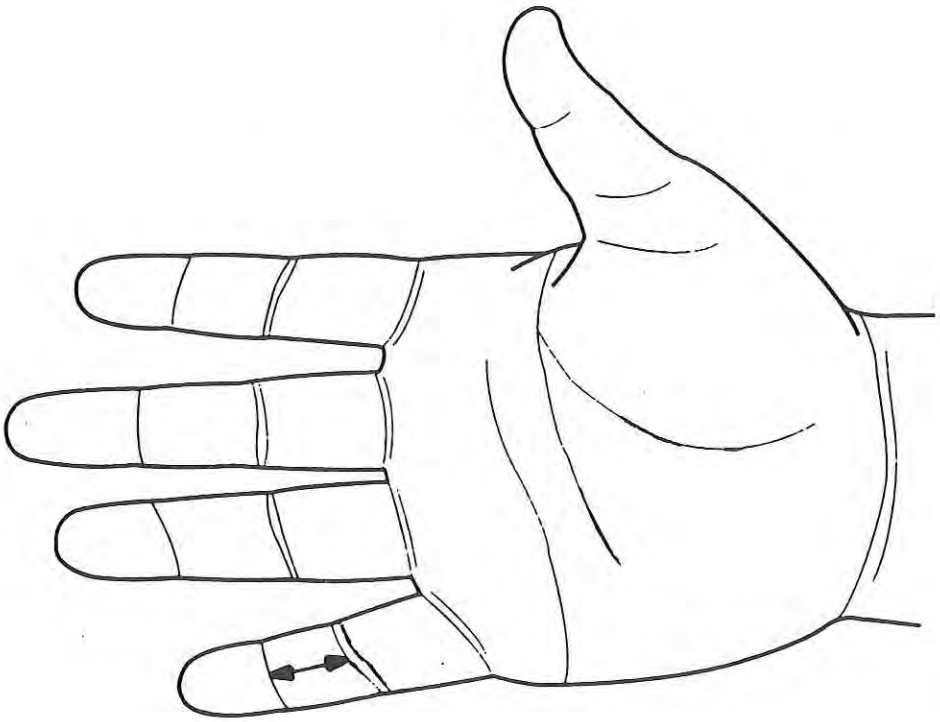
CENTIMETERS		INCHES
2.73	MEAN	1.07
0.01	SE(MEAN)	0.00
0.23	ST DEV	0.09
0.01	SE(SD)	0.00
1.80	MINIMUM	0.71
3.50	MAXIMUM	1.38
COEFF. OF VARIATION		8.5%
SYMMETRY-----BETA I		0.04
KURTOSIS-----BETA II		3.42
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
2.17	1ST	0.86
2.25	2ND	0.89
2.29	3RD	0.90
2.35	5TH	0.93
2.44	10TH	0.96
2.49	15TH	0.98
2.54	20TH	1.00
2.58	25TH	1.01
2.61	30TH	1.03
2.64	35TH	1.04
2.67	40TH	1.05
2.70	45TH	1.06
2.72	50TH	1.07
2.75	55TH	1.08
2.78	60TH	1.09
2.81	65TH	1.11
2.84	70TH	1.12
2.88	75TH	1.13
2.92	80TH	1.15
2.96	85TH	1.17
3.02	90TH	1.19
3.12	95TH	1.23
3.18	97TH	1.25
3.23	98TH	1.27
3.30	99TH	1.30

56--DIGIT 5 MEDIAL PHALANX LINK LENGTH

An approximation of the link length of the medial phalanx of the fifth digit, calculated as the distance between the middle of the distal interphalangeal joint (points 31 and 32) and the middle of the proximal interphalangeal joint (points 23 and 24).



56--DIGIT 5 MEDIAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
1.63	MEAN	0.64
0.01	SE(MEAN)	0.00
0.22	ST DEV	0.09
0.00	SE(SD)	0.00
1.00	MINIMUM	0.39
2.40	MAXIMUM	0.94

COEFF. OF VARIATION	13.2%
SYMMETRY----BETA I	0.28
KURTOSIS----BETA II	3.20
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
1.16	1ST	0.46
1.21	2ND	0.48
1.25	3RD	0.49
1.29	5TH	0.51
1.36	10TH	0.54
1.41	15TH	0.56
1.45	20TH	0.57
1.48	25TH	0.58
1.51	30TH	0.60
1.54	35TH	0.61
1.57	40TH	0.62
1.60	45TH	0.63
1.62	50TH	0.64
1.65	55TH	0.65
1.68	60TH	0.66
1.70	65TH	0.67
1.73	70TH	0.68
1.77	75TH	0.70
1.81	80TH	0.71
1.85	85TH	0.73
1.91	90TH	0.75
2.00	95TH	0.79
2.07	97TH	0.81
2.12	98TH	0.83
2.20	99TH	0.87

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
1.75	MEAN	0.69
0.01	SE(MEAN)	0.00
0.22	ST DEV	0.09
0.00	SE(SD)	0.00
1.10	MINIMUM	0.43
2.50	MAXIMUM	0.98

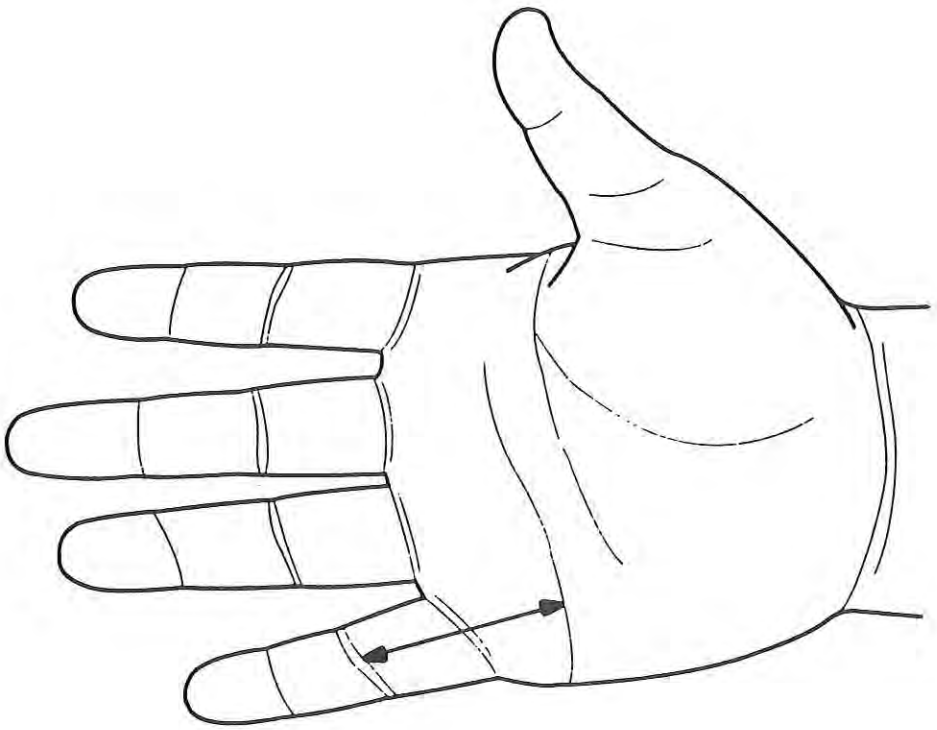
COEFF. OF VARIATION	12.8%
SYMMETRY-----BETA I	0.16
KURTOSIS-----BETA II	3.21
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
1.25	1ST	0.49
1.29	2ND	0.51
1.32	3RD	0.52
1.37	5TH	0.54
1.46	10TH	0.57
1.51	15TH	0.60
1.56	20TH	0.61
1.60	25TH	0.63
1.63	30TH	0.64
1.66	35TH	0.65
1.69	40TH	0.67
1.72	45TH	0.68
1.75	50TH	0.69
1.78	55TH	0.70
1.80	60TH	0.71
1.83	65TH	0.72
1.86	70TH	0.73
1.89	75TH	0.74
1.93	80TH	0.76
1.97	85TH	0.78
2.03	90TH	0.80
2.12	95TH	0.83
2.19	97TH	0.86
2.25	98TH	0.88
2.35	99TH	0.93

57--DIGIT 5 PROXIMAL PHALANX LINK LENGTH

An approximation of the link length of the proximal phalanx of the fifth digit, calculated as the distance between the middle of the proximal interphalangeal joint (points 23 and 24) and the center or rotation of the metacarpo-phalangeal joint (approximated by the distal transverse palm crease), measured along the axis of the digit.



57--DIGIT 5 PROXIMAL PHALANX LINK LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
3.78	MEAN	1.49
0.01	SE(MEAN)	0.00
0.30	ST DEV	0.12
0.01	SE(SD)	0.00
2.80	MINIMUM	1.10
4.90	MAXIMUM	1.93
COEFF. OF VARIATION		8.0%
SYMMETRY----BETA I		0.10
KURTOSIS----BETA II		2.96
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
3.11	1ST	1.22
3.17	2ND	1.25
3.22	3RD	1.27
3.28	5TH	1.29
3.39	10TH	1.33
3.46	15TH	1.36
3.52	20TH	1.39
3.57	25TH	1.41
3.61	30TH	1.42
3.66	35TH	1.44
3.70	40TH	1.46
3.74	45TH	1.47
3.78	50TH	1.49
3.81	55TH	1.50
3.85	60TH	1.52
3.89	65TH	1.53
3.94	70TH	1.55
3.98	75TH	1.57
4.03	80TH	1.59
4.09	85TH	1.61
4.17	90TH	1.64
4.28	95TH	1.68
4.35	97TH	1.71
4.41	98TH	1.73
4.49	99TH	1.77

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
4.15	MEAN	1.63
0.01	SE(MEAN)	0.00
0.36	ST DEV	0.14
0.01	SE(SD)	0.00
3.00	MINIMUM	1.18
5.70	MAXIMUM	2.24
COEFF. OF VARIATION		8.6%
SYMMETRY----BETA I		0.22
KURTOSIS----BETA II		3.17
NUMBER OF SUBJECTS		1003

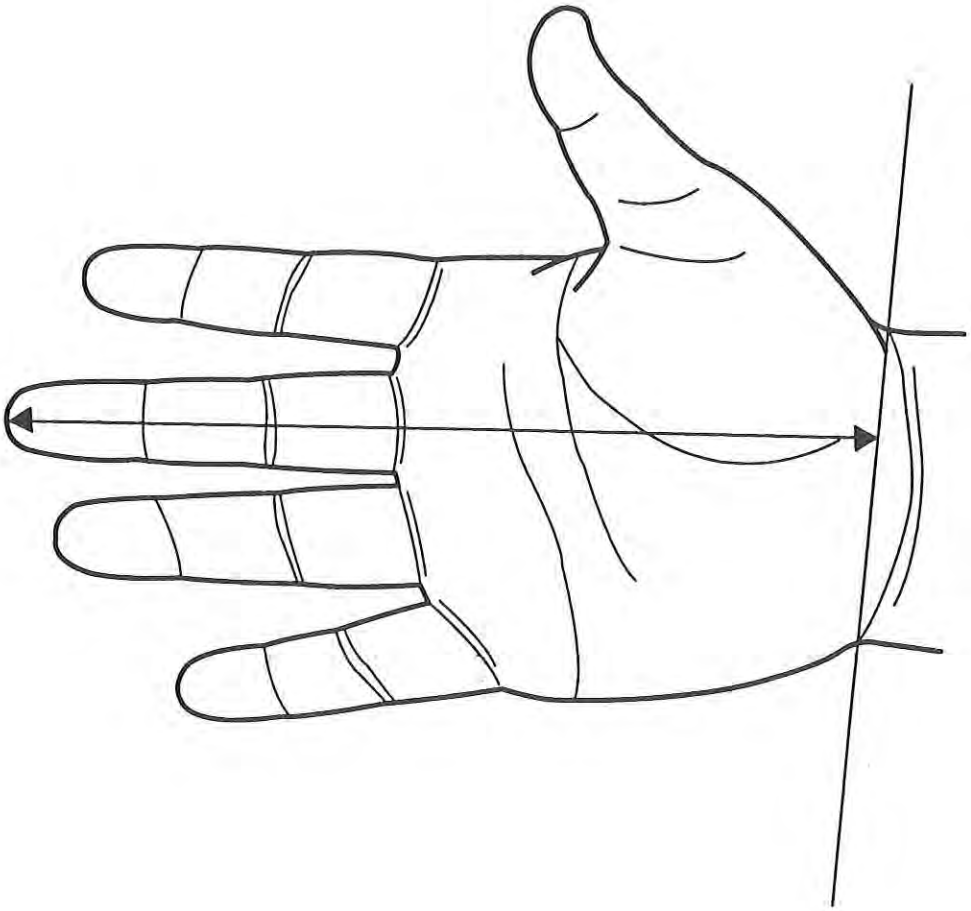
PERCENTILES

CENTIMETERS		INCHES
3.37	1ST	1.33
3.46	2ND	1.36
3.51	3RD	1.38
3.59	5TH	1.41
3.70	10TH	1.46
3.78	15TH	1.49
3.85	20TH	1.52
3.90	25TH	1.54
3.96	30TH	1.56
4.00	35TH	1.58
4.05	40TH	1.59
4.09	45TH	1.61
4.14	50TH	1.63
4.18	55TH	1.65
4.23	60TH	1.67
4.28	65TH	1.68
4.33	70TH	1.70
4.39	75TH	1.73
4.45	80TH	1.75
4.52	85TH	1.78
4.61	90TH	1.82
4.75	95TH	1.87
4.84	97TH	1.91
4.91	98TH	1.93
5.01	99TH	1.97

58--HAND LENGTH FROM DIGITIZER

The longest dimension of the hand, calculated as the perpendicular distance from the tip of digit 3 (point 35) to the wrist crease base line.

Paired t-test comparisons of hand length from the digitizer and from survey measurement show that there is no significance difference between mean values for men (t=.51 df=1002 p=.610), but that there is a significant difference between mean values for women (t=-27.57 df=1303 p=.000). This discrepancy may be due to the digitizing difficulties associated with long finger nails, which are more common among women.



58--HAND LENGTH FROM DIGITIZER

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
17.79	MEAN	7.00
0.03	SE(MEAN)	0.01
0.98	ST DEV	0.39
0.02	SE(SD)	0.01
14.50	MINIMUM	5.71
21.30	MAXIMUM	8.39
COEFF. OF VARIATION		5.5%
SYMMETRY----BETA I		0.19
KURTOSIS----BETA II		3.12
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
15.68	1ST	6.17
15.91	2ND	6.26
16.06	3RD	6.32
16.26	5TH	6.40
16.57	10TH	6.52
16.79	15TH	6.61
16.96	20TH	6.68
17.11	25TH	6.74
17.25	30TH	6.79
17.38	35TH	6.84
17.51	40TH	6.89
17.63	45TH	6.94
17.75	50TH	6.99
17.88	55TH	7.04
18.00	60TH	7.09
18.14	65TH	7.14
18.28	70TH	7.20
18.43	75TH	7.26
18.61	80TH	7.33
18.82	85TH	7.41
19.08	90TH	7.51
19.48	95TH	7.67
19.74	97TH	7.77
19.93	98TH	7.85
20.24	99TH	7.97

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
19.41	MEAN	7.64
0.03	SE(MEAN)	0.01
1.03	ST DEV	0.40
0.02	SE(SD)	0.01
14.40	MINIMUM	5.67
23.10	MAXIMUM	9.09
COEFF. OF VARIATION		5.3%
SYMMETRY----BETA I		0.13
KURTOSIS----BETA II		3.98
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
17.21	1ST	6.78
17.48	2ND	6.88
17.64	3RD	6.94
17.85	5TH	7.03
18.18	10TH	7.16
18.40	15TH	7.24
18.58	20TH	7.31
18.73	25TH	7.37
18.87	30TH	7.43
19.00	35TH	7.48
19.12	40TH	7.53
19.24	45TH	7.58
19.36	50TH	7.62
19.49	55TH	7.67
19.62	60TH	7.72
19.75	65TH	7.78
19.89	70TH	7.83
20.05	75TH	7.89
20.23	80TH	7.97
20.45	85TH	8.05
20.73	90TH	8.16
21.17	95TH	8.33
21.46	97TH	8.45
21.68	98TH	8.54
22.04	99TH	8.68

59--HAND LENGTH MEASURED

The length of the hand from the tip of digit 3 to the stylion landmark. This dimension was measured directly during the survey with a Poech sliding caliper. See Gordon, et al. (1989) pages 190-191.

Paired t-test comparisons of hand length from the digitizer and from survey measurement show that there is no significance difference between mean values for men (t=.51 df=1002 p=.610), but that there is a significant difference between mean values for women (t=-27.57 df=1303 p=.000). This discrepancy may be due to the digitizing difficulties associated with long finger nails, which are more common among women.

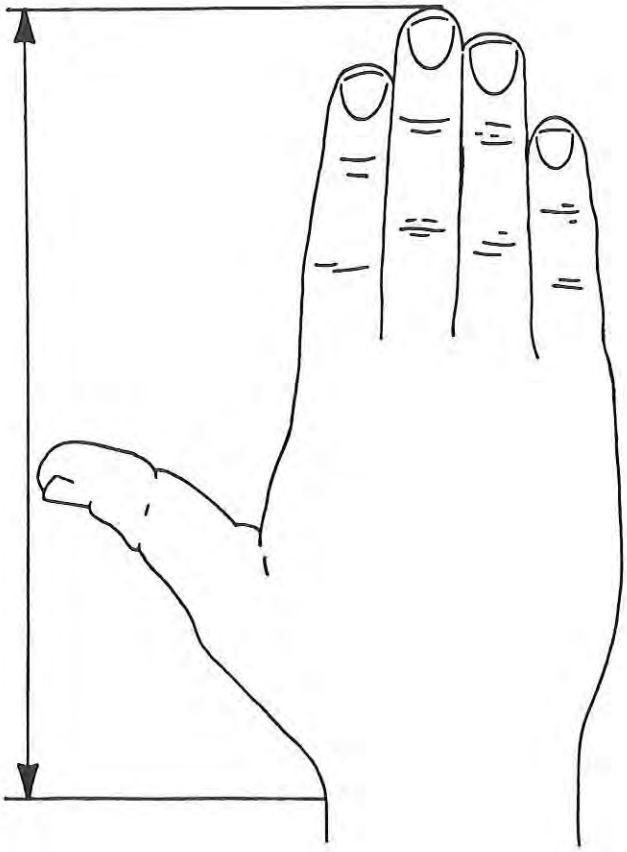




Illustration adapted from Gordon, et al. (1989).

59--HAND LENGTH MEASURED

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
18.07	MEAN	7.11
0.03	SE(MEAN)	0.01
0.98	ST DEV	0.39
0.02	SE(SD)	0.01
14.90	MINIMUM	5.87
21.50	MAXIMUM	8.46
COEFF. OF VARIATION		5.4%
SYMMETRY----BETA I		0.20
KURTOSIS----BETA II		3.15
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
15.94	1ST	6.28
16.18	2ND	6.37
16.33	3RD	6.43
16.53	5TH	6.51
16.85	10TH	6.64
17.07	15TH	6.72
17.25	20TH	6.79
17.40	25TH	6.85
17.54	30TH	6.91
17.67	35TH	6.96
17.79	40TH	7.01
17.91	45TH	7.05
18.03	50TH	7.10
18.15	55TH	7.15
18.28	60TH	7.20
18.41	65TH	7.25
18.55	70TH	7.30
18.70	75TH	7.36
18.87	80TH	7.43
19.08	85TH	7.51
19.35	90TH	7.62
19.76	95TH	7.78
20.04	97TH	7.89
20.26	98TH	7.98
20.61	99TH	8.11

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
19.41	MEAN	7.64
0.03	SE(MEAN)	0.01
0.99	ST DEV	0.39
0.02	SE(SD)	0.01
16.90	MINIMUM	5.65
22.90	MAXIMUM	9.02
COEFF. OF VARIATION		5.1%
SYMMETRY----BETA I		0.32
KURTOSIS----BETA II		3.22
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
17.27	1ST	6.80
17.50	2ND	6.89
17.65	3RD	6.95
17.85	5TH	7.03
18.17	10TH	7.15
18.39	15TH	7.24
18.56	20TH	7.31
18.72	25TH	7.37
18.86	30TH	7.42
18.99	35TH	7.47
19.11	40TH	7.52
19.23	45TH	7.57
19.35	50TH	7.62
19.48	55TH	7.67
19.60	60TH	7.72
19.74	65TH	7.77
19.88	70TH	7.83
20.03	75TH	7.89
20.21	80TH	7.96
20.41	85TH	8.04
20.68	90TH	8.14
21.09	95TH	8.30
21.37	97TH	8.41
21.57	98TH	8.49
21.90	99TH	8.62

60--HAND CIRCUMFERENCE

The circumference of the hand measured with a tape passing over the metacarpale II and metacarpale V landmarks. This dimension was measured directly during the survey. See Gordon, et al. (1989) pages 188-189.

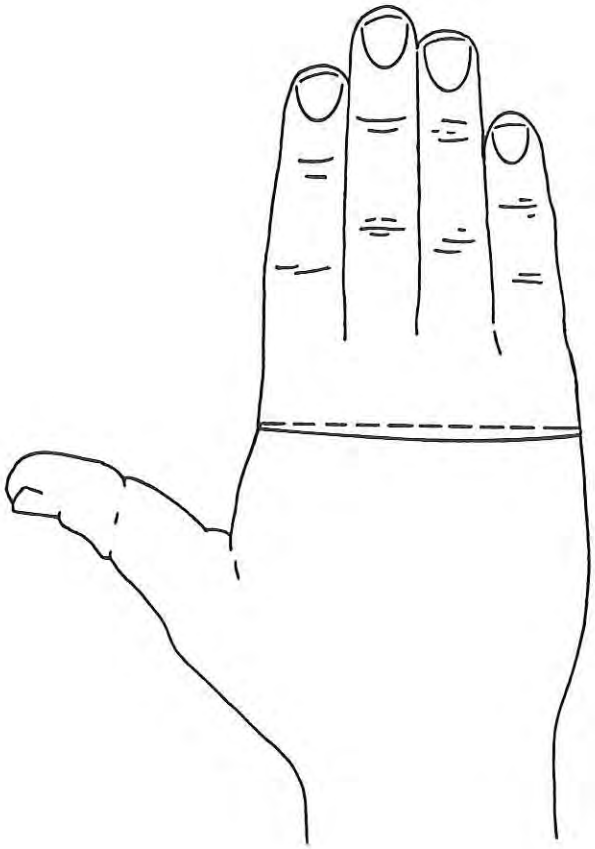




Illustration adapted from Gordon, et al. (1989).

60--HAND CIRCUMFERENCE

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
18.65	MEAN	7.34
0.02	SE(MEAN)	0.01
0.86	ST DEV	0.34
0.02	SE(SD)	0.01
15.80	MINIMUM	6.22
23.00	MAXIMUM	9.06
COEFF. OF VARIATION		4.6%
SYMMETRY----BETA I		0.23
KURTOSIS----BETA II		3.50
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
16.81	1ST	6.62
16.99	2ND	6.69
17.11	3RD	6.74
17.28	5TH	6.80
17.57	10TH	6.92
17.76	15TH	6.99
17.92	20TH	7.06
18.06	25TH	7.11
18.19	30TH	7.16
18.30	35TH	7.21
18.41	40TH	7.25
18.52	45TH	7.29
18.63	50TH	7.33
18.74	55TH	7.38
18.85	60TH	7.42
18.96	65TH	7.46
19.08	70TH	7.51
19.21	75TH	7.56
19.36	80TH	7.62
19.53	85TH	7.69
19.75	90TH	7.78
20.09	95TH	7.91
20.32	97TH	8.00
20.49	98TH	8.07
20.77	99TH	8.18

MALES

THE SUMMARY STATISTICS

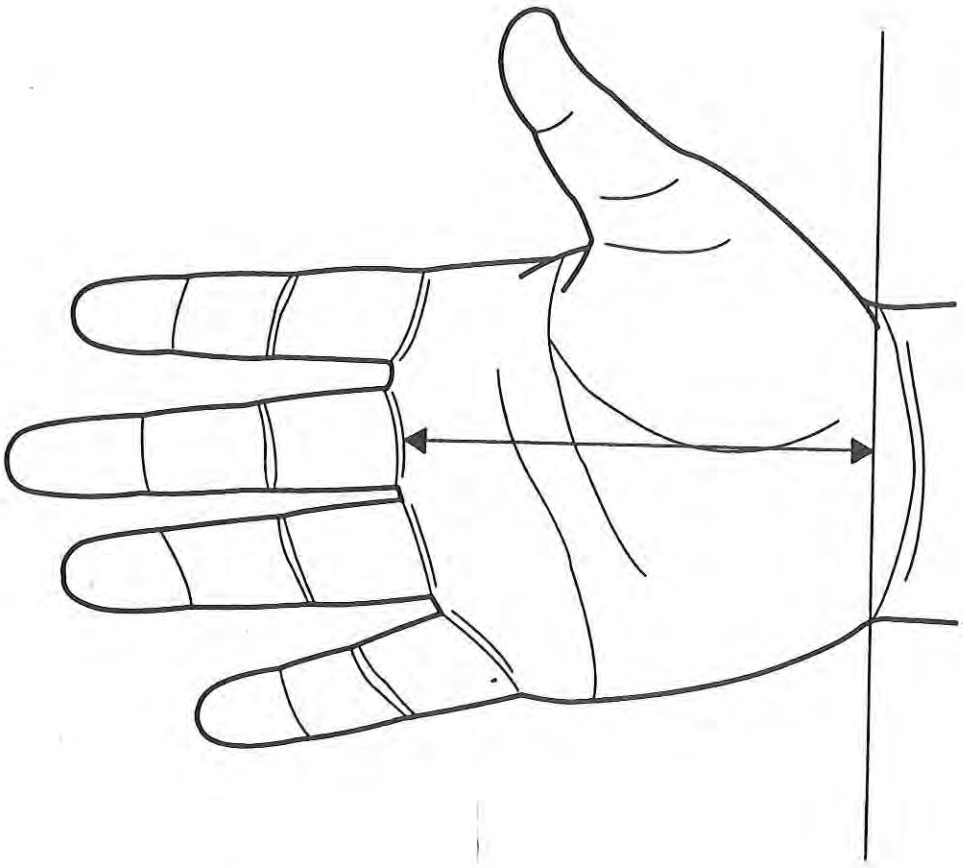
CENTIMETERS		INCHES
21.39	MEAN	8.42
0.03	SE(MEAN)	0.01
0.98	ST DEV	0.39
0.02	SE(SD)	0.01
18.20	MINIMUM	7.17
24.70	MAXIMUM	9.72
COEFF. OF VARIATION		4.6%
SYMMETRY----BETA I		0.19
KURTOSIS----BETA II		3.05
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
19.23	1ST	7.57
19.47	2ND	7.66
19.62	3RD	7.72
19.83	5TH	7.81
20.15	10TH	7.93
20.38	15TH	8.02
20.56	20TH	8.09
20.71	25TH	8.16
20.86	30TH	8.21
20.99	35TH	8.26
21.11	40TH	8.31
21.24	45TH	8.36
21.36	50TH	8.41
21.48	55TH	8.46
21.61	60TH	8.51
21.74	65TH	8.56
21.88	70TH	8.61
22.03	75TH	8.67
22.20	80TH	8.74
22.40	85TH	8.82
22.66	90TH	8.92
23.05	95TH	9.07
23.31	97TH	9.18
23.50	98TH	9.25
23.81	99TH	9.37

61--PALM LENGTH

The longest dimension of the palm, calculated as the perpendicular distance from the base of digit 3 (point 9) to the wrist crease base line.



61--PALM LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
10.09	MEAN	3.97
0.02	SE(MEAN)	0.01
0.57	ST DEV	0.22
0.01	SE(SD)	0.00
7.90	MINIMUM	3.11
12.40	MAXIMUM	4.88
COEFF. OF VARIATION		5.6%
SYMMETRY----BETA I		0.16
KURTOSIS-----BETA II		3.12
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
8.88	1ST	3.50
9.01	2ND	3.55
9.09	3RD	3.58
9.20	5TH	3.62
9.38	10TH	3.69
9.51	15TH	3.74
9.61	20TH	3.78
9.70	25TH	3.82
9.78	30TH	3.85
9.85	35TH	3.88
9.93	40TH	3.91
10.00	45TH	3.94
10.07	50TH	3.96
10.14	55TH	3.99
10.22	60TH	4.02
10.29	65TH	4.05
10.37	70TH	4.08
10.46	75TH	4.12
10.57	80TH	4.16
10.68	85TH	4.21
10.83	90TH	4.26
11.05	95TH	4.35
11.19	97TH	4.41
11.30	98TH	4.45
11.45	99TH	4.51

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
11.05	MEAN	4.35
0.02	SE(MEAN)	0.01
0.60	ST DEV	0.23
0.01	SE(SD)	0.01
8.00	MINIMUM	3.15
13.60	MAXIMUM	5.35
COEFF. OF VARIATION		5.4%
SYMMETRY----BETA I		0.06
KURTOSIS-----BETA II		4.22
NUMBER OF SUBJECTS		1003

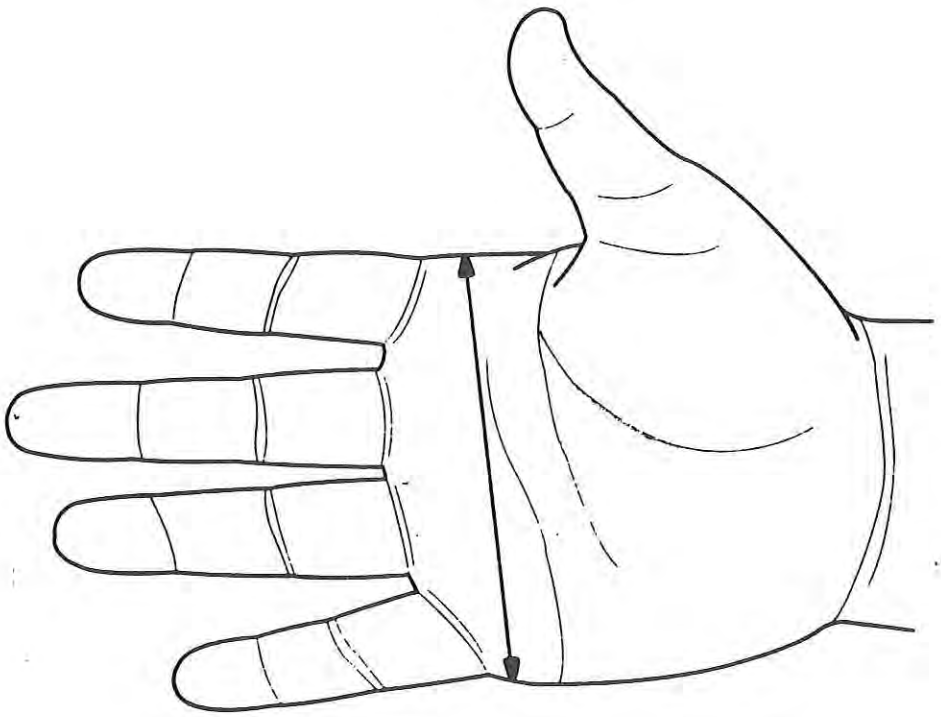
PERCENTILES

CENTIMETERS		INCHES
9.69	1ST	3.81
9.88	2ND	3.89
9.99	3RD	3.93
10.13	5TH	3.99
10.33	10TH	4.07
10.46	15TH	4.12
10.56	20TH	4.16
10.65	25TH	4.19
10.73	30TH	4.22
10.80	35TH	4.25
10.88	40TH	4.28
10.95	45TH	4.31
11.02	50TH	4.34
11.09	55TH	4.37
11.17	60TH	4.40
11.25	65TH	4.43
11.33	70TH	4.46
11.43	75TH	4.50
11.53	80TH	4.54
11.66	85TH	4.59
11.83	90TH	4.66
12.08	95TH	4.75
12.24	97TH	4.82
12.36	98TH	4.87
12.54	99TH	4.94

62--HAND BREADTH FROM DIGITIZER

The widest dimension of the hand, calculated as the distance from the hand's radial edge (point 6) to its ulnar edge (point 14).

Paired t-test comparisons of hand breadth from the digitizer and from survey measurement show that there are significance differences between mean values for men (t=35.24 df=1002 p=.000) and for women (t=46.14 df=1303 p=.000).



62--HAND BREADTH FROM DIGITIZER

FEMALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
8.31	MEAN	3.27
0.01	SE(MEAN)	0.00
0.44	ST DEV	0.17
0.01	SE(SD)	0.00
6.90	MINIMUM	2.72
9.90	MAXIMUM	3.90
COEFF. OF VARIATION		5.3%
SYMMETRY----BETA I		0.04
KURTOSIS-----BETA II		3.24
NUMBER OF SUBJECTS		1304

PERCENTILES CENTIMETERS		INCHES
7.23	1ST	2.85
7.38	2ND	2.91
7.47	3RD	2.94
7.59	5TH	2.99
7.76	10TH	3.05
7.87	15TH	3.10
7.95	20TH	3.13
8.02	25TH	3.16
8.09	30TH	3.18
8.14	35TH	3.21
8.20	40TH	3.23
8.25	45TH	3.25
8.31	50TH	3.27
8.36	55TH	3.29
8.42	60TH	3.31
8.47	65TH	3.34
8.54	70TH	3.36
8.60	75TH	3.39
8.68	80TH	3.42
8.76	85TH	3.45
8.87	90TH	3.49
9.04	95TH	3.56
9.14	97TH	3.60
9.22	98TH	3.63
9.34	99TH	3.68

MALES

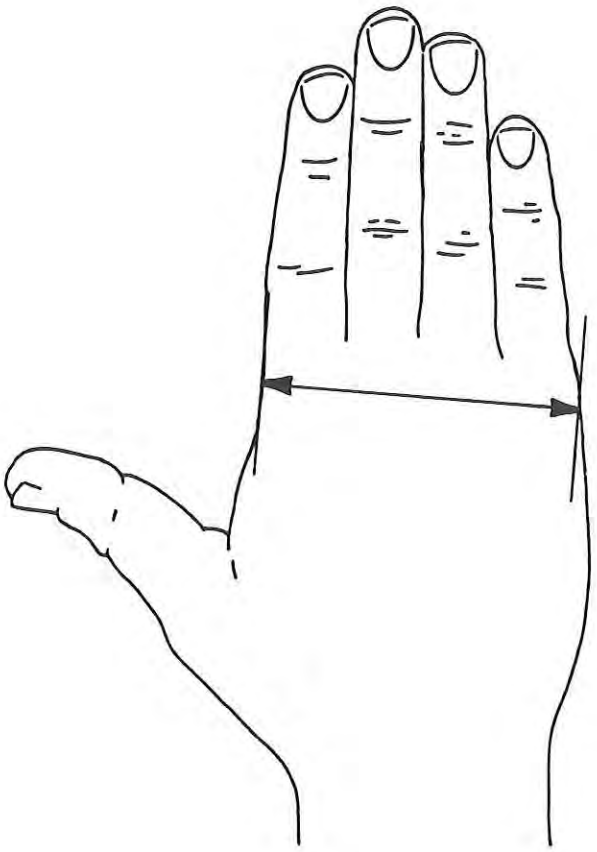
THE SUMMARY STATISTICS CENTIMETERS		INCHES
9.53	MEAN	3.75
0.02	SE(MEAN)	0.01
0.58	ST DEV	0.23
0.01	SE(SD)	0.01
7.90	MINIMUM	3.11
11.70	MAXIMUM	4.61
COEFF. OF VARIATION		6.1%
SYMMETRY----BETA I		0.26
KURTOSIS----BETA II		3.64
NUMBER OF SUBJECTS		1003

PERCENTILES CENTIMETERS		INCHES
8.18	1ST	3.22
8.35	2ND	3.29
8.47	3RD	3.33
8.61	5TH	3.39
8.83	10TH	3.48
8.97	15TH	3.53
9.08	20TH	3.57
9.17	25TH	3.61
9.25	30TH	3.64
9.32	35TH	3.67
9.39	40TH	3.70
9.45	45TH	3.72
9.52	50TH	3.75
9.58	55TH	3.77
9.65	60TH	3.80
9.72	65TH	3.83
9.79	70TH	3.86
9.88	75TH	3.89
9.97	80TH	3.93
10.08	85TH	3.97
10.24	90TH	4.03
10.50	95TH	4.13
10.69	97TH	4.21
10.84	98TH	4.27
11.11	99TH	4.37

63--HAND BREADTH MEASURED

The breadth of the hand measured between the metacarpale II and metacarpale V landmarks. This dimension was measured directly during the survey using a sliding caliper. See Gordon, et al. (1989) pages 186-187.

Paired t-test comparisons of hand breadth from the digitizer and from survey measurement show that there are significance differences between mean values for men (t=35.24 df=1002 p=.000) and for women (t=46.14 df=1303 p=.000).



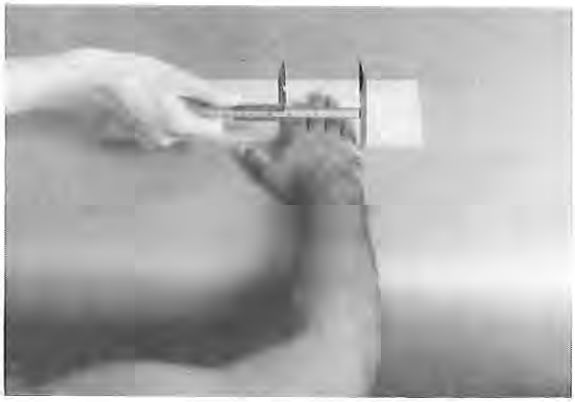


Illustration adapted from Gordon, et al. (1989).

63--HAND BREADTH MEASURED

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
7.95	MEAN	3.13
0.01	SE(MEAN)	0.00
0.38	ST DEV	0.15
0.01	SE(SD)	0.00
6.60	MINIMUM	2.60
9.80	MAXIMUM	3.86
COEFF. OF VARIATION		4.8%
SYMMETRY----BETA I		0.18
KURTOSIS----BETA II		3.51
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
7.13	1ST	2.81
7.22	2ND	2.84
7.27	3RD	2.86
7.35	5TH	2.90
7.48	10TH	2.94
7.56	15TH	2.98
7.63	20TH	3.01
7.69	25TH	3.03
7.75	30TH	3.05
7.80	35TH	3.07
7.85	40TH	3.09
7.90	45TH	3.11
7.94	50TH	3.13
7.99	55TH	3.15
8.04	60TH	3.17
8.09	65TH	3.19
8.15	70TH	3.21
8.21	75TH	3.23
8.27	80TH	3.26
8.35	85TH	3.29
8.45	90TH	3.33
8.59	95TH	3.38
8.68	97TH	3.42
8.75	98TH	3.44
8.85	99TH	3.48

MALES

THE SUMMARY STATISTICS

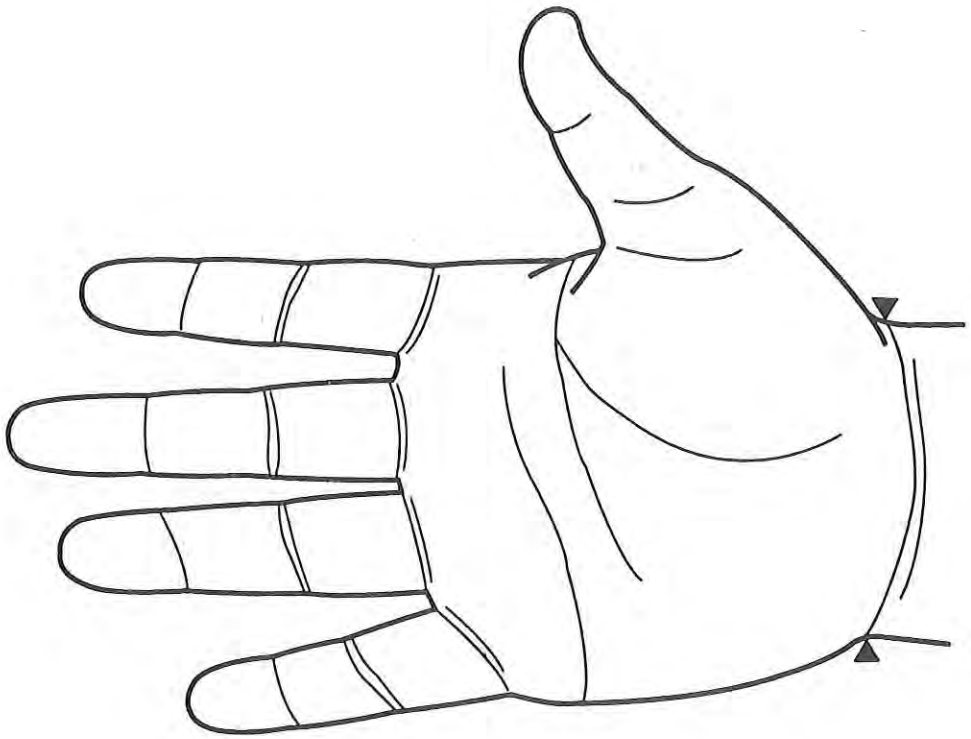
CENTIMETERS		INCHES
9.04	MEAN	3.56
0.01	SE(MEAN)	0.01
0.42	ST DEV	0.17
0.01	SE(SD)	0.00
7.90	MINIMUM	3.11
10.60	MAXIMUM	4.17
COEFF. OF VARIATION		4.7%
SYMMETRY----BETA I		0.17
KURTOSIS----BETA II		2.92
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
8.10	1ST	3.19
8.20	2ND	3.23
8.27	3RD	3.26
8.36	5TH	3.29
8.50	10TH	3.35
8.59	15TH	3.38
8.67	20TH	3.41
8.74	25TH	3.44
8.80	30TH	3.47
8.86	35TH	3.49
8.91	40TH	3.51
8.97	45TH	3.53
9.02	50TH	3.55
9.08	55TH	3.57
9.13	60TH	3.60
9.19	65TH	3.62
9.25	70TH	3.64
9.32	75TH	3.67
9.40	80TH	3.70
9.49	85TH	3.73
9.60	90TH	3.78
9.76	95TH	3.84
9.87	97TH	3.88
9.94	98TH	3.91
10.05	99TH	3.96

64--WRIST BREADTH

The breadth of the wrist calculated as the distance between the ulnar projection (point 2) and the radial projection (point 38) of the distal wrist crease.



64--WRIST BREADTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
5.70	MEAN	2.24
0.01	SE(MEAN)	0.00
0.34	ST DEV	0.14
0.01	SE(SD)	0.00
4.60	MINIMUM	1.81
7.00	MAXIMUM	2.76

COEFF. OF VARIATION	6.0%
SYMMETRY----BETA I	0.22
KURTOSIS----BETA II	3.36
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
4.93	1ST	1.94
5.02	2ND	1.97
5.07	3RD	2.00
5.15	5TH	2.03
5.27	10TH	2.07
5.35	15TH	2.10
5.41	20TH	2.13
5.46	25TH	2.15
5.51	30TH	2.17
5.56	35TH	2.19
5.60	40TH	2.21
5.64	45TH	2.22
5.69	50TH	2.24
5.73	55TH	2.26
5.77	60TH	2.27
5.82	65TH	2.29
5.86	70TH	2.31
5.91	75TH	2.33
5.97	80TH	2.35
6.04	85TH	2.38
6.13	90TH	2.41
6.27	95TH	2.47
6.36	97TH	2.50
6.43	98TH	2.53
6.54	99TH	2.58

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
6.58	MEAN	2.59
0.01	SE(MEAN)	0.01
0.45	ST DEV	0.18
0.01	SE(SD)	0.00
5.30	MINIMUM	2.09
8.20	MAXIMUM	3.23

COEFF. OF VARIATION	6.8%
SYMMETRY----BETA I	0.22
KURTOSIS----BETA II	3.29
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
5.53	1ST	2.18
5.67	2ND	2.23
5.76	3RD	2.27
5.87	5TH	2.31
6.03	10TH	2.37
6.13	15TH	2.41
6.21	20TH	2.45
6.28	25TH	2.47
6.34	30TH	2.50
6.40	35TH	2.52
6.45	40TH	2.54
6.51	45TH	2.56
6.56	50TH	2.58
6.62	55TH	2.60
6.67	60TH	2.63
6.73	65TH	2.65
6.79	70TH	2.67
6.86	75TH	2.70
6.94	80TH	2.73
7.04	85TH	2.77
7.16	90TH	2.82
7.35	95TH	2.89
7.48	97TH	2.94
7.57	98TH	2.98
7.72	99TH	3.04

65--WRIST CIRCUMFERENCE

The circumference of the wrist perpendicular to the long axis of the forearm measured with the tape passing over the stylion landmark. This dimension was measured directly during the survey. See Gordon, et al. (1989) pages 324-325.

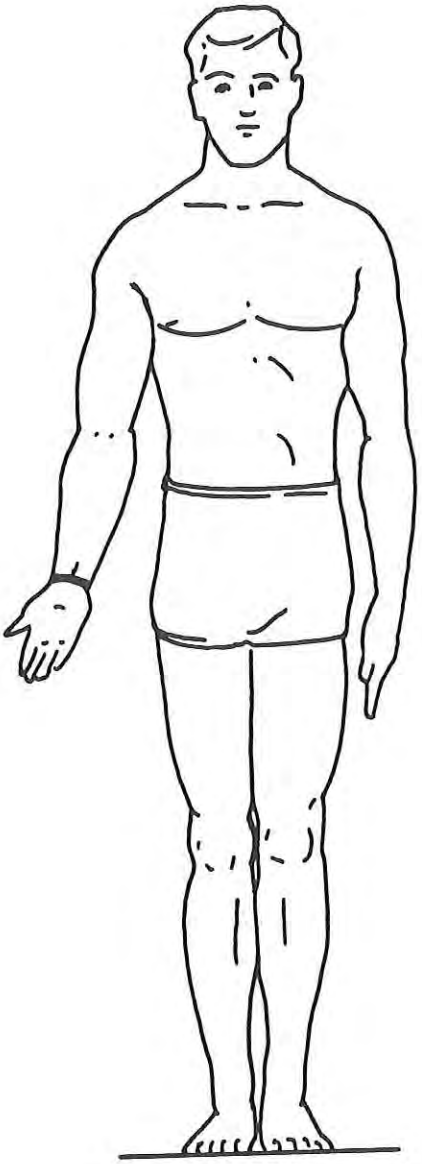




Illustration adapted from Gordon, et al. (1989).

65--WRIST CIRCUMFERENCE

FEMALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
15.14	MEAN	5.96
0.02	SE(MEAN)	0.01
0.69	ST DEV	0.27
0.01	SE(SD)	0.01
13.00	MINIMUM	5.12
17.40	MAXIMUM	6.85
COEFF. OF VARIATION		4.6%
SYMMETRY----BETA I		0.23
KURTOSIS----BETA II		3.06
NUMBER OF SUBJECTS		1304

PERCENTILES		
CENTIMETERS		INCHES
13.62	1ST	5.36
13.80	2ND	5.43
13.91	3RD	5.48
14.05	5TH	5.53
14.28	10TH	5.62
14.43	15TH	5.68
14.55	20TH	5.73
14.66	25TH	5.77
14.76	30TH	5.81
14.85	35TH	5.85
14.94	40TH	5.88
15.02	45TH	5.91
15.11	50TH	5.95
15.19	55TH	5.98
15.28	60TH	6.02
15.38	65TH	6.05
15.48	70TH	6.09
15.59	75TH	6.14
15.71	80TH	6.19
15.86	85TH	6.24
16.04	90TH	6.32
16.32	95TH	6.43
16.50	97TH	6.50
16.64	98TH	6.55
16.85	99TH	6.63

MALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
17.43	MEAN	6.86
0.03	SE(MEAN)	0.01
0.82	ST DEV	0.32
0.02	SE(SD)	0.01
14.30	MINIMUM	5.63
20.40	MAXIMUM	8.03
COEFF. OF VARIATION		4.7%
SYMMETRY----BETA I		0.19
KURTOSIS----BETA II		3.02
NUMBER OF SUBJECTS		1003

PERCENTILES		
CENTIMETERS		INCHES
15.72	1ST	6.19
15.90	2ND	6.26
16.01	3RD	6.30
16.17	5TH	6.36
16.42	10TH	6.46
16.59	15TH	6.53
16.74	20TH	6.59
16.86	25TH	6.64
16.98	30TH	6.68
17.09	35TH	6.73
17.19	40TH	6.77
17.30	45TH	6.81
17.40	50TH	6.85
17.51	55TH	6.89
17.62	60TH	6.94
17.73	65TH	6.98
17.85	70TH	7.03
17.98	75TH	7.08
18.13	80TH	7.14
18.30	85TH	7.20
18.52	90TH	7.29
18.84	95TH	7.42
19.04	97TH	7.50
19.19	98TH	7.55
19.41	99TH	7.64

66--WRIST-CENTER OF GRIP LENGTH

The horizontal distance from the stylion landmark to the center of a dowel gripped in the hand. This dimension was measured directly during the survey with a Poech caliper. See Gordon, et al. (1989) pages 322-323.

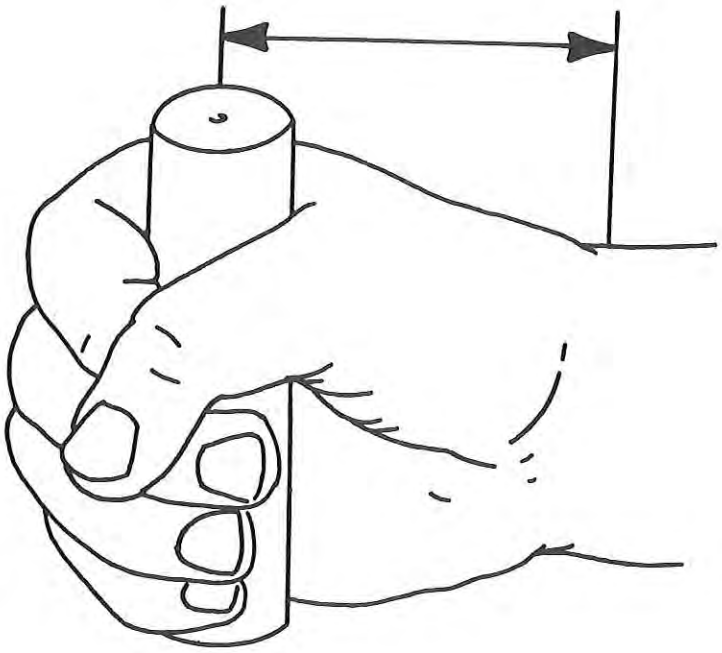




Illustration adapted from Gordon, et al. (1989).

66--WRIST TO CENTER OF GRIP LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
6.62	MEAN	2.61
0.01	SE(MEAN)	0.01
0.49	ST DEV	0.19
0.01	SE(SD)	0.00
5.20	MINIMUM	2.05
8.30	MAXIMUM	3.27
COEFF. OF VARIATION		7.4%
SYMMETRY----BETA I		0.26
KURTOSIS----BETA II		2.90
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
5.59	1ST	2.20
5.70	2ND	2.25
5.78	3RD	2.27
5.87	5TH	2.31
6.02	10TH	2.37
6.12	15TH	2.41
6.20	20TH	2.44
6.27	25TH	2.47
6.34	30TH	2.50
6.41	35TH	2.52
6.47	40TH	2.55
6.53	45TH	2.57
6.59	50TH	2.59
6.65	55TH	2.62
6.72	60TH	2.65
6.79	65TH	2.67
6.86	70TH	2.70
6.94	75TH	2.73
7.03	80TH	2.77
7.14	85TH	2.81
7.28	90TH	2.87
7.49	95TH	2.95
7.62	97TH	3.00
7.71	98TH	3.04
7.85	99TH	3.09

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
6.98	MEAN	2.75
0.02	SE(MEAN)	0.01
0.48	ST DEV	0.19
0.01	SE(SD)	0.00
5.80	MINIMUM	2.28
8.70	MAXIMUM	3.43
COEFF. OF VARIATION		6.9%
SYMMETRY----BETA I		0.41
KURTOSIS----BETA II		3.06
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
6.03	1ST	2.38
6.11	2ND	2.41
6.17	3RD	2.43
6.25	5TH	2.46
6.39	10TH	2.51
6.48	15TH	2.55
6.56	20TH	2.58
6.64	25TH	2.61
6.70	30TH	2.64
6.77	35TH	2.66
6.83	40TH	2.69
6.89	45TH	2.71
6.95	50TH	2.73
7.01	55TH	2.76
7.07	60TH	2.78
7.14	65TH	2.81
7.21	70TH	2.84
7.29	75TH	2.87
7.38	80TH	2.90
7.48	85TH	2.95
7.62	90TH	3.00
7.83	95TH	3.08
7.98	97TH	3.14
8.09	98TH	3.18
8.26	99TH	3.25

67--WRIST-INDEX FINGER LENGTH

The distance between the stylion landmark and the tip of digit 2. This dimension was measured directly during the survey with a Poech caliper. See Gordon, et al. (1989) pages 330-331.

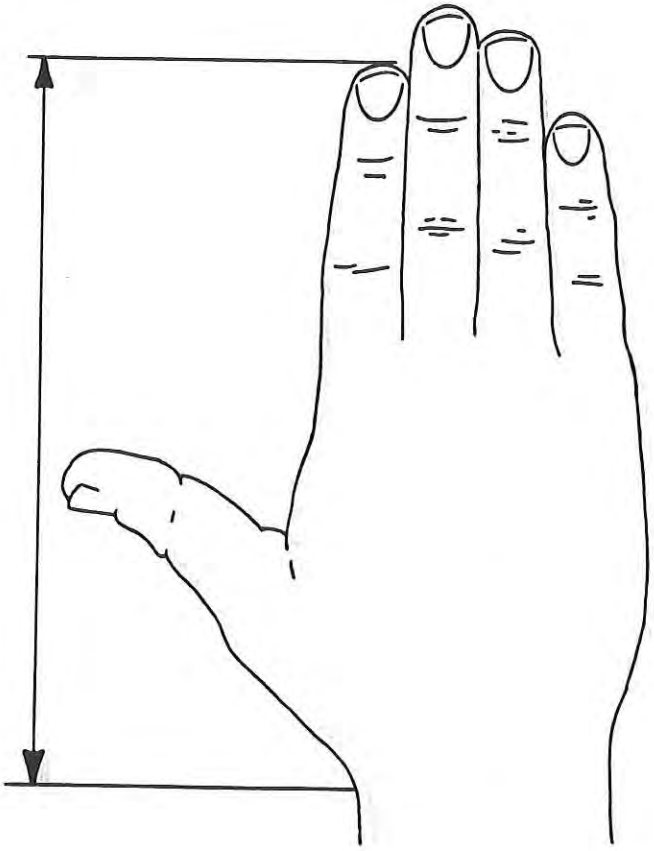




Illustration adapted from Gordon, et al. (1989).

67--WRIST-INDEX FINGER LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
16.95	MEAN	6.67
0.02	SE(MEAN)	0.01
0.90	ST DEV	0.35
0.02	SE(SD)	0.01
14.10	MINIMUM	5.55
20.20	MAXIMUM	7.95
COEFF. OF VARIATION		5.3%
SYMMETRY----BETA I		0.14
KURTOSIS----BETA II		3.15
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
14.91	1ST	5.87
15.14	2ND	5.96
15.28	3RD	6.02
15.49	5TH	6.10
15.81	10TH	6.22
16.02	15TH	6.31
16.19	20TH	6.38
16.34	25TH	6.43
16.47	30TH	6.49
16.59	35TH	6.53
16.71	40TH	6.58
16.82	45TH	6.62
16.93	50TH	6.67
17.04	55TH	6.71
17.15	60TH	6.75
17.27	65TH	6.80
17.39	70TH	6.85
17.53	75TH	6.90
17.68	80TH	6.96
17.86	85TH	7.03
18.10	90TH	7.12
18.46	95TH	7.27
18.72	97TH	7.37
18.91	98TH	7.45
19.24	99TH	7.58

MALES

THE SUMMARY STATISTICS

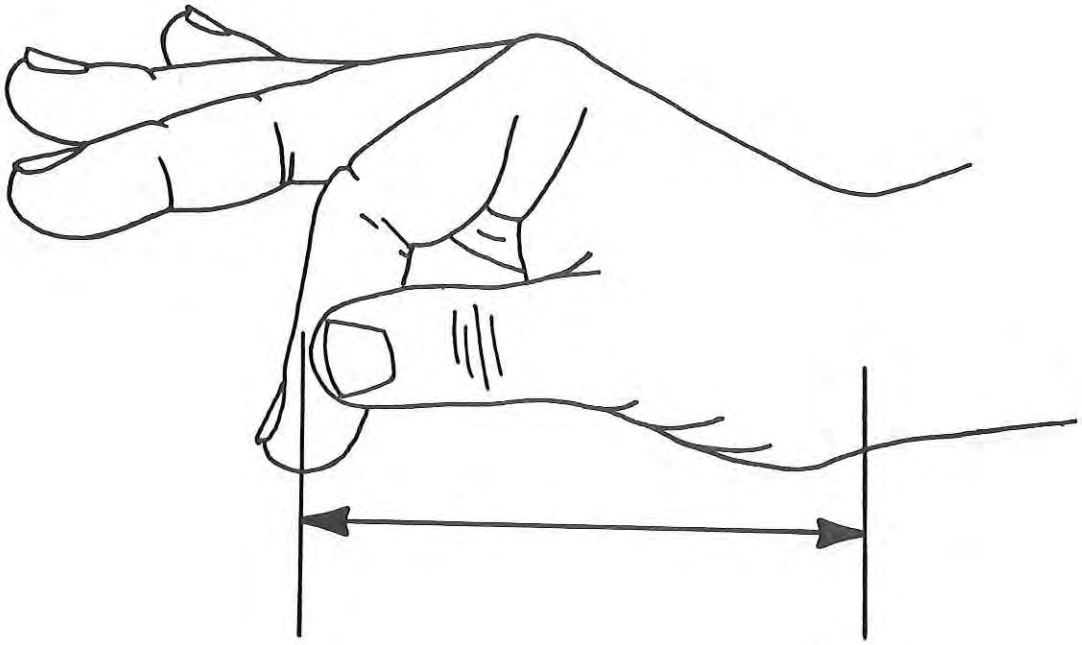
CENTIMETERS		INCHES
18.10	MEAN	7.13
0.03	SE(MEAN)	0.01
0.91	ST DEV	0.36
0.02	SE(SD)	0.01
15.80	MINIMUM	6.22
21.60	MAXIMUM	8.50
COEFF. OF VARIATION		5.0%
SYMMETRY----BETA I		0.24
KURTOSIS----BETA II		3.10
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
16.10	1ST	6.34
16.32	2ND	6.43
16.46	3RD	6.48
16.66	5TH	6.56
16.96	10TH	6.68
17.16	15TH	6.76
17.33	20TH	6.82
17.47	25TH	6.88
17.60	30TH	6.93
17.73	35TH	6.98
17.84	40TH	7.03
17.96	45TH	7.07
18.07	50TH	7.12
18.19	55TH	7.16
18.31	60TH	7.21
18.43	65TH	7.26
18.56	70TH	7.31
18.70	75TH	7.36
18.86	80TH	7.43
19.05	85TH	7.50
19.29	90TH	7.60
19.65	95TH	7.74
19.89	97TH	7.83
20.06	98TH	7.90
20.33	99TH	8.00

68--WRIST-THUMBTIP LENGTH

The distance between the stylion landmark and the tip of digit 1. This dimension was measured directly during the survey with a Poech caliper. See Gordon, et al. (1989) pages 332-333.



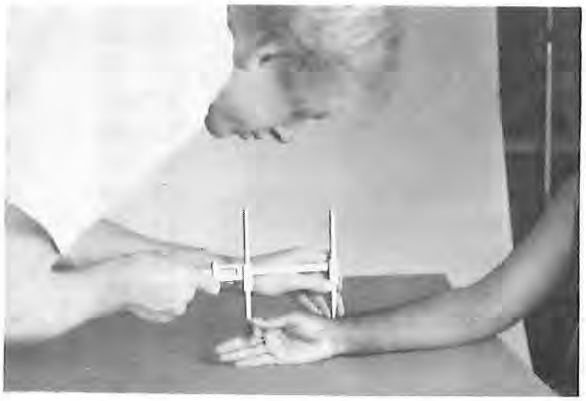


Illustration adapted from Gordon, et al. (1989).

68--WRIST-THUMBTIP LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
11.77	MEAN	4.63
0.02	SE(MEAN)	0.01
0.68	ST DEV	0.27
0.01	SE(SD)	0.01
9.60	MINIMUM	3.78
14.20	MAXIMUM	5.59
COEFF. OF VARIATION		5.7%
SYMMETRY----BETA I		0.14
KURTOSIS----BETA II		3.02
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
10.29	1ST	4.05
10.45	2ND	4.11
10.55	3RD	4.15
10.69	5TH	4.21
10.92	10TH	4.30
11.07	15TH	4.36
11.19	20TH	4.41
11.30	25TH	4.45
11.40	30TH	4.49
11.49	35TH	4.52
11.58	40TH	4.56
11.67	45TH	4.59
11.75	50TH	4.63
11.84	55TH	4.66
11.93	60TH	4.70
12.02	65TH	4.73
12.12	70TH	4.77
12.23	75TH	4.81
12.35	80TH	4.86
12.49	85TH	4.92
12.67	90TH	4.99
12.92	95TH	5.09
13.09	97TH	5.15
13.20	98TH	5.20
13.38	99TH	5.27

MALES

THE SUMMARY STATISTICS

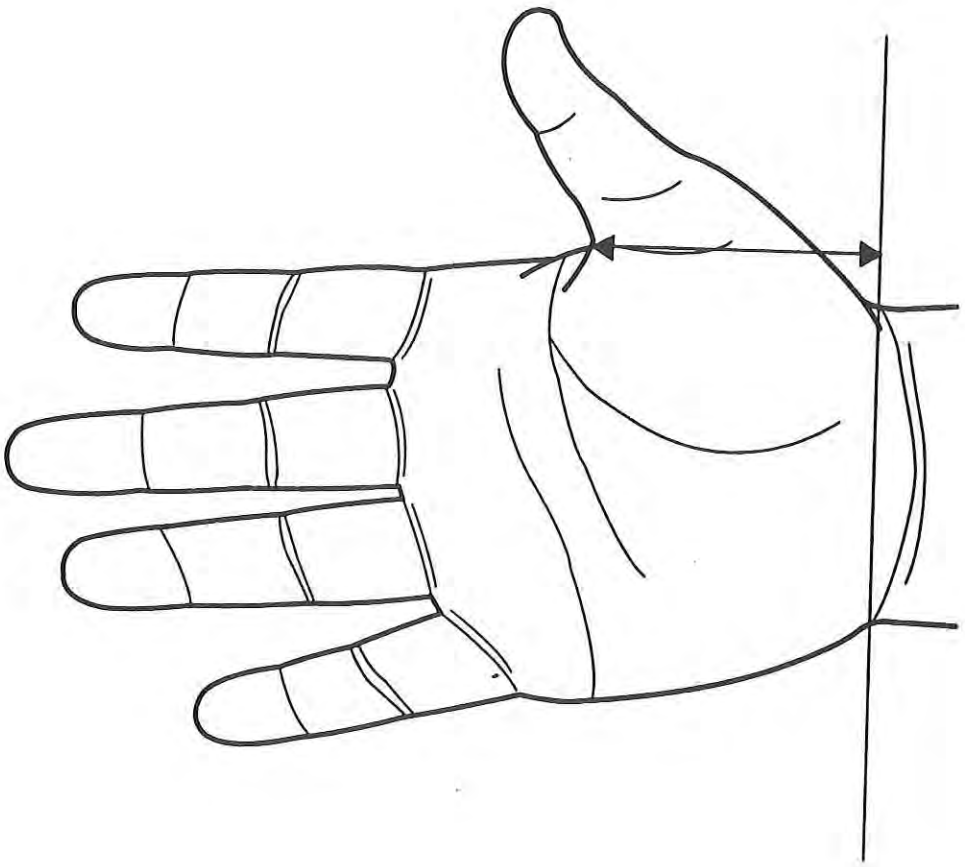
CENTIMETERS		INCHES
12.45	MEAN	4.90
0.02	SE(MEAN)	0.01
0.68	ST DEV	0.27
0.02	SE(SD)	0.01
10.60	MINIMUM	4.17
14.80	MAXIMUM	5.83
COEFF. OF VARIATION		5.5%
SYMMETRY----BETA I		0.22
KURTOSIS----BETA II		3.14
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
10.93	1ST	4.30
11.10	2ND	4.37
11.21	3RD	4.41
11.36	5TH	4.47
11.59	10TH	4.56
11.75	15TH	4.63
11.88	20TH	4.68
11.98	25TH	4.72
12.08	30TH	4.76
12.17	35TH	4.79
12.26	40TH	4.83
12.34	45TH	4.86
12.43	50TH	4.89
12.51	55TH	4.92
12.60	60TH	4.96
12.68	65TH	4.99
12.78	70TH	5.03
12.88	75TH	5.07
13.00	80TH	5.12
13.14	85TH	5.17
13.33	90TH	5.25
13.61	95TH	5.36
13.80	97TH	5.43
13.95	98TH	5.49
14.19	99TH	5.59

69--CROTCH 1 HEIGHT

The perpendicular distance from the crotch between digits 1 and 2 (point 5) to the wrist crease base line.



69--CROTCH 1 HEIGHT

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
6.28	MEAN	2.47
0.01	SE(MEAN)	0.01
0.46	ST DEV	0.18
0.01	SE(SD)	0.00
4.90	MINIMUM	1.93
8.00	MAXIMUM	3.15
COEFF. OF VARIATION		7.3%
SYMMETRY----BETA I		0.20
KURTOSIS----BETA II		2.99
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
5.26	1ST	2.07
5.38	2ND	2.12
5.46	3RD	2.15
5.56	5TH	2.19
5.71	10TH	2.25
5.81	15TH	2.29
5.89	20TH	2.32
5.96	25TH	2.35
6.02	30TH	2.37
6.09	35TH	2.40
6.14	40TH	2.42
6.20	45TH	2.44
6.26	50TH	2.46
6.32	55TH	2.49
6.38	60TH	2.51
6.44	65TH	2.54
6.51	70TH	2.56
6.58	75TH	2.59
6.67	80TH	2.62
6.76	85TH	2.66
6.89	90TH	2.71
7.07	95TH	2.78
7.18	97TH	2.83
7.26	98TH	2.86
7.37	99TH	2.90

MALES

THE SUMMARY STATISTICS

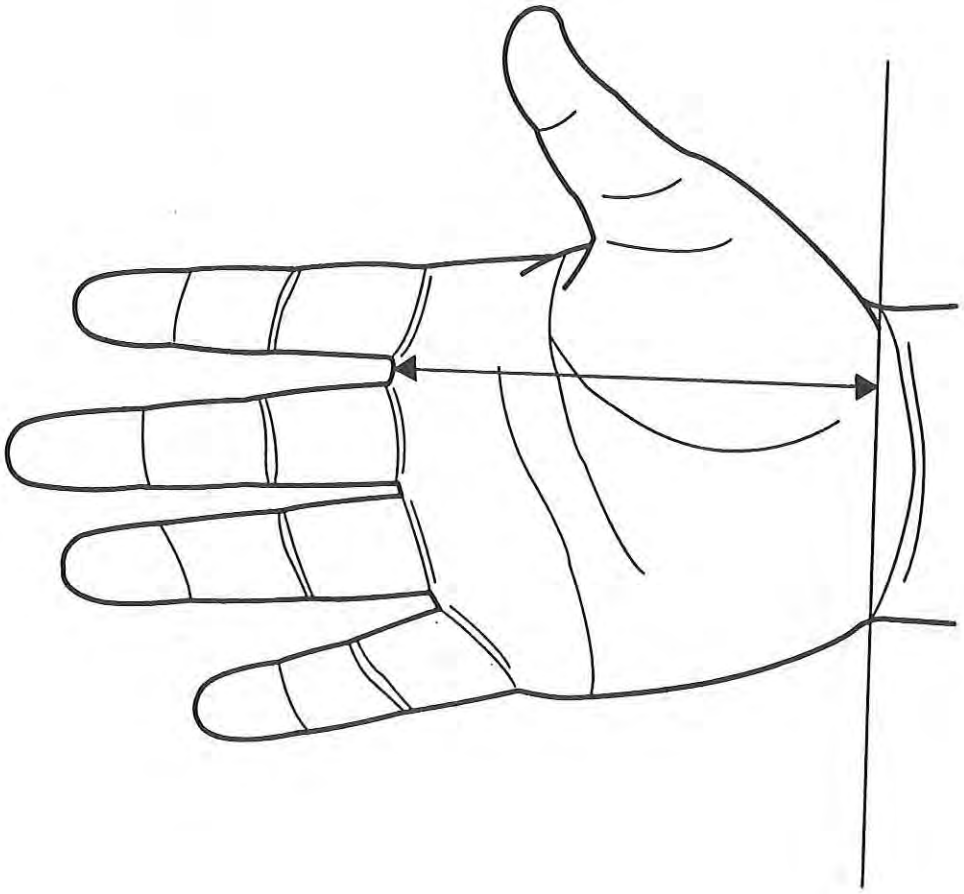
CENTIMETERS		INCHES
6.91	MEAN	2.72
0.01	SE(MEAN)	0.01
0.47	ST DEV	0.19
0.01	SE(SD)	0.00
5.40	MINIMUM	2.13
8.80	MAXIMUM	3.46
COEFF. OF VARIATION		6.9%
SYMMETRY----BETA I		0.20
KURTOSIS----BETA II		3.23
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
5.83	1ST	2.30
5.97	2ND	2.35
6.05	3RD	2.38
6.16	5TH	2.43
6.32	10TH	2.49
6.43	15TH	2.53
6.51	20TH	2.56
6.59	25TH	2.59
6.65	30TH	2.62
6.71	35TH	2.64
6.77	40TH	2.67
6.83	45TH	2.69
6.89	50TH	2.71
6.94	55TH	2.73
7.00	60TH	2.76
7.07	65TH	2.78
7.14	70TH	2.81
7.21	75TH	2.84
7.29	80TH	2.87
7.39	85TH	2.91
7.52	90TH	2.96
7.72	95TH	3.04
7.84	97TH	3.09
7.93	98TH	3.12
8.08	99TH	3.18

70--CROTCH 2 HEIGHT

The perpendicular distance from the crotch between digits 2 and 3 (point 8) to the wrist crease base line.



70--CROTCH 2 HEIGHT

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
10.05	MEAN	3.96
0.02	SE(MEAN)	0.01
0.57	ST DEV	0.23
0.01	SE(SD)	0.00
8.00	MINIMUM	3.15
12.60	MAXIMUM	4.96

COEFF. OF VARIATION	5.7%
SYMMETRY----BETA I	0.21
KURTOSIS----BETA II	3.10
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
8.82	1ST	3.47
8.95	2ND	3.52
9.04	3RD	3.56
9.15	5TH	3.60
9.34	10TH	3.68
9.46	15TH	3.73
9.56	20TH	3.76
9.65	25TH	3.80
9.73	30TH	3.83
9.81	35TH	3.86
9.88	40TH	3.89
9.96	45TH	3.92
10.03	50TH	3.95
10.10	55TH	3.98
10.18	60TH	4.01
10.25	65TH	4.04
10.34	70TH	4.07
10.43	75TH	4.11
10.53	80TH	4.15
10.66	85TH	4.19
10.81	90TH	4.26
11.04	95TH	4.35
11.18	97TH	4.40
11.29	98TH	4.45
11.45	99TH	4.51

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
11.04	MEAN	4.35
0.02	SE(MEAN)	0.01
0.61	ST DEV	0.24
0.01	SE(SD)	0.01
8.20	MINIMUM	3.23
13.30	MAXIMUM	5.24

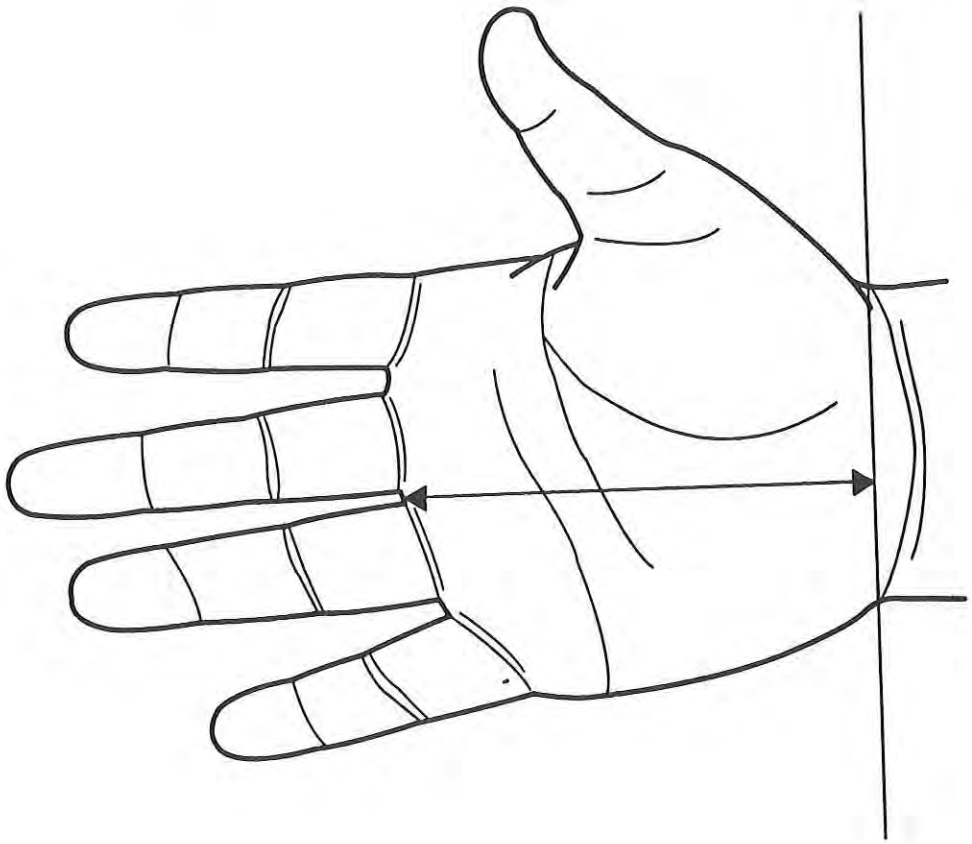
COEFF. OF VARIATION	5.5%
SYMMETRY----BETA I	0.07
KURTOSIS----BETA II	3.82
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
9.73	1ST	3.83
9.88	2ND	3.89
9.98	3RD	3.93
10.11	5TH	3.98
10.30	10TH	4.06
10.44	15TH	4.11
10.54	20TH	4.15
10.63	25TH	4.19
10.72	30TH	4.22
10.80	35TH	4.25
10.87	40TH	4.28
10.95	45TH	4.31
11.02	50TH	4.34
11.10	55TH	4.37
11.17	60TH	4.40
11.26	65TH	4.43
11.34	70TH	4.47
11.44	75TH	4.50
11.54	80TH	4.54
11.67	85TH	4.59
11.83	90TH	4.66
12.07	95TH	4.75
12.23	97TH	4.82
12.35	98TH	4.86
12.53	99TH	4.93

71--CROTCH 3 HEIGHT

The perpendicular distance from the crotch between digits 3 and 4 (point 10) to the wrist crease base line.



71--CROTCH 3 HEIGHT

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
10.03	MEAN	3.95
0.02	SE(MEAN)	0.01
0.60	ST DEV	0.24
0.01	SE(SD)	0.00
8.00	MINIMUM	3.15
12.50	MAXIMUM	4.92
COEFF. OF VARIATION		6.0%
SYMMETRY----BETA I		0.18
KURTOSIS----BETA II		3.00
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
8.71	1ST	3.43
8.88	2ND	3.50
8.98	3RD	3.54
9.11	5TH	3.59
9.30	10TH	3.66
9.42	15TH	3.71
9.52	20TH	3.75
9.61	25TH	3.78
9.69	30TH	3.82
9.77	35TH	3.85
9.85	40TH	3.88
9.92	45TH	3.91
10.00	50TH	3.94
10.07	55TH	3.97
10.15	60TH	4.00
10.24	65TH	4.03
10.33	70TH	4.07
10.43	75TH	4.11
10.54	80TH	4.15
10.68	85TH	4.20
10.84	90TH	4.27
11.08	95TH	4.36
11.22	97TH	4.42
11.32	98TH	4.46
11.44	99TH	4.50

MALES

THE SUMMARY STATISTICS

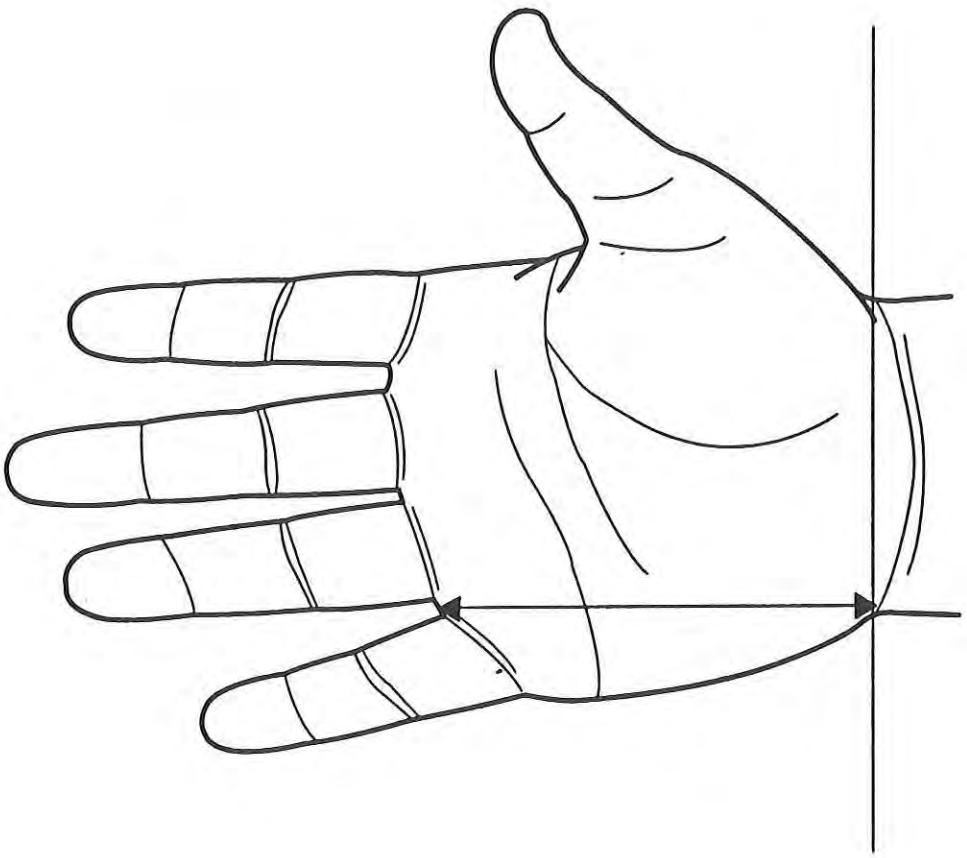
CENTIMETERS		INCHES
10.99	MEAN	4.33
0.02	SE(MEAN)	0.01
0.64	ST DEV	0.25
0.01	SE(SD)	0.01
7.90	MINIMUM	3.11
13.40	MAXIMUM	5.28
COEFF. OF VARIATION		5.8%
SYMMETRY----BETA I		0.10
KURTOSIS----BETA II		4.02
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
9.54	1ST	3.76
9.74	2ND	3.84
9.86	3RD	3.88
10.01	5TH	3.94
10.22	10TH	4.03
10.36	15TH	4.08
10.47	20TH	4.12
10.57	25TH	4.16
10.65	30TH	4.19
10.73	35TH	4.23
10.81	40TH	4.26
10.89	45TH	4.29
10.96	50TH	4.32
11.04	55TH	4.35
11.12	60TH	4.38
11.20	65TH	4.41
11.29	70TH	4.45
11.39	75TH	4.49
11.51	80TH	4.53
11.65	85TH	4.58
11.82	90TH	4.65
12.09	95TH	4.76
12.27	97TH	4.83
12.40	98TH	4.88
12.61	99TH	4.96

72—CROTCH 4 HEIGHT

The perpendicular distance from the crotch between digits 4 and 5 (point 12) to the wrist crease base line.



72--CROTCH 4 HEIGHT

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
8.79	MEAN	3.46
0.02	SE(MEAN)	0.01
0.58	ST DEV	0.23
0.01	SE(SD)	0.00
6.70	MINIMUM	2.64
11.30	MAXIMUM	4.45
COEFF. OF VARIATION		6.6%
SYMMETRY----BETA I		0.12
KURTOSIS----BETA II		3.15
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
7.49	1ST	2.95
7.66	2ND	3.01
7.75	3RD	3.05
7.88	5TH	3.10
8.07	10TH	3.18
8.20	15TH	3.23
8.30	20TH	3.27
8.39	25TH	3.30
8.47	30TH	3.34
8.55	35TH	3.37
8.63	40TH	3.40
8.70	45TH	3.43
8.77	50TH	3.45
8.85	55TH	3.48
8.93	60TH	3.51
9.01	65TH	3.55
9.09	70TH	3.58
9.18	75TH	3.62
9.29	80TH	3.66
9.41	85TH	3.70
9.56	90TH	3.76
9.78	95TH	3.85
9.91	97TH	3.90
9.99	98TH	3.93
10.12	99TH	3.98

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
9.66	MEAN	3.80
0.02	SE(MEAN)	0.01
0.62	ST DEV	0.24
0.01	SE(SD)	0.01
6.80	MINIMUM	2.68
12.10	MAXIMUM	4.76
COEFF. OF VARIATION		6.4%
SYMMETRY----BETA I		0.17
KURTOSIS----BETA II		3.91
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
8.23	1ST	3.24
8.44	2ND	3.32
8.56	3RD	3.37
8.71	5TH	3.43
8.91	10TH	3.51
9.05	15TH	3.56
9.15	20TH	3.60
9.24	25TH	3.64
9.32	30TH	3.67
9.40	35TH	3.70
9.47	40TH	3.73
9.55	45TH	3.76
9.62	50TH	3.79
9.70	55TH	3.82
9.78	60TH	3.85
9.86	65TH	3.88
9.95	70TH	3.92
10.05	75TH	3.96
10.17	80TH	4.00
10.30	85TH	4.06
10.48	90TH	4.13
10.73	95TH	4.22
10.88	97TH	4.29
10.99	98TH	4.33
11.14	99TH	4.39

73--FOREARM-HAND LENGTH

The distance between the back of the tip of the elbow to the tip of the middle finger. This dimension was measured directly during the survey with a beam caliper. See Gordon, et al. (1989) pages 180-181.

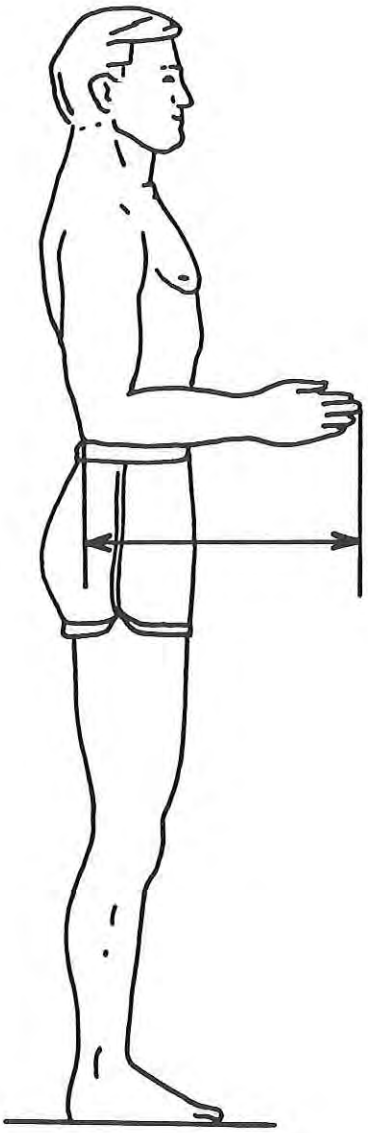




Illustration adapted from Gordon, et al. (1989).

73--FOREARM-HAND LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
44.35	MEAN	17.46
0.07	SE(MEAN)	0.03
2.36	ST DEV	0.93
0.05	SE(SD)	0.02
32.40	MINIMUM	12.76
53.30	MAXIMUM	20.98
COEFF. OF VARIATION		5.3%
SYMMETRY----BETA I		0.07
KURTOSIS----BETA II		3.33
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
39.20	1ST	15.43
39.76	2ND	15.66
40.12	3RD	15.80
40.61	5TH	15.99
41.38	10TH	16.29
41.91	15TH	16.50
42.34	20TH	16.67
42.71	25TH	16.82
43.05	30TH	16.95
43.37	35TH	17.08
43.68	40TH	17.20
43.98	45TH	17.32
44.28	50TH	17.43
44.58	55TH	17.55
44.89	60TH	17.67
45.22	65TH	17.80
45.56	70TH	17.94
45.93	75TH	18.08
46.35	80TH	18.25
46.83	85TH	18.44
47.44	90TH	18.68
48.33	95TH	19.03
48.88	97TH	19.25
49.28	98TH	19.40
49.87	99TH	19.63

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
48.40	MEAN	19.06
0.07	SE(MEAN)	0.03
2.33	ST DEV	0.92
0.05	SE(SD)	0.02
41.50	MINIMUM	16.34
57.80	MAXIMUM	22.76
COEFF. OF VARIATION		4.8%
SYMMETRY----BETA I		0.39
KURTOSIS----BETA II		3.30
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
43.53	1ST	17.14
44.05	2ND	17.34
44.38	3RD	17.47
44.82	5TH	17.65
45.51	10TH	17.92
45.99	15TH	18.11
46.39	20TH	18.26
46.73	25TH	18.40
47.06	30TH	18.53
47.36	35TH	18.65
47.65	40TH	18.76
47.94	45TH	18.88
48.24	50TH	18.99
48.54	55TH	19.11
48.85	60TH	19.23
49.17	65TH	19.36
49.52	70TH	19.50
49.91	75TH	19.65
50.34	80TH	19.82
50.85	85TH	20.02
51.50	90TH	20.28
52.46	95TH	20.65
53.06	97TH	20.89
53.50	98TH	21.06
54.14	99TH	21.32

74--ELBOW-WRIST LENGTH

The distance between the back tip of the elbow to the stylion landmark. This dimension was calculated from the survey measured values as: FOREARM-HAND LENGTH minus HAND LENGTH (MEASURED). See Gordon, et al. (1989) pages 378-379.

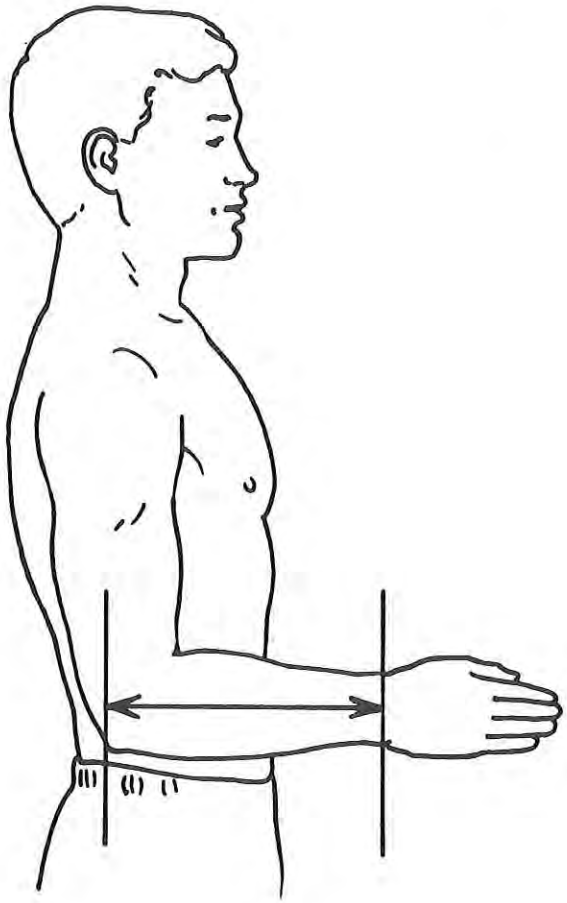


Illustration adapted from Gordon, et al. (1989).

74--ELBOW-WRIST LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
26.28	MEAN	10.35
0.04	SE(MEAN)	0.02
1.56	ST DEV	0.61
0.03	SE(SD)	0.01
17.00	MINIMUM	0.63
31.80	MAXIMUM	6.69
COEFF. OF VARIATION		5.9%
SYMMETRY----BETA I		-0.02
KURTOSIS----BETA II		3.73
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
22.95	1ST	9.04
23.26	2ND	9.16
23.47	3RD	9.24
23.78	5TH	9.36
24.30	10TH	9.57
24.66	15TH	9.71
24.95	20TH	9.82
25.21	25TH	9.92
25.44	30TH	10.02
25.66	35TH	10.10
25.86	40TH	10.18
26.06	45TH	10.26
26.26	50TH	10.34
26.46	55TH	10.42
26.66	60TH	10.50
26.87	65TH	10.58
27.09	70TH	10.66
27.32	75TH	10.76
27.59	80TH	10.86
27.89	85TH	10.98
28.28	90TH	11.14
28.86	95TH	11.36
29.25	97TH	11.51
29.53	98TH	11.63
30.00	99TH	11.81

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
29.00	MEAN	11.42
0.05	SE(MEAN)	0.02
1.53	ST DEV	0.60
0.03	SE(SD)	0.01
24.40	MINIMUM	9.61
35.00	MAXIMUM	13.78
COEFF. OF VARIATION		5.3%
SYMMETRY----BETA I		0.36
KURTOSIS----BETA II		3.23
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
25.89	1ST	10.19
26.18	2ND	10.31
26.37	3RD	10.38
26.65	5TH	10.49
27.10	10TH	10.67
27.43	15TH	10.80
27.69	20TH	10.90
27.92	25TH	10.99
28.14	30TH	11.08
28.34	35TH	11.16
28.53	40TH	11.23
28.72	45TH	11.31
28.92	50TH	11.38
29.11	55TH	11.46
29.31	60TH	11.54
29.51	65TH	11.62
29.74	70TH	11.71
29.98	75TH	11.80
30.26	80TH	11.91
30.58	85TH	12.04
31.00	90TH	12.20
31.64	95TH	12.46
32.06	97TH	12.62
32.38	98TH	12.75
32.89	99TH	12.95

75--ELBOW-CENTER OF GRIP LENGTH

The distance between the back tip of the elbow to the center of a dowel gripped in the hand. This dimension was calculated from the survey measured values as: FOREARM-HAND LENGTH minus HAND LENGTH (MEASURED) plus WRIST-CENTER OF GRIP LENGTH. See Gordon, et al. (1989) pages 376-377.

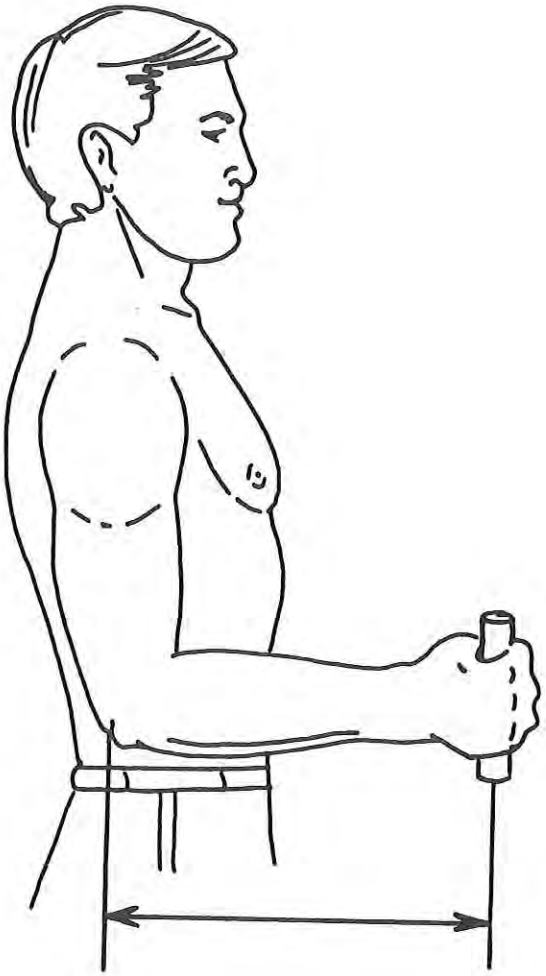


Illustration adapted from Gordon, et al. (1989).

75--ELBOW-CENTER OF GRIP LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
32.90	MEAN	12.95
0.05	SE(MEAN)	0.02
1.78	ST DEV	0.70
0.03	SE(SD)	0.01
23.70	MINIMUM	0.71
38.70	MAXIMUM	9.33
COEFF. OF VARIATION		5.4%
SYMMETRY----BETA I		0.04
KURTOSIS----BETA II		3.41
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
28.96	1ST	11.40
29.36	2ND	11.56
29.63	3RD	11.67
30.01	5TH	11.81
30.62	10TH	12.06
31.04	15TH	12.22
31.38	20TH	12.36
31.68	25TH	12.47
31.95	30TH	12.58
32.19	35TH	12.67
32.42	40TH	12.77
32.65	45TH	12.85
32.87	50TH	12.94
33.10	55TH	13.03
33.32	60TH	13.12
33.56	65TH	13.21
33.80	70TH	13.31
34.07	75TH	13.41
34.37	80TH	13.53
34.72	85TH	13.67
35.17	90TH	13.85
35.85	95TH	14.12
36.31	97TH	14.30
36.66	98TH	14.43
37.22	99TH	14.66

MALES

THE SUMMARY STATISTICS

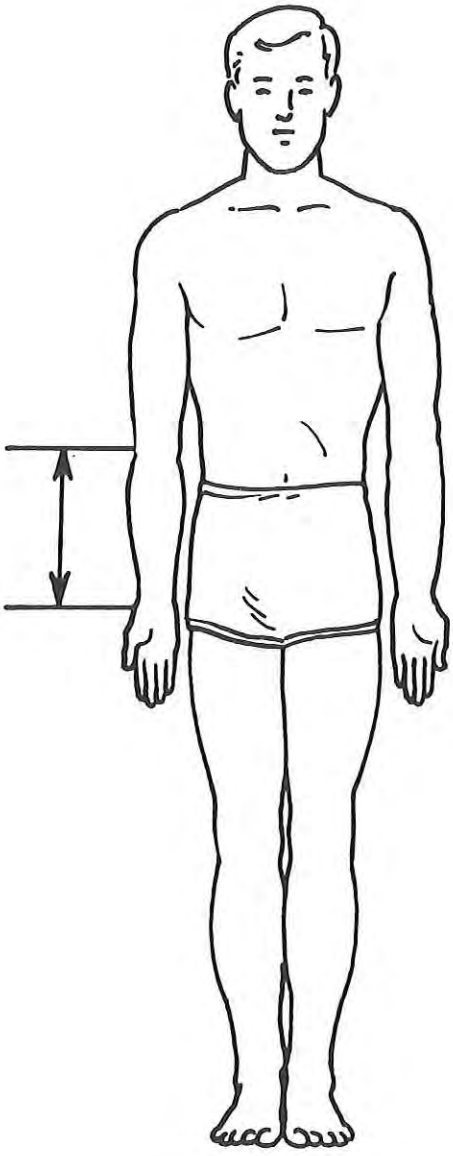
CENTIMETERS		INCHES
35.98	MEAN	14.16
0.06	SE(MEAN)	0.02
1.77	ST DEV	0.70
0.04	SE(SD)	0.02
30.70	MINIMUM	12.07
43.60	MAXIMUM	17.17
COEFF. OF VARIATION		4.9%
SYMMETRY----BETA I		0.42
KURTOSIS----BETA II		3.35
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
32.35	1ST	12.74
32.77	2ND	12.90
33.01	3RD	13.00
33.34	5TH	13.13
33.83	10TH	13.32
34.17	15TH	13.45
34.45	20TH	13.56
34.70	25TH	13.66
34.94	30TH	13.76
35.16	35TH	13.84
35.38	40TH	13.93
35.60	45TH	14.02
35.83	50TH	14.11
36.06	55TH	14.20
36.30	60TH	14.29
36.55	65TH	14.39
36.83	70TH	14.50
37.13	75TH	14.62
37.47	80TH	14.75
37.87	85TH	14.91
38.38	90TH	15.11
39.09	95TH	15.39
39.53	97TH	15.56
39.82	98TH	15.68
40.21	99TH	15.83

76--RADIALE-STYLION LENGTH

The distance between the radiale and stylion landmarks. This dimension was measured directly during the survey with a beam caliper. See Gordon, et al. (1989) pages 246-247.



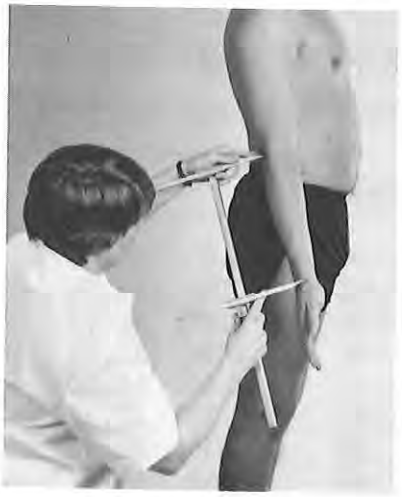


Illustration adapted from Gordon, et al. (1989).

76--RADIALE-STYLION LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
24.36	MEAN	9.59
0.04	SE(MEAN)	0.02
1.56	ST DEV	0.61
0.03	SE(SD)	0.01
15.70	MINIMUM	6.18
30.60	MAXIMUM	12.05

COEFF. OF VARIATION	6.4%
SYMMETRY----BETA I	0.08
KURTOSIS----BETA II	3.72
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
20.97	1ST	8.26
21.33	2ND	8.40
21.57	3RD	8.49
21.89	5TH	8.62
22.41	10TH	8.82
22.77	15TH	8.97
23.06	20TH	9.08
23.31	25TH	9.18
23.53	30TH	9.26
23.74	35TH	9.35
23.94	40TH	9.42
24.13	45TH	9.50
24.32	50TH	9.57
24.51	55TH	9.65
24.71	60TH	9.73
24.91	65TH	9.81
25.13	70TH	9.89
25.36	75TH	9.98
25.63	80TH	10.09
25.94	85TH	10.21
26.34	90TH	10.37
26.97	95TH	10.62
27.39	97TH	10.78
27.72	98TH	10.91
28.26	99TH	11.12

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
26.92	MEAN	10.60
0.05	SE(MEAN)	0.02
1.58	ST DEV	0.62
0.04	SE(SD)	0.01
22.20	MINIMUM	8.74
32.50	MAXIMUM	12.80

COEFF. OF VARIATION	5.9%
SYMMETRY----BETA I	0.31
KURTOSIS----BETA II	3.01
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
23.69	1ST	9.33
23.99	2ND	9.45
24.20	3RD	9.53
24.48	5TH	9.64
24.95	10TH	9.82
25.28	15TH	9.95
25.55	20TH	10.06
25.79	25TH	10.16
26.02	30TH	10.24
26.22	35TH	10.32
26.43	40TH	10.40
26.63	45TH	10.48
26.83	50TH	10.56
27.03	55TH	10.64
27.24	60TH	10.72
27.46	65TH	10.81
27.69	70TH	10.90
27.94	75TH	11.00
28.23	80TH	11.12
28.57	85TH	11.25
29.01	90TH	11.42
29.66	95TH	11.68
30.09	97TH	11.85
30.40	98TH	11.97
30.89	99TH	12.16

77--FOREARM CIRCUMFERENCE, FLEXED

The circumference of the flexed forearm measured with a tape passing across the crease at the juncture of the upper arm and forearm. This dimension was measured directly during the survey. See Gordon, et al. (1989) pages 176-177.

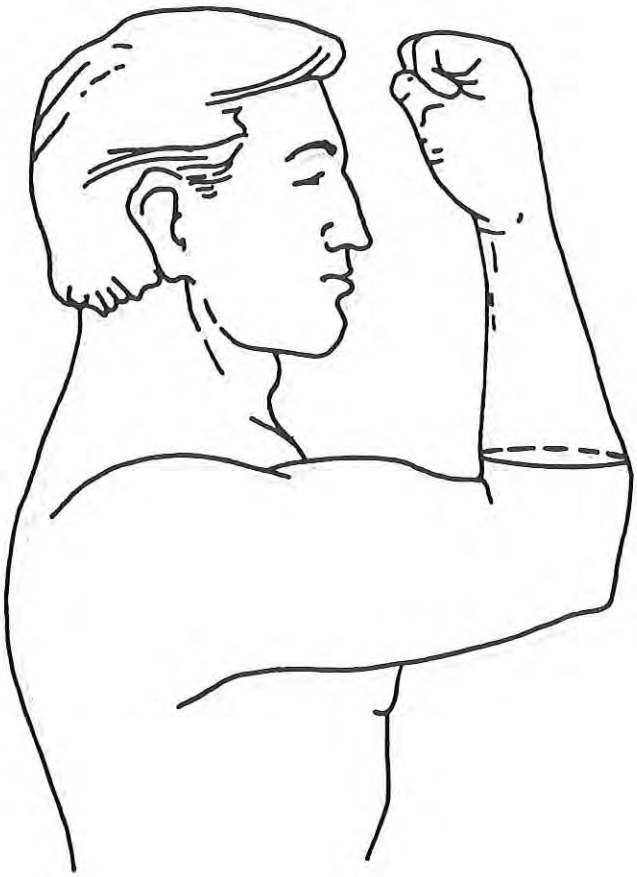




Illustration adapted from Gordon, et al. (1989).

77--FOREARM CIRCUMFERENCE, FLEXED

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
25.41	MEAN	10.00
0.04	SE(MEAN)	0.02
1.50	ST DEV	0.59
0.03	SE(SD)	0.01
21.20	MINIMUM	8.35
32.50	MAXIMUM	12.80

COEFF. OF VARIATION	5.9%
SYMMETRY----BETA I	0.33
KURTOSIS----BETA II	3.56
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
22.07	1ST	8.69
22.47	2ND	8.85
22.72	3RD	8.94
23.05	5TH	9.07
23.55	10TH	9.27
23.89	15TH	9.40
24.15	20TH	9.51
24.39	25TH	9.60
24.60	30TH	9.68
24.79	35TH	9.76
24.98	40TH	9.83
25.16	45TH	9.91
25.34	50TH	9.98
25.53	55TH	10.05
25.72	60TH	10.12
25.91	65TH	10.20
26.13	70TH	10.29
26.36	75TH	10.38
26.63	80TH	10.48
26.94	85TH	10.61
27.35	90TH	10.77
27.98	95TH	11.02
28.41	97TH	11.18
28.73	98TH	11.31
29.24	99TH	11.51

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
30.39	MEAN	11.96
0.06	SE(MEAN)	0.02
1.89	ST DEV	0.74
0.04	SE(SD)	0.02
23.30	MINIMUM	9.17
36.30	MAXIMUM	14.29

COEFF. OF VARIATION	6.2%
SYMMETRY----BETA I	0.15
KURTOSIS----BETA II	3.11
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
26.37	1ST	10.38
26.85	2ND	10.57
27.13	3RD	10.68
27.50	5TH	10.83
28.07	10TH	11.05
28.46	15TH	11.20
28.78	20TH	11.33
29.06	25TH	11.44
29.32	30TH	11.54
29.56	35TH	11.64
29.80	40TH	11.73
30.04	45TH	11.83
30.28	50TH	11.92
30.53	55TH	12.02
30.78	60TH	12.12
31.05	65TH	12.22
31.33	70TH	12.34
31.65	75TH	12.46
32.01	80TH	12.60
32.42	85TH	12.76
32.95	90TH	12.97
33.70	95TH	13.27
34.16	97TH	13.45
34.48	98TH	13.58
34.93	99TH	13.75

78--BICEPS CIRCUMFERENCE, FLEXED

The circumference of the flexed upper arm measured perpendicular to the long axis of the upper arm. This dimension was measured directly during the survey. See Gordon, et al. (1989) pages 94-95.

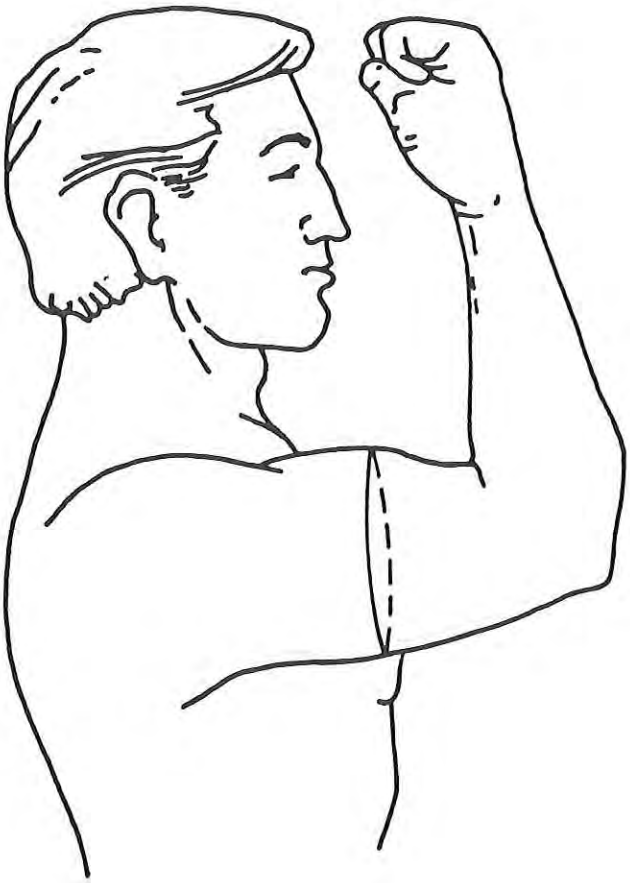




Illustration adapted from Gordon, et al. (1989).

78--BICEPS CIRCUMFERENCE, FLEXED

FEMALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
28.16	MEAN	11.09
0.06	SE(MEAN)	0.02
2.26	ST DEV	0.89
0.04	SE(SD)	0.02
21.50	MINIMUM	8.46
37.10	MAXIMUM	14.61
COEFF. OF VARIATION		8.0%
SYMMETRY----BETA I		0.36
KURTOSIS----BETA II		3.19
NUMBER OF SUBJECTS		1304

PERCENTILES		
CENTIMETERS		INCHES
23.33	1ST	9.18
23.88	2ND	9.40
24.23	3RD	9.54
24.68	5TH	9.72
25.37	10TH	9.99
25.85	15TH	10.18
26.23	20TH	10.33
26.56	25TH	10.46
26.87	30TH	10.58
27.16	35TH	10.69
27.44	40TH	10.80
27.72	45TH	10.91
28.00	50TH	11.02
28.29	55TH	11.14
28.58	60TH	11.25
28.89	65TH	11.37
29.23	70TH	11.51
29.60	75TH	11.65
30.02	80TH	11.82
30.52	85TH	12.01
31.16	90TH	12.27
32.13	95TH	12.65
32.77	97TH	12.90
33.23	98TH	13.08
33.95	99TH	13.37

MALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
33.87	MEAN	13.33
0.09	SE(MEAN)	0.03
2.72	ST DEV	1.07
0.06	SE(SD)	0.02
25.90	MINIMUM	10.20
42.60	MAXIMUM	16.77
COEFF. OF VARIATION		8.0%
SYMMETRY----BETA I		0.22
KURTOSIS----BETA II		3.03
NUMBER OF SUBJECTS		1003

PERCENTILES		
CENTIMETERS		INCHES
27.66	1ST	10.89
28.54	2ND	11.24
29.05	3RD	11.44
29.68	5TH	11.68
30.57	10TH	12.04
31.15	15TH	12.26
31.61	20TH	12.44
32.00	25TH	12.60
32.36	30TH	12.74
32.70	35TH	12.87
33.03	40TH	13.00
33.36	45TH	13.13
33.69	50TH	13.26
34.03	55TH	13.40
34.38	60TH	13.54
34.75	65TH	13.68
35.16	70TH	13.84
35.61	75TH	14.02
36.12	80TH	14.22
36.73	85TH	14.46
37.51	90TH	14.77
38.67	95TH	15.23
39.41	97TH	15.52
39.93	98TH	15.72
40.70	99TH	16.02

79--ARM LENGTH

The distance between the acromion landmark and the tip of the middle finger. This dimension was calculated from the survey measured values as: ACROMIAL HEIGHT minus WRIST HEIGHT plus HAND LENGTH (MEASURED). See Gordon, et al. (1989) pages 348-349.

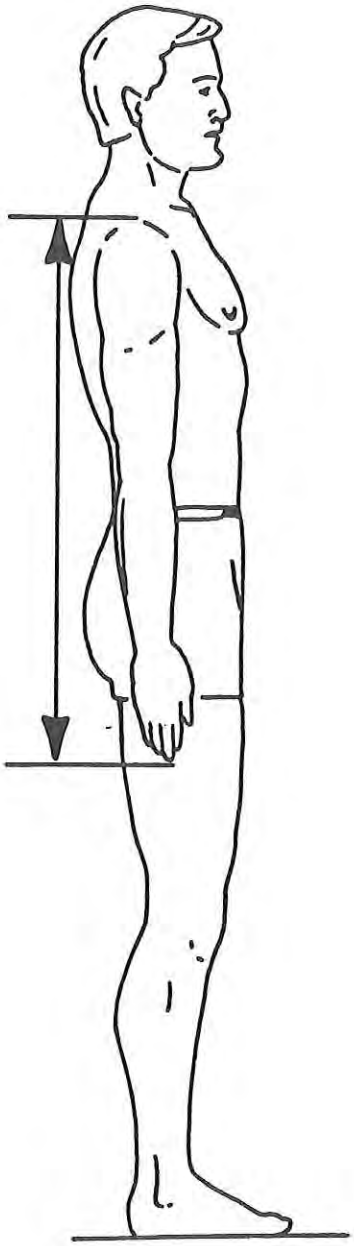


Illustration adapted from Gordon, et al. (1989).

79--ARM LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
72.39	MEAN	28.50
0.11	SE(MEAN)	0.04
3.90	ST DEV	1.53
0.08	SE(SD)	0.03
57.90	MINIMUM	1.54
87.10	MAXIMUM	22.80
COEFF. OF VARIATION		5.4%
SYMMETRY----BETA I		0.10
KURTOSIS----BETA II		3.17
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
63.52	1ST	25.01
64.57	2ND	25.42
65.23	3RD	25.68
66.12	5TH	26.03
67.49	10TH	26.57
68.40	15TH	26.93
69.13	20TH	27.21
69.75	25TH	27.46
70.32	30TH	27.68
70.84	35TH	27.89
71.34	40TH	28.08
71.82	45TH	28.28
72.30	50TH	28.46
72.78	55TH	28.66
73.28	60TH	28.85
73.79	65TH	29.05
74.33	70TH	29.27
74.93	75TH	29.50
75.60	80TH	29.76
76.38	85TH	30.07
77.39	90TH	30.47
78.91	95TH	31.07
79.92	97TH	31.46
80.66	98TH	31.76
81.85	99TH	32.23

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
79.03	MEAN	31.11
0.12	SE(MEAN)	0.05
3.85	ST DEV	1.51
0.09	SE(SD)	0.03
69.30	MINIMUM	27.28
95.90	MAXIMUM	37.76
COEFF. OF VARIATION		4.9%
SYMMETRY----BETA I		0.27
KURTOSIS----BETA II		3.15
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
70.52	1ST	27.76
71.54	2ND	28.17
72.16	3RD	28.41
72.97	5TH	28.73
74.20	10TH	29.21
75.04	15TH	29.54
75.71	20TH	29.81
76.30	25TH	30.04
76.84	30TH	30.25
77.35	35TH	30.45
77.85	40TH	30.65
78.33	45TH	30.84
78.82	50TH	31.03
79.32	55TH	31.23
79.83	60TH	31.43
80.37	65TH	31.64
80.94	70TH	31.87
81.57	75TH	32.11
82.28	80TH	32.40
83.11	85TH	32.72
84.16	90TH	33.13
85.68	95TH	33.73
86.62	97TH	34.10
87.27	98TH	34.36
88.22	99TH	34.73

80--SHOULDER-ELBOW LENGTH

The distance between the acromion and olecranon landmarks. This dimension was measured directly during the survey using a beam caliper. See Gordon, et al. (1989) pages 254-255.

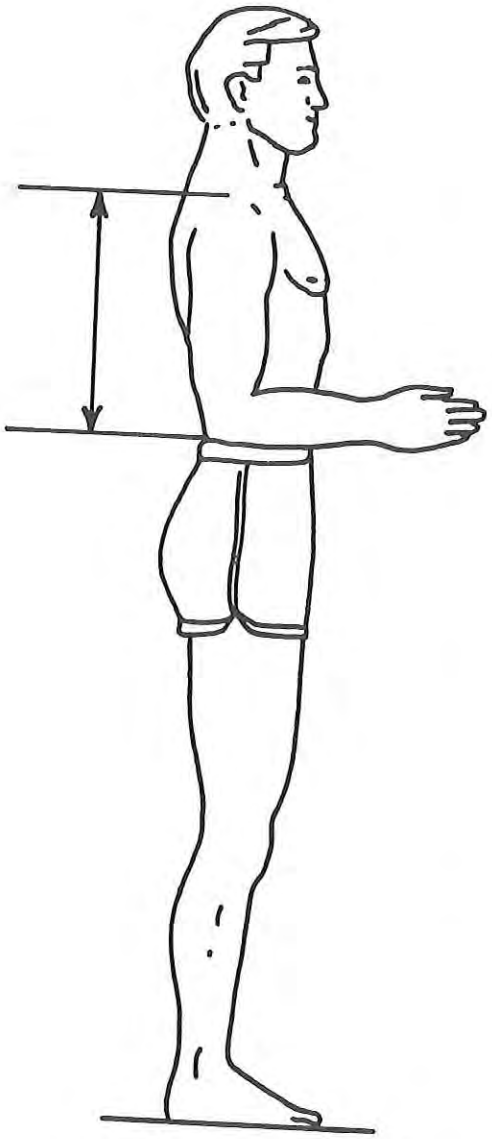




Illustration adapted from Gordon, et al. (1989).

80--SHOULDER-ELBOW LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
33.59	MEAN	13.23
0.05	SE(MEAN)	0.02
1.77	ST DEV	0.70
0.03	SE(SD)	0.01
28.90	MINIMUM	11.38
40.10	MAXIMUM	15.79

COEFF. OF VARIATION	5.3%
SYMMETRY----BETA I	0.13
KURTOSIS----BETA II	2.94
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
29.59	1ST	11.65
30.04	2ND	11.83
30.32	3RD	11.94
30.72	5TH	12.09
31.33	10TH	12.33
31.75	15TH	12.50
32.08	20TH	12.63
32.37	25TH	12.75
32.64	30TH	12.85
32.88	35TH	12.94
33.11	40TH	13.04
33.34	45TH	13.12
33.56	50TH	13.21
33.79	55TH	13.30
34.02	60TH	13.39
34.25	65TH	13.49
34.51	70TH	13.58
34.78	75TH	13.69
35.08	80TH	13.81
35.44	85TH	13.95
35.88	90TH	14.13
36.54	95TH	14.38
36.96	97TH	14.55
37.26	98TH	14.67
37.73	99TH	14.86

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
36.96	MEAN	14.55
0.06	SE(MEAN)	0.02
1.83	ST DEV	0.72
0.04	SE(SD)	0.02
31.90	MINIMUM	12.56
44.60	MAXIMUM	17.56

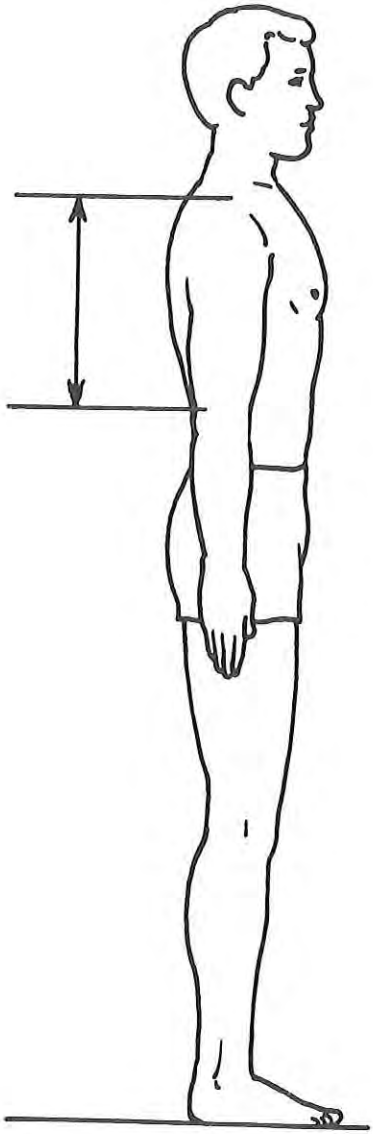
COEFF. OF VARIATION	5.0%
SYMMETRY----BETA I	0.24
KURTOSIS----BETA II	3.18
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
33.01	1ST	13.00
33.45	2ND	13.17
33.73	3RD	13.28
34.10	5TH	13.42
34.68	10TH	13.65
35.08	15TH	13.81
35.40	20TH	13.94
35.69	25TH	14.05
35.94	30TH	14.15
36.19	35TH	14.25
36.42	40TH	14.34
36.65	45TH	14.43
36.89	50TH	14.52
37.12	55TH	14.61
37.36	60TH	14.71
37.61	65TH	14.81
37.88	70TH	14.91
38.17	75TH	15.03
38.50	80TH	15.16
38.88	85TH	15.31
39.36	90TH	15.50
40.07	95TH	15.77
40.51	97TH	15.95
40.82	98TH	16.07
41.28	99TH	16.25

81--ACROMION-RADIALE LENGTH

The distance between the acromion and radiale landmarks. This dimension was measured directly during the survey using a beam caliper. See Gordon, et al. (1989) pages 80-81.



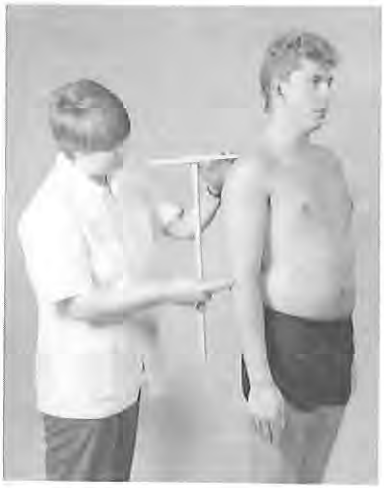


Illustration adapted from Gordon, et al. (1989).

81--ACROMION-RADIALE LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
31.20	MEAN	12.29
0.05	SE(MEAN)	0.02
1.70	ST DEV	0.67
0.03	SE(SD)	0.01
26.50	MINIMUM	10.43
37.00	MAXIMUM	14.57

COEFF. OF VARIATION	5.5%
SYMMETRY----BETA I	0.13
KURTOSIS----BETA II	2.97
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
27.33	1ST	10.76
27.76	2ND	10.93
28.04	3RD	11.04
28.42	5TH	11.19
29.02	10TH	11.42
29.42	15TH	11.58
29.74	20TH	11.71
30.03	25TH	11.82
30.28	30TH	11.92
30.51	35TH	12.01
30.73	40TH	12.10
30.95	45TH	12.19
31.17	50TH	12.27
31.38	55TH	12.36
31.60	60TH	12.44
31.83	65TH	12.53
32.07	70TH	12.63
32.33	75TH	12.73
32.63	80TH	12.85
32.97	85TH	12.98
33.41	90TH	13.15
34.06	95TH	13.41
34.48	97TH	13.58
34.80	98TH	13.70
35.30	99TH	13.90

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
34.14	MEAN	13.44
0.06	SE(MEAN)	0.02
1.75	ST DEV	0.69
0.04	SE(SD)	0.02
28.70	MINIMUM	11.30
41.50	MAXIMUM	16.34

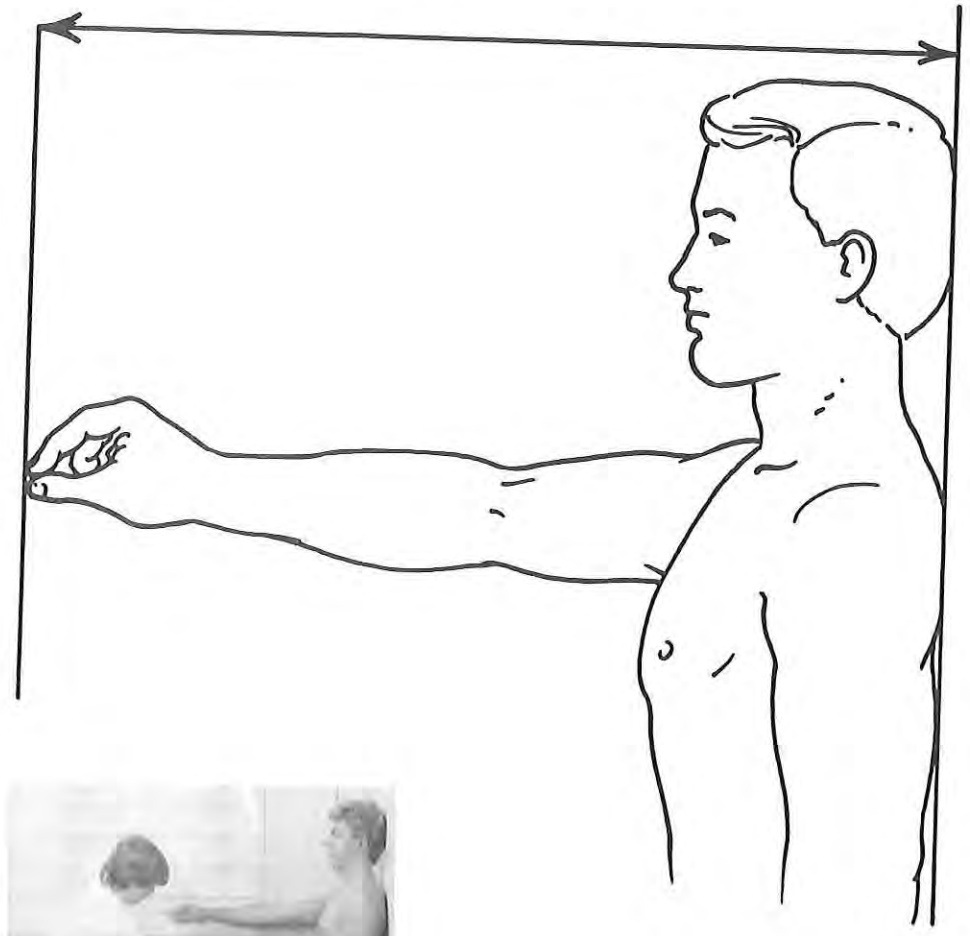
COEFF. OF VARIATION	5.1%
SYMMETRY----BETA I	0.26
KURTOSIS----BETA II	3.24
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
30.32	1ST	11.94
30.75	2ND	12.11
31.02	3RD	12.21
31.38	5TH	12.36
31.95	10TH	12.58
32.34	15TH	12.73
32.65	20TH	12.85
32.92	25TH	12.96
33.17	30TH	13.06
33.40	35TH	13.15
33.63	40TH	13.24
33.85	45TH	13.33
34.07	50TH	13.41
34.29	55TH	13.50
34.52	60TH	13.59
34.76	65TH	13.68
35.01	70TH	13.78
35.29	75TH	13.89
35.60	80TH	14.02
35.97	85TH	14.16
36.44	90TH	14.34
37.12	95TH	14.61
37.56	97TH	14.79
37.88	98TH	14.91
38.36	99TH	15.10

82--THUMBTIP REACH

The horizontal distance from a back wall to the tip of the thumb measured on a wall scale. This dimension was measured directly during the survey. See Gordon, et al. (1989) pages 284-285.



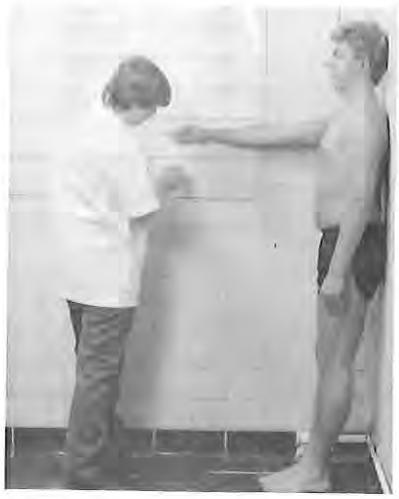


Illustration adapted from Gordon, et al. (1989).

82--THUMBTIP REACH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
73.54	MEAN	28.95
0.10	SE(MEAN)	0.04
3.70	ST DEV	1.46
0.07	SE(SD)	0.03
60.50	MINIMUM	23.82
89.80	MAXIMUM	35.35

COEFF. OF VARIATION	5.0%
SYMMETRY----BETA I	0.19
KURTOSIS----BETA II	3.07
NUMBER OF SUBJECTS	1304

PERCENTILES

CENTIMETERS		INCHES
65.64	1ST	25.84
66.43	2ND	26.16
66.95	3RD	26.36
67.68	5TH	26.65
68.85	10TH	27.11
69.68	15TH	27.43
70.34	20TH	27.69
70.93	25TH	27.93
71.47	30TH	28.14
71.97	35TH	28.33
72.45	40TH	28.53
72.93	45TH	28.71
73.40	50TH	28.90
73.88	55TH	29.09
74.36	60TH	29.28
74.87	65TH	29.48
75.41	70TH	29.69
76.00	75TH	29.92
76.66	80TH	30.18
77.43	85TH	30.49
78.42	90TH	30.87
79.87	95TH	31.45
80.82	97TH	31.82
81.51	98TH	32.09
82.58	99TH	32.51

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
80.15	MEAN	31.55
0.12	SE(MEAN)	0.05
3.94	ST DEV	1.55
0.09	SE(SD)	0.03
69.70	MINIMUM	27.44
98.00	MAXIMUM	38.58

COEFF. OF VARIATION	4.9%
SYMMETRY----BETA I	0.31
KURTOSIS----BETA II	3.25
NUMBER OF SUBJECTS	1003

PERCENTILES

CENTIMETERS		INCHES
72.21	1ST	28.43
72.86	2ND	28.68
73.32	3RD	28.87
74.00	5TH	29.14
75.17	10TH	29.59
76.02	15TH	29.93
76.72	20TH	30.21
77.35	25TH	30.45
77.92	30TH	30.68
78.46	35TH	30.89
78.98	40TH	31.09
79.49	45TH	31.29
79.99	50TH	31.49
80.50	55TH	31.69
81.02	60TH	31.90
81.57	65TH	32.11
82.14	70TH	32.34
82.77	75TH	32.59
83.47	80TH	32.86
84.29	85TH	33.19
85.33	90TH	33.59
86.87	95TH	34.20
87.88	97TH	34.60
88.62	98TH	34.89
89.80	99TH	35.35

83--WRIST WALL LENGTH

The horizontal distance from a back wall to the stylion landmark measured on a wall scale. This dimension was measured directly during the survey. See Gordon, et al. (1989) pages 334-335.

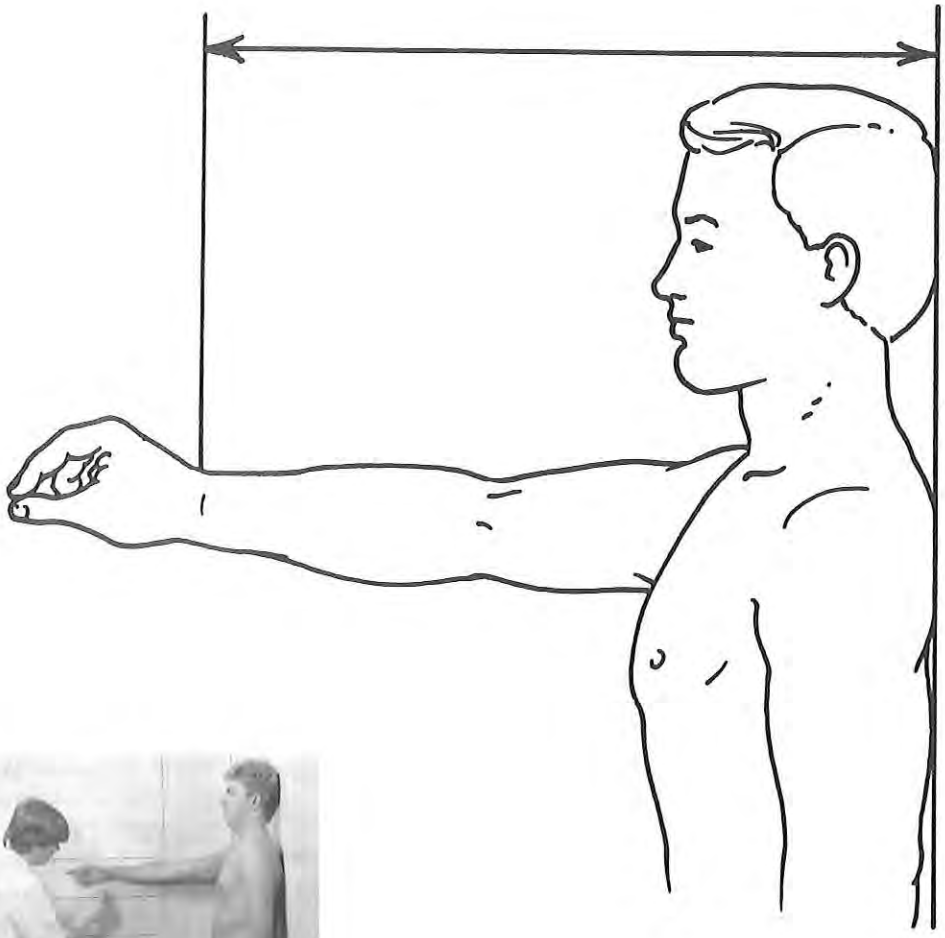




Illustration adapted from Gordon, et al. (1989).

83--WRIST WALL LENGTH

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
62.05	MEAN	24.43
0.09	SE(MEAN)	0.04
3.24	ST DEV	1.28
0.06	SE(SD)	0.03
50.80	MINIMUM	20.00
76.30	MAXIMUM	30.04
COEFF. OF VARIATION		5.2%
SYMMETRY----BETA I		0.17
KURTOSIS----BETA II		3.06
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
55.24	1ST	21.75
55.84	2ND	21.98
56.26	3RD	22.15
56.87	5TH	22.39
57.89	10TH	22.79
58.62	15TH	23.08
59.22	20TH	23.32
59.75	25TH	23.53
60.24	30TH	23.72
60.69	35TH	23.89
61.12	40TH	24.06
61.55	45TH	24.23
61.97	50TH	24.40
62.39	55TH	24.56
62.82	60TH	24.73
63.27	65TH	24.91
63.75	70TH	25.10
64.26	75TH	25.30
64.84	80TH	25.53
65.51	85TH	25.79
66.37	90TH	26.13
67.65	95TH	26.63
68.49	97TH	26.96
69.11	98TH	27.21
70.10	99TH	27.60

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
68.11	MEAN	26.81
0.11	SE(MEAN)	0.04
3.48	ST DEV	1.37
0.08	SE(SD)	0.03
58.20	MINIMUM	22.91
83.50	MAXIMUM	32.87
COEFF. OF VARIATION		5.1%
SYMMETRY----BETA I		0.32
KURTOSIS----BETA II		3.30
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
60.87	1ST	23.96
61.52	2ND	24.22
61.97	3RD	24.40
62.62	5TH	24.66
63.70	10TH	25.08
64.47	15TH	25.38
65.10	20TH	25.63
65.66	25TH	25.85
66.17	30TH	26.05
66.64	35TH	26.24
67.10	40TH	26.42
67.55	45TH	26.59
67.99	50TH	26.77
68.44	55TH	26.95
68.90	60TH	27.13
69.37	65TH	27.31
69.88	70TH	27.51
70.43	75TH	27.73
71.05	80TH	27.97
71.77	85TH	28.26
72.69	90TH	28.62
74.06	95TH	29.16
74.95	97TH	29.51
75.62	98TH	29.77
76.67	99TH	30.18

84--WRIST WALL LENGTH, EXTENDED

The horizontal distance from a back wall to the stylion landmark with a maximally outstretched arm, measured on a wall scale. This dimension was measured directly during the survey. See Gordon, et al. (1989) pages 336-337.

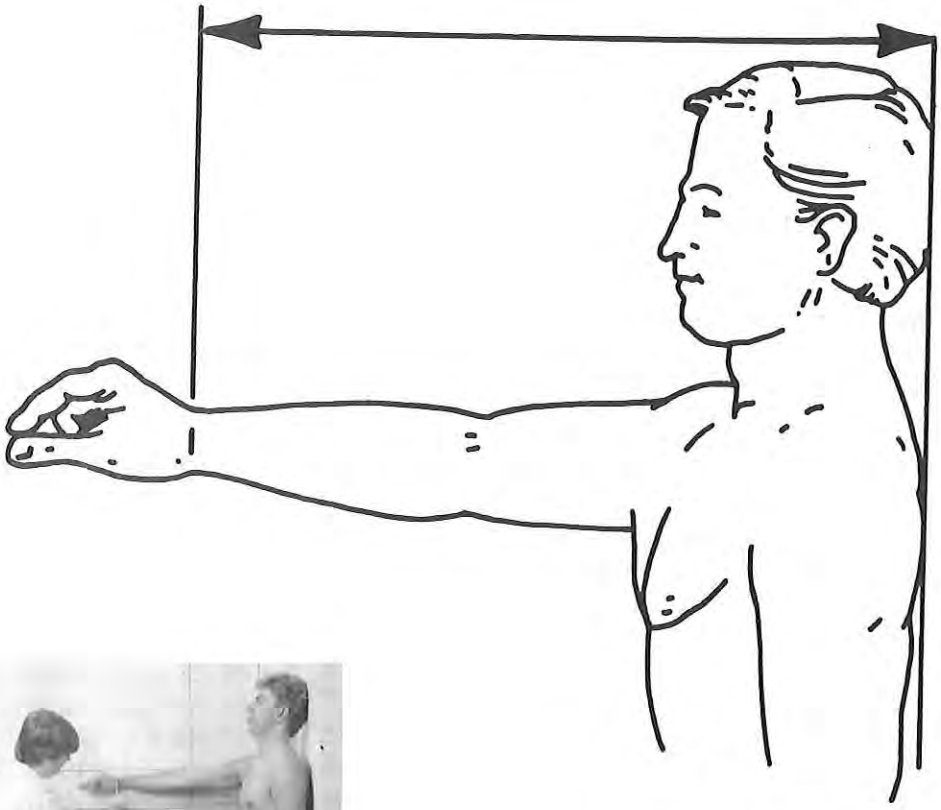




Illustration adapted from Gordon, et al. (1989).

84--WRIST WALL LENGTH, EXTENDED

FEMALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
68.01	MEAN	26.78
0.10	SE(MEAN)	0.04
3.43	ST DEV	1.35
0.07	SE(SD)	0.03
56.00	MINIMUM	1.34
80.80	MAXIMUM	22.05
COEFF. OF VARIATION		5.0%
SYMMETRY----BETA I		0.16
KURTOSIS----BETA II		3.04
NUMBER OF SUBJECTS		1304

PERCENTILES

CENTIMETERS		INCHES
60.53	1ST	23.83
61.31	2ND	24.14
61.82	3RD	24.34
62.53	5TH	24.62
63.67	10TH	25.07
64.46	15TH	25.38
65.10	20TH	25.63
65.66	25TH	25.85
66.16	30TH	26.05
66.63	35TH	26.23
67.08	40TH	26.41
67.52	45TH	26.58
67.96	50TH	26.75
68.39	55TH	26.93
68.84	60TH	27.10
69.30	65TH	27.28
69.79	70TH	27.48
70.32	75TH	27.69
70.92	80TH	27.92
71.61	85TH	28.19
72.50	90TH	28.54
73.81	95TH	29.06
74.67	97TH	29.40
75.30	98TH	29.65
76.30	99TH	30.04

MALES

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
74.76	MEAN	29.43
0.12	SE(MEAN)	0.05
3.75	ST DEV	1.48
0.08	SE(SD)	0.03
64.40	MINIMUM	25.35
90.30	MAXIMUM	35.55
COEFF. OF VARIATION		5.0%
SYMMETRY----BETA I		0.28
KURTOSIS----BETA II		3.31
NUMBER OF SUBJECTS		1003

PERCENTILES

CENTIMETERS		INCHES
66.77	1ST	26.29
67.51	2ND	26.58
68.02	3RD	26.78
68.75	5TH	27.07
69.97	10TH	27.55
70.83	15TH	27.88
71.52	20TH	28.16
72.13	25TH	28.40
72.68	30TH	28.61
73.19	35TH	28.82
73.68	40TH	29.01
74.16	45TH	29.20
74.63	50TH	29.38
75.10	55TH	29.57
75.58	60TH	29.76
76.08	65TH	29.95
76.61	70TH	30.16
77.19	75TH	30.39
77.84	80TH	30.65
78.61	85TH	30.95
79.59	90TH	31.34
81.11	95TH	31.93
82.14	97TH	32.34
82.93	98TH	32.65
84.24	99TH	33.16

85--STATURE

The vertical distance from a standing surface to the top of the head. This dimension was measured directly during the survey using an anthropometer. See Gordon, et al. (1989) pages 270-271.

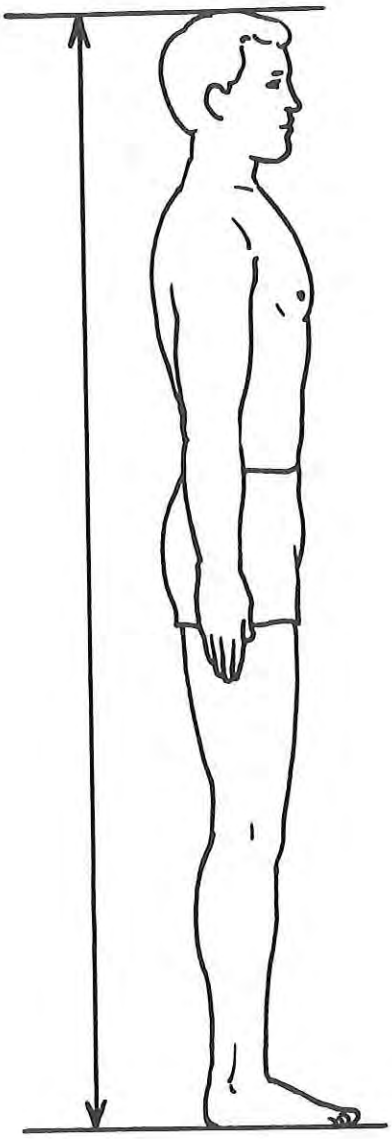




Illustration adapted from Gordon, et al. (1989).

FEMALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
163.02	MEAN	64.18
0.18	SE(MEAN)	0.07
6.39	ST DEV	2.52
0.13	SE(SD)	0.05
144.70	MINIMUM	56.97
183.60	MAXIMUM	72.28
COEFF. OF VARIATION		3.9%
SYMMETRY----BETA I		0.08
KURTOSIS----BETA II		2.82
NUMBER OF SUBJECTS		1304

PERCENTILES CENTIMETERS		INCHES
148.34	1ST	58.40
150.14	2ND	59.11
151.24	3RD	59.54
152.69	5TH	60.12
154.90	10TH	60.98
156.38	15TH	61.57
157.56	20TH	62.03
158.59	25TH	62.44
159.52	30TH	62.81
160.40	35TH	63.15
161.23	40TH	63.48
162.05	45TH	63.80
162.87	50TH	64.12
163.69	55TH	64.45
164.54	60TH	64.78
165.42	65TH	65.12
166.35	70TH	65.49
167.36	75TH	65.89
168.50	80TH	66.34
169.82	85TH	66.86
171.47	90TH	67.51
173.84	95TH	68.44
175.29	97TH	69.01
176.31	98TH	69.41
177.78	99TH	69.99

MALES

THE SUMMARY STATISTICS CENTIMETERS		INCHES
175.74	MEAN	69.19
0.21	SE(MEAN)	0.08
6.71	ST DEV	2.64
0.15	SE(SD)	0.06
157.00	MINIMUM	61.81
204.20	MAXIMUM	80.39
COEFF. OF VARIATION		3.8%
SYMMETRY----BETA I		0.20
KURTOSIS----BETA II		3.06
NUMBER OF SUBJECTS		1003

PERCENTILES CENTIMETERS		INCHES
161.15	1ST	63.45
162.70	2ND	64.05
163.69	3RD	64.45
165.07	5TH	64.99
167.24	10TH	65.84
168.75	15TH	66.44
169.97	20TH	66.92
171.05	25TH	67.34
172.02	30TH	67.73
172.94	35TH	68.09
173.82	40TH	68.43
174.67	45TH	68.77
175.53	50TH	69.11
176.39	55TH	69.45
177.27	60TH	69.79
178.18	65TH	70.15
179.15	70TH	70.53
180.20	75TH	70.94
181.37	80TH	71.41
182.72	85TH	71.94
184.41	90TH	72.60
186.84	95TH	73.56
188.35	97TH	74.15
189.41	98TH	74.57
190.98	99TH	75.19

86--WEIGHT

The weight of the subject. This dimension was measured directly during the survey and was recorded to a tenth of a kilogram. See Gordon, et al. (1989) pages 320-321.

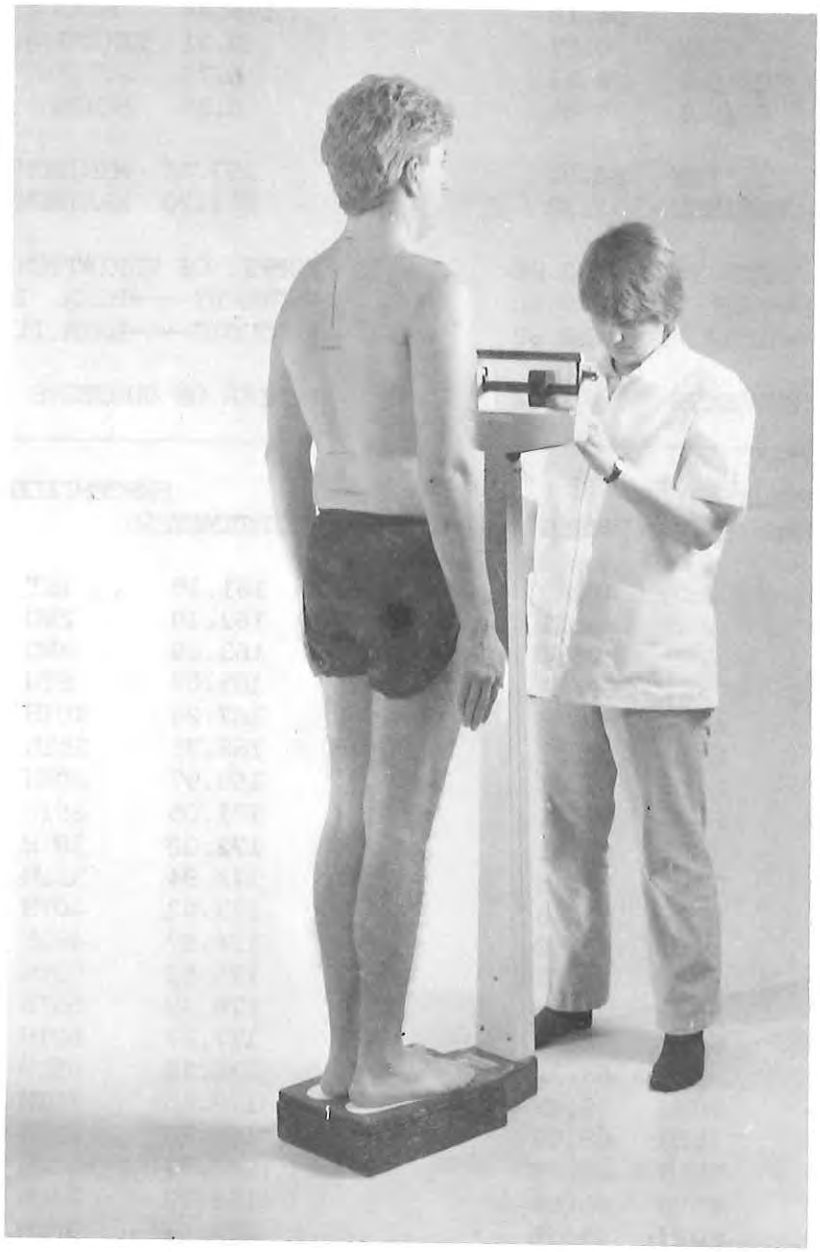


Illustration adapted from Gordon, et al. (1989).

FEMALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
62.20	MEAN	24.49
0.23	SE(MEAN)	0.09
8.37	ST DEV	3.30
0.16	SE(SD)	0.06
41.30	MINIMUM	91.27
94.60	MAXIMUM	209.07
COEFF. OF VARIATION		13.5%
SYMMETRY----BETA I		0.50
KURTOSIS----BETA II		3.37
NUMBER OF SUBJECTS		1304

PERCENTILES		
CENTIMETERS		INCHES
45.56	1ST	17.94
47.25	2ND	18.60
48.32	3RD	19.02
49.78	5TH	19.60
52.08	10TH	20.51
53.71	15TH	21.14
55.04	20TH	21.67
56.23	25TH	22.14
57.33	30TH	22.57
58.38	35TH	22.98
59.40	40TH	23.39
60.41	45TH	23.79
61.45	50TH	24.19
62.51	55TH	24.61
63.60	60TH	25.04
64.77	65TH	25.50
66.03	70TH	25.99
67.42	75TH	26.54
69.03	80TH	27.18
70.93	85TH	27.93
73.42	90TH	28.91
77.22	95TH	30.40
79.74	97TH	31.39
81.61	98TH	32.13
84.55	99TH	33.29

MALES

THE SUMMARY STATISTICS		
CENTIMETERS		INCHES
78.62	MEAN	30.95
0.35	SE(MEAN)	0.14
11.04	ST DEV	4.35
0.25	SE(SD)	0.10
49.80	MINIMUM	11.01
124.30	MAXIMUM	274.70
COEFF. OF VARIATION		14.0%
SYMMETRY----BETA I		0.41
KURTOSIS----BETA II		3.37
NUMBER OF SUBJECTS		1003

PERCENTILES		
CENTIMETERS		INCHES
55.04	1ST	21.67
57.83	2ND	22.77
59.53	3RD	23.44
61.78	5TH	24.32
65.17	10TH	25.66
67.47	15TH	26.56
69.31	20TH	27.29
70.93	25TH	27.93
72.41	30TH	28.51
73.80	35TH	29.06
75.15	40TH	29.59
76.49	45TH	30.11
77.83	50TH	30.64
79.21	55TH	31.19
80.63	60TH	31.75
82.14	65TH	32.34
83.76	70TH	32.98
85.56	75TH	33.68
87.62	80TH	34.50
90.07	85TH	35.46
93.26	90TH	36.72
98.14	95TH	38.64
101.38	97TH	39.91
103.78	98TH	40.86
107.57	99TH	42.35

CHAPTER III

CORRELATION AND REGRESSION

The application of anthropometric data through equipment design, or human engineering, rarely makes use of only a single body dimension. For example, glove sizing systems often employ hand length and hand circumference as key dimensions for predicting fit. However, proper glove design must also incorporate information on the length and breadth of the individual fingers and other hand dimensions. Therefore, equipment design requires as much information as possible while sizing systems seek to reduce variation to a few key dimensions. Appropriate key dimensions can be identified from information on the relationship among dimensions. This information is provided in the following matrices of correlation coefficients.

Cheverud, et al. (1990) provide an excellent explanation of the calculation and interpretation of correlation coefficients. In short, a correlation coefficient (Pearson Product-Moment Correlation) expresses the relationship between two variables. It is signified by the symbol "r," which takes values from -1.0 to +1.0. An r-value of +1.0 is interpreted as perfect correlation; as the value of variable 1 increases the value of variable 2 will always increase by the same amount. An r-value of -1.0 is also interpreted as perfect correlation, but in the opposite direction; as one value increases, the other value decreases. An r-value of zero indicates that there is no relationship between the two variables. Because the value of zero suggests no relationship, the significance of correlations is tested by comparing them to the value zero.

Correlation coefficients are provided for all dimensions except the finger circumferences. These correlations were not calculated since finger circumferences are based on regression equations, and would therefore merely repeat the information provided for the predictor variables. Correlation coefficients are presented in pairs, so that the row of numbers in parenthesis along the top correspond to the identifying number for each variable in the left hand column. All values in the correlation matrices marked with an asterisk (*) are significantly different from zero at the p=.05 level corrected for 2926 (77 x 76 ÷ 2) comparisons (see Cheverud, et al. 1990, or Sokal and Rohlf 1981). Significance levels can be used to establish a threshold of significance for the correlation values. Thus, absolute values of correlations greater than the threshold are interpreted as being significant. Using this criterion, the threshold correlation for the male sample is 0.1347 and the female sample is 0.1184. The threshold values differ because of the different sample sizes for the two sexes.

A series of regression equations follow the presentation of correlation coefficients. The primary purpose of these regression equations is to predict unknown dimension values from known dimensions. Two types of regression

equations are presented for each sex, one multivariate equation and three bivariate equations.

Multivariate equations are used to predict dimension values by plugging in the appropriate elements of the equation as follows:

$$\text{Dependent Variable} = \text{Intercept} + \left[\text{Slope 1} \times \text{Independent Variable 1}\right] + \left[\text{Slope 2} \times \text{Independent Variable 2}\right]$$

Associated with the regression equations are: the coefficient of determination R^2, standard error values for each equation element, and a standard error of the estimate. The value R^2 is a multivariate extension of the values presented in the correlation matrices. Because the value is squared, it is interpreted as representing the proportion of observed variation in the dependent variable that is accounted for by variation in the independent variables. As such, this statistic provides a means of judging the accuracy of the prediction; the closer R^2 is to 1.0 the better the predictive power of the equation. Similarly, the standard error of the estimate (SE Est) can also be used to describe prediction accuracy. This statistic is interpreted as a statement of the relationship between the predicted value and the actual population value. In short, the population value will lie between the Predicted Value ± the SE (Est) 66% of the time. The standard errors associated with the individual equation parameters are interpreted in a similar fashion. They are statements of the range of variability associated with each estimated parameter.

Bivariate equations are very similar to the multivariate equations, except that they each have only one independent variable. Therefore, dimension values are predicted using bivariate equations by plugging in the appropriate elements of the equation as follows:

$$\text{Dependent Variable} = \text{Intercept} + \left[\text{Slope} \times \text{Independent Variable}\right]$$

The statistics associated with the bivariate equations are the same, and are interpreted in the same way, with one minor exception. Instead of R^2, bivariate equations report r^2. This value is the squared value of the correlation coefficient reported in the correlation matrices. The difference lies only in the difference between multivariate and bivariate equations, otherwise r^2 and R^2 are interpreted in the same way.

Part of the utility of making predictions based upon regression equations is that they use dimensions that are easily measured, or that are readily available, as predictors. For this reason, HAND LENGTH MEASURED and HAND BREADTH MEASURED were chosen as the independent (predictor) variables in the

multivariate equations. These dimensions are easily measured and were both reported in the Anthropometric Survey (Gordon, et al. 1989). These dimensions were repeated as predictor variables in the bivariate equations with the addition of HAND LENGTH DIGITIZED. Because it is measured from the distal wrist crease (the axis of rotation at the wrist), Hand Length Digitized is slightly different from Hand Length Measured and may be more useful when predicting dimensions for biomechanical applications. All dimensions in the regression equations are in millimeters, expect for WEIGHT which is predicted in kilograms.

Regression equations to predict finger circumferences were constructed using their measured values, rather than their (regression) predicted values. This reduced the data set for constructing the equations, and thus affected significance levels. All reported regression equations are significant ($p \leq .05$, when corrected for simultaneous comparisons) with ten exceptions. The nonsignificant equations, all associated with the male data set, are: Equations based on HAND LENGTH DIGITIZED predicting DIGIT 1 IP CIRCUMFERENCE, DIGIT 2 PIP CIRCUMFERENCE, DIGIT 2 DIP CIRCUMFERENCE, DIGIT 3 DIP CIRCUMFERENCE, DIGIT 4 PIP CIRCUMFERENCE, DIGIT 4 DIP CIRCUMFERENCE, DIGIT 5 PIP CIRCUMFERENCE, and DIGIT 5 DIP CIRCUMFERENCE; and Equations based on HAND LENGTH MEASURED predicting DIGIT 4 DIP CIRCUMFERENCE and 5 DIGIT DIP CIRCUMFERENCE. To avoid potential misuse, regression equations are not reported when one, or more, of the slope values is not significantly different from zero. In the case of the multivariate equations, this means that the equation is not reported if a slope value is not significantly different from zero even though the overall equation was statistically significant. In these cases, the reader is directed to the appropriate bivariate equation. Although these precautions should prevent most misapplications of these equations, a full understanding of the relationship between the dependent and independent variables, and the assumptions associated with regression statements, is necessary before any applications are attempted.

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES

		(1)	(2)	(3)	(4)	(6)	(7)
1	D1 LENGTH	-----	.6034*	.6186*	.2121*	.7282*	.3186*
2	D1 HEIGHT	.6034*	-----	.4430*	.3016*	.5828*	.2272*
3	D1 TIP TO WRIST	.6186*	.4430*	-----	.2615*	.6589*	.8899*
4	D1 IP BREADTH	.2121*	.3016*	.2615*	-----	.2542*	.1682*
6	D1 LINK	.7282*	.5828*	.6589*	.2542*	-----	.4453*
7	D1 METACARPAL LINK	.3186*	.2272*	.8899*	.1682*	.4453*	-----
8	D1 PROX LINK	.5074*	.3662*	.3537*	.0964	.3587*	.0065
9	D1 DIST LINK	.6005*	.4294*	.4957*	.2986*	.5625*	.2336*
10	D2 LENGTH	.7082*	.6133*	.5569*	.2405*	.6021*	.3147*
11	D2 HEIGHT	.6906*	.8068*	.5813*	.3212*	.6242*	.3474*
12	D2 TIP TO WRIST	.7115*	.7134*	.6539*	.2803*	.6581*	.4333*
13	D2 PIP BREADTH	.2393*	.1535*	.2027*	.4001*	.3383*	.1152
15	D2 DIP BREADTH	.2122*	.1164	.1740*	.4231*	.3324*	.0827
17	D2 LINK	.6609*	.6054*	.5780*	.2371*	.5999*	.3633*
18	D2 METACARPAL LINK	.5107*	.5956*	.5122*	.2351*	.4890*	.3681*
19	D2 DIST LINK	.4958*	.4221*	.4076*	.2564*	.4216*	.2125*
20	D2 MED LINK	.4795*	.4788*	.4455*	.1778*	.4299*	.3097*
21	D2 PROX LINK	.3983*	.3600*	.3983*	.1307	.3931*	.2940*
22	D3 LENGTH	.6609*	.6057*	.5507*	.2455*	.5709*	.3265*
23	D3 HEIGHT	.6928*	.7105*	.6247*	.2910*	.6230*	.4046*
24	D3 TIP TO WRIST	.6914*	.7061*	.6252*	.2873*	.6227*	.4059*
25	D3 PIP BREADTH	.2895*	.1709*	.2239*	.4265*	.3968*	.1215
27	D3 DIP BREADTH	.2486*	.1360*	.1805*	.4096*	.3479*	.0884
29	D3 LINK	.5948*	.5734*	.4849*	.2421*	.5311*	.2838*
30	D3 METACARPAL LINK	.4954*	.5458*	.5100*	.2118*	.4515*	.3672*
31	D3 DIST LINK	.4796*	.4342*	.3909*	.2255*	.3971*	.2070*
32	D3 MED LINK	.4794*	.4767*	.4625*	.1710*	.4408*	.3196*
33	D3 PROX LINK	.3228*	.3174*	.2374*	.1269	.3038*	.1262
34	D4 LENGTH	.6481*	.5762*	.5592*	.2467*	.5677*	.3457*
35	D4 HEIGHT	.6690*	.6009*	.6364*	.2602*	.5929*	.4335*
36	D4 TIP TO WRIST	.6871*	.6889*	.6251*	.2960*	.6138*	.4027*
37	D4 PIP BREADTH	.2843*	.1718*	.2439*	.3781*	.3838*	.1327
39	D4 DIP BREADTH	.2262*	.0935	.2023*	.3586*	.3593*	.1212
41	D4 LINK	.6261*	.5855*	.5246*	.2757*	.5663*	.3127*
42	D4 METACARPAL LINK	.5188*	.5686*	.5237*	.2166*	.4555*	.3663*
43	D4 DIST LINK	.4561*	.3908*	.3732*	.2269*	.4090*	.1987*
44	D4 MED LINK	.4541*	.4485*	.4539*	.1444*	.3960*	.3240*
45	D4 PROX LINK	.4432*	.4073*	.3248*	.2086*	.4092*	.1718*
46	D5 LENGTH	.6155*	.5217*	.5092*	.2165*	.5662*	.3103*
47	D5 HEIGHT	.6244*	.4864*	.6152*	.2140*	.5572*	.4351*
48	D5 TIP TO WRIST	.6623*	.6315*	.5976*	.2581*	.6041*	.3855*
49	D5 PIP BREADTH	.2092*	.1689*	.1823*	.3976*	.3235*	.1043
51	D5 DIP BREADTH	.1971*	.1109	.1638*	.3966*	.3070*	.0865

* $p \leq .05$ (2-tailed, experimental)

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(1)	(2)	(3)	(4)	(6)	(7)
53 D5 LINK	.6247*	.5489*	.5317*	.2555*	.6012*	.3302*
54 D5 METACARPAL LINK	.4612*	.4862*	.4479*	.1677*	.3894*	.3016*
55 D5 DIST LINK	.4854*	.3837*	.3935*	.2302*	.4582*	.2249*
56 D5 MED LINK	.4338*	.4211*	.4233*	.1267	.4023*	.3101*
57 D5 PROX LINK	.4558*	.3874*	.3642*	.1898*	.4594*	.2110*
58 HAND LGTH DIG	.6928*	.7105*	.6247*	.2910*	.6230*	.4046*
59 HAND LGTH MEAS	.6824*	.6726*	.5894*	.3853*	.6290*	.3527*
60 HAND CIRCUMFERENCE	.3490*	.3930*	.3586*	.5804*	.4028*	.2313*
61 PALM LENGTH	.5907*	.6703*	.5771*	.2757*	.5543*	.4027*
62 HAND BREADTH DIG	.3959*	.2002*	.3550*	.3470*	.5236*	.2411*
63 HAND BREADTH MEAS	.3453*	.3777*	.3592*	.5612*	.3982*	.2369*
64 WRIST BREADTH	.3448*	.1569*	.2719*	.3177*	.4481*	.1683*
65 WRIST CIRCUMFERENCE	.3557*	.4328*	.2974*	.5738*	.3936*	.1646*
66 WRIST-C OF GRIP	.3270*	.3897*	.4713*	.3213*	.3614*	.3868*
67 WRIST-INDEX FINGER	.6961*	.6855*	.6023*	.3815*	.6500*	.3613*
68 WRIST-THUMB LENGTH	.7068*	.7207*	.6552*	.4047*	.6796*	.4252*
69 CROTCH 1 HEIGHT	.4909*	.7715*	.6474*	.3311*	.5107*	.5234*
70 CROTCH 2 HEIGHT	.5974*	.7220*	.5811*	.3024*	.5657*	.3858*
71 CROTCH 3 HEIGHT	.5947*	.6138*	.5819*	.2473*	.5393*	.3937*
72 CROTCH 4 HEIGHT	.5654*	.4977*	.5611*	.2236*	.4902*	.3844*
73 FOREARM-HAND LENGTH	.6192*	.6139*	.5968*	.3584*	.5912*	.3905*
74 ELBOW-WRIST LENGTH	.5028*	.5010*	.5288*	.2973*	.4945*	.3672*
75 ELBOW-C OF GRIP	.5231*	.5387*	.5850*	.3443*	.5254*	.4225*
76 RADIALE-STYLION	.4844*	.4962*	.5135*	.3184*	.4627*	.3470*
77 FOREARM CIRC FLEXED	.2226*	.3066*	.2528*	.4695*	.2625*	.1689*
78 BICEPS CIRC FLEXED	.1558*	.2164*	.1899*	.3795*	.2003*	.1333
79 ARM LENGTH	.5694*	.5507*	.5246*	.2968*	.5341*	.3295*
80 SHOULDER-ELBOW LGTH	.4744*	.4747*	.4161*	.2886*	.4397*	.2474*
81 ACROMION-RADIALE LT	.4696*	.4746*	.4106*	.2674*	.4323*	.2408*
82 THUMBTIP REACH	.5455*	.5565*	.5244*	.3541*	.5327*	.3324*
83 WRIST WALL LENGTH	.4799*	.4917*	.4694*	.3318*	.4715*	.2998*
84 WRIST WALL LT EX	.4513*	.4681*	.4416*	.3311*	.4388*	.2674*
85 STATURE	.4610*	.4891*	.3865*	.3207*	.4397*	.2129*
86 WEIGHT	.2621*	.3419*	.2516*	.4411*	.2987*	.1395*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

		(8)	(9)	(10)	(11)	(12)	(13)
1	D1 LENGTH	.5074*	.6005*	.7082*	.6906*	.7115*	.2393*
2	D1 HEIGHT	.3662*	.4294*	.6133*	.8068*	.7134*	.1535*
3	D1 TIP TO WRIST	.3537*	.4957*	.5569*	.5813*	.6539*	.2027*
4	D1 IP BREADTH	.0964	.2986*	.2405*	.3212*	.2803*	.4001*
6	D1 LINK	.3587*	.5625*	.6021*	.6242*	.6581*	.3383*
7	D1 METACARPAL LINK	.0065	.2336*	.3147*	.3474*	.4333*	.1152
8	D1 PROX LINK	-----	.0039	.4067*	.4420*	.4338*	.0525
9	D1 DIST LINK	.0039	-----	.5228*	.4750*	.4924*	.2978*
10	D2 LENGTH	.4067*	.5228*	-----	.8560*	.8724*	.1609*
11	D2 HEIGHT	.4420*	.4750*	.8560*	-----	.9548*	.1690*
12	D2 TIP TO WRIST	.4338*	.4924*	.8724*	.9548*	-----	.1639*
13	D2 PIP BREADTH	.0525	.2978*	.1609*	.1690*	.1639*	-----
15	D2 DIP BREADTH	.0497	.2940*	.1451*	.1328	.1312	.7234*
17	D2 LINK	.3787*	.4936*	.8475*	.8334*	.8970*	.1754*
18	D2 METACARPAL LINK	.3468*	.3006*	.5721*	.7636*	.7644*	.0838
19	D2 DIST LINK	.1828*	.5617*	.6522*	.5697*	.5682*	.1562*
20	D2 MED LINK	.3156*	.2734*	.6705*	.6463*	.6654*	.0761
21	D2 PROX LINK	.2264*	.2620*	.4044*	.4906*	.5777*	.1535*
22	D3 LENGTH	.3870*	.4933*	.8862*	.8286*	.8396*	.0953
23	D3 HEIGHT	.4222*	.4865*	.8376*	.9459*	.9559*	.1223
24	D3 TIP TO WRIST	.4204*	.4869*	.8376*	.9432*	.9572*	.1193
25	D3 PIP BREADTH	.0744	.3255*	.1767*	.1897*	.1872*	.7448*
27	D3 DIP BREADTH	.0423	.3084*	.1341	.1406*	.1258	.7117*
29	D3 LINK	.3283*	.4583*	.7872*	.7806*	.7955*	.0985
30	D3 METACARPAL LINK	.3402*	.3029*	.5224*	.7120*	.7187*	.0902
31	D3 DIST LINK	.1638*	.5435*	.6219*	.5705*	.5715*	.1254
32	D3 MED LINK	.3122*	.3068*	.6426*	.6381*	.6514*	-.0020
33	D3 PROX LINK	.2047*	.2083*	.4243*	.4473*	.4657*	.0589
34	D4 LENGTH	.3689*	.4900*	.8336*	.7855*	.8035*	.1092
35	D4 HEIGHT	.3998*	.4730*	.8006*	.8718*	.9212*	.0848
36	D4 TIP TO WRIST	.4141*	.5024*	.8001*	.9148*	.9192*	.1397*
37	D4 PIP BREADTH	.1021	.3297*	.1880*	.1997*	.2017*	.6806*
39	D4 DIP BREADTH	.0613	.2701*	.1330	.1199	.1252	.6459*
41	D4 LINK	.3547*	.4815*	.7951*	.7950*	.8065*	.1515*
42	D4 METACARPAL LINK	.3387*	.3522*	.5285*	.7350*	.7298*	.0777
43	D4 DIST LINK	.1646*	.5067*	.5970*	.5375*	.5483*	.1556*
44	D4 MED LINK	.3132*	.2655*	.5981*	.6167*	.6330*	-.0094
45	D4 PROX LINK	.2655*	.3040*	.5289*	.5485*	.5497*	.1563*
46	D5 LENGTH	.3425*	.4510*	.7545*	.6843*	.7050*	.1555*
47	D5 HEIGHT	.3656*	.4380*	.7367*	.7626*	.8442*	.0399
48	D5 TIP TO WRIST	.3882*	.4875*	.7358*	.8306*	.8332*	.1626*
49	D5 PIP BREADTH	.0581	.2533*	.1490*	.2153*	.2119*	.6305*
51	D5 DIP BREADTH	.0285	.2743*	.1122	.1333	.1254	.6110*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(8)	(9)	(10)	(11)	(12)	(13)
53 D5 LINK	.3416*	.4724*	.7443*	.7192*	.7403*	.2038*
54 D5 METACARPAL LINK	.2947*	.3269*	.4623*	.6421*	.6255*	.0630
55 D5 DIST LINK	.1807*	.4846*	.5819*	.5277*	.5441*	.1502*
56 D5 MED LINK	.2873*	.2315*	.5588*	.5405*	.5695*	.0543
57 D5 PROX LINK	.2662*	.3276*	.5052*	.5030*	.5113*	.2129*
58 HAND LGTH DIG	.4222*	.4865*	.8376*	.9459*	.9559*	.1223
59 HAND LGTH MEAS	.4312*	.4995*	.7574*	.8460*	.8384*	.2164*
60 HAND CIRCUMFERENCE	.2015*	.3287*	.4598*	.5232*	.5089*	.4308*
61 PALM LENGTH	.3719*	.3923*	.6379*	.8760*	.8863*	.1254
62 HAND BREADTH DIG	.1616*	.3358*	.2715*	.2724*	.3005*	.6907*
63 HAND BREADTH MEAS	.2162*	.2989*	.4524*	.5199*	.5158*	.4111*
64 WRIST BREADTH	.1418*	.2807*	.1954*	.1876*	.2082*	.6201*
65 WRIST CIRCUMFERENCE	.1902*	.3193*	.4077*	.4920*	.4588*	.4577*
66 WRIST-C OF GRIP	.1888*	.2959*	.3909*	.4216*	.4313*	.1232
67 WRIST-INDEX FINGER	.4519*	.4954*	.8047*	.8696*	.8737*	.2336*
68 WRIST-THUMB LENGTH	.4627*	.4854*	.6994*	.7649*	.7697*	.1903*
69 CROTCH 1 HEIGHT	.2832*	.4006*	.5477*	.7121*	.6822*	.1411*
70 CROTCH 2 HEIGHT	.3681*	.4554*	.6619*	.8983*	.8923*	.1416*
71 CROTCH 3 HEIGHT	.3431*	.4653*	.6655*	.8377*	.8629*	.0922
72 CROTCH 4 HEIGHT	.3235*	.4444*	.6278*	.7502*	.7997*	.0433
73 FOREARM-HAND LENGTH	.4064*	.4509*	.6900*	.7850*	.7902*	.1753*
74 ELBOW-WRIST LENGTH	.3408*	.3644*	.5623*	.6498*	.6626*	.1274
75 ELBOW-C OF GRIP	.3456*	.3953*	.5919*	.6758*	.6895*	.1436*
76 RADIALE-STYLION	.3464*	.3619*	.5415*	.6354*	.6449*	.1006
77 FOREARM CIRC FLEXED	.1325	.2268*	.3034*	.3699*	.3397*	.3084*
78 BICEPS CIRC FLEXED	.0632	.1949*	.2344*	.2879*	.2627*	.2947*
79 ARM LENGTH	.3829*	.4037*	.6201*	.7151*	.7198*	.1597*
80 SHOULDER-ELBOW LGTH	.3281*	.3300*	.5207*	.6016*	.5943*	.1757*
81 ACROMION-RADIALE LT	.3314*	.3258*	.5158*	.5994*	.5895*	.1744*
82 THUMBTIP REACH	.3646*	.4164*	.5996*	.6778*	.6763*	.1964*
83 WRIST WALL LENGTH	.3214*	.3724*	.5386*	.6214*	.6187*	.1863*
84 WRIST WALL LT EX	.3424*	.3437*	.5158*	.6010*	.5955*	.1517*
85 STATURE	.3288*	.3243*	.5249*	.6092*	.5956*	.2249*
86 WEIGHT	.1799*	.2476*	.3593*	.4306*	.3913*	.3797*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

		(15)	(17)	(18)	(19)	(20)	(21)
1	D1 LENGTH	.2122*	.6609*	.5107*	.4958*	.4795*	.3983*
2	D1 HEIGHT	.1164	.6054*	.5956*	.4221*	.4788*	.3600*
3	D1 TIP TO WRIST	.1740*	.5780*	.5122*	.4076*	.4455*	.3983*
4	D1 IP BREADTH	.4231*	.2371*	.2351*	.2564*	.1778*	.1307
6	D1 LINK	.3324*	.5999*	.4890*	.4216*	.4299*	.3931*
7	D1 METACARPAL LINK	.0827	.3633*	.3681*	.2125*	.3097*	.2940*
8	D1 PROX LINK	.0497	.3787*	.3468*	.1828*	.3156*	.2264*
9	D1 DIST LINK	.2940*	.4936*	.3006*	.5617*	.2734*	.2620*
10	D2 LENGTH	.1451*	.8475*	.5721*	.6522*	.6705*	.4044*
11	D2 HEIGHT	.1328	.8334*	.7636*	.5697*	.6463*	.4906*
12	D2 TIP TO WRIST	.1312	.8970*	.7644*	.5682*	.6654*	.5777*
13	D2 PIP BREADTH	.7234*	.1754*	.0838	.1562*	.0761	.1535*
15	D2 DIP BREADTH	-----	.1487*	.0551	.1830*	.0195	.0990
17	D2 LINK	.1487*	-----	.4007*	.5642*	.6303*	.7473*
18	D2 METACARPAL LINK	.0551	.4007*	-----	.3549*	.4600*	.1073
19	D2 DIST LINK	.1830*	.5642*	.3549*	-----	.1478*	.2031*
20	D2 MED LINK	.0195	.6303*	.4600*	.1478*	-----	.3029*
21	D2 PROX LINK	.0990	.7473*	.1073	.2031*	.3029*	-----
22	D3 LENGTH	.0748	.7897*	.5886*	.6025*	.6188*	.3829*
23	D3 HEIGHT	.0890	.8237*	.7799*	.5594*	.6369*	.4885*
24	D3 TIP TO WRIST	.0850	.8244*	.7816*	.5606*	.6354*	.4890*
25	D3 PIP BREADTH	.7007*	.1807*	.1243	.1393*	.0839	.1359*
27	D3 DIP BREADTH	.7701*	.1448*	.0495	.1666*	.0315	.1258
29	D3 LINK	.0875	.7450*	.5622*	.5336*	.5703*	.4053*
30	D3 METACARPAL LINK	.0441	.5490*	.6888*	.3419*	.4278*	.3685*
31	D3 DIST LINK	.1334	.5605*	.3670*	.7621*	.2939*	.1949*
32	D3 MED LINK	-.0432	.5834*	.4992*	.3009*	.6847*	.2847*
33	D3 PROX LINK	.0504	.4531*	.3043*	.2092*	.2631*	.3706*
34	D4 LENGTH	.0994	.7584*	.5592*	.5877*	.5805*	.3774*
35	D4 HEIGHT	.0558	.7906*	.7564*	.5484*	.6099*	.4649*
36	D4 TIP TO WRIST	.1124	.7852*	.7600*	.5558*	.6155*	.4557*
37	D4 PIP BREADTH	.6171*	.2110*	.1103	.1651*	.1226	.1703*
39	D4 DIP BREADTH	.6918*	.1397*	.0558	.1195	.0644	.1245
41	D4 LINK	.1448*	.7558*	.5692*	.5657*	.5634*	.4076*
42	D4 METACARPAL LINK	.0363	.5467*	.7154*	.3518*	.4619*	.3528*
43	D4 DIST LINK	.1537*	.5357*	.3551*	.7056*	.2797*	.1558*
44	D4 MED LINK	-.0067	.5710*	.4791*	.2847*	.6217*	.3125*
45	D4 PROX LINK	.1478*	.5145*	.3890*	.3001*	.3338*	.3554*
46	D5 LENGTH	.1742*	.6808*	.4682*	.5296*	.5354*	.3169*
47	D5 HEIGHT	.0222	.7279*	.6881*	.5060*	.5753*	.4178*
48	D5 TIP TO WRIST	.1438*	.7127*	.6875*	.5019*	.5894*	.4264*
49	D5 PIP BREADTH	.5858*	.1918*	.1596*	.1690*	.1015	.1507*
51	D5 DIP BREADTH	.6469*	.1237	.0796	.1612*	.0259	.1153

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(15)	(17)	(18)	(19)	(20)	(21)
53 D5 LINK	.2111*	.7185*	.4865*	.5225*	.5485*	.3880*
54 D5 METACARPAL LINK	.0251	.4504*	.6397*	.3006*	.4177*	.2620*
55 D5 DIST LINK	.1990*	.5475*	.3292*	.6412*	.2944*	.1944*
56 D5 MED LINK	.0530	.5203*	.4215*	.2716*	.5740*	.2417*
57 D5 PROX LINK	.2060*	.5048*	.3235*	.2758*	.3595*	.3535*
58 HAND LGTH DIG	.0890	.8237*	.7799*	.5594*	.6369*	.4885*
59 HAND LGTH MEAS	.1824*	.7411*	.6568*	.5007*	.5864*	.4294*
60 HAND CIRCUMFERENCE	.4020*	.4256*	.4340*	.3092*	.3405*	.2491*
61 PALM LENGTH	.0854	.7036*	.8107*	.4175*	.5333*	.4966*
62 HAND BREADTH DIG	.6664*	.2770*	.2188*	.1341	.1808*	.2426*
63 HAND BREADTH MEAS	.3800*	.4345*	.4355*	.2854*	.3442*	.2742*
64 WRIST BREADTH	.5850*	.2068*	.1298	.0826	.1550*	.1885*
65 WRIST CIRCUMFERENCE	.4043*	.3914*	.3801*	.2849*	.3067*	.2296*
66 WRIST-C OF GRIP	.1138	.3616*	.3665*	.2820*	.3346*	.1709*
67 WRIST-INDEX FINGER	.2019*	.7968*	.6487*	.5072*	.6277*	.4708*
68 WRIST-THUMB LENGTH	.1611*	.6856*	.5952*	.4577*	.5477*	.4027*
69 CROTCH 1 HEIGHT	.1134	.5621*	.5941*	.4606*	.4366*	.3462*
70 CROTCH 2 HEIGHT	.1035	.7319*	.7820*	.5118*	.5287*	.4822*
71 CROTCH 3 HEIGHT	.0518	.6980*	.7705*	.5107*	.5235*	.4278*
72 CROTCH 4 HEIGHT	.0086	.6407*	.7231*	.4888*	.4970*	.3674*
73 FOREARM-HAND LENGTH	.1388*	.6812*	.6443*	.4354*	.5511*	.4074*
74 ELBOW-WRIST LENGTH	.0937	.5593*	.5576*	.3400*	.4610*	.3435*
75 ELBOW-C OF GRIP	.1120	.5813*	.5812*	.3704*	.4892*	.3430*
76 RADIALE-STYLION	.0617	.5442*	.5430*	.3212*	.4503*	.3369*
77 FOREARM CIRC FLEXED	.2855*	.2794*	.2965*	.2087*	.2366*	.1659*
78 BICEPS CIRC FLEXED	.2641*	.2138*	.2326*	.1640*	.1814*	.1232
79 ARM LENGTH	.1360*	.6259*	.5789*	.3907*	.4656*	.4012*
80 SHOULDER-ELBOW LGTH	.1497*	.5108*	.4867*	.3344*	.3695*	.3048*
81 ACROMION-RADIALE LT	.1415*	.5064*	.4833*	.3341*	.3582*	.3062*
82 THUMBTIP REACH	.1546*	.5880*	.5443*	.3707*	.4479*	.3584*
83 WRIST WALL LENGTH	.1537*	.5354*	.5016*	.3257*	.4012*	.3351*
84 WRIST WALL LT EX	.1206	.5159*	.4817*	.3105*	.3937*	.3119*
85 STATURE	.2007*	.5104*	.4902*	.3282*	.3522*	.3137*
86 WEIGHT	.3340*	.3245*	.3378*	.2396*	.2283*	.1931*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(22)	(23)	(24)	(25)	(27)	(29)
1 D1 LENGTH	.6609*	.6928*	.6914*	.2895*	.2486*	.5948*
2 D1 HEIGHT	.6057*	.7105*	.7061*	.1709*	.1360*	.5734*
3 D1 TIP TO WRIST	.5507*	.6247*	.6252*	.2239*	.1805*	.4849*
4 D1 IP BREADTH	.2455*	.2910*	.2873*	.4265*	.4096*	.2421*
6 D1 LINK	.5709*	.6230*	.6227*	.3968*	.3479*	.5311*
7 D1 METACARPAL LINK	.3265*	.4046*	.4059*	.1215	.0884	.2838*
8 D1 PROX LINK	.3870*	.4222*	.4204*	.0744	.0423	.3283*
9 D1 DIST LINK	.4933*	.4865*	.4869*	.3255*	.3084*	.4583*
10 D2 LENGTH	.8862*	.8376*	.8376*	.1767*	.1341	.7872*
11 D2 HEIGHT	.8286*	.9459*	.9432*	.1897*	.1406*	.7806*
12 D2 TIP TO WRIST	.8396*	.9559*	.9572*	.1872*	.1258	.7955*
13 D2 PIP BREADTH	.0953	.1223	.1193	.7448*	.7117*	.0985
15 D2 DIP BREADTH	.0748	.0890	.0850	.7007*	.7701*	.0875
17 D2 LINK	.7897*	.8237*	.8244*	.1807*	.1448*	.7450*
18 D2 METACARPAL LINK	.5886*	.7799*	.7816*	.1243	.0495	.5622*
19 D2 DIST LINK	.6025*	.5594*	.5606*	.1393*	.1666*	.5336*
20 D2 MED LINK	.6188*	.6369*	.6354*	.0839	.0315	.5703*
21 D2 PROX LINK	.3829*	.4885*	.4890*	.1359*	.1258	.4053*
22 D3 LENGTH	-----	.8929*	.8929*	.1810*	.1290	.8404*
23 D3 HEIGHT	.8929*	-----	.9985*	.1930*	.1242	.8271*
24 D3 TIP TO WRIST	.8929*	.9985*	-----	.1897*	.1213	.8276*
25 D3 PIP BREADTH	.1810*	.1930*	.1897*	-----	.7662*	.1552*
27 D3 DIP BREADTH	.1290	.1242	.1213	.7662*	-----	.1317
29 D3 LINK	.8404*	.8271*	.8276*	.1552*	.1317	-----
30 D3 METACARPAL LINK	.5554*	.7528*	.7548*	.1453*	.0551	.2565*
31 D3 DIST LINK	.6786*	.6136*	.6142*	.1541*	.1618*	.5748*
32 D3 MED LINK	.7024*	.7004*	.6986*	.0584	.0091	.6166*
33 D3 PROX LINK	.4347*	.4589*	.4611*	.0847	.0707	.7585*
34 D4 LENGTH	.9130*	.8441*	.8428*	.1767*	.1418*	.7929*
35 D4 HEIGHT	.8451*	.9614*	.9620*	.1450*	.0801	.7866*
36 D4 TIP TO WRIST	.8507*	.9683*	.9680*	.2013*	.1456*	.7854*
37 D4 PIP BREADTH	.1751*	.1964*	.1915*	.7504*	.6937*	.1616*
39 D4 DIP BREADTH	.1016	.1115	.1069	.7081*	.7556*	.1079
41 D4 LINK	.8473*	.8461*	.8453*	.2103*	.1889*	.9286*
42 D4 METACARPAL LINK	.5596*	.7729*	.7731*	.1213	.0455	.3488*
43 D4 DIST LINK	.6263*	.5852*	.5849*	.1665*	.1696*	.5429*
44 D4 MED LINK	.6577*	.6660*	.6642*	.0621	.0285	.5830*
45 D4 PROX LINK	.5565*	.5681*	.5679*	.1953*	.1848*	.7908*
46 D5 LENGTH	.7545*	.7054*	.7031*	.1881*	.1582*	.6632*
47 D5 HEIGHT	.7515*	.8660*	.8680*	.0786	.0183	.7045*
48 D5 TIP TO WRIST	.7644*	.8712*	.8725*	.2094*	.1520*	.6940*
49 D5 PIP BREADTH	.1453*	.2158*	.2126*	.6882*	.6125*	.1606*
51 D5 DIP BREADTH	.0934	.1234	.1212	.6330*	.6985*	.1047

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(22)	(23)	(24)	(25)	(27)	(29)
53 D5 LINK	.7598*	.7511*	.7497*	.2365*	.2128*	.7762*
54 D5 METACARPAL LINK	.4938*	.6802*	.6804*	.1070	.0368	.3624*
55 D5 DIST LINK	.5902*	.5545*	.5555*	.1804*	.1922*	.5263*
56 D5 MED LINK	.5558*	.5692*	.5661*	.0586	.0356	.4827*
57 D5 PROX LINK	.5261*	.5237*	.5227*	.2492*	.2253*	.6549*
58 HAND LGTH DIG	.8929*	1.0000*	.9985*	.1930*	.1242	.8271*
59 HAND LGTH MEAS	.8135*	.8834*	.8828*	.3232*	.2308*	.7409*
60 HAND CIRCUMFERENCE	.4864*	.5226*	.5206*	.5289*	.4466*	.4284*
61 PALM LENGTH	.6326*	.9111*	.9109*	.1693*	.0995	.6626*
62 HAND BREADTH DIG	.2430*	.2650*	.2611*	.7848*	.7119*	.2162*
63 HAND BREADTH MEAS	.4720*	.5204*	.5185*	.4957*	.4156*	.4160*
64 WRIST BREADTH	.1544*	.1644*	.1632*	.6640*	.5936*	.1587*
65 WRIST CIRCUMFERENCE	.4094*	.4654*	.4647*	.5166*	.4386*	.4163*
66 WRIST-C OF GRIP	.3884*	.4444*	.4437*	.1474*	.1160	.3513*
67 WRIST-INDEX FINGER	.7753*	.8530*	.8531*	.2810*	.2038*	.7297*
68 WRIST-THUMB LENGTH	.6843*	.7583*	.7587*	.2392*	.1752*	.6405*
69 CROTCH 1 HEIGHT	.5629*	.6803*	.6785*	.1539*	.1370*	.5318*
70 CROTCH 2 HEIGHT	.6746*	.9030*	.9016*	.1644*	.1113	.6818*
71 CROTCH 3 HEIGHT	.6776*	.9017*	.9026*	.1217	.0635	.6676*
72 CROTCH 4 HEIGHT	.6537*	.8463*	.8485*	.0736	.0204	.6233*
73 FOREARM-HAND LENGTH	.7335*	.8235*	.8228*	.2691*	.1782*	.6776*
74 ELBOW-WRIST LENGTH	.5923*	.6843*	.6835*	.2013*	.1224	.5539*
75 ELBOW-C OF GRIP	.6171*	.7118*	.7109*	.2140*	.1373*	.5738*
76 RADIALE-STYLION	.5815*	.6707*	.6708*	.1699*	.0887	.5291*
77 FOREARM CIRC FLEXED	.3186*	.3597*	.3580*	.3822*	.3351*	.2937*
78 BICEPS CIRC FLEXED	.2410*	.2818*	.2807*	.3521*	.3304*	.2404*
79 ARM LENGTH	.6511*	.7442*	.7453*	.2358*	.1521*	.6133*
80 SHOULDER-ELBOW LGTH	.5384*	.6092*	.6093*	.2219*	.1501*	.5240*
81 ACROMION-RADIALE LT	.5333*	.6039*	.6043*	.2176*	.1479*	.5210*
82 THUMBTIP REACH	.6233*	.6941*	.6925*	.2545*	.1710*	.5890*
83 WRIST WALL LENGTH	.5699*	.6404*	.6389*	.2435*	.1710*	.5397*
84 WRIST WALL LT EX	.5484*	.6130*	.6126*	.2143*	.1279	.5101*
85 STATURE	.5342*	.6048*	.6051*	.2744*	.1894*	.5263*
86 WEIGHT	.3476*	.4008*	.3985*	.4356*	.3663*	.3545*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(30)	(31)	(32)	(33)	(34)	(35)
1 D1 LENGTH	.4954*	.4796*	.4794*	.3228*	.6481*	.6690*
2 D1 HEIGHT	.5458*	.4342*	.4767*	.3174*	.5762*	.6009*
3 D1 TIP TO WRIST	.5100*	.3909*	.4625*	.2374*	.5592*	.6364*
4 D1 IP BREADTH	.2118*	.2255*	.1710*	.1269	.2467*	.2602*
6 D1 LINK	.4515*	.3971*	.4408*	.3038*	.5677*	.5929*
7 D1 METACARPAL LINK	.3672*	.2070*	.3196*	.1262	.3457*	.4335*
8 D1 PROX LINK	.3402*	.1638*	.3122*	.2047*	.3689*	.3998*
9 D1 DIST LINK	.3029*	.5435*	.3068*	.2083*	.4900*	.4730*
10 D2 LENGTH	.5224*	.6219*	.6426*	.4243*	.8336*	.8006*
11 D2 HEIGHT	.7120*	.5705*	.6381*	.4473*	.7855*	.8718*
12 D2 TIP TO WRIST	.7187*	.5715*	.6514*	.4657*	.8035*	.9212*
13 D2 PIP BREADTH	.0902	.1254	-.0020	.0589	.1092	.0848
15 D2 DIP BREADTH	.0441	.1334	-.0432	.0504	.0994	.0558
17 D2 LINK	.5490*	.5605*	.5834*	.4531*	.7584*	.7906*
18 D2 METACARPAL LINK	.6888*	.3670*	.4992*	.3043*	.5592*	.7564*
19 D2 DIST LINK	.3419*	.7621*	.3009*	.2092*	.5877*	.5484*
20 D2 MED LINK	.4278*	.2939*	.6847*	.2631*	.5805*	.6099*
21 D2 PROX LINK	.3685*	.1949*	.2847*	.3706*	.3774*	.4649*
22 D3 LENGTH	.5554*	.6786*	.7024*	.4347*	.9130*	.8451*
23 D3 HEIGHT	.7528*	.6136*	.7004*	.4589*	.8441*	.9614*
24 D3 TIP TO WRIST	.7548*	.6142*	.6986*	.4611*	.8428*	.9620*
25 D3 PIP BREADTH	.1453*	.1541*	.0584	.0847	.1767*	.1450*
27 D3 DIP BREADTH	.0551	.1618*	.0091	.0707	.1418*	.0801
29 D3 LINK	.2565*	.5748*	.6166*	.7585*	.7929*	.7866*
30 D3 METACARPAL LINK	-----	.3859*	.4823*	-.0923	.5246*	.7373*
31 D3 DIST LINK	.3859*	-----	.2387*	.1875*	.6389*	.5917*
32 D3 MED LINK	.4823*	.2387*	-----	.1910*	.6597*	.6738*
33 D3 PROX LINK	-.0923	.1875*	.1910*	-----	.4119*	.4284*
34 D4 LENGTH	.5246*	.6389*	.6597*	.4119*	-----	.8576*
35 D4 HEIGHT	.7373*	.5917*	.6738*	.4284*	.8576*	-----
36 D4 TIP TO WRIST	.7490*	.6015*	.6847*	.4157*	.8623*	.9693*
37 D4 PIP BREADTH	.1409*	.1706*	.0842	.0770	.2204*	.1711*
39 D4 DIP BREADTH	.0579	.1094	.0159	.0832	.1407*	.0922
41 D4 LINK	.3705*	.6023*	.6189*	.6410*	.8949*	.8572*
42 D4 METACARPAL LINK	.9236*	.3920*	.5227*	.0132	.5260*	.7619*
43 D4 DIST LINK	.3727*	.7836*	.3272*	.1846*	.6573*	.6051*
44 D4 MED LINK	.4624*	.3216*	.7338*	.2422*	.6911*	.6729*
45 D4 PROX LINK	.0538	.2880*	.3150*	.7733*	.5932*	.5708*
46 D5 LENGTH	.4357*	.5524*	.5390*	.3319*	.8241*	.7243*
47 D5 HEIGHT	.6714*	.5311*	.6159*	.3727*	.7616*	.9399*
48 D5 TIP TO WRIST	.6914*	.5375*	.6380*	.3379*	.7734*	.8844*
49 D5 PIP BREADTH	.1784*	.1753*	.0610	.0935	.1806*	.1992*
51 D5 DIP BREADTH	.0864	.1390*	.0056	.0677	.1187	.1089

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(30)	(31)	(32)	(33)	(34)	(35)
53 D5 LINK	.3839*	.5432*	.5638*	.4854*	.8119*	.7695*
54 D5 METACARPAL LINK	.7481*	.3383*	.4820*	.0696	.4566*	.6801*
55 D5 DIST LINK	.3415*	.6995*	.3050*	.2080*	.6231*	.5733*
56 D5 MED LINK	.4108*	.2688*	.5938*	.1842*	.5923*	.5838*
57 D5 PROX LINK	.1349*	.2699*	.3648*	.5739*	.5698*	.5357*
58 HAND LGTH DIG	.7528*	.6136*	.7004*	.4589*	.8441*	.9614*
59 HAND LGTH MEAS	.6543*	.5238*	.6641*	.4076*	.7661*	.8318*
60 HAND CIRCUMFERENCE	.3958*	.3211*	.3242*	.2334*	.4939*	.4847*
61 PALM LENGTH	.7942*	.4421*	.5666*	.3985*	.6224*	.8905*
62 HAND BREADTH DIG	.1969*	.1355*	.1266	.1348*	.2836*	.2374*
63 HAND BREADTH MEAS	.4067*	.2860*	.3279*	.2335*	.4819*	.4895*
64 WRIST BREADTH	.0955	.0565	.0850	.1143	.1777*	.1320
65 WRIST CIRCUMFERENCE	.3136*	.2830*	.2494*	.2835*	.3987*	.4128*
66 WRIST-C OF GRIP	.3535*	.2764*	.3523*	.1666*	.4064*	.4446*
67 WRIST-INDEX FINGER	.6163*	.4926*	.6246*	.4230*	.7376*	.8039*
68 WRIST-THUMB LENGTH	.5580*	.4506*	.5417*	.3632*	.6627*	.7272*
69 CROTCH 1 HEIGHT	.5469*	.4753*	.4430*	.2692*	.5544*	.6261*
70 CROTCH 2 HEIGHT	.7557*	.5455*	.5491*	.3802*	.6642*	.8621*
71 CROTCH 3 HEIGHT	.7740*	.5514*	.5647*	.3539*	.6586*	.9099*
72 CROTCH 4 HEIGHT	.7326*	.5323*	.5532*	.3043*	.6236*	.8948*
73 FOREARM-HAND LENGTH	.6250*	.4629*	.6107*	.3773*	.7077*	.7851*
74 ELBOW-WRIST LENGTH	.5297*	.3671*	.5017*	.3117*	.5835*	.6591*
75 ELBOW-C OF GRIP	.5536*	.3922*	.5291*	.3144*	.6145*	.6901*
76 RADIALE-STYLION	.5367*	.3478*	.5143*	.2838*	.5695*	.6464*
77 FOREARM CIRC FLEXED	.2732*	.2242*	.2438*	.1520*	.3105*	.3106*
78 BICEPS CIRC FLEXED	.2025*	.1780*	.1944*	.1345	.2304*	.2372*
79 ARM LENGTH	.5667*	.4036*	.5254*	.3617*	.6276*	.7091*
80 SHOULDER-ELBOW LGTH	.4369*	.3401*	.3983*	.3270*	.5221*	.5740*
81 ACROMION-RADIALE LT	.4318*	.3327*	.3912*	.3339*	.5134*	.5670*
82 THUMBTIP REACH	.5041*	.3861*	.4772*	.3640*	.6037*	.6540*
83 WRIST WALL LENGTH	.4694*	.3481*	.4330*	.3386*	.5515*	.6013*
84 WRIST WALL LT EX	.4588*	.3393*	.4248*	.3073*	.5269*	.5781*
85 STATURE	.4268*	.3478*	.3614*	.3376*	.5043*	.5589*
86 WEIGHT	.2720*	.2214*	.2116*	.2474*	.3310*	.3401*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

		(36)	(37)	(39)	(41)	(42)	(43)
1	D1 LENGTH	.6871*	.2843*	.2262*	.6261*	.5188*	.4561*
2	D1 HEIGHT	.6889*	.1718*	.0935	.5855*	.5686*	.3908*
3	D1 TIP TO WRIST	.6251*	.2439*	.2023*	.5246*	.5237*	.3732*
4	D1 IP BREADTH	.2960*	.3781*	.3586*	.2757*	.2166*	.2269*
6	D1 LINK	.6138*	.3838*	.3593*	.5663*	.4555*	.4090*
7	D1 METACARPAL LINK	.4027*	.1327	.1212	.3127*	.3663*	.1987*
8	D1 PROX LINK	.4141*	.1021	.0613	.3547*	.3387*	.1646*
9	D1 DIST LINK	.5024*	.3297*	.2701*	.4815*	.3522*	.5067*
10	D2 LENGTH	.8001*	.1880*	.1330	.7951*	.5285*	.5970*
11	D2 HEIGHT	.9148*	.1997*	.1199	.7950*	.7350*	.5375*
12	D2 TIP TO WRIST	.9192*	.2017*	.1252	.8065*	.7298*	.5483*
13	D2 PIP BREADTH	.1397*	.6806*	.6459*	.1515*	.0777	.1556*
15	D2 DIP BREADTH	.1124	.6171*	.6918*	.1448*	.0363	.1537*
17	D2 LINK	.7852*	.2110*	.1397*	.7558*	.5467*	.5357*
18	D2 METACARPAL LINK	.7600*	.1103	.0558	.5692*	.7154*	.3551*
19	D2 DIST LINK	.5558*	.1651*	.1195	.5657*	.3518*	.7056*
20	D2 MED LINK	.6155*	.1226	.0644	.5634*	.4619*	.2797*
21	D2 PROX LINK	.4557*	.1703*	.1245	.4076*	.3528*	.1558*
22	D3 LENGTH	.8507*	.1751*	.1016	.8473*	.5596*	.6263*
23	D3 HEIGHT	.9683*	.1964*	.1115	.8461*	.7729*	.5852*
24	D3 TIP TO WRIST	.9680*	.1915*	.1069	.8453*	.7731*	.5849*
25	D3 PIP BREADTH	.2013*	.7504*	.7081*	.2103*	.1213	.1665*
27	D3 DIP BREADTH	.1456*	.6937*	.7556*	.1889*	.0455	.1696*
29	D3 LINK	.7854*	.1616*	.1079	.9286*	.3488*	.5429*
30	D3 METACARPAL LINK	.7490*	.1409*	.0579	.3705*	.9236*	.3727*
31	D3 DIST LINK	.6015*	.1706*	.1094	.6023*	.3920*	.7836*
32	D3 MED LINK	.6847*	.0842	.0159	.6189*	.5227*	.3272*
33	D3 PROX LINK	.4157*	.0770	.0832	.6410*	.0132	.1846*
34	D4 LENGTH	.8623*	.2204*	.1407*	.8949*	.5260*	.6573*
35	D4 HEIGHT	.9693*	.1711*	.0922	.8572*	.7619*	.6051*
36	D4 TIP TO WRIST	-----	.2260*	.1421*	.8612*	.8125*	.6135*
37	D4 PIP BREADTH	.2260*	-----	.6750*	.2489*	.1214	.2147*
39	D4 DIP BREADTH	.1421*	.6750*	-----	.1830*	.0461	.1555*
41	D4 LINK	.8612*	.2489*	.1830*	-----	.4034*	.6302*
42	D4 METACARPAL LINK	.8125*	.1214	.0461	.4034*	-----	.3815*
43	D4 DIST LINK	.6135*	.2147*	.1555*	.6302*	.3815*	-----
44	D4 MED LINK	.6862*	.1228	.0107	.6398*	.5014*	.2036*
45	D4 PROX LINK	.5634*	.1832*	.1954*	.8112*	.0838	.2756*
46	D5 LENGTH	.7319*	.2250*	.1638*	.7604*	.4454*	.5925*
47	D5 HEIGHT	.8779*	.1049	.0425	.7576*	.7116*	.5441*
48	D5 TIP TO WRIST	.9207*	.2218*	.1513*	.7641*	.7811*	.5551*
49	D5 PIP BREADTH	.2437*	.6347*	.6109*	.2317*	.1729*	.2111*
51	D5 DIP BREADTH	.1539*	.6071*	.6731*	.1674*	.0850	.1563*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(36)	(37)	(39)	(41)	(42)	(43)
53 D5 LINK	.7786*	.2757*	.2158*	.8741*	.3992*	.5799*
54 D5 METACARPAL LINK	.7304*	.0882	.0327	.3796*	.8795*	.3306*
55 D5 DIST LINK	.5759*	.2162*	.1485*	.5947*	.3547*	.7194*
56 D5 MED LINK	.5930*	.1156	.0620	.5442*	.4434*	.3165*
57 D5 PROX LINK	.5444*	.2573*	.2386*	.7326*	.1397*	.3028*
58 HAND LGTH DIG	.9683*	.1964*	.1115	.8461*	.7729*	.5852*
59 HAND LGTH MEAS	.8727*	.2825*	.2051*	.7653*	.6933*	.5085*
60 HAND CIRCUMFERENCE	.5145*	.4609*	.4147*	.4943*	.3592*	.3253*
61 PALM LENGTH	.8970*	.1786*	.0998	.6874*	.8264*	.4403*
62 HAND BREADTH DIG	.2811*	.6975*	.6946*	.3000*	.1621*	.1732*
63 HAND BREADTH MEAS	.5095*	.4381*	.4009*	.4823*	.3640*	.2994*
64 WRIST BREADTH	.1759*	.5924*	.5562*	.1993*	.0882	.0941
65 WRIST CIRCUMFERENCE	.4500*	.4577*	.4071*	.4430*	.3021*	.2692*
66 WRIST-C OF GRIP	.4481*	.1236	.0813	.3803*	.3706*	.2846*
67 WRIST-INDEX FINGER	.8337*	.2554*	.1933*	.7395*	.6528*	.4771*
68 WRIST-THUMB LENGTH	.7459*	.2183*	.1636*	.6616*	.5841*	.4087*
69 CROTCH 1 HEIGHT	.6625*	.1877*	.1118	.5610*	.5493*	.4310*
70 CROTCH 2 HEIGHT	.8875*	.1985*	.0969	.7073*	.7866*	.5329*
71 CROTCH 3 HEIGHT	.9086*	.1565*	.0683	.7056*	.8265*	.5516*
72 CROTCH 4 HEIGHT	.8636*	.0936	.0197	.6579*	.8001*	.5250*
73 FOREARM-HAND LENGTH	.8137*	.2350*	.1496*	.7035*	.6580*	.4423*
74 ELBOW-WRIST LENGTH	.6762*	.1756*	.0955	.5777*	.5548*	.3456*
75 ELBOW-C OF GRIP	.7058*	.1853*	.1046	.6023*	.5799*	.3759*
76 RADIALE-STYLION	.6717*	.1421*	.0655	.5558*	.5717*	.3388*
77 FOREARM CIRC FLEXED	.3537*	.3396*	.2725*	.3199*	.2698*	.1989*
78 BICEPS CIRC FLEXED	.2770*	.3054*	.2601*	.2552*	.2060*	.1457*
79 ARM LENGTH	.7334*	.2099*	.1218	.6373*	.5893*	.3884*
80 SHOULDER-ELBOW LGTH	.5921*	.1909*	.1067	.5394*	.4473*	.3169*
81 ACROMION-RADIALE LT	.5872*	.1826*	.1017	.5363*	.4421*	.3066*
82 THUMBTIP REACH	.6806*	.2401*	.1425*	.6081*	.5278*	.3615*
83 WRIST WALL LENGTH	.6273*	.2320*	.1359*	.5577*	.4897*	.3277*
84 WRIST WALL LT EX	.6040*	.1885*	.0977	.5255*	.4847*	.3224*
85 STATURE	.5777*	.2369*	.1642*	.5318*	.4301*	.3085*
86 WEIGHT	.3811*	.3749*	.3068*	.3722*	.2591*	.1888*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

		(44)	(45)	(46)	(47)	(48)	(49)
1	D1 LENGTH	.4541*	.4432*	.6155*	.6244*	.6623*	.2092*
2	D1 HEIGHT	.4485*	.4073*	.5217*	.4864*	.6315*	.1689*
3	D1 TIP TO WRIST	.4539*	.3248*	.5092*	.6152*	.5976*	.1823*
4	D1 IP BREADTH	.1444*	.2086*	.2165*	.2140*	.2581*	.3976*
6	D1 LINK	.3960*	.4092*	.5662*	.5572*	.6041*	.3235*
7	D1 METACARPAL LINK	.3240*	.1718*	.3103*	.4351*	.3855*	.1043
8	D1 PROX LINK	.3132*	.2655*	.3425*	.3656*	.3882*	.0581
9	D1 DIST LINK	.2655*	.3040*	.4510*	.4380*	.4875*	.2533*
10	D2 LENGTH	.5981*	.5289*	.7545*	.7367*	.7358*	.1490*
11	D2 HEIGHT	.6167*	.5485*	.6843*	.7626*	.8306*	.2153*
12	D2 TIP TO WRIST	.6330*	.5497*	.7050*	.8442*	.8332*	.2119*
13	D2 PIP BREADTH	-.0094	.1563*	.1555*	.0399	.1626*	.6305*
15	D2 DIP BREADTH	-.0067	.1478*	.1742*	.0222	.1438*	.5858*
17	D2 LINK	.5710*	.5145*	.6808*	.7279*	.7127*	.1918*
18	D2 METACARPAL LINK	.4791*	.3890*	.4682*	.6881*	.6875*	.1596*
19	D2 DIST LINK	.2847*	.3001*	.5296*	.5060*	.5019*	.1690*
20	D2 MED LINK	.6217*	.3338*	.5354*	.5753*	.5894*	.1015
21	D2 PROX LINK	.3125*	.3554*	.3169*	.4178*	.3964*	.1507*
22	D3 LENGTH	.6577*	.5565*	.7545*	.7515*	.7644*	.1453*
23	D3 HEIGHT	.6660*	.5681*	.7054*	.8660*	.8732*	.2158*
24	D3 TIP TO WRIST	.6642*	.5679*	.7031*	.8680*	.8725*	.2126*
25	D3 PIP BREADTH	.0621	.1953*	.1881*	.0786	.2094*	.6382*
27	D3 DIP BREADTH	.0285	.1848*	.1582*	.0183	.1520*	.6125*
29	D3 LINK	.5830*	.7908*	.6632*	.7045*	.6940*	.1606*
30	D3 METACARPAL LINK	.4624*	.0538	.4357*	.6714*	.6914*	.1784*
31	D3 DIST LINK	.3216*	.2880*	.5524*	.5311*	.5375*	.1753*
32	D3 MED LINK	.7338*	.3150*	.5390*	.6159*	.6380*	.0610
33	D3 PROX LINK	.2422*	.7733*	.3319*	.3727*	.3379*	.0935
34	D4 LENGTH	.6911*	.5932*	.8241*	.7616*	.7734*	.1806*
35	D4 HEIGHT	.6729*	.5708*	.7243*	.9399*	.8844*	.1992*
36	D4 TIP TO WRIST	.6862*	.5634*	.7319*	.8779*	.9207*	.2437*
37	D4 PIP BREADTH	.1228	.1832*	.2250*	.1049	.2218*	.6347*
39	D4 DIP BREADTH	.0107	.1954*	.1638*	.0425	.1513*	.6109*
41	D4 LINK	.6398*	.8112*	.7604*	.7576*	.7641*	.2317*
42	D4 METACARPAL LINK	.5014*	.0838	.4454*	.7116*	.7811*	.1729*
43	D4 DIST LINK	.2036*	.2756*	.5925*	.5441*	.5551*	.2111*
44	D4 MED LINK	-----	.2562*	.5571*	.6091*	.6398*	.0721
45	D4 PROX LINK	.2562*	-----	.4981*	.4888*	.4741*	.1910*
46	D5 LENGTH	.5571*	.4981*	-----	.7537*	.7770*	.2390*
47	D5 HEIGHT	.6091*	.4888*	.7537*	-----	.8698*	.1679*
48	D5 TIP TO WRIST	.6398*	.4741*	.7770*	.8698*	-----	.2709*
49	D5 PIP BREADTH	.0721	.1910*	.2390*	.1679*	.2709*	-----
51	D5 DIP BREADTH	-.0010	.1731*	.1960*	.0960	.1891*	.6611*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(44)	(45)	(46)	(47)	(48)	(49)
53 D5 LINK	.5829*	.6728*	.9018*	.7902*	.8182*	.2956*
54 D5 METACARPAL LINK	.4660*	.1060	.3731*	.6357*	.8206*	.1487*
55 D5 DIST LINK	.3206*	.3049*	.6955*	.5936*	.5996*	.2165*
56 D5 MED LINK	.6222*	.2642*	.7064*	.6148*	.6522*	.1426*
57 D5 PROX LINK	.3647*	.7673*	.5980*	.5414*	.5665*	.2716*
58 HAND LGTH DIG	.6660*	.5681*	.7054*	.8660*	.8732*	.2158*
59 HAND LGTH MEAS	.6335*	.5090*	.6456*	.7355*	.8107*	.2435*
60 HAND CIRCUMFERENCE	.3035*	.3976*	.4324*	.4008*	.4352*	.4583*
61 PALM LENGTH	.5486*	.4723*	.5262*	.8122*	.8102*	.2400*
62 HAND BREADTH DIG	.1380*	.2898*	.3322*	.1948*	.2853*	.5897*
63 HAND BREADTH MEAS	.3091*	.3913*	.4223*	.4128*	.4237*	.4402*
64 WRIST BREADTH	.0700	.2211*	.2266*	.1006	.2086*	.4719*
65 WRIST CIRCUMFERENCE	.2313*	.3980*	.3608*	.3323*	.3900*	.4723*
66 WRIST-C OF GRIP	.3326*	.2170*	.3658*	.4217*	.4269*	.1144
67 WRIST-INDEX FINGER	.6083*	.5030*	.6538*	.7287*	.7819*	.2196*
68 WRIST-THUMB LENGTH	.5428*	.4631*	.6055*	.6827*	.7123*	.1854*
69 CROTCH 1 HEIGHT	.4167*	.3696*	.4906*	.5443*	.6016*	.1980*
70 CROTCH 2 HEIGHT	.5432*	.4524*	.5709*	.7743*	.8072*	.2536*
71 CROTCH 3 HEIGHT	.5398*	.4397*	.5652*	.8523*	.8371*	.2157*
72 CROTCH 4 HEIGHT	.5326*	.3894*	.5298*	.8964*	.8451*	.1661*
73 FOREARM-HAND LENGTH	.6062*	.4697*	.5814*	.6991*	.7457*	.1866*
74 ELBOW-WRIST LENGTH	.5146*	.3869*	.4690*	.5903*	.6127*	.1270
75 ELBOW-C OF GRIP	.5348*	.3931*	.5046*	.6245*	.6452*	.1408*
76 RADIALE-STYLION	.5196*	.3533*	.4454*	.5741*	.6108*	.1108
77 FOREARM CIRC FLEXED	.2237*	.2493*	.2745*	.2429*	.3008*	.3477*
78 BICEPS CIRC FLEXED	.1804*	.2082*	.2057*	.1800*	.2351*	.3345*
79 ARM LENGTH	.5377*	.4426*	.5194*	.6296*	.6713*	.1775*
80 SHOULDER-ELBOW LGTH	.4149*	.4136*	.4289*	.5064*	.5222*	.1705*
81 ACROMION-RADIALE LT	.4128*	.4150*	.4208*	.4984*	.5192*	.1632*
82 THUMBTIP REACH	.5040*	.4372*	.5088*	.5788*	.6238*	.1947*
83 WRIST WALL LENGTH	.4657*	.4024*	.4546*	.5256*	.5693*	.1891*
84 WRIST WALL LT EX	.4467*	.3669*	.4351*	.5068*	.5492*	.1547*
85 STATURE	.3736*	.4284*	.4334*	.4907*	.5099*	.1895*
86 WEIGHT	.2144*	.3489*	.3055*	.2660*	.3234*	.3855*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

		(51)	(53)	(54)	(55)	(56)	(57)
1	D1 LENGTH	.1971*	.6247*	.4612*	.4854*	.4338*	.4558*
2	D1 HEIGHT	.1109	.5489*	.4862*	.3837*	.4211*	.3874*
3	D1 TIP TO WRIST	.1638*	.5317*	.4479*	.3935*	.4233*	.3642*
4	D1 IP BREADTH	.3966*	.2555*	.1677*	.2302*	.1267	.1898*
6	D1 LINK	.3070*	.6012*	.3894*	.4582*	.4023*	.4594*
7	D1 METACARPAL LINK	.0865	.3302*	.3016*	.2249*	.3101*	.2110*
8	D1 PROX LINK	.0285	.3416*	.2947*	.1807*	.2873*	.2662*
9	D1 DIST LINK	.2743*	.4724*	.3269*	.4846*	.2315*	.3276*
10	D2 LENGTH	.1122	.7443*	.4623*	.5819*	.5588*	.5052*
11	D2 HEIGHT	.1333	.7192*	.6421*	.5277*	.5405*	.5030*
12	D2 TIP TO WRIST	.1254	.7403*	.6255*	.5441*	.5695*	.5113*
13	D2 PIP BREADTH	.6110*	.2038*	.0630	.1502*	.0543	.2129*
15	D2 DIP BREADTH	.6469*	.2111*	.0251	.1990*	.0530	.2060*
17	D2 LINK	.1237	.7185*	.4504*	.5475*	.5203*	.5048*
18	D2 METACARPAL LINK	.0796	.4865*	.6397*	.3292*	.4215*	.3235*
19	D2 DIST LINK	.1612*	.5225*	.3006*	.6412*	.2716*	.2758*
20	D2 MED LINK	.0259	.5485*	.4177*	.2944*	.5740*	.3595*
21	D2 PROX LINK	.1153	.3880*	.2620*	.1944*	.2417*	.3535*
22	D3 LENGTH	.0934	.7598*	.4938*	.5902*	.5558*	.5261*
23	D3 HEIGHT	.1234	.7511*	.6802*	.5545*	.5692*	.5237*
24	D3 TIP TO WRIST	.1212	.7497*	.6804*	.5555*	.5661*	.5227*
25	D3 PIP BREADTH	.6330*	.2365*	.1070	.1804*	.0586	.2492*
27	D3 DIP BREADTH	.6985*	.2128*	.0368	.1922*	.0356	.2253*
29	D3 LINK	.1047	.7762*	.3624*	.5263*	.4827*	.6549*
30	D3 METACARPAL LINK	.0864	.3839*	.7481*	.3415*	.4108*	.1349*
31	D3 DIST LINK	.1390*	.5432*	.3383*	.6995*	.2688*	.2699*
32	D3 MED LINK	.0056	.5638*	.4820*	.3050*	.5938*	.3648*
33	D3 PROX LINK	.0677	.4854*	.0696	.2080*	.1842*	.5739*
34	D4 LENGTH	.1187	.8119*	.4566*	.6231*	.5923*	.5698*
35	D4 HEIGHT	.1089	.7695*	.6801*	.5733*	.5838*	.5357*
36	D4 TIP TO WRIST	.1539*	.7786*	.7304*	.5759*	.5930*	.5444*
37	D4 PIP BREADTH	.6071*	.2757*	.0882	.2162*	.1156	.2573*
39	D4 DIP BREADTH	.6731*	.2158*	.0327	.1485*	.0620	.2386*
41	D4 LINK	.1674*	.8741*	.3796*	.5947*	.5442*	.7326*
42	D4 METACARPAL LINK	.0850	.3992*	.8795*	.3547*	.4434*	.1397*
43	D4 DIST LINK	.1563*	.5799*	.3306*	.7194*	.3165*	.3028*
44	D4 MED LINK	-.0010	.5829*	.4660*	.3206*	.6222*	.3647*
45	D4 PROX LINK	.1731*	.6728*	.1060	.3049*	.2642*	.7673*
46	D5 LENGTH	.1960*	.9018*	.3731*	.6955*	.7064*	.5980*
47	D5 HEIGHT	.0960	.7902*	.6357*	.5936*	.6148*	.5414*
48	D5 TIP TO WRIST	.1891*	.8182*	.8206*	.5996*	.6522*	.5665*
49	D5 PIP BREADTH	.6611*	.2956*	.1487*	.2165*	.1426*	.2716*
51	D5 DIP BREADTH	-----	.2378*	.0727	.2036*	.0399	.2572*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(51)	(53)	(54)	(55)	(56)	(57)
53 D5 LINK	.2378*	-----	.3428*	.6663*	.6659*	.8148*
54 D5 METACARPAL LINK	.0727	.3428*	-----	.3174*	.4037*	.1157
55 D5 DIST LINK	.2036*	.6663*	.3174*	-----	.2862*	.2989*
56 D5 MED LINK	.0399	.6659*	.4037*	.2862*	-----	.3006*
57 D5 PROX LINK	.2572*	.8148*	.1157	.2989*	.3006*	-----
58 HAND LGTH DIG	.1234	.7511*	.6802*	.5545*	.5692*	.5237*
59 HAND LGTH MEAS	.1737*	.6986*	.6302*	.4949*	.5479*	.4961*
60 HAND CIRCUMFERENCE	.4184*	.4611*	.2528*	.3251*	.2767*	.3743*
61 PALM LENGTH	.1306	.6025*	.7248*	.4207*	.4731*	.4225*
62 HAND BREADTH DIG	.6027*	.3679*	.1004	.2268*	.1872*	.3606*
63 HAND BREADTH MEAS	.3787*	.4521*	.2429*	.3004*	.2845*	.3685*
64 WRIST BREADTH	.4967*	.2591*	.0833	.1575*	.1180	.2714*
65 WRIST CIRCUMFERENCE	.4160*	.4033*	.2363*	.2877*	.2342*	.3364*
66 WRIST-C OF GRIP	.0783	.3711*	.3285*	.2892*	.3151*	.2330*
67 WRIST-INDEX FINGER	.1562*	.6938*	.5879*	.4945*	.5513*	.4866*
68 WRIST-THUMB LENGTH	.1398*	.6487*	.5190*	.4514*	.4962*	.4751*
69 CROTCH 1 HEIGHT	.1552*	.5279*	.4582*	.4194*	.3891*	.3438*
70 CROTCH 2 HEIGHT	.1306	.6351*	.6875*	.5160*	.4622*	.4203*
71 CROTCH 3 HEIGHT	.1042	.6283*	.7432*	.5178*	.4684*	.4058*
72 CROTCH 4 HEIGHT	.0752	.6126*	.7718*	.5147*	.4522*	.3998*
73 FOREARM-HAND LENGTH	.1170	.6366*	.5856*	.4481*	.4880*	.4555*
74 ELBOW-WRIST LENGTH	.0661	.5188*	.4853*	.3632*	.3898*	.3736*
75 ELBOW-C OF GRIP	.0784	.5490*	.5085*	.3924*	.4224*	.3860*
76 RADIALE-STYLION	.0612	.4923*	.5085*	.3353*	.3887*	.3489*
77 FOREARM CIRC FLEXED	.3378*	.2919*	.2014*	.2022*	.1997*	.2217*
78 BICEPS CIRC FLEXED	.3326*	.2260*	.1595*	.1463*	.1567*	.1757*
79 ARM LENGTH	.1299	.5787*	.5216*	.3940*	.4094*	.4434*
80 SHOULDER-ELBOW LGTH	.1206	.4800*	.3761*	.3298*	.3032*	.3881*
81 ACROMION-RADIALE LT	.1198	.4760*	.3753*	.3222*	.2954*	.3889*
82 THUMBTIP REACH	.1549*	.5573*	.4652*	.3789*	.3995*	.4219*
83 WRIST WALL LENGTH	.1494*	.5039*	.4292*	.3379*	.3529*	.3867*
84 WRIST WALL LT EX	.1053	.4738*	.4264*	.3281*	.3299*	.3562*
85 STATURE	.1636*	.4755*	.3603*	.3464*	.2889*	.3800*
86 WEIGHT	.3619*	.3379*	.1925*	.2243*	.1861*	.2906*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

		(58)	(59)	(60)	(61)	(62)	(63)
1	D1 LENGTH	.6928*	.6824*	.3490*	.5907*	.3959*	.3453*
2	D1 HEIGHT	.7105*	.6726*	.3930*	.6703*	.2002*	.3777*
3	D1 TIP TO WRIST	.6247*	.5894*	.3586*	.5771*	.3550*	.3592*
4	D1 IP BREADTH	.2910*	.3853*	.5804*	.2757*	.3470*	.5612*
6	D1 LINK	.6230*	.6290*	.4028*	.5543*	.5236*	.3982*
7	D1 METACARPAL LINK	.4046*	.3527*	.2313*	.4027*	.2411*	.2369*
8	D1 PROX LINK	.4222*	.4312*	.2015*	.3719*	.1616*	.2162*
9	D1 DIST LINK	.4865*	.4995*	.3287*	.3923*	.3358*	.2989*
10	D2 LENGTH	.8376*	.7574*	.4598*	.6379*	.2715*	.4524*
11	D2 HEIGHT	.9459*	.8460*	.5232*	.8760*	.2724*	.5199*
12	D2 TIP TO WRIST	.9559*	.8384*	.5089*	.8863*	.3005*	.5158*
13	D2 PIP BREADTH	.1223	.2164*	.4308*	.1254	.6907*	.4111*
15	D2 DIP BREADTH	.0890	.1824*	.4020*	.0854	.6664*	.3800*
17	D2 LINK	.8237*	.7411*	.4256*	.7036*	.2770*	.4345*
18	D2 METACARPAL LINK	.7799*	.6568*	.4340*	.8107*	.2188*	.4355*
19	D2 DIST LINK	.5594*	.5007*	.3092*	.4175*	.1341	.2854*
20	D2 MED LINK	.6369*	.5864*	.3405*	.5333*	.1808*	.3442*
21	D2 PROX LINK	.4885*	.4294*	.2491*	.4966*	.2426*	.2742*
22	D3 LENGTH	.8929*	.8135*	.4864*	.6326*	.2430*	.4720*
23	D3 HEIGHT	1.0000*	.8834*	.5226*	.9111*	.2650*	.5204*
24	D3 TIP TO WRIST	.9985*	.8828*	.5206*	.9109*	.2611*	.5185*
25	D3 PIP BREADTH	.1930*	.3232*	.5289*	.1693*	.7848*	.4957*
27	D3 DIP BREADTH	.1242	.2308*	.4466*	.0995	.7119*	.4156*
29	D3 LINK	.8271*	.7409*	.4284*	.6626*	.2162*	.4160*
30	D3 METACARPAL LINK	.7528*	.6543*	.3958*	.7942*	.1969*	.4067*
31	D3 DIST LINK	.6136*	.5238*	.3211*	.4421*	.1355*	.2860*
32	D3 MED LINK	.7004*	.6641*	.3242*	.5666*	.1266	.3279*
33	D3 PROX LINK	.4589*	.4076*	.2334*	.3985*	.1348*	.2335*
34	D4 LENGTH	.8441*	.7661*	.4939*	.6224*	.2836*	.4819*
35	D4 HEIGHT	.9614*	.8318*	.4847*	.8905*	.2374*	.4895*
36	D4 TIP TO WRIST	.9683*	.8727*	.5145*	.8970*	.2811*	.5095*
37	D4 PIP BREADTH	.1964*	.2825*	.4609*	.1786*	.6975*	.4381*
39	D4 DIP BREADTH	.1115	.2051*	.4147*	.0998	.6946*	.4009*
41	D4 LINK	.8461*	.7653*	.4943*	.6874*	.3000*	.4823*
42	D4 METACARPAL LINK	.7729*	.6933*	.3592*	.8264*	.1621*	.3640*
43	D4 DIST LINK	.5852*	.5085*	.3253*	.4403*	.1732*	.2994*
44	D4 MED LINK	.6660*	.6335*	.3035*	.5486*	.1380*	.3091*
45	D4 PROX LINK	.5681*	.5090*	.3976*	.4723*	.2898*	.3913*
46	D5 LENGTH	.7054*	.6456*	.4324*	.5262*	.3322*	.4223*
47	D5 HEIGHT	.8660*	.7355*	.4008*	.8122*	.1948*	.4128*
48	D5 TIP TO WRIST	.8732*	.8107*	.4352*	.8102*	.2853*	.4237*
49	D5 PIP BREADTH	.2158*	.2435*	.4583*	.2400*	.5897*	.4402*
51	D5 DIP BREADTH	.1234	.1737*	.4184*	.1306	.6027*	.3787*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(58)	(59)	(60)	(61)	(62)	(63)
53 D5 LINK	.7511*	.6986*	.4611*	.6025*	.3679*	.4521*
54 D5 METACARPAL LINK	.6802*	.6302*	.2528*	.7248*	.1004	.2429*
55 D5 DIST LINK	.5545*	.4949*	.3251*	.4207*	.2268*	.3004*
56 D5 MED LINK	.5692*	.5479*	.2767*	.4731*	.1872*	.2845*
57 D5 PROX LINK	.5237*	.4961*	.3743*	.4225*	.3606*	.3685*
58 HAND LGTH DIG	-----	.8834*	.5226*	.9111*	.2650*	.5204*
59 HAND LGTH MEAS	.8834*	-----	.5690*	.7821*	.3679*	.5560*
60 HAND CIRCUMFERENCE	.5226*	.5690*	-----	.4573*	.6426*	.9507*
61 PALM LENGTH	.9111*	.7821*	.4573*	-----	.2345*	.4668*
62 HAND BREADTH DIG	.2650*	.3679*	.6426*	.2345*	-----	.6439*
63 HAND BREADTH MEAS	.5204*	.5560*	.9507*	.4668*	.6439*	-----
64 WRIST BREADTH	.1644*	.3318*	.4518*	.1415*	.7586*	.4301*
65 WRIST CIRCUMFERENCE	.4654*	.5335*	.7721*	.4301*	.5165*	.7177*
66 WRIST-C OF GRIP	.4444*	.5166*	.3483*	.4106*	.1784*	.3180*
67 WRIST-INDEX FINGER	.8530*	.9528*	.5308*	.7648*	.3601*	.5298*
68 WRIST-THUMB LENGTH	.7583*	.8426*	.4941*	.6838*	.3149*	.4924*
69 CROTCH 1 HEIGHT	.6803*	.5960*	.4610*	.6600*	.2190*	.4316*
70 CROTCH 2 HEIGHT	.9030*	.7688*	.4604*	.9440*	.2158*	.4595*
71 CROTCH 3 HEIGHT	.9017*	.7585*	.4127*	.9410*	.1668*	.4142*
72 CROTCH 4 HEIGHT	.8463*	.7111*	.3514*	.8677*	.1156	.3579*
73 FOREARM-HAND LENGTH	.8235*	.8835*	.5320*	.7510*	.3380*	.5224*
74 ELBOW-WRIST LENGTH	.6843*	.7005*	.4431*	.6393*	.2773*	.4369*
75 ELBOW-C OF GRIP	.7118*	.7455*	.4775*	.6637*	.2880*	.4638*
76 RADIALE-STYLION	.6707*	.7129*	.4346*	.6252*	.2362*	.4375*
77 FOREARM CIRC FLEXED	.3597*	.4065*	.6611*	.3281*	.3694*	.5870*
78 BICEPS CIRC FLEXED	.2818*	.3229*	.5372*	.2670*	.3382*	.4669*
79 ARM LENGTH	.7442*	.7916*	.4667*	.6898*	.3153*	.4618*
80 SHOULDER-ELBOW LGTH	.6092*	.6371*	.4480*	.5571*	.2921*	.4354*
81 ACROMION-RADIALE LT	.6039*	.6299*	.4313*	.5532*	.2830*	.4178*
82 THUMBTIP REACH	.6941*	.7555*	.4999*	.6262*	.3197*	.4836*
83 WRIST WALL LENGTH	.6404*	.6896*	.4706*	.5828*	.3007*	.4550*
84 WRIST WALL LT EX	.6130*	.6771*	.4671*	.5557*	.2648*	.4556*
85 STATURE	.6048*	.6512*	.4890*	.5528*	.3310*	.4806*
86 WEIGHT	.4008*	.4659*	.6115*	.3732*	.4104*	.5520*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(64)	(65)	(66)	(67)	(68)	(69)
1 D1 LENGTH	.3448*	.3557*	.3270*	.6961*	.7068*	.4909*
2 D1 HEIGHT	.1569*	.4328*	.3897*	.6855*	.7207*	.7715*
3 D1 TIP TO WRIST	.2719*	.2974*	.4713*	.6023*	.6552*	.6474*
4 D1 IP BREADTH	.3177*	.5738*	.3213*	.3815*	.4047*	.3311*
6 D1 LINK	.4481*	.3936*	.3614*	.6500*	.6796*	.5107*
7 D1 METACARPAL LINK	.1683*	.1646*	.3868*	.3613*	.4252*	.5234*
8 D1 PROX LINK	.1418*	.1902*	.1888*	.4519*	.4627*	.2832*
9 D1 DIST LINK	.2807*	.3193*	.2959*	.4954*	.4854*	.4006*
10 D2 LENGTH	.1954*	.4077*	.3909*	.8047*	.6994*	.5477*
11 D2 HEIGHT	.1876*	.4920*	.4216*	.8696*	.7649*	.7121*
12 D2 TIP TO WRIST	.2082*	.4588*	.4313*	.8737*	.7697*	.6822*
13 D2 PIP BREADTH	.6201*	.4577*	.1232	.2336*	.1903*	.1411*
15 D2 DIP BREADTH	.5850*	.4043*	.1138	.2019*	.1611*	.1134
17 D2 LINK	.2068*	.3914*	.3616*	.7968*	.6856*	.5621*
18 D2 METACARPAL LINK	.1298	.3801*	.3665*	.6487*	.5952*	.5941*
19 D2 DIST LINK	.0826	.2849*	.2820*	.5072*	.4577*	.4606*
20 D2 MED LINK	.1550*	.3067*	.3346*	.6277*	.5477*	.4366*
21 D2 PROX LINK	.1885*	.2296*	.1709*	.4708*	.4027*	.3462*
22 D3 LENGTH	.1544*	.4094*	.3884*	.7753*	.6843*	.5629*
23 D3 HEIGHT	.1644*	.4654*	.4444*	.8530*	.7583*	.6803*
24 D3 TIP TO WRIST	.1632*	.4647*	.4437*	.8531*	.7587*	.6785*
25 D3 PIP BREADTH	.6640*	.5166*	.1474*	.2810*	.2392*	.1539*
27 D3 DIP BREADTH	.5936*	.4386*	.1160	.2038*	.1752*	.1370*
29 D3 LINK	.1587*	.4163*	.3513*	.7297*	.6405*	.5318*
30 D3 METACARPAL LINK	.0955	.3136*	.3535*	.6163*	.5580*	.5469*
31 D3 DIST LINK	.0565	.2830*	.2764*	.4926*	.4506*	.4753*
32 D3 MED LINK	.0850	.2494*	.3523*	.6246*	.5417*	.4430*
33 D3 PROX LINK	.1143	.2835*	.1666*	.4230*	.3632*	.2692*
34 D4 LENGTH	.1777*	.3987*	.4064*	.7376*	.6627*	.5544*
35 D4 HEIGHT	.1320	.4128*	.4446*	.8039*	.7272*	.6261*
36 D4 TIP TO WRIST	.1759*	.4500*	.4481*	.8337*	.7459*	.6625*
37 D4 PIP BREADTH	.5924*	.4577*	.1236	.2554*	.2183*	.1877*
39 D4 DIP BREADTH	.5562*	.4071*	.0813	.1933*	.1636*	.1118
41 D4 LINK	.1993*	.4430*	.3803*	.7395*	.6616*	.5610*
42 D4 METACARPAL LINK	.0882	.3021*	.3706*	.6528*	.5841*	.5493*
43 D4 DIST LINK	.0941	.2692*	.2846*	.4771*	.4087*	.4310*
44 D4 MED LINK	.0700	.2313*	.3326*	.6083*	.5428*	.4167*
45 D4 PROX LINK	.2211*	.3980*	.2170*	.5030*	.4631*	.3696*
46 D5 LENGTH	.2266*	.3608*	.3658*	.6538*	.6055*	.4906*
47 D5 HEIGHT	.1006	.3323*	.4217*	.7287*	.6827*	.5443*
48 D5 TIP TO WRIST	.2086*	.3900*	.4269*	.7819*	.7123*	.6016*
49 D5 PIP BREADTH	.4719*	.4723*	.1144	.2196*	.1854*	.1980*
51 D5 DIP BREADTH	.4967*	.4160*	.0783	.1562*	.1398*	.1552*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(64)	(65)	(66)	(67)	(68)	(69)
53 D5 LINK	.2591*	.4033*	.3711*	.6938*	.6487*	.5279*
54 D5 METACARPAL LINK	.0833	.2363*	.3285*	.5879*	.5190*	.4582*
55 D5 DIST LINK	.1575*	.2877*	.2892*	.4945*	.4514*	.4194*
56 D5 MED LINK	.1180	.2342*	.3151*	.5513*	.4962*	.3891*
57 D5 PROX LINK	.2714*	.3364*	.2330*	.4866*	.4751*	.3438*
58 HAND LGTH DIG	.1644*	.4654*	.4444*	.8530*	.7583*	.6803*
59 HAND LGTH MEAS	.3318*	.5335*	.5166*	.9528*	.8426*	.5960*
60 HAND CIRCUMFERENCE	.4518*	.7721*	.3483*	.5308*	.4941*	.4610*
61 PALM LENGTH	.1415*	.4301*	.4106*	.7648*	.6838*	.6600*
62 HAND BREADTH DIG	.7586*	.5165*	.1784*	.3601*	.3149*	.2190*
63 HAND BREADTH MEAS	.4301*	.7177*	.3180*	.5298*	.4924*	.4316*
64 WRIST BREADTH	-----	.5753*	.1943*	.3489*	.3085*	.1185
65 WRIST CIRCUMFERENCE	.5753*	-----	.3380*	.5274*	.4908*	.4248*
66 WRIST-C OF GRIP	.1943*	.3380*	-----	.5201*	.5859*	.4923*
67 WRIST-INDEX FINGER	.3489*	.5274*	.5201*	-----	.8734*	.5927*
68 WRIST-THUMB LENGTH	.3085*	.4908*	.5859*	.8734*	-----	.6333*
69 CROTCH 1 HEIGHT	.1185	.4248*	.4923*	.5927*	.6333*	-----
70 CROTCH 2 HEIGHT	.1228	.4415*	.4183*	.7632*	.6830*	.7230*
71 CROTCH 3 HEIGHT	.0791	.3844*	.4260*	.7310*	.6561*	.6451*
72 CROTCH 4 HEIGHT	.0374	.3140*	.4000*	.6795*	.6260*	.5685*
73 FOREARM-HAND LENGTH	.3004*	.5013*	.4711*	.8608*	.7721*	.5845*
74 ELBOW-WRIST LENGTH	.2434*	.4193*	.3842*	.6962*	.6322*	.5058*
75 ELBOW-C OF GRIP	.2631*	.4541*	.6051*	.7428*	.7056*	.5709*
76 RADIALE-STYLION	.2065*	.3984*	.3721*	.6896*	.6205*	.4786*
77 FOREARM CIRC FLEXED	.3324*	.7009*	.3003*	.3787*	.3537*	.3547*
78 BICEPS CIRC FLEXED	.2976*	.5994*	.2480*	.2933*	.2556*	.2829*
79 ARM LENGTH	.2932*	.4612*	.3927*	.7692*	.6863*	.5203*
80 SHOULDER-ELBOW LGTH	.3054*	.4759*	.3277*	.6334*	.5713*	.4547*
81 ACROMION-RADIALE LT	.2884*	.4598*	.3197*	.6274*	.5663*	.4539*
82 THUMBTIP REACH	.3089*	.4970*	.4054*	.7458*	.6919*	.5310*
83 WRIST WALL LENGTH	.2915*	.4695*	.3496*	.6730*	.5984*	.4812*
84 WRIST WALL LT EX	.2777*	.4627*	.3331*	.6661*	.5918*	.4508*
85 STATURE	.3369*	.5236*	.3301*	.6583*	.5986*	.4512*
86 WEIGHT	.4266*	.7410*	.3125*	.4603*	.4168*	.3702*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

		(70)	(71)	(72)	(73)	(74)	(75)
1	D1 LENGTH	.5974*	.5947*	.5654*	.6192*	.5028*	.5231*
2	D1 HEIGHT	.7220*	.6138*	.4977*	.6139*	.5010*	.5387*
3	D1 TIP TO WRIST	.5811*	.5819*	.5611*	.5968*	.5288*	.5850*
4	D1 IP BREADTH	.3024*	.2473*	.2236*	.3584*	.2973*	.3443*
6	D1 LINK	.5657*	.5393*	.4902*	.5912*	.4945*	.5254*
7	D1 METACARPAL LINK	.3858*	.3937*	.3844*	.3905*	.3672*	.4225*
8	D1 PROX LINK	.3681*	.3431*	.3235*	.4064*	.3408*	.3456*
9	D1 DIST LINK	.4554*	.4653*	.4444*	.4509*	.3644*	.3953*
10	D2 LENGTH	.6619*	.6655*	.6278*	.6900*	.5623*	.5919*
11	D2 HEIGHT	.8983*	.8377*	.7502*	.7850*	.6498*	.6758*
12	D2 TIP TO WRIST	.8923*	.8629*	.7997*	.7902*	.6626*	.6895*
13	D2 PIP BREADTH	.1416*	.0922	.0433	.1753*	.1274	.1436*
15	D2 DIP BREADTH	.1035	.0518	.0086	.1388*	.0937	.1120
17	D2 LINK	.7319*	.6980*	.6407*	.6812*	.5593*	.5813*
18	D2 METACARPAL LINK	.7820*	.7705*	.7231*	.6443*	.5576*	.5812*
19	D2 DIST LINK	.5118*	.5107*	.4888*	.4354*	.3400*	.3704*
20	D2 MED LINK	.5287*	.5235*	.4970*	.5511*	.4610*	.4892*
21	D2 PROX LINK	.4822*	.4278*	.3674*	.4074*	.3435*	.3430*
22	D3 LENGTH	.6746*	.6776*	.6537*	.7335*	.5923*	.6171*
23	D3 HEIGHT	.9030*	.9017*	.8463*	.8235*	.6843*	.7118*
24	D3 TIP TO WRIST	.9016*	.9026*	.8485*	.8228*	.6835*	.7109*
25	D3 PIP BREADTH	.1644*	.1217	.0736	.2691*	.2013*	.2140*
27	D3 DIP BREADTH	.1113	.0635	.0204	.1782*	.1224	.1373*
29	D3 LINK	.6818*	.6676*	.6233*	.6776*	.5539*	.5738*
30	D3 METACARPAL LINK	.7557*	.7740*	.7326*	.6250*	.5297*	.5536*
31	D3 DIST LINK	.5455*	.5514*	.5323*	.4629*	.3671*	.3922*
32	D3 MED LINK	.5491*	.5647*	.5532*	.6107*	.5017*	.5291*
33	D3 PROX LINK	.3802*	.3539*	.3043*	.3773*	.3117*	.3144*
34	D4 LENGTH	.6642*	.6586*	.6236*	.7077*	.5835*	.6145*
35	D4 HEIGHT	.8621*	.9099*	.8948*	.7851*	.6591*	.6901*
36	D4 TIP TO WRIST	.8875*	.9086*	.8636*	.8137*	.6762*	.7058*
37	D4 PIP BREADTH	.1985*	.1565*	.0936	.2350*	.1756*	.1853*
39	D4 DIP BREADTH	.0969	.0683	.0197	.1496*	.0955	.1046
41	D4 LINK	.7073*	.7056*	.6579*	.7035*	.5777*	.6023*
42	D4 METACARPAL LINK	.7866*	.8265*	.8001*	.6580*	.5548*	.5799*
43	D4 DIST LINK	.5329*	.5516*	.5250*	.4423*	.3456*	.3759*
44	D4 MED LINK	.5432*	.5398*	.5326*	.6062*	.5146*	.5348*
45	D4 PROX LINK	.4524*	.4397*	.3894*	.4697*	.3869*	.3931*
46	D5 LENGTH	.5709*	.5652*	.5298*	.5814*	.4690*	.5046*
47	D5 HEIGHT	.7743*	.8523*	.8964*	.6991*	.5903*	.6245*
48	D5 TIP TO WRIST	.8072*	.8371*	.8451*	.7457*	.6127*	.6452*
49	D5 PIP BREADTH	.2536*	.2157*	.1661*	.1866*	.1270	.1408*
51	D5 DIP BREADTH	.1306	.1042	.0752	.1170	.0661	.0784

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(70)	(71)	(72)	(73)	(74)	(75)
53 D5 LINK	.6351*	.6283*	.6126*	.6366*	.5188*	.5490*
54 D5 METACARPAL LINK	.6875*	.7432*	.7718*	.5856*	.4853*	.5085*
55 D5 DIST LINK	.5160*	.5178*	.5147*	.4481*	.3632*	.3924*
56 D5 MED LINK	.4622*	.4684*	.4522*	.4880*	.3898*	.4224*
57 D5 PROX LINK	.4203*	.4058*	.3998*	.4555*	.3736*	.3860*
58 HAND LGTH DIG	.9030*	.9017*	.8463*	.8235*	.6843*	.7118*
59 HAND LGTH MEAS	.7688*	.7585*	.7111*	.8835*	.7005*	.7455*
60 HAND CIRCUMFERENCE	.4604*	.4127*	.3514*	.5320*	.4431*	.4775*
61 PALM LENGTH	.9440*	.9410*	.8677*	.7510*	.6393*	.6637*
62 HAND BREADTH DIG	.2158*	.1668*	.1156	.3380*	.2773*	.2880*
63 HAND BREADTH MEAS	.4595*	.4142*	.3579*	.5224*	.4369*	.4638*
64 WRIST BREADTH	.1228	.0791	.0374	.3004*	.2434*	.2631*
65 WRIST CIRCUMFERENCE	.4415*	.3844*	.3140*	.5013*	.4193*	.4541*
66 WRIST-C OF GRIP	.4183*	.4260*	.4000*	.4711*	.3842*	.6051*
67 WRIST-INDEX FINGER	.7632*	.7310*	.6795*	.8608*	.6962*	.7428*
68 WRIST-THUMB LENGTH	.6830*	.6561*	.6260*	.7721*	.6322*	.7056*
69 CROTCH 1 HEIGHT	.7230*	.6451*	.5685*	.5845*	.5058*	.5709*
70 CROTCH 2 HEIGHT	-----	.9316*	.8483*	.7453*	.6392*	.6657*
71 CROTCH 3 HEIGHT	.9316*	-----	.9324*	.7309*	.6239*	.6546*
72 CROTCH 4 HEIGHT	.8483*	.9324*	-----	.6860*	.5860*	.6148*
73 FOREARM-HAND LENGTH	.7453*	.7309*	.6860*	-----	.9531*	.9509*
74 ELBOW-WRIST LENGTH	.6392*	.6239*	.5860*	.9531*	-----	.9675*
75 ELBOW-C OF GRIP	.6657*	.6546*	.6148*	.9509*	.9675*	-----
76 RADIALE-STYLION	.6185*	.6122*	.5803*	.9069*	.9215*	.8965*
77 FOREARM CIRC FLEXED	.3394*	.2998*	.2427*	.4021*	.3502*	.3842*
78 BICEPS CIRC FLEXED	.2728*	.2464*	.1967*	.3187*	.2771*	.3069*
79 ARM LENGTH	.6755*	.6601*	.6182*	.8955*	.8533*	.8434*
80 SHOULDER-ELBOW LGTH	.5508*	.5296*	.4871*	.7736*	.7672*	.7513*
81 ACROMION-RADIALE LT	.5483*	.5265*	.4820*	.7719*	.7693*	.7510*
82 THUMBTIP REACH	.6244*	.5969*	.5520*	.8693*	.8368*	.8326*
83 WRIST WALL LENGTH	.5796*	.5530*	.5100*	.8309*	.8207*	.8035*
84 WRIST WALL LT EX	.5629*	.5383*	.5022*	.8224*	.8158*	.7947*
85 STATURE	.5478*	.5220*	.4640*	.7420*	.7101*	.7028*
86 WEIGHT	.3829*	.3352*	.2629*	.4901*	.4459*	.4700*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

		(76)	(77)	(78)	(79)	(80)	(81)
1	D1 LENGTH	.4844*	.2226*	.1558*	.5694*	.4744*	.4696*
2	D1 HEIGHT	.4962*	.3066*	.2164*	.5507*	.4747*	.4746*
3	D1 TIP TO WRIST	.5135*	.2528*	.1899*	.5246*	.4161*	.4106*
4	D1 IP BREADTH	.3184*	.4695*	.3795*	.2968*	.2886*	.2674*
6	D1 LINK	.4627*	.2625*	.2003*	.5341*	.4397*	.4323*
7	D1 METACARPAL LINK	.3470*	.1689*	.1333	.3295*	.2474*	.2408*
8	D1 PROX LINK	.3464*	.1325	.0632	.3829*	.3281*	.3314*
9	D1 DIST LINK	.3619*	.2268*	.1949*	.4037*	.3300*	.3258*
10	D2 LENGTH	.5415*	.3034*	.2344*	.6201*	.5207*	.5158*
11	D2 HEIGHT	.6354*	.3699*	.2879*	.7151*	.6016*	.5994*
12	D2 TIP TO WRIST	.6449*	.3397*	.2627*	.7198*	.5943*	.5895*
13	D2 PIP BREADTH	.1006	.3084*	.2947*	.1597*	.1757*	.1744*
15	D2 DIP BREADTH	.0617	.2855*	.2641*	.1360*	.1497*	.1415*
17	D2 LINK	.5442*	.2794*	.2138*	.6259*	.5108*	.5064*
18	D2 METACARPAL LINK	.5430*	.2965*	.2326*	.5789*	.4867*	.4833*
19	D2 DIST LINK	.3212*	.2087*	.1640*	.3907*	.3344*	.3341*
20	D2 MED LINK	.4503*	.2366*	.1814*	.4656*	.3695*	.3582*
21	D2 PROX LINK	.3369*	.1659*	.1232	.4012*	.3048*	.3062*
22	D3 LENGTH	.5815*	.3186*	.2410*	.6511*	.5384*	.5333*
23	D3 HEIGHT	.6707*	.3597*	.2818*	.7442*	.6092*	.6039*
24	D3 TIP TO WRIST	.6708*	.3580*	.2807*	.7453*	.6093*	.6043*
25	D3 PIP BREADTH	.1699*	.3822*	.3521*	.2358*	.2219*	.2176*
27	D3 DIP BREADTH	.0887	.3351*	.3304*	.1521*	.1501*	.1479*
29	D3 LINK	.5291*	.2937*	.2404*	.6133*	.5240*	.5210*
30	D3 METACARPAL LINK	.5367*	.2732*	.2025*	.5667*	.4369*	.4318*
31	D3 DIST LINK	.3478*	.2242*	.1780*	.4036*	.3401*	.3327*
32	D3 MED LINK	.5143*	.2438*	.1944*	.5254*	.3983*	.3912*
33	D3 PROX LINK	.2838*	.1520*	.1345	.3617*	.3270*	.3339*
34	D4 LENGTH	.5695*	.3105*	.2304*	.6276*	.5221*	.5134*
35	D4 HEIGHT	.6464*	.3106*	.2372*	.7091*	.5740*	.5670*
36	D4 TIP TO WRIST	.6717*	.3537*	.2770*	.7334*	.5921*	.5872*
37	D4 PIP BREADTH	.1421*	.3396*	.3054*	.2099*	.1909*	.1826*
39	D4 DIP BREADTH	.0655	.2725*	.2601*	.1218	.1067	.1017
41	D4 LINK	.5558*	.3199*	.2552*	.6373*	.5394*	.5363*
42	D4 METACARPAL LINK	.5717*	.2698*	.2060*	.5893*	.4473*	.4421*
43	D4 DIST LINK	.3388*	.1989*	.1457*	.3884*	.3169*	.3066*
44	D4 MED LINK	.5196*	.2237*	.1804*	.5377*	.4149*	.4128*
45	D4 PROX LINK	.3533*	.2493*	.2082*	.4426*	.4136*	.4150*
46	D5 LENGTH	.4454*	.2745*	.2057*	.5194*	.4289*	.4208*
47	D5 HEIGHT	.5741*	.2429*	.1800*	.6296*	.5064*	.4984*
48	D5 TIP TO WRIST	.6108*	.3008*	.2351*	.6713*	.5222*	.5192*
49	D5 PIP BREADTH	.1108	.3477*	.3345*	.1775*	.1705*	.1632*
51	D5 DIP BREADTH	.0612	.3378*	.3326*	.1299	.1206	.1198

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(76)	(77)	(78)	(79)	(80)	(81)
53 D5 LINK	.4923*	.2919*	.2260*	.5787*	.4800*	.4760*
54 D5 METACARPAL LINK	.5085*	.2014*	.1595*	.5216*	.3761*	.3753*
55 D5 DIST LINK	.3353*	.2022*	.1463*	.3940*	.3298*	.3222*
56 D5 MED LINK	.3887*	.1997*	.1567*	.4094*	.3032*	.2954*
57 D5 PROX LINK	.3489*	.2217*	.1757*	.4434*	.3881*	.3889*
58 HAND LGTH DIG	.6707*	.3597*	.2818*	.7442*	.6092*	.6039*
59 HAND LGTH MEAS	.7129*	.4065*	.3229*	.7916*	.6371*	.6299*
60 HAND CIRCUMFERENCE	.4346*	.6611*	.5372*	.4667*	.4480*	.4313*
61 PALM LENGTH	.6252*	.3281*	.2670*	.6898*	.5571*	.5532*
62 HAND BREADTH DIG	.2362*	.3694*	.3382*	.3153*	.2921*	.2830*
63 HAND BREADTH MEAS	.4375*	.5870*	.4669*	.4618*	.4354*	.4178*
64 WRIST BREADTH	.2065*	.3324*	.2976*	.2932*	.3054*	.2884*
65 WRIST CIRCUMFERENCE	.3984*	.7009*	.5994*	.4612*	.4759*	.4598*
66 WRIST-C OF GRIP	.3721*	.3003*	.2480*	.3927*	.3277*	.3197*
67 WRIST-INDEX FINGER	.6896*	.3787*	.2933*	.7692*	.6334*	.6274*
68 WRIST-THUMB LENGTH	.6205*	.3537*	.2556*	.6863*	.5713*	.5663*
69 CROTCH 1 HEIGHT	.4786*	.3547*	.2829*	.5203*	.4547*	.4539*
70 CROTCH 2 HEIGHT	.6185*	.3394*	.2728*	.6755*	.5508*	.5483*
71 CROTCH 3 HEIGHT	.6122*	.2998*	.2464*	.6601*	.5296*	.5265*
72 CROTCH 4 HEIGHT	.5803*	.2427*	.1967*	.6182*	.4871*	.4820*
73 FOREARM-HAND LENGTH	.9069*	.4021*	.3187*	.8955*	.7736*	.7719*
74 ELBOW-WRIST LENGTH	.9215*	.3502*	.2771*	.8533*	.7672*	.7693*
75 ELBOW-C OF GRIP	.8965*	.3842*	.3069*	.8434*	.7513*	.7510*
76 RADIALE-STYLION	-----	.3328*	.2562*	.8602*	.7556*	.7510*
77 FOREARM CIRC FLEXED	.3328*	-----	.8537*	.3276*	.3308*	.3251*
78 BICEPS CIRC FLEXED	.2562*	.8537*	-----	.2268*	.2190*	.2267*
79 ARM LENGTH	.8602*	.3276*	.2268*	-----	.8786*	.8776*
80 SHOULDER-ELBOW LGTH	.7556*	.3308*	.2190*	.8786*	-----	.9780*
81 ACROMION-RADIALE LT	.7510*	.3251*	.2267*	.8776*	.9780*	-----
82 THUMBTIP REACH	.8315*	.3876*	.2996*	.8791*	.8449*	.8371*
83 WRIST WALL LENGTH	.8152*	.3770*	.2958*	.8564*	.8391*	.8318*
84 WRIST WALL LT EX	.8204*	.3494*	.2527*	.8432*	.8291*	.8201*
85 STATURE	.6880*	.3289*	.2214*	.8012*	.8281*	.8111*
86 WEIGHT	.4249*	.7631*	.7704*	.4784*	.5133*	.5184*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(82)	(83)	(84)	(85)	(86)
1 D1 LENGTH	.5455*	.4799*	.4513*	.4610*	.2621*
2 D1 HEIGHT	.5565*	.4917*	.4681*	.4891*	.3419*
3 D1 TIP TO WRIST	.5244*	.4694*	.4416*	.3865*	.2516*
4 D1 IP BREADTH	.3541*	.3318*	.3311*	.3207*	.4411*
6 D1 LINK	.5327*	.4715*	.4388*	.4397*	.2987*
7 D1 METACARPAL LINK	.3324*	.2998*	.2674*	.2129*	.1395*
8 D1 PROX LINK	.3646*	.3214*	.3424*	.3288*	.1799*
9 D1 DIST LINK	.4164*	.3724*	.3437*	.3243*	.2476*
10 D2 LENGTH	.5996*	.5386*	.5158*	.5249*	.3593*
11 D2 HEIGHT	.6778*	.6214*	.6010*	.6092*	.4306*
12 D2 TIP TO WRIST	.6763*	.6187*	.5955*	.5956*	.3913*
13 D2 PIP BREADTH	.1964*	.1863*	.1517*	.2249*	.3797*
15 D2 DIP BREADTH	.1546*	.1537*	.1206	.2007*	.3340*
17 D2 LINK	.5880*	.5354*	.5159*	.5104*	.3245*
18 D2 METACARPAL LINK	.5443*	.5016*	.4817*	.4902*	.3378*
19 D2 DIST LINK	.3707*	.3257*	.3105*	.3282*	.2396*
20 D2 MED LINK	.4479*	.4012*	.3937*	.3522*	.2283*
21 D2 PROX LINK	.3584*	.3351*	.3119*	.3137*	.1931*
22 D3 LENGTH	.6233*	.5699*	.5484*	.5342*	.3476*
23 D3 HEIGHT	.6941*	.6404*	.6130*	.6048*	.4008*
24 D3 TIP TO WRIST	.6925*	.6389*	.6126*	.6051*	.3985*
25 D3 PIP BREADTH	.2545*	.2435*	.2143*	.2744*	.4356*
27 D3 DIP BREADTH	.1710*	.1710*	.1279	.1894*	.3663*
29 D3 LINK	.5890*	.5397*	.5101*	.5263*	.3545*
30 D3 METACARPAL LINK	.5041*	.4694*	.4588*	.4268*	.2720*
31 D3 DIST LINK	.3861*	.3481*	.3393*	.3478*	.2214*
32 D3 MED LINK	.4772*	.4330*	.4248*	.3614*	.2116*
33 D3 PROX LINK	.3640*	.3386*	.3073*	.3376*	.2474*
34 D4 LENGTH	.6037*	.5515*	.5269*	.5043*	.3310*
35 D4 HEIGHT	.6540*	.6013*	.5781*	.5589*	.3401*
36 D4 TIP TO WRIST	.6806*	.6273*	.6040*	.5777*	.3811*
37 D4 PIP BREADTH	.2401*	.2320*	.1885*	.2369*	.3749*
39 D4 DIP BREADTH	.1425*	.1359*	.0977	.1642*	.3068*
41 D4 LINK	.6081*	.5577*	.5255*	.5318*	.3722*
42 D4 METACARPAL LINK	.5278*	.4897*	.4847*	.4301*	.2591*
43 D4 DIST LINK	.3615*	.3277*	.3224*	.3085*	.1888*
44 D4 MED LINK	.5040*	.4657*	.4467*	.3736*	.2144*
45 D4 PROX LINK	.4372*	.4024*	.3669*	.4284*	.3489*
46 D5 LENGTH	.5088*	.4546*	.4351*	.4334*	.3055*
47 D5 HEIGHT	.5788*	.5256*	.5068*	.4907*	.2660*
48 D5 TIP TO WRIST	.6238*	.5693*	.5492*	.5099*	.3234*
49 D5 PIP BREADTH	.1947*	.1891*	.1547*	.1895*	.3855*
51 D5 DIP BREADTH	.1549*	.1494*	.1053	.1636*	.3619*

TABLE 7.

CORRELATION COEFFICIENTS FOR MALES
(Continued)

	(82)	(83)	(84)	(85)	(86)
53 D5 LINK	.5573*	.5039*	.4738*	.4755*	.3379*
54 D5 METACARPAL LINK	.4652*	.4292*	.4264*	.3603*	.1925*
55 D5 DIST LINK	.3789*	.3379*	.3281*	.3464*	.2243*
56 D5 MED LINK	.3995*	.3529*	.3299*	.2889*	.1861*
57 D5 PROX LINK	.4219*	.3867*	.3562*	.3800*	.2906*
58 HAND LGTH DIG	.6941*	.6404*	.6130*	.6048*	.4008*
59 HAND LGTH MEAS	.7555*	.6896*	.6771*	.6512*	.4659*
60 HAND CIRCUMFERENCE	.4999*	.4706*	.4671*	.4890*	.6115*
61 PALM LENGTH	.6262*	.5828*	.5557*	.5528*	.3732*
62 HAND BREADTH DIG	.3197*	.3007*	.2648*	.3310*	.4104*
63 HAND BREADTH MEAS	.4836*	.4550*	.4556*	.4806*	.5520*
64 WRIST BREADTH	.3089*	.2915*	.2777*	.3369*	.4266*
65 WRIST CIRCUMFERENCE	.4970*	.4695*	.4627*	.5236*	.7410*
66 WRIST-C OF GRIP	.4054*	.3496*	.3331*	.3301*	.3125*
67 WRIST-INDEX FINGER	.7458*	.6730*	.6661*	.6583*	.4603*
68 WRIST-THUMB LENGTH	.6919*	.5984*	.5918*	.5986*	.4168*
69 CROTCH 1 HEIGHT	.5310*	.4812*	.4508*	.4512*	.3702*
70 CROTCH 2 HEIGHT	.6244*	.5796*	.5629*	.5478*	.3829*
71 CROTCH 3 HEIGHT	.5969*	.5530*	.5383*	.5220*	.3352*
72 CROTCH 4 HEIGHT	.5520*	.5100*	.5022*	.4640*	.2629*
73 FOREARM-HAND LENGTH	.8693*	.8309*	.8224*	.7420*	.4901*
74 ELBOW-WRIST LENGTH	.8368*	.8207*	.8158*	.7101*	.4459*
75 ELBOW-C OF GRIP	.8326*	.8035*	.7947*	.7028*	.4700*
76 RADIALE-STYLION	.8315*	.8152*	.8204*	.6880*	.4249*
77 FOREARM CIRC FLEXED	.3876*	.3770*	.3494*	.3289*	.7631*
78 BICEPS CIRC FLEXED	.2996*	.2958*	.2527*	.2214*	.7704*
79 ARM LENGTH	.8791*	.8564*	.8432*	.8012*	.4784*
80 SHOULDER-ELBOW LGTH	.8449*	.8391*	.8291*	.8281*	.5133*
81 ACROMION-RADIALE LT	.8371*	.8318*	.8201*	.8111*	.5184*
82 THUMBTIP REACH	-----	.9849*	.9131*	.7770*	.5401*
83 WRIST WALL LENGTH	.9849*	-----	.9133*	.7609*	.5305*
84 WRIST WALL LT EX	.9131*	.9133*	-----	.7550*	.5091*
85 STATURE	.7770*	.7609*	.7550*	-----	.5614*
86 WEIGHT	.5401*	.5305*	.5091*	.5614*	-----

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES

		(1)	(2)	(3)	(4)	(6)	(7)
1	D1 LENGTH	-----	.6290*	.6528*	.2166*	.7694*	.3676*
2	D1 HEIGHT	.6290*	-----	.4449*	.2900*	.6435*	.2429*
3	D1 TIP TO WRIST	.6528*	.4449*	-----	.3184*	.7275*	.9007*
4	D1 IP BREADTH	.2166*	.2900*	.3184*	-----	.2986*	.2453*
6	D1 LINK	.7694*	.6435*	.7275*	.2986*	-----	.5221*
7	D1 METACARPAL LINK	.3676*	.2429*	.9007*	.2453*	.5221*	-----
8	D1 PROX LINK	.5527*	.3706*	.3820*	.1192*	.4071*	.0399
9	D1 DIST LINK	.6443*	.4682*	.5607*	.3008*	.6396*	.3187*
10	D2 LENGTH	.7182*	.5894*	.6108*	.2931*	.6903*	.3828*
11	D2 HEIGHT	.7403*	.7862*	.6524*	.3551*	.7514*	.4430*
12	D2 TIP TO WRIST	.7568*	.6817*	.7431*	.3475*	.7787*	.5452*
13	D2 PIP BREADTH	.2520*	.2189*	.2527*	.4092*	.3001*	.1666*
15	D2 DIP BREADTH	.2440*	.1713*	.2315*	.4255*	.2869*	.1567*
17	D2 LINK	.6622*	.5477*	.6098*	.3025*	.6704*	.4174*
18	D2 METACARPAL LINK	.5743*	.5817*	.6172*	.2659*	.6055*	.4923*
19	D2 DIST LINK	.5308*	.4276*	.4600*	.2755*	.5093*	.2693*
20	D2 MED LINK	.5503*	.5010*	.5108*	.2591*	.5469*	.3557*
21	D2 PROX LINK	.3776*	.2919*	.3991*	.2102*	.4105*	.3005*
22	D3 LENGTH	.6906*	.5981*	.6157*	.3075*	.6877*	.4109*
23	D3 HEIGHT	.7406*	.6871*	.7201*	.3596*	.7622*	.5273*
24	D3 TIP TO WRIST	.7421*	.6882*	.7189*	.3624*	.7602*	.5260*
25	D3 PIP BREADTH	.3142*	.2345*	.3487*	.4248*	.3840*	.2710*
27	D3 DIP BREADTH	.2484*	.1651*	.2897*	.4560*	.3201*	.2267*
29	D3 LINK	.6671*	.5813*	.6202*	.3194*	.6793*	.4329*
30	D3 METACARPAL LINK	.5504*	.5530*	.5629*	.2761*	.5686*	.4357*
31	D3 DIST LINK	.5307*	.4397*	.4737*	.2889*	.5246*	.3001*
32	D3 MED LINK	.5209*	.5154*	.4872*	.2459*	.5088*	.3495*
33	D3 PROX LINK	.3869*	.2943*	.3641*	.1795*	.4137*	.2500*
34	D4 LENGTH	.6661*	.5844*	.5893*	.3098*	.6714*	.3888*
35	D4 HEIGHT	.7212*	.5895*	.7268*	.3432*	.7410*	.5436*
36	D4 TIP TO WRIST	.7262*	.6758*	.6950*	.3539*	.7409*	.5038*
37	D4 PIP BREADTH	.3317*	.2464*	.3460*	.3959*	.3860*	.2627*
39	D4 DIP BREADTH	.2356*	.1444*	.2513*	.4020*	.2866*	.1882*
41	D4 LINK	.6808*	.5947*	.6206*	.3379*	.6965*	.4278*
42	D4 METACARPAL LINK	.5752*	.5782*	.5846*	.2735*	.5847*	.4482*
43	D4 DIST LINK	.5026*	.4231*	.4164*	.2909*	.4915*	.2544*
44	D4 MED LINK	.5280*	.4763*	.5120*	.2172*	.5193*	.3797*
45	D4 PROX LINK	.4623*	.3971*	.4155*	.2414*	.4959*	.2775*
46	D5 LENGTH	.6187*	.4997*	.5284*	.2687*	.6057*	.3328*
47	D5 HEIGHT	.6711*	.4799*	.6922*	.2986*	.6843*	.5234*
48	D5 TIP TO WRIST	.6779*	.6260*	.6489*	.3176*	.6959*	.4657*
49	D5 PIP BREADTH	.2427*	.1912*	.2961*	.4231*	.3057*	.2440*
51	D5 DIP BREADTH	.1738*	.1147	.2259*	.4036*	.2422*	.1826*

* $p \leq .05$ (2-tailed, experimental)

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(1)	(2)	(3)	(4)	(6)	(7)
53 D5 LINK	.6413*	.5442*	.5689*	.3023*	.6549*	.3789*
54 D5 METACARPAL LINK	.5055*	.5107*	.5251*	.2351*	.5219*	.4036*
55 D5 DIST LINK	.4828*	.3813*	.4059*	.2613*	.4702*	.2483*
56 D5 MED LINK	.4623*	.4162*	.4459*	.1936*	.4687*	.3167*
57 D5 PROX LINK	.4770*	.4056*	.4257*	.2249*	.5044*	.2904*
58 HAND LGTH DIG	.7406*	.6871*	.7201*	.3596*	.7622*	.5273*
59 HAND LGTH MEAS	.7014*	.6747*	.6667*	.4023*	.7198*	.4769*
60 HAND CIRCUMFERENCE	.4081*	.4043*	.4474*	.5847*	.4930*	.3304*
61 PALM LENGTH	.6572*	.6492*	.6855*	.3446*	.6940*	.5368*
62 HAND BREADTH DIG	.4366*	.3347*	.4979*	.4086*	.5443*	.3937*
63 HAND BREADTH MEAS	.3969*	.3904*	.4489*	.5903*	.4880*	.3383*
64 WRIST BREADTH	.3178*	.2282*	.3123*	.2962*	.4035*	.2288*
65 WRIST CIRCUMFERENCE	.3740*	.3763*	.3961*	.5285*	.4576*	.2877*
66 WRIST-C OF GRIP	.2610*	.3699*	.4131*	.2920*	.3754*	.3740*
67 WRIST-INDEX FINGER	.7175*	.6806*	.6760*	.3940*	.7344*	.4771*
68 WRIST-THUMB LENGTH	.7312*	.7104*	.7163*	.4030*	.7550*	.5176*
69 CROTCH 1 HEIGHT	.5043*	.7744*	.6607*	.3569*	.5960*	.5608*
70 CROTCH 2 HEIGHT	.6578*	.6940*	.6824*	.3460*	.7043*	.5225*
71 CROTCH 3 HEIGHT	.6618*	.5941*	.6860*	.3251*	.6821*	.5243*
72 CROTCH 4 HEIGHT	.6196*	.4917*	.6727*	.3029*	.6468*	.5238*
73 FOREARM-HAND LENGTH	.6750*	.6397*	.6552*	.3648*	.6878*	.4676*
74 ELBOW-WRIST LENGTH	.5816*	.5449*	.5735*	.2997*	.5894*	.4085*
75 ELBOW-C OF GRIP	.5799*	.5778*	.6146*	.3421*	.6182*	.4597*
76 RADIALE-STYLION	.5931*	.5553*	.5744*	.3154*	.5877*	.4049*
77 FOREARM CIRC FLEXED	.2107*	.2278*	.2505*	.4444*	.2921*	.1826*
78 BICEPS CIRC FLEXED	.0974	.1211*	.1347*	.3142*	.1774*	.0911
79 ARM LENGTH	.6155*	.5907*	.5893*	.3473*	.6298*	.4118*
80 SHOULDER-ELBOW LGTH	.5273*	.4775*	.5046*	.2708*	.5406*	.3587*
81 ACROMION-RADIALE LT	.5043*	.4785*	.4821*	.2563*	.5162*	.3394*
82 THUMBTIP REACH	.6102*	.5836*	.5851*	.3506*	.6305*	.4127*
83 WRIST WALL LENGTH	.5453*	.5191*	.5233*	.3281*	.5647*	.3684*
84 WRIST WALL LT EX	.4961*	.5000*	.4819*	.3345*	.5239*	.3319*
85 STATURE	.5034*	.4764*	.4683*	.2742*	.5572*	.3312*
86 WEIGHT	.2562*	.2783*	.2716*	.3739*	.3429*	.1852*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

		(8)	(9)	(10)	(11)	(12)	(13)
1	D1 LENGTH	.5527*	.6443*	.7182*	.7403*	.7568*	.2520*
2	D1 HEIGHT	.3706*	.4682*	.5894*	.7862*	.6817*	.2189*
3	D1 TIP TO WRIST	.3820*	.5607*	.6108*	.6524*	.7431*	.2527*
4	D1 IP BREADTH	.1192*	.3008*	.2931*	.3551*	.3475*	.4092*
6	D1 LINK	.4071*	.6396*	.6903*	.7514*	.7787*	.3001*
7	D1 METACARPAL LINK	.0399	.3187*	.3828*	.4430*	.5452*	.1666*
8	D1 PROX LINK	-----	.0869	.4286*	.4091*	.4366*	.0949
9	D1 DIST LINK	.0869	-----	.5952*	.5945*	.5947*	.3192*
10	D2 LENGTH	.4286*	.5952*	-----	.8509*	.8690*	.2761*
11	D2 HEIGHT	.4091*	.5945*	.8509*	-----	.9438*	.3302*
12	D2 TIP TO WRIST	.4366*	.5947*	.8690*	.9438*	-----	.3107*
13	D2 PIP BREADTH	.0949	.3192*	.2761*	.3302*	.3107*	-----
15	D2 DIP BREADTH	.0716	.2987*	.2649*	.2832*	.2737*	.5835*
17	D2 LINK	.3954*	.5309*	.8241*	.7973*	.8713*	.2580*
18	D2 METACARPAL LINK	.3138*	.4376*	.5759*	.7538*	.7640*	.2541*
19	D2 DIST LINK	.2371*	.6031*	.6925*	.6183*	.6162*	.2691*
20	D2 MED LINK	.3728*	.3781*	.6859*	.6400*	.6709*	.1508*
21	D2 PROX LINK	.2621*	.2647*	.4175*	.4669*	.5648*	.1576*
22	D3 LENGTH	.4126*	.5503*	.8789*	.8317*	.8432*	.2511*
23	D3 HEIGHT	.4175*	.5858*	.8259*	.9382*	.9525*	.3056*
24	D3 TIP TO WRIST	.4172*	.5856*	.8248*	.9377*	.9531*	.3048*
25	D3 PIP BREADTH	.1124	.3441*	.3058*	.3646*	.3488*	.6689*
27	D3 DIP BREADTH	.0796	.2975*	.2226*	.2761*	.2723*	.6124*
29	D3 LINK	.3837*	.5375*	.8018*	.8094*	.8220*	.2352*
30	D3 METACARPAL LINK	.2996*	.4218*	.5429*	.7337*	.7466*	.2703*
31	D3 DIST LINK	.2133*	.5921*	.6520*	.6052*	.6042*	.2457*
32	D3 MED LINK	.3662*	.3190*	.6336*	.6389*	.6515*	.1074
33	D3 PROX LINK	.2529*	.2950*	.4514*	.4796*	.4928*	.1736*
34	D4 LENGTH	.4006*	.5333*	.8100*	.7930*	.7921*	.2446*
35	D4 HEIGHT	.4178*	.5627*	.7884*	.8630*	.9213*	.2708*
36	D4 TIP TO WRIST	.4093*	.5724*	.7841*	.9113*	.9090*	.2941*
37	D4 PIP BREADTH	.1113	.3597*	.3291*	.3856*	.3678*	.5737*
39	D4 DIP BREADTH	.0584	.2948*	.2071*	.2549*	.2440*	.5282*
41	D4 LINK	.3818*	.5558*	.8000*	.8222*	.8239*	.2674*
42	D4 METACARPAL LINK	.3263*	.4323*	.5495*	.7572*	.7511*	.2421*
43	D4 DIST LINK	.2028*	.5297*	.5895*	.5639*	.5569*	.2393*
44	D4 MED LINK	.3518*	.3382*	.6098*	.6289*	.6471*	.1061
45	D4 PROX LINK	.2777*	.3718*	.5481*	.5831*	.5750*	.2296*
46	D5 LENGTH	.3735*	.5068*	.7364*	.6914*	.6992*	.2223*
47	D5 HEIGHT	.3918*	.5263*	.7265*	.7505*	.8472*	.2167*
48	D5 TIP TO WRIST	.3895*	.5396*	.7119*	.8386*	.8291*	.2645*
49	D5 PIP BREADTH	.0826	.2670*	.2465*	.3046*	.2902*	.5520*
51	D5 DIP BREADTH	.0316	.2507*	.1944*	.2301*	.2073*	.5022*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(8)	(9)	(10)	(11)	(12)	(13)
53 D5 LINK	.3600*	.5356*	.7507*	.7454*	.7504*	.2482*
54 D5 METACARPAL LINK	.2982*	.3794*	.4601*	.6691*	.6493*	.1991*
55 D5 DIST LINK	.1887*	.5259*	.5619*	.5159*	.5192*	.2330*
56 D5 MED LINK	.3372*	.2986*	.5280*	.5368*	.5529*	.1218*
57 D5 PROX LINK	.2708*	.3795*	.5645*	.5852*	.5780*	.2042*
58 HAND LGTH DIG	.4175*	.5858*	.8259*	.9382*	.9525*	.3056*
59 HAND LGTH MEAS	.4133*	.5433*	.7662*	.8862*	.8841*	.3212*
60 HAND CIRCUMFERENCE	.2131*	.4102*	.5300*	.6001*	.5788*	.4845*
61 PALM LENGTH	.3514*	.5115*	.6325*	.8693*	.8841*	.3012*
62 HAND BREADTH DIG	.1966*	.4296*	.4549*	.5331*	.5320*	.5971*
63 HAND BREADTH MEAS	.2074*	.3996*	.5315*	.5956*	.5816*	.4539*
64 WRIST BREADTH	.1709*	.2657*	.2714*	.3411*	.3249*	.4717*
65 WRIST CIRCUMFERENCE	.1990*	.3649*	.4389*	.5382*	.5158*	.4748*
66 WRIST-C OF GRIP	.1539*	.2307*	.3129*	.3922*	.4146*	.1401*
67 WRIST-INDEX FINGER	.4309*	.5554*	.8110*	.9054*	.9151*	.3155*
68 WRIST-THUMB LENGTH	.4589*	.5512*	.7037*	.8044*	.8161*	.2612*
69 CROTCH 1 HEIGHT	.2705*	.4478*	.5299*	.7052*	.6681*	.2552*
70 CROTCH 2 HEIGHT	.3286*	.5678*	.6472*	.8897*	.8872*	.2987*
71 CROTCH 3 HEIGHT	.3532*	.5472*	.6449*	.8254*	.8580*	.2756*
72 CROTCH 4 HEIGHT	.3274*	.5310*	.6164*	.7476*	.8125*	.2458*
73 FOREARM-HAND LENGTH	.4273*	.5124*	.7125*	.8212*	.8431*	.2588*
74 ELBOW-WRIST LENGTH	.3875*	.4347*	.5977*	.6869*	.7214*	.1901*
75 ELBOW-C OF GRIP	.3809*	.4432*	.6082*	.7080*	.7443*	.2046*
76 RADIALE-STYLION	.3907*	.4445*	.5930*	.6917*	.7257*	.1880*
77 FOREARM CIRC FLEXED	.1225*	.2327*	.2570*	.3249*	.3046*	.3819*
78 BICEPS CIRC FLEXED	.0841	.1240*	.1480*	.1790*	.1600*	.3108*
79 ARM LENGTH	.3935*	.4752*	.6457*	.7548*	.7733*	.2449*
80 SHOULDER-ELBOW LGTH	.3343*	.3924*	.5375*	.6268*	.6442*	.2360*
81 ACROMION-RADIALE LT	.3330*	.3686*	.5233*	.6118*	.6298*	.2252*
82 THUMBTIP REACH	.3882*	.4638*	.6280*	.7283*	.7437*	.2503*
83 WRIST WALL LENGTH	.3472*	.4169*	.5703*	.6624*	.6784*	.2312*
84 WRIST WALL LT EX	.3422*	.3788*	.5389*	.6193*	.6394*	.1857*
85 STATURE	.2926*	.3900*	.5558*	.6396*	.6412*	.2436*
86 WEIGHT	.1682*	.2479*	.3284*	.3903*	.3693*	.3685*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(15)	(17)	(18)	(19)	(20)	(21)
1 D1 LENGTH	.2440*	.6622*	.5743*	.5308*	.5503*	.3776*
2 D1 HEIGHT	.1713*	.5477*	.5817*	.4276*	.5010*	.2919*
3 D1 TIP TO WRIST	.2315*	.6098*	.6172*	.4600*	.5108*	.3991*
4 D1 IP BREADTH	.4255*	.3025*	.2659*	.2755*	.2591*	.2102*
6 D1 LINK	.2869*	.6704*	.6055*	.5093*	.5469*	.4105*
7 D1 METACARPAL LINK	.1567*	.4174*	.4923*	.2693*	.3557*	.3005*
8 D1 PROX LINK	.0716	.3954*	.3138*	.2371*	.3728*	.2621*
9 D1 DIST LINK	.2987*	.5309*	.4376*	.6031*	.3781*	.2647*
10 D2 LENGTH	.2649*	.8241*	.5759*	.6925*	.6859*	.4175*
11 D2 HEIGHT	.2832*	.7973*	.7538*	.6183*	.6400*	.4669*
12 D2 TIP TO WRIST	.2737*	.8713*	.7640*	.6162*	.6709*	.5648*
13 D2 PIP BREADTH	.5835*	.2580*	.2541*	.2691*	.1508*	.1576*
15 D2 DIP BREADTH	-----	.2317*	.2180*	.2671*	.1497*	.1401*
17 D2 LINK	.2317*	-----	.3490*	.6130*	.6265*	.7849*
18 D2 METACARPAL LINK	.2180*	.3490*	-----	.3706*	.4574*	.0467
19 D2 DIST LINK	.2671*	.6130*	.3706*	-----	.2200*	.2655*
20 D2 MED LINK	.1497*	.6265*	.4574*	.2200*	-----	.3222*
21 D2 PROX LINK	.1401*	.7849*	.0467	.2655*	.3222*	-----
22 D3 LENGTH	.2223*	.7716*	.5956*	.6031*	.6379*	.4073*
23 D3 HEIGHT	.2604*	.7950*	.7736*	.5890*	.6419*	.4764*
24 D3 TIP TO WRIST	.2619*	.7942*	.7757*	.5857*	.6409*	.4756*
25 D3 PIP BREADTH	.5810*	.2837*	.2930*	.2687*	.1564*	.1905*
27 D3 DIP BREADTH	.6798*	.2145*	.2380*	.2302*	.1420*	.1469*
29 D3 LINK	.2241*	.7575*	.5737*	.5637*	.6164*	.4413*
30 D3 METACARPAL LINK	.2072*	.5395*	.7163*	.3920*	.4295*	.3370*
31 D3 DIST LINK	.2475*	.5731*	.4002*	.7588*	.3348*	.2338*
32 D3 MED LINK	.0943	.5777*	.4844*	.3085*	.6835*	.3054*
33 D3 PROX LINK	.1662*	.4629*	.3324*	.2554*	.3132*	.3668*
34 D4 LENGTH	.2061*	.7236*	.5611*	.5587*	.6086*	.3815*
35 D4 HEIGHT	.2300*	.7625*	.7567*	.5598*	.6218*	.4522*
36 D4 TIP TO WRIST	.2533*	.7458*	.7551*	.5682*	.6161*	.4315*
37 D4 PIP BREADTH	.5426*	.2901*	.3208*	.2963*	.2095*	.1609*
39 D4 DIP BREADTH	.5787*	.2138*	.1850*	.2163*	.1287*	.1486*
41 D4 LINK	.2473*	.7523*	.5842*	.5707*	.6095*	.4278*
42 D4 METACARPAL LINK	.1898*	.5321*	.7346*	.4081*	.4528*	.3161*
43 D4 DIST LINK	.2382*	.5232*	.3755*	.6693*	.3202*	.2042*
44 D4 MED LINK	.0865	.5706*	.4854*	.3108*	.6402*	.3064*
45 D4 PROX LINK	.2041*	.5352*	.3943*	.3371*	.3586*	.3864*
46 D5 LENGTH	.2095*	.6509*	.4794*	.5050*	.5820*	.3234*
47 D5 HEIGHT	.1863*	.7031*	.6934*	.5102*	.5930*	.4099*
48 D5 TIP TO WRIST	.2399*	.6731*	.6983*	.5071*	.5927*	.3792*
49 D5 PIP BREADTH	.4999*	.2230*	.2610*	.2430*	.1640*	.1262*
51 D5 DIP BREADTH	.5467*	.1666*	.1767*	.1776*	.1165	.1272*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(15)	(17)	(18)	(19)	(20)	(21)
53 D5 LINK	.2486*	.7008*	.5116*	.5317*	.5958*	.3862*
54 D5 METACARPAL LINK	.1590*	.4432*	.6571*	.3306*	.4098*	.2575*
55 D5 DIST LINK	.2307*	.4896*	.3478*	.6284*	.3281*	.1587*
56 D5 MED LINK	.1148	.4953*	.4045*	.2491*	.5637*	.2819*
57 D5 PROX LINK	.1992*	.5476*	.3838*	.3307*	.4257*	.3712*
58 HAND LGTH DIG	.2604*	.7950*	.7736*	.5890*	.6419*	.4764*
59 HAND LGTH MEAS	.2691*	.7402*	.7151*	.5091*	.6274*	.4668*
60 HAND CIRCUMFERENCE	.4423*	.4562*	.5054*	.3794*	.3877*	.2569*
61 PALM LENGTH	.2520*	.6763*	.7991*	.4717*	.5298*	.4550*
62 HAND BREADTH DIG	.5560*	.4119*	.4743*	.3251*	.3217*	.2593*
63 HAND BREADTH MEAS	.4168*	.4661*	.4977*	.3768*	.3810*	.2673*
64 WRIST BREADTH	.4310*	.2692*	.2666*	.1702*	.1908*	.2100*
65 WRIST CIRCUMFERENCE	.3926*	.4312*	.4180*	.3264*	.3327*	.2957*
66 WRIST-C OF GRIP	.1178	.3307*	.3569*	.2092*	.3044*	.2374*
67 WRIST-INDEX FINGER	.2710*	.7864*	.7135*	.5350*	.6482*	.5038*
68 WRIST-THUMB LENGTH	.2334*	.6965*	.6426*	.4850*	.5893*	.4459*
69 CROTCH 1 HEIGHT	.2103*	.5142*	.5998*	.4452*	.4616*	.2841*
70 CROTCH 2 HEIGHT	.2372*	.6963*	.7787*	.5364*	.5285*	.4459*
71 CROTCH 3 HEIGHT	.2291*	.6591*	.7719*	.5281*	.5206*	.3928*
72 CROTCH 4 HEIGHT	.1939*	.6179*	.7390*	.4979*	.4903*	.3627*
73 FOREARM-HAND LENGTH	.1980*	.6997*	.6899*	.4748*	.5865*	.4511*
74 ELBOW-WRIST LENGTH	.1308*	.5947*	.5957*	.3992*	.4940*	.3899*
75 ELBOW-C OF GRIP	.1467*	.6105*	.6186*	.4063*	.5153*	.4059*
76 RADIALE-STYLION	.1291*	.6010*	.5956*	.3921*	.4985*	.4039*
77 FOREARM CIRC FLEXED	.3311*	.2663*	.2315*	.1981*	.2282*	.1981*
78 BICEPS CIRC FLEXED	.2753*	.1514*	.1064	.1019	.1380*	.1413*
79 ARM LENGTH	.1915*	.6494*	.6227*	.4218*	.5161*	.4331*
80 SHOULDER-ELBOW LGTH	.1652*	.5421*	.5174*	.3471*	.4213*	.3605*
81 ACROMION-RADIALE LT	.1521*	.5328*	.5020*	.3368*	.4099*	.3574*
82 THUMBTIP REACH	.1797*	.6351*	.5851*	.4293*	.5024*	.4259*
83 WRIST WALL LENGTH	.1630*	.5807*	.5320*	.3894*	.4567*	.3989*
84 WRIST WALL LT EX	.1254*	.5521*	.4950*	.3465*	.4449*	.3869*
85 STATURE	.1787*	.5458*	.5067*	.3818*	.3854*	.3577*
86 WEIGHT	.3081*	.3337*	.2664*	.2249*	.2444*	.2512*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(22)	(23)	(24)	(25)	(27)	(29)
1 D1 LENGTH	.6906*	.7406*	.7421*	.3142*	.2484*	.6671*
2 D1 HEIGHT	.5981*	.6871*	.6882*	.2345*	.1651*	.5813*
3 D1 TIP TO WRIST	.6157*	.7201*	.7189*	.3487*	.2897*	.6202*
4 D1 IP BREADTH	.3075*	.3596*	.3624*	.4248*	.4560*	.3194*
6 D1 LINK	.6877*	.7622*	.7602*	.3840*	.3201*	.6793*
7 D1 METACARPAL LINK	.4109*	.5273*	.5260*	.2710*	.2267*	.4329*
8 D1 PROX LINK	.4126*	.4175*	.4172*	.1124	.0796	.3837*
9 D1 DIST LINK	.5503*	.5858*	.5856*	.3441*	.2975*	.5375*
10 D2 LENGTH	.8789*	.8259*	.8248*	.3058*	.2226*	.8018*
11 D2 HEIGHT	.8317*	.9382*	.9377*	.3646*	.2761*	.8094*
12 D2 TIP TO WRIST	.8432*	.9525*	.9531*	.3488*	.2723*	.8220*
13 D2 PIP BREADTH	.2511*	.3056*	.3048*	.6689*	.6124*	.2352*
15 D2 DIP BREADTH	.2223*	.2604*	.2619*	.5810*	.6798*	.2241*
17 D2 LINK	.7716*	.7950*	.7942*	.2837*	.2145*	.7575*
18 D2 METACARPAL LINK	.5956*	.7736*	.7757*	.2930*	.2380*	.5737*
19 D2 DIST LINK	.6031*	.5890*	.5857*	.2687*	.2302*	.5637*
20 D2 MED LINK	.6379*	.6419*	.6409*	.1564*	.1420*	.6164*
21 D2 PROX LINK	.4073*	.4764*	.4756*	.1905*	.1469*	.4413*
22 D3 LENGTH	-----	.8959*	.8949*	.3607*	.2372*	.8646*
23 D3 HEIGHT	.8959*	-----	.9975*	.3939*	.2960*	.8501*
24 D3 TIP TO WRIST	.8949*	.9975*	-----	.3969*	.2976*	.8491*
25 D3 PIP BREADTH	.3607*	.3939*	.3969*	-----	.6915*	.3342*
27 D3 DIP BREADTH	.2372*	.2960*	.2976*	.6915*	-----	.2510*
29 D3 LINK	.8646*	.8501*	.8491*	.3342*	.2510*	-----
30 D3 METACARPAL LINK	.5952*	.7930*	.7985*	.3202*	.2396*	.3600*
31 D3 DIST LINK	.6926*	.6476*	.6458*	.3027*	.2508*	.6297*
32 D3 MED LINK	.7280*	.7057*	.7070*	.1864*	.1389*	.6472*
33 D3 PROX LINK	.4495*	.4752*	.4737*	.2333*	.1755*	.7238*
34 D4 LENGTH	.9049*	.8396*	.8377*	.3336*	.2292*	.8132*
35 D4 HEIGHT	.8471*	.9613*	.9587*	.3548*	.2734*	.8047*
36 D4 TIP TO WRIST	.8501*	.9673*	.9688*	.3823*	.2971*	.8073*
37 D4 PIP BREADTH	.3571*	.4069*	.4088*	.7014*	.6421*	.3368*
39 D4 DIP BREADTH	.2117*	.2649*	.2649*	.5993*	.6671*	.2087*
41 D4 LINK	.8670*	.8660*	.8652*	.3621*	.2812*	.9246*
42 D4 METACARPAL LINK	.5961*	.8112*	.8148*	.2988*	.2324*	.4545*
43 D4 DIST LINK	.6155*	.5966*	.5949*	.2727*	.2500*	.5624*
44 D4 MED LINK	.6908*	.6908*	.6919*	.1813*	.1203*	.6374*
45 D4 PROX LINK	.5795*	.5860*	.5849*	.3126*	.2335*	.7601*
46 D5 LENGTH	.7595*	.7138*	.7115*	.2702*	.2075*	.6996*
47 D5 HEIGHT	.7509*	.8631*	.8598*	.2834*	.2225*	.7215*
48 D5 TIP TO WRIST	.7507*	.8799*	.8814*	.3343*	.2701*	.7257*
49 D5 PIP BREADTH	.2462*	.3230*	.3253*	.6303*	.5912*	.2531*
51 D5 DIP BREADTH	.1753*	.2311*	.2329*	.5496*	.6115*	.1930*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(22)	(23)	(24)	(25)	(27)	(29)
53 D5 LINK	.7756*	.7691*	.7685*	.3176*	.2623*	.7878*
54 D5 METACARPAL LINK	.4999*	.7140*	.7170*	.2479*	.1952*	.4485*
55 D5 DIST LINK	.5648*	.5397*	.5370*	.2580*	.2168*	.5139*
56 D5 MED LINK	.5627*	.5715*	.5707*	.1707*	.1364*	.5294*
57 D5 PROX LINK	.5812*	.5890*	.5904*	.2763*	.2244*	.6722*
58 HAND LGTH DIG	.8959*	1.0000*	.9975*	.3939*	.2960*	.8501*
59 HAND LGTH MEAS	.8375*	.9300*	.9316*	.4115*	.3011*	.8023*
60 HAND CIRCUMFERENCE	.5730*	.6111*	.6122*	.5870*	.4877*	.5285*
61 PALM LENGTH	.6485*	.9163*	.9168*	.3571*	.2990*	.6886*
62 HAND BREADTH DIG	.4740*	.5339*	.5355*	.7133*	.6254*	.4455*
63 HAND BREADTH MEAS	.5667*	.6070*	.6086*	.5530*	.4593*	.5207*
64 WRIST BREADTH	.2767*	.3212*	.3236*	.5700*	.4868*	.2919*
65 WRIST CIRCUMFERENCE	.4618*	.5324*	.5338*	.5336*	.4451*	.4865*
66 WRIST-C OF GRIP	.3394*	.4136*	.4133*	.1845*	.1332*	.3650*
67 WRIST-INDEX FINGER	.7991*	.8954*	.8964*	.3617*	.2648*	.7883*
68 WRIST-THUMB LENGTH	.7153*	.8148*	.8143*	.3412*	.2514*	.7053*
69 CROTCH 1 HEIGHT	.5537*	.6754*	.6745*	.3020*	.2587*	.5547*
70 CROTCH 2 HEIGHT	.6703*	.9023*	.9024*	.3280*	.2849*	.6987*
71 CROTCH 3 HEIGHT	.6693*	.8999*	.8994*	.3177*	.2787*	.6787*
72 CROTCH 4 HEIGHT	.6461*	.8552*	.8544*	.2958*	.2483*	.6433*
73 FOREARM-HAND LENGTH	.7707*	.8752*	.8775*	.3477*	.2396*	.7336*
74 ELBOW-WRIST LENGTH	.6411*	.7412*	.7436*	.2680*	.1736*	.6070*
75 ELBOW-C OF GRIP	.6534*	.7613*	.7634*	.2849*	.1883*	.6307*
76 RADIALE-STYLION	.6374*	.7438*	.7466*	.2466*	.1735*	.6035*
77 FOREARM CIRC FLEXED	.2809*	.3237*	.3286*	.4462*	.3867*	.3001*
78 BICEPS CIRC FLEXED	.1677*	.1762*	.1809*	.3643*	.3156*	.1822*
79 ARM LENGTH	.6973*	.7947*	.7983*	.3191*	.2141*	.6662*
80 SHOULDER-ELBOW LGTH	.5677*	.6531*	.6552*	.3070*	.2058*	.5600*
81 ACROMION-RADIALE LT	.5538*	.6372*	.6406*	.2909*	.1907*	.5393*
82 THUMBTIP REACH	.6549*	.7513*	.7533*	.3213*	.2185*	.6383*
83 WRIST WALL LENGTH	.5970*	.6862*	.6885*	.3009*	.2024*	.5821*
84 WRIST WALL LT EX	.5734*	.6393*	.6426*	.2428*	.1522*	.5484*
85 STATURE	.5769*	.6370*	.6383*	.3060*	.1838*	.5674*
86 WEIGHT	.3452*	.3785*	.3836*	.4439*	.3527*	.3649*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

		(30)	(31)	(32)	(33)	(34)	(35)
1	D1 LENGTH	.5504*	.5307*	.5209*	.3869*	.6661*	.7212*
2	D1 HEIGHT	.5530*	.4397*	.5154*	.2943*	.5844*	.5895*
3	D1 TIP TO WRIST	.5629*	.4737*	.4872*	.3641*	.5893*	.7268*
4	D1 IP BREADTH	.2761*	.2889*	.2459*	.1795*	.3098*	.3432*
6	D1 LINK	.5686*	.5246*	.5088*	.4137*	.6714*	.7410*
7	D1 METACARPAL LINK	.4357*	.3001*	.3495*	.2500*	.3888*	.5436*
8	D1 PROX LINK	.2996*	.2133*	.3662*	.2529*	.4006*	.4178*
9	D1 DIST LINK	.4218*	.5921*	.3190*	.2950*	.5333*	.5627*
10	D2 LENGTH	.5429*	.6520*	.6336*	.4514*	.8100*	.7884*
11	D2 HEIGHT	.7337*	.6052*	.6389*	.4796*	.7930*	.8630*
12	D2 TIP TO WRIST	.7466*	.6042*	.6515*	.4928*	.7921*	.9213*
13	D2 PIP BREADTH	.2703*	.2457*	.1074	.1736*	.2446*	.2708*
15	D2 DIP BREADTH	.2072*	.2475*	.0943	.1662*	.2061*	.2300*
17	D2 LINK	.5395*	.5731*	.5777*	.4629*	.7236*	.7625*
18	D2 METACARPAL LINK	.7163*	.4002*	.4844*	.3324*	.5611*	.7567*
19	D2 DIST LINK	.3920*	.7588*	.3085*	.2554*	.5587*	.5598*
20	D2 MED LINK	.4295*	.3348*	.6835*	.3132*	.6086*	.6218*
21	D2 PROX LINK	.3370*	.2338*	.3054*	.3668*	.3815*	.4522*
22	D3 LENGTH	.5952*	.6926*	.7280*	.4495*	.9049*	.8471*
23	D3 HEIGHT	.7930*	.6476*	.7057*	.4752*	.8396*	.9613*
24	D3 TIP TO WRIST	.7985*	.6458*	.7070*	.4737*	.8377*	.9587*
25	D3 PIP BREADTH	.3202*	.3027*	.1864*	.2333*	.3336*	.3548*
27	D3 DIP BREADTH	.2396*	.2508*	.1389*	.1755*	.2292*	.2734*
29	D3 LINK	.3600*	.6297*	.6472*	.7238*	.8132*	.8047*
30	D3 METACARPAL LINK	-----	.4230*	.5112*	.0118	.5528*	.7762*
31	D3 DIST LINK	.4230*	-----	.2784*	.2476*	.6132*	.6079*
32	D3 MED LINK	.5112*	.2784*	-----	.1832*	.6957*	.6775*
33	D3 PROX LINK	.0118	.2476*	.1832*	-----	.4318*	.4529*
34	D4 LENGTH	.5528*	.6132*	.6957*	.4318*	-----	.8497*
35	D4 HEIGHT	.7762*	.6079*	.6775*	.4529*	.8497*	-----
36	D4 TIP TO WRIST	.7910*	.6142*	.6920*	.4415*	.8652*	.9621*
37	D4 PIP BREADTH	.3381*	.3341*	.2254*	.2059*	.3724*	.3865*
39	D4 DIP BREADTH	.2301*	.2443*	.1142	.1118	.2423*	.2652*
41	D4 LINK	.4745*	.6281*	.6619*	.6119*	.9151*	.8731*
42	D4 METACARPAL LINK	.9212*	.4288*	.5337*	.1313*	.5705*	.7938*
43	D4 DIST LINK	.4097*	.7487*	.3435*	.2276*	.6494*	.6073*
44	D4 MED LINK	.4956*	.3548*	.7603*	.2580*	.7186*	.6932*
45	D4 PROX LINK	.1668*	.3388*	.3437*	.7346*	.6198*	.5880*
46	D5 LENGTH	.4593*	.5374*	.5803*	.3906*	.8200*	.7305*
47	D5 HEIGHT	.6964*	.5423*	.6028*	.4170*	.7440*	.9341*
48	D5 TIP TO WRIST	.7297*	.5341*	.6406*	.3920*	.7695*	.8795*
49	D5 PIP BREADTH	.2861*	.2561*	.1600*	.1590*	.2593*	.3143*
51	D5 DIP BREADTH	.1913*	.1999*	.0772	.1485*	.1888*	.2169*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(30)	(31)	(32)	(33)	(34)	(35)
53 D5 LINK	.4594*	.5588*	.6031*	.4933*	.8172*	.7792*
54 D5 METACARPAL LINK	.7553*	.3492*	.4802*	.1803*	.4922*	.7041*
55 D5 DIST LINK	.3629*	.6651*	.3165*	.2161*	.5753*	.5486*
56 D5 MED LINK	.4046*	.2815*	.5864*	.2674*	.6087*	.5816*
57 D5 PROX LINK	.2766*	.3334*	.4302*	.5420*	.6188*	.5939*
58 HAND LGTH DIG	.7930*	.6476*	.7057*	.4752*	.8396*	.9613*
59 HAND LGTH MEAS	.7311*	.5605*	.6935*	.4603*	.7922*	.8835*
60 HAND CIRCUMFERENCE	.4789*	.4202*	.4045*	.3244*	.5706*	.5862*
61 PALM LENGTH	.8346*	.4947*	.5634*	.4157*	.6340*	.8942*
62 HAND BREADTH DIG	.4381*	.3343*	.3091*	.3010*	.4960*	.5091*
63 HAND BREADTH MEAS	.4815*	.4083*	.4060*	.3128*	.5649*	.5856*
64 WRIST BREADTH	.2389*	.1616*	.1424*	.2610*	.2974*	.2886*
65 WRIST CIRCUMFERENCE	.3883*	.3399*	.2969*	.3643*	.4631*	.4992*
66 WRIST-C OF GRIP	.3141*	.2123*	.3132*	.2273*	.3462*	.4088*
67 WRIST-INDEX FINGER	.6848*	.5381*	.6338*	.4892*	.7622*	.8543*
68 WRIST-THUMB LENGTH	.6344*	.4942*	.5915*	.4151*	.7004*	.7906*
69 CROTCH 1 HEIGHT	.5592*	.4603*	.4830*	.2725*	.5365*	.6190*
70 CROTCH 2 HEIGHT	.7974*	.5546*	.5531*	.3976*	.6548*	.8611*
71 CROTCH 3 HEIGHT	.8150*	.5558*	.5518*	.3827*	.6400*	.9054*
72 CROTCH 4 HEIGHT	.7758*	.5312*	.5341*	.3527*	.6071*	.8975*
73 FOREARM-HAND LENGTH	.7137*	.5070*	.6556*	.4144*	.7319*	.8473*
74 ELBOW-WRIST LENGTH	.6216*	.4157*	.5572*	.3384*	.6107*	.7281*
75 ELBOW-C OF GRIP	.6295*	.4216*	.5729*	.3582*	.6288*	.7486*
76 RADIALE-STYLION	.6308*	.4054*	.5747*	.3286*	.6010*	.7260*
77 FOREARM CIRC FLEXED	.2384*	.2040*	.2072*	.2197*	.2982*	.3023*
78 BICEPS CIRC FLEXED	.1119	.1104	.1233*	.1361*	.1754*	.1550*
79 ARM LENGTH	.6508*	.4561*	.5834*	.3920*	.6726*	.7688*
80 SHOULDER-ELBOW LGTH	.5190*	.3713*	.4473*	.3689*	.5503*	.6336*
81 ACROMION-RADIALE LT	.5167*	.3603*	.4479*	.3425*	.5347*	.6170*
82 THUMBTIP REACH	.6031*	.4385*	.5327*	.3916*	.6334*	.7276*
83 WRIST WALL LENGTH	.5526*	.3937*	.4891*	.3607*	.5782*	.6641*
84 WRIST WALL LT EX	.5099*	.3458*	.4889*	.3333*	.5487*	.6162*
85 STATURE	.4807*	.3895*	.3890*	.4012*	.5585*	.6104*
86 WEIGHT	.2617*	.2320*	.2385*	.2819*	.3390*	.3439*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

		(36)	(37)	(39)	(41)	(42)	(43)
1	D1 LENGTH	.7262*	.3317*	.2356*	.6808*	.5752*	.5026*
2	D1 HEIGHT	.6758*	.2464*	.1444*	.5947*	.5782*	.4231*
3	D1 TIP TO WRIST	.6950*	.3460*	.2513*	.6206*	.5846*	.4164*
4	D1 IP BREADTH	.3539*	.3959*	.4020*	.3379*	.2735*	.2909*
6	D1 LINK	.7409*	.3860*	.2866*	.6965*	.5847*	.4915*
7	D1 METACARPAL LINK	.5038*	.2627*	.1882*	.4278*	.4482*	.2544*
8	D1 PROX LINK	.4093*	.1113	.0584	.3818*	.3263*	.2028*
9	D1 DIST LINK	.5724*	.3597*	.2948*	.5558*	.4323*	.5297*
10	D2 LENGTH	.7841*	.3291*	.2071*	.8000*	.5495*	.5895*
11	D2 HEIGHT	.9113*	.3856*	.2549*	.8222*	.7572*	.5639*
12	D2 TIP TO WRIST	.9090*	.3678*	.2440*	.8239*	.7511*	.5569*
13	D2 PIP BREADTH	.2941*	.5737*	.5282*	.2674*	.2421*	.2393*
15	D2 DIP BREADTH	.2533*	.5426*	.5787*	.2473*	.1898*	.2382*
17	D2 LINK	.7458*	.2901*	.2138*	.7523*	.5321*	.5232*
18	D2 METACARPAL LINK	.7551*	.3208*	.1850*	.5842*	.7346*	.3755*
19	D2 DIST LINK	.5682*	.2963*	.2163*	.5707*	.4081*	.6693*
20	D2 MED LINK	.6161*	.2095*	.1287*	.6095*	.4528*	.3202*
21	D2 PROX LINK	.4315*	.1609*	.1486*	.4278*	.3161*	.2042*
22	D3 LENGTH	.8501*	.3571*	.2117*	.8670*	.5961*	.6155*
23	D3 HEIGHT	.9673*	.4069*	.2649*	.8660*	.8112*	.5966*
24	D3 TIP TO WRIST	.9688*	.4088*	.2649*	.8652*	.8148*	.5949*
25	D3 PIP BREADTH	.3823*	.7014*	.5993*	.3621*	.2988*	.2727*
27	D3 DIP BREADTH	.2971*	.6421*	.6671*	.2812*	.2324*	.2500*
29	D3 LINK	.8073*	.3368*	.2087*	.9246*	.4545*	.5624*
30	D3 METACARPAL LINK	.7910*	.3381*	.2301*	.4745*	.9212*	.4097*
31	D3 DIST LINK	.6142*	.3341*	.2443*	.6281*	.4288*	.7487*
32	D3 MED LINK	.6920*	.2254*	.1142	.6619*	.5337*	.3435*
33	D3 PROX LINK	.4415*	.2059*	.1118	.6119*	.1313*	.2276*
34	D4 LENGTH	.8652*	.3724*	.2423*	.9151*	.5705*	.6494*
35	D4 HEIGHT	.9621*	.3865*	.2652*	.8731*	.7938*	.6073*
36	D4 TIP TO WRIST	-----	.4151*	.2812*	.8816*	.8537*	.6223*
37	D4 PIP BREADTH	.4151*	-----	.6075*	.4014*	.3153*	.3110*
39	D4 DIP BREADTH	.2812*	.6075*	-----	.2794*	.2054*	.2632*
41	D4 LINK	.8816*	.4014*	.2794*	-----	.5068*	.6500*
42	D4 METACARPAL LINK	.8537*	.3153*	.2054*	.5068*	-----	.4194*
43	D4 DIST LINK	.6223*	.3110*	.2632*	.6500*	.4194*	-----
44	D4 MED LINK	.7077*	.2681*	.1176	.6862*	.5355*	.2495*
45	D4 PROX LINK	.5838*	.2903*	.2240*	.7894*	.1954*	.3008*
46	D5 LENGTH	.7384*	.3148*	.2263*	.7771*	.4912*	.5452*
47	D5 HEIGHT	.8605*	.3057*	.2183*	.7644*	.7283*	.5229*
48	D5 TIP TO WRIST	.9262*	.3603*	.2528*	.7873*	.8230*	.5345*
49	D5 PIP BREADTH	.3318*	.6505*	.5440*	.3083*	.2658*	.2490*
51	D5 DIP BREADTH	.2475*	.5474*	.5874*	.2416*	.1855*	.1906*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(36)	(37)	(39)	(41)	(42)	(43)
53 D5 LINK	.7906*	.3580*	.2740*	.8710*	.4830*	.5685*
54 D5 METACARPAL LINK	.7690*	.2530*	.1567*	.4716*	.8842*	.3411*
55 D5 DIST LINK	.5512*	.2999*	.2406*	.5596*	.3893*	.6840*
56 D5 MED LINK	.5977*	.2172*	.1186*	.5876*	.4434*	.2741*
57 D5 PROX LINK	.6060*	.2849*	.2492*	.7439*	.2860*	.3467*
58 HAND LGTH DIG	.9673*	.4069*	.2649*	.8660*	.8112*	.5966*
59 HAND LGTH MEAS	.9120*	.4006*	.2756*	.8186*	.7625*	.5286*
60 HAND CIRCUMFERENCE	.5993*	.5697*	.4570*	.5860*	.4480*	.3974*
61 PALM LENGTH	.9056*	.3797*	.2639*	.7140*	.8661*	.4765*
62 HAND BREADTH DIG	.5292*	.6778*	.5743*	.5159*	.3974*	.3275*
63 HAND BREADTH MEAS	.5936*	.5427*	.4352*	.5763*	.4483*	.3871*
64 WRIST BREADTH	.3272*	.5098*	.4400*	.3200*	.2445*	.1582*
65 WRIST CIRCUMFERENCE	.5176*	.4986*	.4090*	.5118*	.3807*	.3507*
66 WRIST-C OF GRIP	.4064*	.1816*	.0932	.3634*	.3413*	.2006*
67 WRIST-INDEX FINGER	.8695*	.3546*	.2454*	.7920*	.7142*	.5090*
68 WRIST-THUMB LENGTH	.8045*	.3228*	.2245*	.7222*	.6725*	.4869*
69 CROTCH 1 HEIGHT	.6583*	.3159*	.2165*	.5662*	.5777*	.4146*
70 CROTCH 2 HEIGHT	.8869*	.3763*	.2539*	.7213*	.8239*	.5302*
71 CROTCH 3 HEIGHT	.9030*	.3535*	.2430*	.7123*	.8634*	.5342*
72 CROTCH 4 HEIGHT	.8611*	.3156*	.2212*	.6739*	.8291*	.5004*
73 FOREARM-HAND LENGTH	.8647*	.3584*	.2123*	.7532*	.7483*	.4912*
74 ELBOW-WRIST LENGTH	.7367*	.2910*	.1483*	.6264*	.6544*	.4117*
75 ELBOW-C OF GRIP	.7554*	.3042*	.1552*	.6472*	.6655*	.4149*
76 RADIALE-STYLION	.7372*	.2741*	.1410*	.6134*	.6696*	.3989*
77 FOREARM CIRC FLEXED	.3271*	.4073*	.3392*	.3351*	.2276*	.2291*
78 BICEPS CIRC FLEXED	.1790*	.3216*	.2616*	.2087*	.0967	.1375*
79 ARM LENGTH	.7892*	.3209*	.1980*	.6889*	.6814*	.4484*
80 SHOULDER-ELBOW LGTH	.6480*	.2813*	.1572*	.5726*	.5518*	.3805*
81 ACROMION-RADIALE LT	.6338*	.2642*	.1470*	.5547*	.5455*	.3749*
82 THUMBTIP REACH	.7439*	.3115*	.1783*	.6521*	.6392*	.4296*
83 WRIST WALL LENGTH	.6809*	.2937*	.1595*	.5943*	.5880*	.3851*
84 WRIST WALL LT EX	.6296*	.2569*	.1108	.5469*	.5464*	.3491*
85 STATURE	.6212*	.2963*	.1837*	.5767*	.4984*	.3763*
86 WEIGHT	.3698*	.3966*	.3019*	.3849*	.2507*	.2455*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

		(44)	(45)	(46)	(47)	(48)	(49)
1	D1 LENGTH	.5280*	.4623*	.6187*	.6711*	.6779*	.2427*
2	D1 HEIGHT	.4763*	.3971*	.4997*	.4799*	.6260*	.1912*
3	D1 TIP TO WRIST	.5120*	.4155*	.5284*	.6922*	.6489*	.2961*
4	D1 IP BREADTH	.2172*	.2414*	.2687*	.2986*	.3176*	.4231*
6	D1 LINK	.5193*	.4959*	.6057*	.6843*	.6959*	.3057*
7	D1 METACARPAL LINK	.3797*	.2775*	.3328*	.5234*	.4657*	.2440*
8	D1 PROX LINK	.3518*	.2777*	.3735*	.3918*	.3895*	.0826
9	D1 DIST LINK	.3382*	.3718*	.5068*	.5263*	.5396*	.2670*
10	D2 LENGTH	.6098*	.5481*	.7364*	.7265*	.7119*	.2465*
11	D2 HEIGHT	.6289*	.5831*	.6914*	.7505*	.8386*	.3046*
12	D2 TIP TO WRIST	.6471*	.5750*	.6992*	.8472*	.8291*	.2902*
13	D2 PIP BREADTH	.1061	.2296*	.2223*	.2167*	.2645*	.5520*
15	D2 DIP BREADTH	.0865	.2041*	.2095*	.1863*	.2399*	.4999*
17	D2 LINK	.5706*	.5352*	.6509*	.7031*	.6731*	.2230*
18	D2 METACARPAL LINK	.4854*	.3943*	.4794*	.6934*	.6983*	.2610*
19	D2 DIST LINK	.3108*	.3371*	.5050*	.5102*	.5071*	.2430*
20	D2 MED LINK	.6402*	.3586*	.5820*	.5930*	.5927*	.1640*
21	D2 PROX LINK	.3064*	.3864*	.3234*	.4099*	.3792*	.1262*
22	D3 LENGTH	.6908*	.5795*	.7595*	.7509*	.7507*	.2462*
23	D3 HEIGHT	.6908*	.5860*	.7138*	.8631*	.8799*	.3230*
24	D3 TIP TO WRIST	.6919*	.5849*	.7115*	.8598*	.8814*	.3253*
25	D3 PIP BREADTH	.1813*	.3126*	.2702*	.2834*	.3343*	.6303*
27	D3 DIP BREADTH	.1203*	.2335*	.2075*	.2225*	.2701*	.5912*
29	D3 LINK	.6374*	.7601*	.6996*	.7215*	.7257*	.2531*
30	D3 METACARPAL LINK	.4956*	.1668*	.4593*	.6964*	.7297*	.2861*
31	D3 DIST LINK	.3548*	.3388*	.5374*	.5423*	.5341*	.2561*
32	D3 MED LINK	.7603*	.3437*	.5803*	.6028*	.6406*	.1600*
33	D3 PROX LINK	.2580*	.7346*	.3906*	.4170*	.3920*	.1590*
34	D4 LENGTH	.7186*	.6198*	.8200*	.7440*	.7695*	.2593*
35	D4 HEIGHT	.6932*	.5880*	.7305*	.9341*	.8795*	.3143*
36	D4 TIP TO WRIST	.7077*	.5838*	.7384*	.8605*	.9262*	.3318*
37	D4 PIP BREADTH	.2681*	.2903*	.3148*	.3057*	.3603*	.6505*
39	D4 DIP BREADTH	.1176	.2240*	.2263*	.2183*	.2528*	.5440*
41	D4 LINK	.6862*	.7894*	.7771*	.7644*	.7873*	.3083*
42	D4 METACARPAL LINK	.5355*	.1954*	.4912*	.7283*	.8230*	.2658*
43	D4 DIST LINK	.2495*	.3008*	.5452*	.5229*	.5345*	.2490*
44	D4 MED LINK	-----	.2663*	.6225*	.6316*	.6660*	.1811*
45	D4 PROX LINK	.2663*	-----	.5254*	.5041*	.5122*	.2256*
46	D5 LENGTH	.6225*	.5254*	-----	.7712*	.7780*	.2924*
47	D5 HEIGHT	.6316*	.5041*	.7712*	-----	.8508*	.2905*
48	D5 TIP TO WRIST	.6660*	.5122*	.7780*	.8508*	-----	.3304*
49	D5 PIP BREADTH	.1811*	.2256*	.2924*	.2905*	.3304*	-----
51	D5 DIP BREADTH	.1051	.2131*	.2452*	.2051*	.2656*	.6151*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(44)	(45)	(46)	(47)	(48)	(49)
53 D5 LINK	.6357*	.6625*	.9131*	.8042*	.8253*	.3391*
54 D5 METACARPAL LINK	.4914*	.2190*	.4181*	.6351*	.8561*	.2220*
55 D5 DIST LINK	.3423*	.2666*	.6539*	.5740*	.5665*	.2819*
56 D5 MED LINK	.6389*	.3530*	.7183*	.6138*	.6529*	.2325*
57 D5 PROX LINK	.4414*	.7376*	.6522*	.5959*	.6271*	.2567*
58 HAND LGTH DIG	.6908*	.5860*	.7138*	.8631*	.8799*	.3230*
59 HAND LGTH MEAS	.6703*	.5673*	.6739*	.7799*	.8422*	.3208*
60 HAND CIRCUMFERENCE	.3967*	.4637*	.4933*	.4976*	.5068*	.5291*
61 PALM LENGTH	.5706*	.4888*	.5448*	.8098*	.8423*	.3366*
62 HAND BREADTH DIG	.3187*	.4380*	.4509*	.4316*	.4729*	.5849*
63 HAND BREADTH MEAS	.4044*	.4477*	.4988*	.5059*	.5050*	.4980*
64 WRIST BREADTH	.1619*	.3232*	.2647*	.2281*	.3145*	.4278*
65 WRIST CIRCUMFERENCE	.2892*	.4429*	.3952*	.4110*	.4468*	.4972*
66 WRIST-C OF GRIP	.2939*	.2681*	.2881*	.3696*	.3882*	.1305*
67 WRIST-INDEX FINGER	.6294*	.5651*	.6789*	.7765*	.8132*	.2869*
68 WRIST-THUMB LENGTH	.5873*	.4915*	.6329*	.7307*	.7652*	.2768*
69 CROTCH 1 HEIGHT	.4497*	.3678*	.4449*	.5322*	.5913*	.2854*
70 CROTCH 2 HEIGHT	.5596*	.4772*	.5650*	.7677*	.8196*	.3272*
71 CROTCH 3 HEIGHT	.5570*	.4604*	.5690*	.8433*	.8468*	.3200*
72 CROTCH 4 HEIGHT	.5454*	.4270*	.5406*	.8881*	.8434*	.2894*
73 FOREARM-HAND LENGTH	.6340*	.5072*	.6105*	.7590*	.8015*	.2892*
74 ELBOW-WRIST LENGTH	.5390*	.4116*	.5012*	.6596*	.6848*	.2364*
75 ELBOW-C OF GRIP	.5518*	.4334*	.5171*	.6779*	.7050*	.2424*
76 RADIALE-STYLION	.5468*	.3939*	.4979*	.6650*	.6913*	.2307*
77 FOREARM CIRC FLEXED	.1960*	.2797*	.2276*	.2211*	.2734*	.4109*
78 BICEPS CIRC FLEXED	.1116	.1833*	.1286*	.0904	.1372*	.3358*
79 ARM LENGTH	.5588*	.4829*	.5643*	.6860*	.7316*	.2650*
80 SHOULDER-ELBOW LGTH	.4239*	.4264*	.4726*	.5654*	.5991*	.2421*
81 ACROMION-RADIALE LT	.4190*	.4023*	.4589*	.5499*	.5857*	.2316*
82 THUMBTIP REACH	.5269*	.4562*	.5524*	.6626*	.6929*	.2782*
83 WRIST WALL LENGTH	.4797*	.4200*	.4962*	.5998*	.6302*	.2615*
84 WRIST WALL LT EX	.4642*	.3767*	.4812*	.5640*	.5821*	.1961*
85 STATURE	.3805*	.4661*	.4941*	.5437*	.5736*	.2293*
86 WEIGHT	.2174*	.3410*	.2845*	.2640*	.3129*	.3901*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

		(51)	(53)	(54)	(55)	(56)	(57)
1	D1 LENGTH	.1738*	.6413*	.5055*	.4828*	.4623*	.4770*
2	D1 HEIGHT	.1147	.5442*	.5107*	.3813*	.4162*	.4056*
3	D1 TIP TO WRIST	.2259*	.5689*	.5251*	.4059*	.4459*	.4257*
4	D1 IP BREADTH	.4036*	.3023*	.2351*	.2613*	.1936*	.2249*
6	D1 LINK	.2422*	.6549*	.5219*	.4702*	.4687*	.5044*
7	D1 METACARPAL LINK	.1826*	.3789*	.4036*	.2483*	.3167*	.2904*
8	D1 PROX LINK	.0316	.3600*	.2982*	.1887*	.3372*	.2708*
9	D1 DIST LINK	.2507*	.5356*	.3794*	.5259*	.2986*	.3795*
10	D2 LENGTH	.1944*	.7507*	.4601*	.5619*	.5280*	.5645*
11	D2 HEIGHT	.2301*	.7454*	.6691*	.5159*	.5368*	.5852*
12	D2 TIP TO WRIST	.2073*	.7504*	.6493*	.5192*	.5529*	.5780*
13	D2 PIP BREADTH	.5022*	.2482*	.1991*	.2330*	.1218*	.2042*
15	D2 DIP BREADTH	.5467*	.2486*	.1590*	.2307*	.1148	.1992*
17	D2 LINK	.1666*	.7008*	.4432*	.4896*	.4953*	.5476*
18	D2 METACARPAL LINK	.1767*	.5116*	.6571*	.3478*	.4045*	.3838*
19	D2 DIST LINK	.1776*	.5317*	.3306*	.6284*	.2491*	.3307*
20	D2 MED LINK	.1165	.5958*	.4098*	.3281*	.5637*	.4257*
21	D2 PROX LINK	.1272*	.3862*	.2575*	.1587*	.2819*	.3712*
22	D3 LENGTH	.1753*	.7756*	.4999*	.5648*	.5627*	.5812*
23	D3 HEIGHT	.2311*	.7691*	.7140*	.5397*	.5715*	.5890*
24	D3 TIP TO WRIST	.2329*	.7685*	.7170*	.5370*	.5707*	.5904*
25	D3 PIP BREADTH	.5496*	.3176*	.2479*	.2580*	.1707*	.2763*
27	D3 DIP BREADTH	.6115*	.2623*	.1952*	.2168*	.1364*	.2244*
29	D3 LINK	.1930*	.7878*	.4485*	.5139*	.5294*	.6722*
30	D3 METACARPAL LINK	.1913*	.4594*	.7553*	.3629*	.4046*	.2766*
31	D3 DIST LINK	.1999*	.5588*	.3492*	.6651*	.2815*	.3334*
32	D3 MED LINK	.0772	.6031*	.4802*	.3165*	.5864*	.4302*
33	D3 PROX LINK	.1485*	.4933*	.1803*	.2161*	.2674*	.5420*
34	D4 LENGTH	.1888*	.8172*	.4922*	.5753*	.6087*	.6188*
35	D4 HEIGHT	.2169*	.7792*	.7041*	.5486*	.5816*	.5939*
36	D4 TIP TO WRIST	.2475*	.7906*	.7690*	.5512*	.5977*	.6060*
37	D4 PIP BREADTH	.5474*	.3580*	.2530*	.2999*	.2172*	.2849*
39	D4 DIP BREADTH	.5874*	.2740*	.1567*	.2406*	.1186*	.2492*
41	D4 LINK	.2416*	.8710*	.4716*	.5596*	.5876*	.7439*
42	D4 METACARPAL LINK	.1855*	.4830*	.8842*	.3893*	.4434*	.2860*
43	D4 DIST LINK	.1906*	.5685*	.3411*	.6840*	.2741*	.3467*
44	D4 MED LINK	.1051	.6357*	.4914*	.3423*	.6389*	.4414*
45	D4 PROX LINK	.2131*	.6625*	.2190*	.2666*	.3530*	.7376*
46	D5 LENGTH	.2452*	.9131*	.4181*	.6539*	.7183*	.6522*
47	D5 HEIGHT	.2051*	.8042*	.6351*	.5740*	.6138*	.5959*
48	D5 TIP TO WRIST	.2656*	.8253*	.8561*	.5665*	.6529*	.6271*
49	D5 PIP BREADTH	.6151*	.3391*	.2220*	.2819*	.2325*	.2567*
51	D5 DIP BREADTH	-----	.2910*	.1618*	.2258*	.1357*	.2759*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(51)	(53)	(54)	(55)	(56)	(57)
53 D5 LINK	.2910*	-----	.4147*	.6454*	.7009*	.8217*
54 D5 METACARPAL LINK	.1618*	.4147*	-----	.3222*	.4107*	.2584*
55 D5 DIST LINK	.2258*	.6454*	.3222*	-----	.2557*	.3030*
56 D5 MED LINK	.1357*	.7009*	.4107*	.2557*	-----	.3627*
57 D5 PROX LINK	.2759*	.8217*	.2584*	.3030*	.3627*	-----
58 HAND LGTH DIG	.2311*	.7691*	.7140*	.5397*	.5715*	.5890*
59 HAND LGTH MEAS	.2369*	.7268*	.6920*	.4769*	.5828*	.5557*
60 HAND CIRCUMFERENCE	.4317*	.5228*	.3382*	.3711*	.3489*	.4253*
61 PALM LENGTH	.2407*	.6268*	.7836*	.4208*	.4787*	.4920*
62 HAND BREADTH DIG	.5212*	.4954*	.3086*	.3060*	.3246*	.4443*
63 HAND BREADTH MEAS	.4010*	.5232*	.3349*	.3639*	.3584*	.4229*
64 WRIST BREADTH	.3747*	.2911*	.2403*	.1695*	.2117*	.2661*
65 WRIST CIRCUMFERENCE	.3957*	.4325*	.3242*	.3203*	.2806*	.3602*
66 WRIST-C OF GRIP	.0922	.3152*	.3371*	.2040*	.2906*	.2240*
67 WRIST-INDEX FINGER	.2089*	.7243*	.6475*	.4733*	.5702*	.5600*
68 WRIST-THUMB LENGTH	.1959*	.6747*	.6155*	.4448*	.5561*	.5091*
69 CROTCH 1 HEIGHT	.1866*	.4981*	.4970*	.3955*	.3640*	.3536*
70 CROTCH 2 HEIGHT	.2218*	.6390*	.7358*	.4838*	.4551*	.4827*
71 CROTCH 3 HEIGHT	.2141*	.6378*	.7809*	.4939*	.4609*	.4724*
72 CROTCH 4 HEIGHT	.1993*	.6224*	.7893*	.4858*	.4383*	.4701*
73 FOREARM-HAND LENGTH	.1829*	.6730*	.6756*	.4432*	.5390*	.5129*
74 ELBOW-WRIST LENGTH	.1282*	.5627*	.5885*	.3716*	.4501*	.4277*
75 ELBOW-C OF GRIP	.1373*	.5783*	.6069*	.3808*	.4732*	.4353*
76 RADIALE-STYLION	.1206*	.5553*	.6058*	.3627*	.4578*	.4168*
77 FOREARM CIRC FLEXED	.3269*	.2587*	.2038*	.1744*	.1687*	.2302*
78 BICEPS CIRC FLEXED	.2886*	.1497*	.0840	.0889	.0988	.1423*
79 ARM LENGTH	.1704*	.6148*	.6162*	.4018*	.4844*	.4737*
80 SHOULDER-ELBOW LGTH	.1543*	.5070*	.5015*	.3407*	.3695*	.4052*
81 ACROMION-RADIALE LT	.1449*	.4919*	.4936*	.3293*	.3628*	.3902*
82 THUMBTIP REACH	.1631*	.5937*	.5733*	.4019*	.4509*	.4612*
83 WRIST WALL LENGTH	.1483*	.5332*	.5275*	.3618*	.4013*	.4159*
84 WRIST WALL LT EX	.0970	.4981*	.4822*	.3333*	.3958*	.3740*
85 STATURE	.1567*	.5137*	.4541*	.3656*	.3366*	.4229*
86 WEIGHT	.3134*	.3098*	.2206*	.2084*	.2043*	.2677*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

		(58)	(59)	(60)	(61)	(62)	(63)
1	D1 LENGTH	.7406*	.7014*	.4081*	.6572*	.4366*	.3969*
2	D1 HEIGHT	.6871*	.6747*	.4043*	.6492*	.3347*	.3904*
3	D1 TIP TO WRIST	.7201*	.6667*	.4474*	.6855*	.4979*	.4489*
4	D1 IP BREADTH	.3596*	.4023*	.5847*	.3446*	.4086*	.5903*
6	D1 LINK	.7622*	.7198*	.4930*	.6940*	.5443*	.4880*
7	D1 METACARPAL LINK	.5273*	.4769*	.3304*	.5368*	.3937*	.3383*
8	D1 PROX LINK	.4175*	.4133*	.2131*	.3514*	.1966*	.2074*
9	D1 DIST LINK	.5858*	.5433*	.4102*	.5115*	.4296*	.3996*
10	D2 LENGTH	.8259*	.7662*	.5300*	.6325*	.4549*	.5315*
11	D2 HEIGHT	.9382*	.8862*	.6001*	.8693*	.5331*	.5956*
12	D2 TIP TO WRIST	.9525*	.8841*	.5788*	.8841*	.5320*	.5816*
13	D2 PIP BREADTH	.3056*	.3212*	.4845*	.3012*	.5971*	.4539*
15	D2 DIP BREADTH	.2604*	.2691*	.4423*	.2520*	.5560*	.4168*
17	D2 LINK	.7950*	.7402*	.4562*	.6763*	.4119*	.4661*
18	D2 METACARPAL LINK	.7736*	.7151*	.5054*	.7991*	.4743*	.4977*
19	D2 DIST LINK	.5890*	.5091*	.3794*	.4717*	.3251*	.3768*
20	D2 MED LINK	.6419*	.6274*	.3877*	.5298*	.3217*	.3810*
21	D2 PROX LINK	.4764*	.4668*	.2569*	.4550*	.2593*	.2673*
22	D3 LENGTH	.8959*	.8375*	.5730*	.6485*	.4740*	.5667*
23	D3 HEIGHT	1.0000*	.9300*	.6111*	.9163*	.5339*	.6070*
24	D3 TIP TO WRIST	.9975*	.9316*	.6122*	.9168*	.5355*	.6086*
25	D3 PIP BREADTH	.3939*	.4115*	.5870*	.3571*	.7133*	.5530*
27	D3 DIP BREADTH	.2960*	.3011*	.4877*	.2990*	.6254*	.4593*
29	D3 LINK	.8501*	.8023*	.5285*	.6886*	.4455*	.5207*
30	D3 METACARPAL LINK	.7930*	.7311*	.4789*	.8346*	.4381*	.4815*
31	D3 DIST LINK	.6476*	.5605*	.4202*	.4947*	.3343*	.4083*
32	D3 MED LINK	.7057*	.6935*	.4045*	.5634*	.3091*	.4060*
33	D3 PROX LINK	.4752*	.4603*	.3244*	.4157*	.3010*	.3128*
34	D4 LENGTH	.8396*	.7922*	.5706*	.6340*	.4960*	.5649*
35	D4 HEIGHT	.9613*	.8835*	.5862*	.8942*	.5091*	.5856*
36	D4 TIP TO WRIST	.9673*	.9120*	.5993*	.9056*	.5292*	.5936*
37	D4 PIP BREADTH	.4069*	.4006*	.5697*	.3797*	.6778*	.5427*
39	D4 DIP BREADTH	.2649*	.2756*	.4570*	.2639*	.5743*	.4352*
41	D4 LINK	.8660*	.8186*	.5860*	.7140*	.5159*	.5763*
42	D4 METACARPAL LINK	.8112*	.7625*	.4480*	.8661*	.3974*	.4483*
43	D4 DIST LINK	.5966*	.5286*	.3974*	.4765*	.3275*	.3871*
44	D4 MED LINK	.6908*	.6703*	.3967*	.5706*	.3187*	.4044*
45	D4 PROX LINK	.5860*	.5673*	.4637*	.4888*	.4380*	.4477*
46	D5 LENGTH	.7138*	.6739*	.4933*	.5448*	.4509*	.4988*
47	D5 HEIGHT	.8631*	.7799*	.4976*	.8098*	.4316*	.5059*
48	D5 TIP TO WRIST	.8799*	.8422*	.5068*	.8423*	.4729*	.5050*
49	D5 PIP BREADTH	.3230*	.3208*	.5291*	.3366*	.5849*	.4980*
51	D5 DIP BREADTH	.2311*	.2369*	.4317*	.2407*	.5212*	.4010*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(58)	(59)	(60)	(61)	(62)	(63)
53 D5 LINK	.7691*	.7268*	.5228*	.6268*	.4954*	.5232*
54 D5 METACARPAL LINK	.7140*	.6920*	.3382*	.7836*	.3086*	.3349*
55 D5 DIST LINK	.5397*	.4769*	.3711*	.4208*	.3060*	.3639*
56 D5 MED LINK	.5715*	.5828*	.3489*	.4787*	.3246*	.3584*
57 D5 PROX LINK	.5890*	.5557*	.4253*	.4920*	.4443*	.4229*
58 HAND LGTH DIG	-----	.9300*	.6111*	.9163*	.5339*	.6070*
59 HAND LGTH MEAS	.9300*	-----	.6219*	.8521*	.5366*	.6163*
60 HAND CIRCUMFERENCE	.6111*	.6219*	-----	.5398*	.7870*	.9640*
61 PALM LENGTH	.9163*	.8521*	.5398*	-----	.4957*	.5390*
62 HAND BREADTH DIG	.5339*	.5366*	.7870*	.4957*	-----	.7768*
63 HAND BREADTH MEAS	.6070*	.6163*	.9640*	.5390*	.7768*	-----
64 WRIST BREADTH	.3212*	.3980*	.4938*	.3061*	.6613*	.4532*
65 WRIST CIRCUMFERENCE	.5324*	.5529*	.7470*	.5025*	.6010*	.6941*
66 WRIST-C OF GRIP	.4136*	.4761*	.2956*	.4064*	.2520*	.2971*
67 WRIST-INDEX FINGER	.8954*	.9554*	.5909*	.8256*	.5234*	.5959*
68 WRIST-THUMB LENGTH	.8148*	.8670*	.5382*	.7629*	.4786*	.5405*
69 CROTCH 1 HEIGHT	.6754*	.6314*	.4663*	.6676*	.4107*	.4432*
70 CROTCH 2 HEIGHT	.9023*	.8287*	.5307*	.9533*	.4773*	.5277*
71 CROTCH 3 HEIGHT	.8999*	.8169*	.5114*	.9496*	.4406*	.5099*
72 CROTCH 4 HEIGHT	.8552*	.7632*	.4601*	.8927*	.3977*	.4626*
73 FOREARM-HAND LENGTH	.8752*	.8875*	.5663*	.8178*	.4830*	.5606*
74 ELBOW-WRIST LENGTH	.7412*	.7158*	.4669*	.7033*	.3944*	.4619*
75 ELBOW-C OF GRIP	.7613*	.7563*	.4892*	.7262*	.4138*	.4852*
76 RADIALE-STYLION	.7438*	.7356*	.4461*	.7107*	.3655*	.4478*
77 FOREARM CIRC FLEXED	.3237*	.3477*	.5848*	.3114*	.4502*	.5148*
78 BICEPS CIRC FLEXED	.1762*	.2015*	.4337*	.1597*	.3342*	.3701*
79 ARM LENGTH	.7947*	.8244*	.5344*	.7455*	.4509*	.5318*
80 SHOULDER-ELBOW LGTH	.6531*	.6711*	.4546*	.6150*	.4144*	.4458*
81 ACROMION-RADIALE LT	.6372*	.6584*	.4393*	.6021*	.3912*	.4311*
82 THUMBTIP REACH	.7513*	.7662*	.5213*	.7077*	.4466*	.5211*
83 WRIST WALL LENGTH	.6862*	.6961*	.4879*	.6475*	.4116*	.4861*
84 WRIST WALL LT EX	.6393*	.6653*	.4560*	.5883*	.3415*	.4624*
85 STATURE	.6370*	.6567*	.4934*	.5807*	.4429*	.4903*
86 WEIGHT	.3785*	.4116*	.5462*	.3481*	.4436*	.4956*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

		(64)	(65)	(66)	(67)	(68)	(69)
1	D1 LENGTH	.3178*	.3740*	.2610*	.7175*	.7312*	.5043*
2	D1 HEIGHT	.2282*	.3763*	.3699*	.6806*	.7104*	.7744*
3	D1 TIP TO WRIST	.3123*	.3961*	.4131*	.6760*	.7163*	.6607*
4	D1 IP BREADTH	.2962*	.5285*	.2920*	.3940*	.4030*	.3569*
6	D1 LINK	.4035*	.4576*	.3754*	.7344*	.7550*	.5960*
7	D1 METACARPAL LINK	.2288*	.2877*	.3740*	.4771*	.5176*	.5608*
8	D1 PROX LINK	.1709*	.1990*	.1539*	.4309*	.4589*	.2705*
9	D1 DIST LINK	.2657*	.3649*	.2307*	.5554*	.5512*	.4478*
10	D2 LENGTH	.2714*	.4389*	.3129*	.8110*	.7037*	.5299*
11	D2 HEIGHT	.3411*	.5382*	.3922*	.9054*	.8044*	.7052*
12	D2 TIP TO WRIST	.3249*	.5158*	.4146*	.9151*	.8161*	.6681*
13	D2 PIP BREADTH	.4717*	.4748*	.1401*	.3155*	.2612*	.2552*
15	D2 DIP BREADTH	.4310*	.3926*	.1178	.2710*	.2334*	.2103*
17	D2 LINK	.2692*	.4312*	.3307*	.7864*	.6965*	.5142*
18	D2 METACARPAL LINK	.2666*	.4180*	.3569*	.7135*	.6426*	.5998*
19	D2 DIST LINK	.1702*	.3264*	.2092*	.5350*	.4850*	.4452*
20	D2 MED LINK	.1908*	.3327*	.3044*	.6482*	.5893*	.4616*
21	D2 PROX LINK	.2100*	.2957*	.2374*	.5038*	.4459*	.2841*
22	D3 LENGTH	.2767*	.4618*	.3394*	.7991*	.7153*	.5537*
23	D3 HEIGHT	.3212*	.5324*	.4136*	.8954*	.8148*	.6754*
24	D3 TIP TO WRIST	.3236*	.5338*	.4133*	.8964*	.8143*	.6745*
25	D3 PIP BREADTH	.5700*	.5336*	.1845*	.3617*	.3412*	.3020*
27	D3 DIP BREADTH	.4868*	.4451*	.1332*	.2648*	.2514*	.2587*
29	D3 LINK	.2919*	.4865*	.3650*	.7883*	.7053*	.5547*
30	D3 METACARPAL LINK	.2389*	.3883*	.3141*	.6848*	.6344*	.5592*
31	D3 DIST LINK	.1616*	.3399*	.2123*	.5381*	.4942*	.4603*
32	D3 MED LINK	.1424*	.2969*	.3132*	.6338*	.5915*	.4830*
33	D3 PROX LINK	.2610*	.3643*	.2273*	.4892*	.4151*	.2725*
34	D4 LENGTH	.2974*	.4631*	.3462*	.7622*	.7004*	.5365*
35	D4 HEIGHT	.2886*	.4992*	.4088*	.8543*	.7906*	.6190*
36	D4 TIP TO WRIST	.3272*	.5176*	.4064*	.8695*	.8045*	.6583*
37	D4 PIP BREADTH	.5098*	.4986*	.1816*	.3546*	.3228*	.3159*
39	D4 DIP BREADTH	.4400*	.4090*	.0932	.2454*	.2245*	.2165*
41	D4 LINK	.3200*	.5118*	.3634*	.7920*	.7222*	.5662*
42	D4 METACARPAL LINK	.2445*	.3807*	.3413*	.7142*	.6725*	.5777*
43	D4 DIST LINK	.1582*	.3507*	.2006*	.5090*	.4869*	.4146*
44	D4 MED LINK	.1619*	.2892*	.2939*	.6294*	.5873*	.4497*
45	D4 PROX LINK	.3232*	.4429*	.2681*	.5651*	.4915*	.3678*
46	D5 LENGTH	.2647*	.3952*	.2881*	.6789*	.6329*	.4449*
47	D5 HEIGHT	.2281*	.4110*	.3696*	.7765*	.7307*	.5322*
48	D5 TIP TO WRIST	.3145*	.4468*	.3882*	.8132*	.7652*	.5913*
49	D5 PIP BREADTH	.4278*	.4972*	.1305*	.2869*	.2768*	.2854*
51	D5 DIP BREADTH	.3747*	.3957*	.0922	.2089*	.1959*	.1866*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(64)	(65)	(66)	(67)	(68)	(69)
53 D5 LINK	.2911*	.4325*	.3152*	.7243*	.6747*	.4981*
54 D5 METACARPAL LINK	.2403*	.3242*	.3371*	.6475*	.6155*	.4970*
55 D5 DIST LINK	.1695*	.3203*	.2040*	.4733*	.4448*	.3955*
56 D5 MED LINK	.2117*	.2806*	.2906*	.5702*	.5561*	.3640*
57 D5 PROX LINK	.2661*	.3602*	.2240*	.5600*	.5091*	.3536*
58 HAND LGTH DIG	.3212*	.5324*	.4136*	.8954*	.8148*	.6754*
59 HAND LGTH MEAS	.3980*	.5529*	.4761*	.9554*	.8670*	.6314*
60 HAND CIRCUMFERENCE	.4938*	.7470*	.2956*	.5909*	.5382*	.4663*
61 PALM LENGTH	.3061*	.5025*	.4064*	.8256*	.7629*	.6676*
62 HAND BREADTH DIG	.6613*	.6010*	.2520*	.5234*	.4786*	.4107*
63 HAND BREADTH MEAS	.4532*	.6941*	.2971*	.5959*	.5405*	.4432*
64 WRIST BREADTH	-----	.6295*	.2672*	.4043*	.3802*	.2188*
65 WRIST CIRCUMFERENCE	.6295*	-----	.3025*	.5477*	.4918*	.4157*
66 WRIST-C OF GRIP	.2672*	.3025*	-----	.4891*	.5438*	.4607*
67 WRIST-INDEX FINGER	.4043*	.5477*	.4891*	-----	.8867*	.6245*
68 WRIST-THUMB LENGTH	.3802*	.4918*	.5438*	.8867*	-----	.6622*
69 CROTCH 1 HEIGHT	.2188*	.4157*	.4607*	.6245*	.6622*	-----
70 CROTCH 2 HEIGHT	.2827*	.4986*	.4059*	.8157*	.7499*	.7200*
71 CROTCH 3 HEIGHT	.2480*	.4662*	.3872*	.7839*	.7310*	.6511*
72 CROTCH 4 HEIGHT	.2095*	.4101*	.3655*	.7317*	.6898*	.5852*
73 FOREARM-HAND LENGTH	.3433*	.4961*	.4189*	.8617*	.7889*	.6189*
74 ELBOW-WRIST LENGTH	.2698*	.4039*	.3352*	.7047*	.6501*	.5406*
75 ELBOW-C OF GRIP	.3092*	.4360*	.5676*	.7502*	.7175*	.5990*
76 RADIALE-STYLION	.2543*	.4026*	.3364*	.7175*	.6559*	.5352*
77 FOREARM CIRC FLEXED	.4505*	.6995*	.2402*	.3291*	.3293*	.2900*
78 BICEPS CIRC FLEXED	.3454*	.5501*	.1687*	.1809*	.1881*	.1814*
79 ARM LENGTH	.3459*	.4895*	.3592*	.8041*	.7311*	.5538*
80 SHOULDER-ELBOW LGTH	.3489*	.4684*	.2876*	.6674*	.6018*	.4478*
81 ACROMION-RADIALE LT	.3285*	.4492*	.2803*	.6528*	.5902*	.4456*
82 THUMBTIP REACH	.3560*	.4927*	.3791*	.7656*	.7153*	.5573*
83 WRIST WALL LENGTH	.3349*	.4682*	.3275*	.6920*	.6203*	.4997*
84 WRIST WALL LT EX	.2972*	.4550*	.3308*	.6636*	.5890*	.4629*
85 STATURE	.4136*	.5266*	.3175*	.6815*	.6105*	.4326*
86 WEIGHT	.4690*	.6816*	.2520*	.4031*	.3837*	.3096*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

		(70)	(71)	(72)	(73)	(74)	(75)
1	D1 LENGTH	.6578*	.6618*	.6196*	.6750*	.5816*	.5799*
2	D1 HEIGHT	.6940*	.5941*	.4917*	.6397*	.5449*	.5778*
3	D1 TIP TO WRIST	.6824*	.6860*	.6727*	.6552*	.5735*	.6146*
4	D1 IP BREADTH	.3460*	.3251*	.3029*	.3648*	.2997*	.3421*
6	D1 LINK	.7043*	.6821*	.6468*	.6878*	.5894*	.6182*
7	D1 METACARPAL LINK	.5225*	.5243*	.5238*	.4676*	.4085*	.4597*
8	D1 PROX LINK	.3286*	.3532*	.3274*	.4273*	.3875*	.3809*
9	D1 DIST LINK	.5678*	.5472*	.5310*	.5124*	.4347*	.4432*
10	D2 LENGTH	.6472*	.6449*	.6164*	.7125*	.5977*	.6082*
11	D2 HEIGHT	.8897*	.8254*	.7476*	.8212*	.6869*	.7080*
12	D2 TIP TO WRIST	.8872*	.8580*	.8125*	.8431*	.7214*	.7443*
13	D2 PIP BREADTH	.2987*	.2756*	.2458*	.2588*	.1901*	.2046*
15	D2 DIP BREADTH	.2372*	.2291*	.1939*	.1980*	.1308*	.1467*
17	D2 LINK	.6963*	.6591*	.6179*	.6997*	.5947*	.6105*
18	D2 METACARPAL LINK	.7787*	.7719*	.7390*	.6899*	.5957*	.6186*
19	D2 DIST LINK	.5364*	.5281*	.4979*	.4748*	.3992*	.4063*
20	D2 MED LINK	.5285*	.5206*	.4903*	.5865*	.4940*	.5153*
21	D2 PROX LINK	.4459*	.3928*	.3627*	.4511*	.3899*	.4059*
22	D3 LENGTH	.6703*	.6693*	.6461*	.7707*	.6411*	.6534*
23	D3 HEIGHT	.9023*	.8999*	.8552*	.8752*	.7412*	.7613*
24	D3 TIP TO WRIST	.9024*	.8994*	.8544*	.8775*	.7436*	.7634*
25	D3 PIP BREADTH	.3280*	.3177*	.2958*	.3477*	.2680*	.2849*
27	D3 DIP BREADTH	.2849*	.2787*	.2483*	.2396*	.1736*	.1883*
29	D3 LINK	.6987*	.6787*	.6433*	.7336*	.6070*	.6307*
30	D3 METACARPAL LINK	.7974*	.8150*	.7758*	.7137*	.6216*	.6295*
31	D3 DIST LINK	.5546*	.5558*	.5312*	.5070*	.4157*	.4216*
32	D3 MED LINK	.5531*	.5518*	.5341*	.6556*	.5572*	.5729*
33	D3 PROX LINK	.3976*	.3827*	.3527*	.4144*	.3384*	.3582*
34	D4 LENGTH	.6548*	.6400*	.6071*	.7319*	.6107*	.6288*
35	D4 HEIGHT	.8611*	.9054*	.8975*	.8473*	.7281*	.7486*
36	D4 TIP TO WRIST	.8869*	.9030*	.8611*	.8647*	.7367*	.7554*
37	D4 PIP BREADTH	.3763*	.3535*	.3156*	.3584*	.2910*	.3042*
39	D4 DIP BREADTH	.2539*	.2430*	.2212*	.2123*	.1483*	.1552*
41	D4 LINK	.7213*	.7123*	.6739*	.7532*	.6264*	.6472*
42	D4 METACARPAL LINK	.8239*	.8634*	.8291*	.7483*	.6544*	.6655*
43	D4 DIST LINK	.5302*	.5342*	.5004*	.4912*	.4117*	.4149*
44	D4 MED LINK	.5596*	.5570*	.5454*	.6340*	.5390*	.5518*
45	D4 PROX LINK	.4772*	.4604*	.4270*	.5072*	.4116*	.4334*
46	D5 LENGTH	.5650*	.5690*	.5406*	.6105*	.5012*	.5171*
47	D5 HEIGHT	.7677*	.8433*	.8881*	.7590*	.6596*	.6779*
48	D5 TIP TO WRIST	.8196*	.8468*	.8434*	.8015*	.6848*	.7050*
49	D5 PIP BREADTH	.3272*	.3200*	.2894*	.2892*	.2364*	.2424*
51	D5 DIP BREADTH	.2218*	.2141*	.1993*	.1829*	.1282*	.1373*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(70)	(71)	(72)	(73)	(74)	(75)
53 D5 LINK	.6390*	.6378*	.6224*	.6730*	.5627*	.5783*
54 D5 METACARPAL LINK	.7358*	.7809*	.7893*	.6756*	.5885*	.6069*
55 D5 DIST LINK	.4838*	.4939*	.4858*	.4432*	.3716*	.3808*
56 D5 MED LINK	.4551*	.4609*	.4383*	.5390*	.4501*	.4732*
57 D5 PROX LINK	.4827*	.4724*	.4701*	.5129*	.4277*	.4353*
58 HAND LGTH DIG	.9023*	.8999*	.8552*	.8752*	.7412*	.7613*
59 HAND LGTH MEAS	.8287*	.8169*	.7632*	.8875*	.7158*	.7563*
60 HAND CIRCUMFERENCE	.5307*	.5114*	.4601*	.5663*	.4669*	.4892*
61 PALM LENGTH	.9533*	.9496*	.8927*	.8178*	.7033*	.7262*
62 HAND BREADTH DIG	.4773*	.4406*	.3977*	.4830*	.3944*	.4138*
63 HAND BREADTH MEAS	.5277*	.5099*	.4626*	.5606*	.4619*	.4852*
64 WRIST BREADTH	.2827*	.2480*	.2095*	.3433*	.2698*	.3092*
65 WRIST CIRCUMFERENCE	.4986*	.4662*	.4101*	.4961*	.4039*	.4360*
66 WRIST-C OF GRIP	.4059*	.3872*	.3655*	.4189*	.3352*	.5676*
67 WRIST-INDEX FINGER	.8157*	.7839*	.7317*	.8617*	.7047*	.7502*
68 WRIST-THUMB LENGTH	.7499*	.7310*	.6898*	.7889*	.6501*	.7175*
69 CROTCH 1 HEIGHT	.7200*	.6511*	.5852*	.6189*	.5406*	.5990*
70 CROTCH 2 HEIGHT	-----	.9306*	.8617*	.7977*	.6875*	.7122*
71 CROTCH 3 HEIGHT	.9306*	-----	.9354*	.8019*	.7013*	.7192*
72 CROTCH 4 HEIGHT	.8617*	.9354*	-----	.7571*	.6672*	.6835*
73 FOREARM-HAND LENGTH	.7977*	.8019*	.7571*	-----	.9571*	.9514*
74 ELBOW-WRIST LENGTH	.6875*	.7013*	.6672*	.9571*	-----	.9659*
75 ELBOW-C OF GRIP	.7122*	.7192*	.6835*	.9514*	.9659*	-----
76 RADIALE-STYLION	.6963*	.7077*	.6779*	.9276*	.9429*	.9164*
77 FOREARM CIRC FLEXED	.3102*	.2870*	.2442*	.3166*	.2610*	.2941*
78 BICEPS CIRC FLEXED	.1593*	.1384*	.1044	.1742*	.1372*	.1662*
79 ARM LENGTH	.7283*	.7228*	.6839*	.9131*	.8650*	.8546*
80 SHOULDER-ELBOW LGTH	.5990*	.5945*	.5606*	.7872*	.7707*	.7525*
81 ACROMION-RADIALE LT	.5874*	.5819*	.5477*	.7806*	.7688*	.7488*
82 THUMBTIP REACH	.6990*	.6886*	.6476*	.8777*	.8480*	.8452*
83 WRIST WALL LENGTH	.6404*	.6304*	.5916*	.8371*	.8305*	.8157*
84 WRIST WALL LT EX	.5877*	.5747*	.5386*	.8049*	.8013*	.7911*
85 STATURE	.5738*	.5480*	.5150*	.7278*	.6898*	.6900*
86 WEIGHT	.3483*	.3190*	.2695*	.4063*	.3567*	.3810*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

		(76)	(77)	(78)	(79)	(80)	(81)
1	D1 LENGTH	.5931*	.2107*	.0974	.6155*	.5273*	.5043*
2	D1 HEIGHT	.5553*	.2278*	.1211*	.5907*	.4775*	.4785*
3	D1 TIP TO WRIST	.5744*	.2505*	.1347*	.5893*	.5046*	.4821*
4	D1 IP BREADTH	.3154*	.4444*	.3142*	.3473*	.2708*	.2563*
6	D1 LINK	.5877*	.2921*	.1774*	.6298*	.5406*	.5162*
7	D1 METACARPAL LINK	.4049*	.1826*	.0911	.4118*	.3587*	.3394*
8	D1 PROX LINK	.3907*	.1225*	.0841	.3935*	.3343*	.3330*
9	D1 DIST LINK	.4445*	.2327*	.1240*	.4752*	.3924*	.3686*
10	D2 LENGTH	.5930*	.2570*	.1480*	.6457*	.5375*	.5233*
11	D2 HEIGHT	.6917*	.3249*	.1790*	.7548*	.6268*	.6118*
12	D2 TIP TO WRIST	.7257*	.3046*	.1600*	.7733*	.6442*	.6298*
13	D2 PIP BREADTH	.1880*	.3819*	.3108*	.2449*	.2360*	.2252*
15	D2 DIP BREADTH	.1291*	.3311*	.2753*	.1915*	.1652*	.1521*
17	D2 LINK	.6010*	.2663*	.1514*	.6494*	.5421*	.5328*
18	D2 METACARPAL LINK	.5956*	.2315*	.1064	.6227*	.5174*	.5020*
19	D2 DIST LINK	.3921*	.1981*	.1019	.4218*	.3471*	.3368*
20	D2 MED LINK	.4985*	.2282*	.1380*	.5161*	.4213*	.4099*
21	D2 PROX LINK	.4039*	.1981*	.1413*	.4331*	.3605*	.3574*
22	D3 LENGTH	.6374*	.2809*	.1677*	.6973*	.5677*	.5538*
23	D3 HEIGHT	.7438*	.3237*	.1762*	.7947*	.6531*	.6372*
24	D3 TIP TO WRIST	.7466*	.3286*	.1809*	.7983*	.6552*	.6406*
25	D3 PIP BREADTH	.2466*	.4462*	.3643*	.3191*	.3070*	.2909*
27	D3 DIP BREADTH	.1735*	.3867*	.3156*	.2141*	.2058*	.1907*
29	D3 LINK	.6035*	.3001*	.1822*	.6662*	.5600*	.5393*
30	D3 METACARPAL LINK	.6308*	.2384*	.1119	.6508*	.5190*	.5167*
31	D3 DIST LINK	.4054*	.2040*	.1104	.4561*	.3713*	.3603*
32	D3 MED LINK	.5747*	.2072*	.1233*	.5834*	.4473*	.4479*
33	D3 PROX LINK	.3286*	.2197*	.1361*	.3920*	.3689*	.3425*
34	D4 LENGTH	.6010*	.2982*	.1754*	.6726*	.5503*	.5347*
35	D4 HEIGHT	.7260*	.3023*	.1550*	.7688*	.6336*	.6170*
36	D4 TIP TO WRIST	.7372*	.3271*	.1790*	.7892*	.6480*	.6338*
37	D4 PIP BREADTH	.2741*	.4073*	.3216*	.3209*	.2813*	.2642*
39	D4 DIP BREADTH	.1410*	.3392*	.2616*	.1980*	.1572*	.1470*
41	D4 LINK	.6134*	.3351*	.2087*	.6889*	.5726*	.5547*
42	D4 METACARPAL LINK	.6696*	.2276*	.0967	.6814*	.5518*	.5455*
43	D4 DIST LINK	.3989*	.2291*	.1375*	.4484*	.3805*	.3749*
44	D4 MED LINK	.5468*	.1960*	.1116	.5588*	.4239*	.4190*
45	D4 PROX LINK	.3939*	.2797*	.1833*	.4829*	.4264*	.4023*
46	D5 LENGTH	.4979*	.2276*	.1286*	.5643*	.4726*	.4589*
47	D5 HEIGHT	.6650*	.2211*	.0904	.6860*	.5654*	.5499*
48	D5 TIP TO WRIST	.6913*	.2734*	.1372*	.7316*	.5991*	.5857*
49	D5 PIP BREADTH	.2307*	.4109*	.3358*	.2650*	.2421*	.2316*
51	D5 DIP BREADTH	.1206*	.3269*	.2886*	.1704*	.1543*	.1449*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(76)	(77)	(78)	(79)	(80)	(81)
53 D5 LINK	.5553*	.2587*	.1497*	.6148*	.5070*	.4919*
54 D5 METACARPAL LINK	.6058*	.2038*	.0840	.6162*	.5015*	.4936*
55 D5 DIST LINK	.3627*	.1744*	.0889	.4018*	.3407*	.3293*
56 D5 MED LINK	.4578*	.1687*	.0988	.4844*	.3695*	.3628*
57 D5 PROX LINK	.4168*	.2302*	.1423*	.4737*	.4052*	.3902*
58 HAND LGTH DIG	.7438*	.3237*	.1762*	.7947*	.6531*	.6372*
59 HAND LGTH MEAS	.7356*	.3477*	.2015*	.8244*	.6711*	.6584*
60 HAND CIRCUMFERENCE	.4461*	.5848*	.4337*	.5344*	.4546*	.4393*
61 PALM LENGTH	.7107*	.3114*	.1597*	.7455*	.6150*	.6021*
62 HAND BREADTH DIG	.3655*	.4502*	.3342*	.4509*	.4144*	.3912*
63 HAND BREADTH MEAS	.4478*	.5148*	.3701*	.5318*	.4458*	.4311*
64 WRIST BREADTH	.2543*	.4505*	.3454*	.3459*	.3489*	.3285*
65 WRIST CIRCUMFERENCE	.4026*	.6995*	.5501*	.4895*	.4684*	.4492*
66 WRIST-C OF GRIP	.3364*	.2402*	.1687*	.3592*	.2876*	.2803*
67 WRIST-INDEX FINGER	.7175*	.3291*	.1809*	.8041*	.6674*	.6528*
68 WRIST-THUMB LENGTH	.6559*	.3293*	.1881*	.7311*	.6018*	.5902*
69 CROTCH 1 HEIGHT	.5352*	.2900*	.1814*	.5538*	.4478*	.4456*
70 CROTCH 2 HEIGHT	.6963*	.3102*	.1593*	.7283*	.5990*	.5874*
71 CROTCH 3 HEIGHT	.7077*	.2870*	.1384*	.7228*	.5945*	.5819*
72 CROTCH 4 HEIGHT	.6779*	.2442*	.1044	.6839*	.5606*	.5477*
73 FOREARM-HAND LENGTH	.9276*	.3166*	.1742*	.9131*	.7872*	.7806*
74 ELBOW-WRIST LENGTH	.9429*	.2610*	.1372*	.8650*	.7707*	.7688*
75 ELBOW-C OF GRIP	.9164*	.2941*	.1662*	.8546*	.7525*	.7488*
76 RADIALE-STYLION	-----	.2442*	.1156	.8764*	.7687*	.7594*
77 FOREARM CIRC FLEXED	.2442*	-----	.8219*	.2993*	.2782*	.2931*
78 BICEPS CIRC FLEXED	.1156	.8219*	-----	.1450*	.1217*	.1496*
79 ARM LENGTH	.8764*	.2993*	.1450*	-----	.8844*	.8837*
80 SHOULDER-ELBOW LGTH	.7687*	.2782*	.1217*	.8844*	-----	.9752*
81 ACROMION-RADIALE LT	.7594*	.2931*	.1496*	.8837*	.9752*	-----
82 THUMBTIP REACH	.8497*	.3264*	.1829*	.8855*	.8541*	.8464*
83 WRIST WALL LENGTH	.8337*	.3111*	.1757*	.8565*	.8468*	.8398*
84 WRIST WALL LT EX	.8156*	.2890*	.1528*	.8379*	.8182*	.8103*
85 STATURE	.6763*	.2964*	.1573*	.7792*	.8095*	.7860*
86 WEIGHT	.3385*	.7597*	.7960*	.4204*	.4338*	.4505*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

		(82)	(83)	(84)	(85)	(86)
1	D1 LENGTH	.6102*	.5453*	.4961*	.5034*	.2562*
2	D1 HEIGHT	.5836*	.5191*	.5000*	.4764*	.2783*
3	D1 TIP TO WRIST	.5851*	.5233*	.4819*	.4683*	.2716*
4	D1 IP BREADTH	.3506*	.3281*	.3345*	.2742*	.3739*
6	D1 LINK	.6305*	.5647*	.5239*	.5572*	.3429*
7	D1 METACARPAL LINK	.4127*	.3684*	.3319*	.3312*	.1852*
8	D1 PROX LINK	.3882*	.3472*	.3422*	.2926*	.1682*
9	D1 DIST LINK	.4638*	.4169*	.3788*	.3900*	.2479*
10	D2 LENGTH	.6280*	.5703*	.5389*	.5558*	.3284*
11	D2 HEIGHT	.7283*	.6624*	.6193*	.6396*	.3903*
12	D2 TIP TO WRIST	.7437*	.6784*	.6394*	.6412*	.3693*
13	D2 PIP BREADTH	.2503*	.2312*	.1857*	.2436*	.3685*
15	D2 DIP BREADTH	.1797*	.1630*	.1254*	.1787*	.3081*
17	D2 LINK	.6351*	.5807*	.5521*	.5458*	.3337*
18	D2 METACARPAL LINK	.5851*	.5320*	.4950*	.5067*	.2664*
19	D2 DIST LINK	.4293*	.3894*	.3465*	.3818*	.2249*
20	D2 MED LINK	.5024*	.4567*	.4449*	.3854*	.2444*
21	D2 PROX LINK	.4259*	.3989*	.3869*	.3577*	.2512*
22	D3 LENGTH	.6549*	.5970*	.5734*	.5769*	.3452*
23	D3 HEIGHT	.7513*	.6862*	.6393*	.6370*	.3785*
24	D3 TIP TO WRIST	.7533*	.6885*	.6426*	.6383*	.3836*
25	D3 PIP BREADTH	.3213*	.3009*	.2428*	.3060*	.4439*
27	D3 DIP BREADTH	.2185*	.2024*	.1522*	.1838*	.3527*
29	D3 LINK	.6383*	.5821*	.5484*	.5674*	.3649*
30	D3 METACARPAL LINK	.6031*	.5526*	.5099*	.4807*	.2617*
31	D3 DIST LINK	.4385*	.3937*	.3458*	.3895*	.2320*
32	D3 MED LINK	.5327*	.4891*	.4889*	.3890*	.2385*
33	D3 PROX LINK	.3916*	.3607*	.3333*	.4012*	.2819*
34	D4 LENGTH	.6334*	.5782*	.5487*	.5585*	.3390*
35	D4 HEIGHT	.7276*	.6641*	.6162*	.6104*	.3439*
36	D4 TIP TO WRIST	.7439*	.6809*	.6296*	.6212*	.3698*
37	D4 PIP BREADTH	.3115*	.2937*	.2569*	.2963*	.3966*
39	D4 DIP BREADTH	.1783*	.1595*	.1108	.1837*	.3019*
41	D4 LINK	.6521*	.5943*	.5469*	.5767*	.3849*
42	D4 METACARPAL LINK	.6392*	.5880*	.5464*	.4984*	.2507*
43	D4 DIST LINK	.4296*	.3851*	.3491*	.3763*	.2455*
44	D4 MED LINK	.5269*	.4797*	.4642*	.3805*	.2174*
45	D4 PROX LINK	.4562*	.4200*	.3767*	.4661*	.3410*
46	D5 LENGTH	.5524*	.4962*	.4812*	.4941*	.2845*
47	D5 HEIGHT	.6626*	.5998*	.5640*	.5437*	.2640*
48	D5 TIP TO WRIST	.6929*	.6302*	.5821*	.5736*	.3129*
49	D5 PIP BREADTH	.2782*	.2615*	.1961*	.2293*	.3901*
51	D5 DIP BREADTH	.1631*	.1483*	.0970	.1567*	.3134*

TABLE 8.

CORRELATION COEFFICIENTS FOR FEMALES
(Continued)

	(82)	(83)	(84)	(85)	(86)
53 D5 LINK	.5937*	.5332*	.4981*	.5137*	.3098*
54 D5 METACARPAL LINK	.5733*	.5275*	.4822*	.4541*	.2206*
55 D5 DIST LINK	.4019*	.3618*	.3333*	.3656*	.2084*
56 D5 MED LINK	.4509*	.4013*	.3958*	.3366*	.2043*
57 D5 PROX LINK	.4612*	.4159*	.3740*	.4229*	.2677*
58 HAND LGTH DIG	.7513*	.6862*	.6393*	.6370*	.3785*
59 HAND LGTH MEAS	.7662*	.6961*	.6653*	.6567*	.4116*
60 HAND CIRCUMFERENCE	.5213*	.4879*	.4560*	.4934*	.5462*
61 PALM LENGTH	.7077*	.6475*	.5883*	.5807*	.3481*
62 HAND BREADTH DIG	.4466*	.4116*	.3415*	.4429*	.4436*
63 HAND BREADTH MEAS	.5211*	.4861*	.4624*	.4903*	.4956*
64 WRIST BREADTH	.3560*	.3349*	.2972*	.4136*	.4690*
65 WRIST CIRCUMFERENCE	.4927*	.4682*	.4550*	.5266*	.6816*
66 WRIST-C OF GRIP	.3791*	.3275*	.3308*	.3175*	.2520*
67 WRIST-INDEX FINGER	.7656*	.6920*	.6636*	.6815*	.4031*
68 WRIST-THUMB LENGTH	.7153*	.6203*	.5890*	.6105*	.3837*
69 CROTCH 1 HEIGHT	.5573*	.4997*	.4629*	.4326*	.3096*
70 CROTCH 2 HEIGHT	.6990*	.6404*	.5877*	.5738*	.3483*
71 CROTCH 3 HEIGHT	.6886*	.6304*	.5747*	.5480*	.3190*
72 CROTCH 4 HEIGHT	.6476*	.5916*	.5386*	.5150*	.2695*
73 FOREARM-HAND LENGTH	.8777*	.8371*	.8049*	.7278*	.4063*
74 ELBOW-WRIST LENGTH	.8480*	.8305*	.8013*	.6898*	.3567*
75 ELBOW-C OF GRIP	.8452*	.8157*	.7911*	.6900*	.3810*
76 RADIALE-STYLION	.8497*	.8337*	.8156*	.6763*	.3385*
77 FOREARM CIRC FLEXED	.3264*	.3111*	.2890*	.2964*	.7597*
78 BICEPS CIRC FLEXED	.1829*	.1757*	.1528*	.1573*	.7960*
79 ARM LENGTH	.8855*	.8565*	.8379*	.7792*	.4204*
80 SHOULDER-ELBOW LGTH	.8541*	.8468*	.8182*	.8095*	.4338*
81 ACROMION-RADIALE LT	.8464*	.8398*	.8103*	.7860*	.4505*
82 THUMBTIP REACH	-----	.9837*	.9050*	.7654*	.4596*
83 WRIST WALL LENGTH	.9837*	-----	.9131*	.7475*	.4501*
84 WRIST WALL LT EX	.9050*	.9131*	-----	.7341*	.4273*
85 STATURE	.7654*	.7475*	.7341*	-----	.5186*
86 WEIGHT	.4596*	.4501*	.4273*	.5186*	-----

TABLE 9.

MULTIVARIATE REGRESSION EQUATIONS FOR MALES

	Dependent Variable	Intercept	(SE)	HAND LENGTH MEASURED Slope 1	(SE)	HAND BREADTH MEASURED Slope 2	(SE)	SE (Est)	R^2
1	D1 LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
2	D1 HEIGHT	Slope 2 not significantly different from 0. See Bivariate Equation.							
3	D1 TIP TO WRIST CREASE	Slope 2 not significantly different from 0. See Bivariate Equation.							
4	D1 IP JOINT BREADTH	6.95	(0.81)	0.01	(0.00)	0.16	(0.01)	1.10	.321
5	D1 IP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
6	D1 LINK LENGTH	29.18	(4.11)	0.43	(0.02)	0.12	(0.05)	5.58	.398
7	D1 MC LINK LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
8	D1 PROXIMAL LINK LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
9	D1 DISTAL LINK LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
10	D2 LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
11	D2 HEIGHT	15.71	(3.69)	0.77	(0.02)	0.16	(0.04)	5.02	.719
12	D2 TIP TO WRIST CREASE	15.32	(3.93)	0.80	(0.02)	0.17	(0.05)	5.35	.706
13	D2 PIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.							
14	D2 PIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
15	D2 DIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.							
16	D2 DIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
17	D2 LINK LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
18	D2 MC LINK LENGTH	10.42	(2.62)	0.29	(0.01)	0.11	(0.03)	3.57	.437
19	D2 DISTAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							
20	D2 MEDIAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							
21	D2 PROXIMAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							
22	D3 LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
23	D3 HEIGHT	11.02	(3.54)	0.90	(0.02)	0.10	(0.04)	4.81	.781
24	D3 TIP TO WRIST CREASE	11.28	(3.56)	0.90	(0.02)	0.10	(0.04)	4.83	.780
25	D3 PIP JOINT BREADTH	5.00	(1.01)	0.01	(0.01)	0.17	(0.01)	1.37	.248
26	D3 PIP JOINT CIRC *	15.44	(7.01)	0.09	(0.04)	0.43	(0.09)	2.58	.454
27	D3 DIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.							
28	D3 DIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
29	D3 LINK LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
30	D3 MC LINK LENGTH	3.75	(3.32	0.38	(0.02)	0.09	(0.04)	4.52	.430
31	D3 DISTAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							
32	D3 MEDIAL PHALANX LINK	-8.94	(1.56)	0.20	(0.01)	-0.04	(0.02)	2.12	.442
33	D3 PROXIMAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							
34	D4 LENGTH	-4.22	(2.47)	0.38	(0.01)	0.10	(0.03)	3.36	.591
35	D4 HEIGHT	Slope 2 not significantly different from 0. See Bivariate Equation.							
36	D4 TIP TO WRIST CREASE	Slope 2 not significantly different from 0. See Bivariate Equation.							
37	D4 PIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.							
38	D4 PIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
39	D4 DIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.							
40	D4 DIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
41	D4 LINK LENGTH	3.96	(3.05)	0.47	(0.02)	0.13	(0.04)	4.15	.589
42	D4 MC LINK LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
43	D4 DISTAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 9.

MULTIVARIATE REGRESSION EQUATIONS FOR MALES
(Continued)

	Dependent Variable	Intercept	(SE)	HAND LENGTH MEASURED Slope 1	(SE)	HAND BREADTH MEASURED Slope 2	(SE)	SE (Est)	R^2
44	D4 MEDIAL PHALANX LINK	-6.96	(1.50)	0.18	(0.01)	-0.04	(0.02)	2.04	.403
45	D4 PROXIMAL PHALANX LINK	6.90	(2.48)	0.17	(0.01)	0.15	(0.03)	3.37	.275
46	D5 LENGTH	-2.10	(2.74)	0.30	(0.14)	0.11	(0.03)	3.73	.421
47	D5 HEIGHT	Slope 2 not significantly different from 0. See Bivariate Equation.							
48	D5 TIP TO WRIST CREASE	Slope 2 not significantly different from 0. See Bivariate Equation.							
49	D5 PIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.							
50	D5 PIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
51	D5 DIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.							
52	D5 DIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
53	D5 LINK LENGTH	-1.30	(3.11)	0.39	(0.02)	0.13	(0.04)	4.23	.493
54	D5 MC LINK LENGTH	9.44	(3.37)	0.43	(0.02)	-0.22	(0.04)	4.59	.413
55	D5 DISTAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							
56	D5 MEDIAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							
57	D5 PROXIMAL PHALANX LINK	1.91	(2.25)	0.15	(0.01)	0.11	(0.03)	3.06	.257
58	HAND LENGTH DIGITIZED	11.02	(3.54)	0.90	(0.02)	0.10	(0.04)	4.81	.781
60	HAND CIRCUMFERENCE	11.30	(2.21)	0.06	(0.01)	2.12	(0.03)	3.00	.906
61	PALM LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
62	HAND BREADTH DIGITIZED	Slope 1 not significantly different from 0. See Bivariate Equation.							
64	WRIST BREADTH	20.27	(2.94)	0.06	(0.02)	0.37	(0.04)	4.00	.196
65	WRIST CIRCUMFERENCE	37.07	(4.08)	0.16	(0.02)	1.17	(0.05)	5.54	.540
66	WRIST-CENTER OF GRIP LGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
67	WRIST-INDEX FINGER LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
68	WRIST-THUMBTIP LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
69	CROTCH 1 HEIGHT	6.35	(2.77)	0.25	(0.01)	0.16	(0.03)	3.77	.369
70	CROTCH 2 HEIGHT	Slope 2 not significantly different from 0. See Bivariate Equation.							
71	CROTCH 3 HEIGHT	Slope 2 not significantly different from 0. See Bivariate Equation.							
72	CROTCH 4 HEIGHT	13.53	(3.20)	0.46	(0.02)	-0.08	(0.04)	4.35	.507
73	FOREARM-HAND LENGTH	68.69	(8.00)	2.03	(0.04)	0.25	(0.10)	10.88	.782
74	ELBOW-WRIST LENGTH	68.69	(8.00)	1.03	(0.04)	0.25	(0.10)	10.88	.493
75	ELBOW-CENTER OF GRIP LGTH	87.00	(8.66)	1.27	(0.05)	0.30	(0.11)	11.78	.558
76	RADIALE-STYLION LENGTH	37.62	(8.15)	1.10	(0.04)	0.22	(0.10)	11.08	.510
77	FOREARM CIRC, FLEXED	50.83	(11.18)	0.22	(0.06)	2.32	(0.14)	15.21	.353
78	BICEPS CIRC, FLEXED	49.09	(17.64)	0.25	(0.09)	2.66	(0.21)	23.99	.222
79	ARM LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
80	SHOULDER-ELBOW LENGTH	117.78	(10.31)	1.06	(0.05)	0.51	(0.13)	14.02	.414
81	ACROMION-RADIALE LENGTH	106.99	(9.95)	1.02	(0.05)	0.40	(0.12)	13.53	.402
82	THUMBTIP REACH	178.89	(18.87)	2.81	(0.10)	0.85	(0.23)	25.66	.576
83	WRIST WALL LENGTH	171.51	(18.44)	2.23	(0.10)	0.85	(0.22)	25.08	.482
84	WRIST WALL LENGTH, EXTND	203.13	(20.17)	2.33	(0.11)	1.01	(0.25)	27.43	.466
85	STATURE	779.27	(36.82)	3.78	(0.19)	2.71	(0.45)	50.08	.443
86	WEIGHT	-70.98	(6.60)	0.26	(0.03)	1.10	(0.08)	8.98	.340

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 10.

MULTIVARIATE REGRESSION EQUATIONS FOR FEMALES

	Dependent Variable	Intercept	(SE)	HAND LENGTH MEASURED Slope 1	(SE)	HAND BREADTH MEASURED Slope 2	(SE)	SE (Est)	R^2
1	D1 LENGTH	3.57	(2.10)	0.36	(0.01)	-0.07	(0.03)	3.44	.493
2	D1 HEIGHT	4.74	(3.29)	0.52	(0.02)	-0.08	(0.05)	5.38	.455
3	D1 TIP TO WRIST CREASE	13.04	(3.98)	0.56	(0.02)	0.14	(0.06)	6.51	.446
4	D1 IP JOINT BREADTH	4.69	(0.62)	0.01	(0.00)	0.18	(0.01)	1.02	.350
5	D1 IP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
6	D1 LINK LENGTH	14.43	(2.91)	0.47	(0.02)	0.13	(0.04)	4.77	.521
7	D1 MC LINK LENGTH	9.47	(3.75)	0.31	(0.02)	0.13	(0.06)	6.14	.230
8	D1 PROXIMAL LINK LENGTH	-0.45	(1.58)	0.13	(0.01)	-0.06	(0.02)	2.59	.173
9	D1 DISTAL LINK LENGTH	4.02	(1.24)	0.12	(0.01)	0.07	(0.02)	2.03	.301
10	D2 LENGTH	-0.39	(1.82)	0.34	(0.01)	0.12	(0.03)	2.97	.592
11	D2 HEIGHT	10.68	(2.53)	0.77	(0.01)	0.19	(0.04)	4.15	.789
12	D2 TIP TO WRIST CREASE	12.07	(2.66)	0.81	(0.02)	0.15	(0.04)	4.35	.784
13	D2 PIP JOINT BREADTH	7.44	(0.69)	0.01	(0.00)	0.14	(0.01)	1.12	.208
14	D2 PIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
15	D2 DIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.							
16	D2 DIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
17	D2 LINK LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
18	D2 MC LINK LENGTH	0.74	(2.08)	0.33	(0.01)	0.12	(0.03)	3.41	.516
19	D2 DISTAL PHALANX LINK	3.91	(1.09)	0.09	(0.01)	0.06	(0.02)	1.79	.264
20	D2 MEDIAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							
21	D2 PROXIMAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							
22	D3 LENGTH	-5.84	(1.70)	0.41	(0.01)	0.11	(0.03)	2.78	.705
23	D3 HEIGHT	4.60	(2.19)	0.90	(0.01)	0.14	(0.03)	3.58	.866
24	D3 TIP TO WRIST CREASE	3.92	(2.17)	0.90	(0.01)	0.14	(0.03)	3.56	.870
25	D3 PIP JOINT BREADTH	4.10	(0.63)	0.01	(0.00)	0.16	(0.01)	1.04	.313
26	D3 PIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
27	D3 DIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.							
28	D3 DIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
29	D3 LINK LENGTH	3.71	(2.32)	0.50	(0.01)	0.07	(0.03)	3.79	.644
30	D3 MC LINK LENGTH	0.21	(2.32)	0.40	(0.01)	0.07	(0.04)	3.80	.535
31	D3 DISTAL PHALANX LINK	1.74	(1.11)	0.11	(0.01)	0.58	(0.02)	1.81	.319
32	D3 MEDIAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							
33	D3 PROXIMAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.							
34	D4 LENGTH	-6.14	(1.83)	0.36	(0.01)	0.16	(0.03)	2.99	.636
35	D4 HEIGHT	2.49	(2.73)	0.82	(0.01)	0.17	(0.04)	4.46	.783
36	D4 TIP TO WRIST CREASE	-0.20	(2.44)	0.88	(0.01)	0.13	(0.04)	3.99	.833
37	D4 PIP JOINT BREADTH	3.74	(0.63)	0.01	(0.00)	0.15	(0.01)	1.03	.301
38	D4 PIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
39	D4 DIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.							
40	D4 DIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.							
41	D4 LINK LENGTH	1.70	(2.05)	0.45	(0.01)	0.18	(0.03)	3.34	.678
42	D4 MC LINK LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.							
43	D4 DISTAL PHALANX LINK	2.75	(1.13)	0.10	(0.01)	0.06	(0.02)	1.84	.284

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 10.

MULTIVARIATE REGRESSION EQUATIONS FOR FEMALES
(Continued)

	Dependent Variable	Intercept (SE)	HAND LENGTH MEASURED Slope 1	(SE)	HAND BREADTH MEASURED Slope 2	(SE)	SE (Est)	R^2
44	D4 MEDIAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.						
45	D4 PROXIMAL PHALANX LINK	7.52 (1.70)	0.16	(0.01)	0.14	(0.03)	2.78	.336
46	D5 LENGTH	-4.08 (2.04)	0.27	(0.01)	0.16	(0.03)	3.33	.465
47	D5 HEIGHT	Slope 2 not significantly different from 0. See Bivariate Equation.						
48	D5 TIP TO WRIST CREASE	Slope 2 not significantly different from 0. See Bivariate Equation.						
49	D5 PIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.						
50	D5 PIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.						
51	D5 DIP JOINT BREADTH	Slope 1 not significantly different from 0. See Bivariate Equation.						
52	D5 DIP JOINT CIRC *	Slope 1 not significantly different from 0. See Bivariate Equation.						
53	D5 LINK LENGTH	-0.52 (2.23)	0.38	(0.01)	0.17	(0.03)	3.65	.537
54	D5 MC LINK LENGTH	1.33 (2.55)	0.47	(0.02)	-0.23	(0.04)	4.18	.492
55	D5 DISTAL PHALANX LINK	3.52 (1.09)	0.08	(0.01)	0.06	(0.02)	1.79	.234
56	D5 MEDIAL PHALANX LINK	Slope 2 not significantly different from 0. See Bivariate Equation.						
57	D5 PROXIMAL PHALANX LINK	3.23 (1.52)	0.15	(0.01)	0.10	(0.02)	2.48	.318
58	HAND LENGTH DIGITIZED	4.60 (2.19)	0.90	(0.01)	0.14	(0.03)	3.58	.866
60	HAND CIRCUMFERENCE	11.28 (1.39)	0.04	(0.01)	2.11	(0.02)	2.27	.930
61	PALM LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.						
62	HAND BREADTH DIGITIZED	9.44 (1.68)	0.04	(0.01)	0.83	(0.03)	2.76	.608
64	WRIST BREADTH	20.69 (1.85)	0.07	(0.01)	0.30	(0.03)	3.03	.227
65	WRIST CIRCUMFERENCE	43.75 (2.96)	0.14	(0.02)	1.03	(0.04)	4.85	.506
66	WRIST-CENTER OF GRIP LGTH	Slope 2 not significantly different from 0. See Bivariate Equation.						
67	WRIST-INDEX FINGER LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.						
68	WRIST-THUMBTIP LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.						
69	CROTCH 1 HEIGHT	5.47 (2.17)	0.27	(0.01)	0.11	(0.03)	3.55	.403
70	CROTCH 2 HEIGHT	Slope 2 not significantly different from 0. See Bivariate Equation.						
71	CROTCH 3 HEIGHT	Slope 2 not significantly different from 0. See Bivariate Equation.						
72	CROTCH 4 HEIGHT	Slope 2 not significantly different from 0. See Bivariate Equation.						
73	FOREARM-HAND LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.						
74	ELBOW-WRIST LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.						
75	ELBOW-CENTER OF GRIP LGTH	Slope 2 not significantly different from 0. See Bivariate Equation.						
76	RADIALE-STYLION LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.						
77	FOREARM CIRC, FLEXED	Slope 1 not significantly different from 0. See Bivariate Equation.						
78	BICEPS CIRC, FLEXED	Slope 1 not significantly different from 0. See Bivariate Equation.						
79	ARM LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.						
80	SHOULDER-ELBOW LENGTH	107.80 (8.02)	1.16	(0.05)	0.24	(0.12)	13.13	.451
81	ACROMION-RADIALE LENGTH	Slope 2 not significantly different from 0. See Bivariate Equation.						
82	THUMBTIP REACH	184.18 (14.49)	2.71	(0.09)	0.77	(0.22)	23.71	.590
83	WRIST WALL LENGTH	175.44 (14.17)	2.12	(0.08)	0.78	(0.21)	23.20	.489
84	WRIST WALL LENGTH, EXTND	231.33 (15.61)	2.15	(0.09)	0.76	(0.24)	25.54	.446
85	STATURE	771.49 (29.20)	3.73	(0.17)	2.31	(0.44)	47.78	.442
86	WEIGHT	-32.44 (4.40)	0.15	(0.03)	0.86	(0.07)	7.19	.263

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 11.
BIVARIATE REGRESSION EQUATIONS FOR MALES

Predictions Based on (58) HAND LENGTH DIGITIZED

	Dependent Variable	Intercept	(SE)	HAND LENGTH DIGITIZED Slope	(SE)	SE (Est)	r^2
1	D1 LENGTH	7.38	(2.05)	0.32	(0.01)	3.44	.480
2	D1 HEIGHT	1.15	(3.11)	0.51	(0.02)	5.20	.505
3	D1 TIP TO WRIST CREASE	35.80	(4.04)	0.53	(0.02)	6.76	.390
4	D1 IP JOINT BREADTH	16.66	(0.76)	0.04	(0.00)	1.28	.085
5	D1 IP JOINT CIRC *	Regression equation is not significant.					
6	D1 LINK LENGTH	38.76	(3.36)	0.44	(0.02)	5.63	.388
7	D1 MC LINK LENGTH	28.29	(3.86)	0.28	(0.02)	6.47	.164
8	D1 PROXIMAL LINK LENGTH	-2.84	(1.63)	0.12	(0.01)	2.73	.178
9	D1 DISTAL LINK LENGTH	10.35	(1.37)	0.12	(0.01)	2.30	.237
10	D2 LENGTH	-1.99	(1.59)	0.40	(0.01)	2.67	.702
11	D2 HEIGHT	11.12	(1.83)	0.87	(0.01)	3.07	.895
12	D2 TIP TO WRIST CREASE	7.27	(1.73)	0.92	(0.01)	2.90	.914
13	D2 PIP JOINT BREADTH	19.22	(0.96)	0.02	(0.00)	1.61	.015
14	D2 PIP JOINT CIRC *	Regression equation is not significant.					
15	D2 DIP JOINT BREADTH	17.50	(0.91)	0.01	(0.00)	1.53	.008
16	D2 DIP JOINT CIRC *	Regression equation is not significant.					
17	D2 LINK LENGTH	0.45	(2.35)	0.56	(0.01)	3.94	.678
18	D2 MC LINK LENGTH	6.81	(1.78)	0.36	(0.01)	2.98	.608
19	D2 DISTAL PHALANX LINK	3.80	(1.15)	0.13	(0.01)	1.93	.313
20	D2 MEDIAL PHALANX LINK	-6.70	(1.12)	0.15	(0.01)	1.88	.406
21	D2 PROXIMAL PHALANX LINK	6.66	(3.06)	0.28	(0.02)	5.13	.239
22	D3 LENGTH	-7.98	(1.47)	0.47	(0.01)	2.45	.797
24	D3 TIP TO WRIST CREASE	0.17	(0.34)	1.00	(0.00)	0.57	.997
25	D3 PIP JOINT BREADTH	16.72	(0.92)	0.03	(0.00)	1.55	.037
26	D3 PIP JOINT CIRC *	43.67	(6.94)	0.14	(0.04)	3.16	.167
27	D3 DIP JOINT BREADTH	16.39	(0.85)	0.02	(0.00)	1.43	.015
28	D3 DIP JOINT CIRC *	Regression equation is not significant.					
29	D3 LINK LENGTH	0.63	(2.34)	0.56	(0.01)	3.93	.684
30	D3 MC LINK LENGTH	-0.46	(2.35)	0.44	(0.01)	3.94	.567
31	D3 DISTAL PHALANX LINK	1.43	(1.15)	0.15	(0.01)	1.93	.376
32	D3 MEDIAL PHALANX LINK	-11.16	(1.21)	0.19	(0.01)	2.03	.491
33	D3 PROXIMAL PHALANX LINK	11.44	(2.66)	0.22	(0.01)	4.45	.211
34	D4 LENGTH	-4.41	(1.68)	0.43	(0.01)	2.81	.713
35	D4 HEIGHT	-3.63	(1.67)	0.95	(0.01)	2.79	.924
36	D4 TIP TO WRIST CREASE	-0.78	(1.52)	0.96	(0.01)	2.54	.938
37	D4 PIP JOINT BREADTH	15.90	(0.87)	0.03	(0.00)	1.46	.039
38	D4 PIP JOINT CIRC *	Regression equation is not significant.					
39	D4 DIP JOINT BREADTH	15.43	(0.86)	0.02	(0.00)	1.44	.012
40	D4 DIP JOINT CIRC *	Regression equation is not significant.					
41	D4 LINK LENGTH	3.47	(2.06)	0.53	(0.01)	3.45	.716
42	D4 MC LINK LENGTH	-4.24	(2.14)	0.42	(0.01)	3.58	.597
43	D4 DISTAL PHALANX LINK	2.87	(1.17)	0.14	(0.01)	1.96	.342

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 11.
BIVARIATE REGRESSION EQUATIONS FOR MALES

Predictions Based on (58) HAND LENGTH DIGITIZED
(Continued)

	Dependent Variable	Intercept	(SE)	HAND LENGTH DIGITIZED Slope	(SE)	SE (Est)	r^2
44	D4 MEDIAL PHALANX LINK	-8.97	(1.18)	0.17	(0.01)	1.97	.444
45	D4 PROXIMAL PHALANX LINK	10.48	(1.95)	0.22	(0.01)	3.26	.323
46	D5 LENGTH	-0.51	(2.07)	0.34	(0.01)	3.47	.498
47	D5 HEIGHT	-9.19	(2.82)	0.80	(0.01)	4.73	.750
48	D5 TIP TO WRIST CREASE	-1.12	(2.84)	0.83	(0.01)	4.76	.763
49	D5 PIP JOINT BREADTH	13.88	(0.76)	0.03	(0.00)	1.27	.047
50	D5 PIP JOINT CIRC *	Regression equation is not significant.					
51	D5 DIP JOINT BREADTH	14.36	(0.76)	0.02	(0.00)	1.28	.015
52	D5 DIP JOINT CIRC *	Regression equation is not significant.					
53	D5 LINK LENGTH	1.73	(2.34)	0.43	(0.01)	3.93	.564
54	D5 MC LINK LENGTH	-2.86	(2.62)	0.40	(0.01)	4.39	.463
55	D5 DISTAL PHALANX LINK	2.98	(1.15)	0.13	(0.01)	1.93	.307
56	D5 MEDIAL PHALANX LINK	-6.59	(1.10)	0.12	(0.01)	1.84	.324
57	D5 PROXIMAL PHALANX LINK	6.37	(1.81)	0.18	(0.01)	3.03	.274
59	HAND LENGTH MEASURED	29.47	(2.76)	0.85	(0.01)	4.62	.780
60	HAND CIRCUMFERENCE	117.18	(4.99)	0.50	(0.03)	8.36	.273
61	PALM LENGTH	7.95	(1.47)	0.53	(0.01)	2.46	.830
62	HAND BREADTH DIGITIZED	66.44	(3.33)	0.15	(0.02)	5.57	.070
63	HAND BREADTH MEASURED	48.61	(2.17)	0.22	(0.01)	3.63	.271
64	WRIST BREADTH	51.93	(2.63)	0.07	(0.01)	4.41	.027
65	WRIST CIRCUMFERENCE	102.47	(4.32)	0.37	(0.02)	7.24	.217
66	WRIST-CENTER OF GRIP LGTH	29.13	(2.60)	0.21	(0.01)	4.35	.197
67	WRIST-INDEX FINGER LENGTH	34.18	(2.84)	0.76	(0.01)	4.76	.728
68	WRIST-THUMBTIP LENGTH	26.95	(2.65)	0.50	(0.01)	4.44	.575
69	CROTCH 1 HEIGHT	8.13	(2.08)	0.31	(0.01)	3.48	.463
70	CROTCH 2 HEIGHT	7.17	(1.55)	0.53	(0.01)	2.60	.815
71	CROTCH 3 HEIGHT	1.22	(1.65)	0.56	(0.01)	2.76	.813
72	CROTCH 4 HEIGHT	-2.28	(1.97)	0.51	(0.01)	3.30	.716
73	FOREARM-HAND LENGTH	122.05	(7.89)	1.86	(0.04)	13.22	.678
74	ELBOW-WRIST LENGTH	92.58	(6.66)	1.02	(0.03)	11.15	.468
75	ELBOW-CENTER OF GRIP LGTH	121.70	(7.44)	1.23	(0.04)	12.45	.507
76	RADIALE-STYLION LENGTH	68.81	(7.01)	1.03	(0.04)	11.75	.450
77	FOREARM CIRC, FLEXED	175.52	(10.54)	0.66	(0.05)	17.65	.129
78	BICEPS CIRC, FLEXED	193.93	(15.60)	0.75	(0.08)	26.12	.079
79	ARM LENGTH	249.72	(15.36)	2.78	(0.08)	25.72	.554
80	SHOULDER-ELBOW LENGTH	158.84	(8.68)	1.09	(0.04)	14.54	.371
81	ACROMION-RADIALE LENGTH	141.91	(8.33)	1.03	(0.04)	13.96	.365
82	THUMBTIP REACH	285.31	(16.94)	2.66	(0.09)	28.37	.482
83	WRIST WALL LENGTH	259.94	(15.99)	2.17	(0.08)	26.77	.410
84	WRIST WALL LENGTH, EXTND	312.69	(17.73)	2.24	(0.09)	29.69	.376
85	STATURE	991.24	(31.93)	3.95	(0.16)	53.48	.366
86	WEIGHT	-4.99	(6.05)	0.43	(0.03)	10.13	.161

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 11.
BIVARIATE REGRESSION EQUATIONS FOR MALES

Predictions Based on (59) HAND LENGTH MEASURED

	Dependent Variable	Intercept	(SE)	HAND LENGTH MEASURED Slope	(SE)	SE (Est)	r^2
1	D1 LENGTH	5.77	(2.17)	0.33	(0.01)	3.48	.466
2	D1 HEIGHT	2.54	(4.30)	0.50	(0.02)	5.47	.452
3	D1 TIP TO WRIST CREASE	37.57	(4.35)	0.52	(0.02)	7.00	.347
4	D1 IP JOINT BREADTH	13.88	(0.77)	0.05	(0.00)	1.23	.148
5	D1 IP JOINT CIRC *	38.56	(8.13)	0.17	(0.04)	3.53	.182
6	D1 LINK LENGTH	34.39	(3.48)	0.46	(0.02)	5.60	.396
7	D1 MC LINK LENGTH	33.26	(4.12)	0.25	(0.02)	6.62	.124
8	D1 PROXIMAL LINK LENGTH	-4.36	(1.69)	0.13	(0.01)	2.71	.186
9	D1 DISTAL LINK LENGTH	8.67	(1.42)	0.13	(0.01)	2.28	.250
10	D2 LENGTH	2.50	(1.98)	0.38	(0.01)	3.19	.574
11	D2 HEIGHT	22.71	(3.14)	0.81	(0.02)	5.05	.716
12	D2 TIP TO WRIST CREASE	22.64	(3.34)	0.84	(0.02)	5.38	.703
13	D2 PIP JOINT BREADTH	16.06	(0.99)	0.04	(0.01)	1.58	.047
14	D2 PIP JOINT CIRC *	40.38	(6.56)	0.16	(0.03)	2.85	.213
15	D2 DIP JOINT BREADTH	14.57	(0.94)	0.03	(0.00)	1.51	.033
16	D2 DIP JOINT CIRC *	30.75	(5.93)	0.14	(0.03)	2.58	.228
17	D2 LINK LENGTH	7.23	(2.90)	0.52	(0.01)	4.66	.549
18	D2 MC LINK LENGTH	15.41	(2.23)	0.32	(0.01)	3.59	.431
19	D2 DISTAL PHALANX LINK	5.46	(1.25)	0.12	(0.01)	2.02	.251
20	D2 MEDIAL PHALANX LINK	-5.50	(1.23)	0.14	(0.01)	1.97	.344
21	D2 PROXIMAL PHALANX LINK	11.23	(3.30)	0.26	(0.02)	5.31	.184
22	D3 LENGTH	-3.30	(1.97)	0.45	(0.01)	3.17	.662
23	D3 HEIGHT	15.50	(3.00)	0.92	(0.02)	4.82	.780
24	D3 TIP TO WRIST CREASE	15.53	(3.01)	0.92	(0.02)	4.84	.779
25	D3 PIP JOINT BREADTH	12.44	(0.03)	0.05	(0.00)	1.49	.104
26	D3 PIP JOINT CIRC *	33.19	(6.72)	0.20	(0.03)	2.91	.291
27	D3 DIP JOINT BREADTH	13.24	(0.87)	0.03	(0.00)	1.40	.053
28	D3 DIP JOINT CIRC *	29.83	(5.87)	0.15	(0.03)	2.54	.239
29	D3 LINK LENGTH	7.94	(2.92)	0.53	(0.02)	4.70	.549
30	D3 MC LINK LENGTH	7.59	(2.82)	0.40	(0.01)	4.53	.428
31	D3 DISTAL PHALANX LINK	4.57	(1.30)	0.13	(0.01)	2.08	.274
32	D3 MEDIAL PHALANX LINK	-10.70	(1.32)	0.19	(0.01)	2.12	.441
33	D3 PROXIMAL PHALANX LINK	14.69	(2.84)	0.21	(0.01)	4.57	.166
34	D4 LENGTH	0.16	(2.10)	0.41	(0.01)	3.37	.587
35	D4 HEIGHT	14.55	(3.50)	0.85	(0.02)	5.63	.692
36	D4 TIP TO WRIST CREASE	10.62	(3.09)	0.90	(0.02)	4.97	.762
37	D4 PIP JOINT BREADTH	13.16	(0.89)	0.04	(0.00)	1.42	.080
38	D4 PIP JOINT CIRC *	30.08	(6.98)	0.18	(0.04)	3.03	.254
39	D4 DIP JOINT BREADTH	12.65	(0.88)	0.03	(0.00)	1.42	.042
40	D4 DIP JOINT CIRC *	Regression equation is not significant.					
41	D4 LINK LENGTH	9.45	(2.59)	0.50	(0.01)	4.17	.586
42	D4 MC LINK LENGTH	1.16	(2.53)	0.40	(0.01)	4.07	.481
43	D4 DISTAL PHALANX LINK	5.41	(1.30)	0.12	(0.01)	2.09	.257

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 11.
BIVARIATE REGRESSION EQUATIONS FOR MALES

Predictions Based on (59) HAND LENGTH MEASURED
(Continued)

	Dependent Variable	Intercept	(SE)	HAND LENGTH MEASURED Slope	(SE)	SE (Est)	r^2
44	D4 MEDIAL PHALANX LINK	-8.66	(1.27)	0.17	(0.01)	2.05	.401
45	D4 PROXIMAL PHALANX LINK	13.31	(2.12)	0.20	(0.01)	3.41	.259
46	D5 LENGTH	2.54	(2.33)	0.32	(0.01)	3.74	.417
47	D5 HEIGHT	8.65	(3.98)	0.70	(0.02)	6.41	.541
48	D5 TIP TO WRIST CREASE	4.19	(3.56)	0.80	(0.01)	5.72	.657
49	D5 PIP JOINT BREADTH	12.96	(0.78)	0.03	(0.00)	1.26	.059
50	D5 PIP JOINT CIRC *	34.72	(6.15)	0.12	(0.03)	2.67	.162
51	D5 DIP JOINT BREADTH	12.96	(0.79)	0.02	(0.00)	1.27	.030
52	D5 DIP JOINT CIRC *	Regression equation is not significant.					
53	D5 LINK LENGTH	4.36	(2.65)	0.42	(0.01)	4.25	.488
54	D5 MC LINK LENGTH	-0.17	(2.89)	0.38	(0.01)	4.65	.397
55	D5 DISTAL PHALANX LINK	4.69	(1.25)	0.12	(0.01)	2.02	.245
56	D5 MEDIAL PHALANX LINK	-6.65	(1.17)	0.12	(0.01)	1.87	.300
57	D5 PROXIMAL PHALANX LINK	6.84	(1.92)	0.18	(0.01)	3.09	.246
58	HAND LENGTH DIGITIZED	15.50	(3.00)	0.92	(0.02)	4.82	.780
60	HAND CIRCUMFERENCE	104.22	(5.02)	0.57	(0.03)	8.06	.324
61	PALM LENGTH	18.81	(2.31)	0.47	(0.12)	3.72	.612
62	HAND BREADTH DIGITIZED	53.55	(3.34)	0.22	(0.02)	5.37	.135
63	HAND BREADTH MEASURED	43.89	(2.20)	0.24	(0.01)	3.54	.309
64	WRIST BREADTH	36.66	(2.62)	0.15	(0.01)	4.21	.110
65	WRIST CIRCUMFERENCE	88.53	(4.30)	0.44	(0.02)	6.92	.285
66	WRIST-CENTER OF GRIP LGTH	20.54	(2.58)	0.25	(0.01)	4.16	.267
67	WRIST-INDEX FINGER LENGTH	10.16	(1.72)	0.88	(0.01)	2.77	.908
68	WRIST-THUMBTIP LENGTH	11.61	(2.28)	0.58	(0.01)	3.67	.710
69	CROTCH 1 HEIGHT	13.46	(2.37)	0.29	(0.01)	3.81	.355
70	CROTCH 2 HEIGHT	18.87	(2.41)	0.47	(0.01)	3.88	.591
71	CROTCH 3 HEIGHT	14.67	(2.59)	0.49	(0.01)	4.16	.575
72	CROTCH 4 HEIGHT	10.07	(2.71)	0.45	(0.01)	4.35	.506
73	FOREARM-HAND LENGTH	79.52	(6.77)	2.08	(0.03)	10.91	.781
74	ELBOW-WRIST LENGTH	79.52	(6.77)	1.08	(0.03)	10.91	.491
75	ELBOW-CENTER OF GRIP LGTH	100.07	(7.35)	1.34	(0.04)	11.82	.556
76	RADIALE-STYLION LENGTH	47.35	(6.90)	1.14	(0.04)	11.10	.508
77	FOREARM CIRC, FLEXED	152.80	(0.78)	0.78	(0.06)	17.28	.165
78	BICEPS CIRC, FLEXED	165.91	(16.02)	0.89	(0.08)	25.76	.104
79	ARM LENGTH	191.34	(14.63)	3.09	(0.08)	23.52	.627
80	SHOULDER-ELBOW LENGTH	140.00	(8.79)	1.18	(0.05)	14.13	.406
81	ACROMION-RADIALE LENGTH	124.66	(8.46)	1.12	(0.04)	13.60	.397
82	THUMBTIP REACH	216.82	(16.06)	3.02	(0.08)	25.82	.571
83	WRIST WALL LENGTH	208.76	(15.70)	2.43	(0.08)	25.24	.475
84	WRIST, WALL LENGTH, EXTND	247.55	(17.20)	2.58	(0.09)	27.65	.458
85	STATURE	898.10	(31.69)	4.43	(0.16)	50.96	.424
86	WEIGHT	-22.60	(6.08)	0.52	(0.03)	9.78	.217

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 11.
BIVARIATE REGRESSION EQUATIONS FOR MALES

Predictions Based on (63) HAND BREADTH MEASURED

	Dependent Variable	Intercept	(SE)	HAND BREADTH MEASURED Slope	(SE)	SE (Est)	r^2
1	D1 LENGTH	34.73	(3.01)	0.39	(0.03)	4.47	.119
2	D1 HEIGHT	40.94	(4.60)	0.66	(0.05)	6.85	.143
3	D1 TIP TO WRIST CREASE	71.78	(5.43)	0.73	(0.06)	8.08	.129
4	D1 IP JOINT BREADTH	8.05	(0.74)	0.18	(0.01)	1.11	.315
5	D1 IP JOINT CIRC *	22.03	(8.05)	0.56	(0.09)	3.18	.336
6	D1 LINK LENGTH	62.47	(4.44)	0.67	(0.05)	6.60	.159
7	D1 MC LINK LENGTH	46.68	(4.62)	0.39	(0.05)	6.87	.056
8	D1 PROXIMAL LINK LENGTH	7.31	(1.97)	0.15	(0.02)	2.94	.047
9	D1 DISTAL LINK LENGTH	17.79	(1.69)	0.18	(0.02)	2.51	.089
10	D2 LENGTH	28.29	(2.93)	0.52	(0.03)	4.36	.205
11	D2 HEIGHT	75.50	(5.43)	1.16	(0.06)	8.08	.270
12	D2 TIP TO WRIST CREASE	77.06	(5.68)	1.20	(0.06)	8.45	.266
13	D2 PIP JOINT BREADTH	8.79	(0.99)	0.16	(0.01)	1.48	.169
14	D2 PIP JOINT CIRC *	30.25	(6.72)	0.44	(0.07)	2.65	.316
15	D2 DIP JOINT BREADTH	7.70	(0.95)	0.14	(0.01)	1.42	.144
16	D2 DIP JOINT CIRC *	22.72	(6.16)	0.40	(0.07)	2.43	.306
17	D2 LINK LENGTH	44.25	(4.20)	0.71	(0.05)	6.25	.189
18	D2 MC LINK LENGTH	32.81	(2.88)	0.49	(0.03)	4.28	.190
19	D2 DISTAL PHALANX LINK	14.25	(1.50)	0.16	(0.02)	2.23	.081
20	D2 MEDIAL PHALANX LINK	4.76	(1.54)	0.20	(0.02)	2.29	.118
21	D2 PROXIMAL PHALANX LINK	26.57	(3.80)	0.38	(0.04)	5.65	.075
22	D3 LENGTH	29.17	(3.23)	0.60	(0.04)	4.80	.223
23	D3 HEIGHT	80.38	(5.91)	1.26	(0.07)	8.79	.217
24	D3 TIP TO WRIST CREASE	80.85	(5.93)	1.26	(0.07)	8.82	.269
25	D3 PIP JOINT BREADTH	5.84	(0.92)	0.18	(0.01)	1.37	.246
26	D3 PIP JOINT CIRC *	21.34	(6.70)	0.55	(0.07)	2.65	.416
27	D3 DIP JOINT BREADTH	7.07	(0.88)	0.14	(0.01)	1.31	.173
28	D3 DIP JOINT CIRC *	19.52	(5.89)	0.43	(0.06)	2.32	.365
29	D3 LINK LENGTH	48.00	(4.28)	0.68	(0.05)	6.36	.173
30	D3 MC LINK LENGTH	32.85	(3.68)	0.57	(0.04)	5.47	.165
31	D3 DISTAL PHALANX LINK	14.89	(1.58)	0.16	(0.02)	2.34	.082
32	D3 MEDIAL PHALANX LINK	6.59	(1.80)	0.22	(0.02)	2.68	.108
33	D3 PROXIMAL PHALANX LINK	29.96	(3.27)	0.27	(0.04)	4.87	.055
34	D4 LENGTH	25.45	(3.09)	0.59	(0.03)	4.60	.232
35	D4 HEIGHT	74.81	(5.94)	1.17	(0.07)	8.84	.240
36	D4 TIP TO WRIST CREASE	74.95	(5.88)	1.22	(0.07)	8.75	.260
37	D4 PIP JOINT BREADTH	7.59	(0.90)	0.15	(0.01)	1.33	.192
38	D4 PIP JOINT CIRC *	15.24	(6.76)	0.56	(0.07)	2.67	.421
39	D4 DIP JOINT BREADTH	6.16	(0.89)	0.14	(0.01)	1.32	.161
40	D4 DIP JOINT CIRC *	21.66	(6.49)	0.36	(0.07)	2.56	.251
41	D4 LINK LENGTH	40.50	(3.82)	0.73	(0.04)	5.68	.233
42	D4 MC LINK LENGTH	34.45	(3.54)	0.48	(0.04)	5.26	.132
43	D4 DISTAL PHALANX LINK	14.21	(1.55)	0.17	(0.02)	2.31	.090

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 11.
BIVARIATE REGRESSION EQUATIONS FOR MALES

Predictions Based on (63) HAND BREADTH MEASURED
(Continued)

	Dependent Variable	Intercept	(SE)	HAND BREADTH MEASURED Slope	(SE)	SE (Est)	r^2
44	D4 MEDIAL PHALANX LINK	6.90	(1.69)	0.19	(0.02)	2.52	.096
45	D4 PROXIMAL PHALANX LINK	20.00	(2.45)	0.36	(0.03)	3.65	.153
46	D5 LENGTH	20.75	(2.99)	0.49	(0.03)	4.44	.178
47	D5 HEIGHT	62.41	(5.79)	0.92	(0.06)	8.62	.170
48	D5 TIP TO WRIST CREASE	71.93	(5.95)	0.97	(0.07)	8.85	.180
49	D5 PIP JOINT BREADTH	7.04	(0.78)	0.13	(0.01)	1.16	.194
50	D5 PIP JOINT CIRC *	15.56	(5.54)	0.47	(0.06)	2.19	.438
51	D5 DIP JOINT BREADTH	6.99	(0.80)	0.11	(0.01)	1.19	.143
52	D5 DIP JOINT CIRC *	17.79	(5.44)	0.36	(0.06)	2.15	.316
53	D5 LINK LENGTH	28.88	(3.57)	0.63	(0.04)	5.30	.204
54	D5 MC LINK LENGTH	43.05	(3.90)	0.34	(5.80)	5.80	.059
55	D5 DISTAL PHALANX LINK	12.45	(1.49)	0.16	(0.02)	2.21	.090
56	D5 MEDIAL PHALANX LINK	3.93	(1.44)	0.15	(0.02)	2.15	.081
57	D5 PROXIMAL PHALANX LINK	13.67	(2.22)	0.31	(0.02)	3.31	.136
58	HAND LENGTH DIGITIZED	80.38	(5.91)	1.26	(0.07)	8.79	.271
59	HAND LENGTH MEASURED	77.41	(5.52)	1.29	(0.06)	8.21	.309
60	HAND CIRCUMFERENCE	15.79	(2.04)	2.19	(0.02)	3.04	.904
61	PALM LENGTH	51.32	(3.56)	0.65	(0.04)	5.27	.218
62	HAND BREADTH DIGITIZED	16.30	(2.97)	0.87	(0.03)	4.42	.415
64	WRIST BREADTH	24.97	(2.71)	0.45	(0.03)	4.03	.185
65	WRIST CIRCUMFERENCE	49.55	(3.83)	1.38	(0.04)	5.70	.515
66	WRIST-CENTER OF GRIP LGTH	37.03	(3.09)	0.36	(0.03)	4.60	.101
67	WRIST-INDEX FINGER LENGTH	78.32	(5.20)	1.14	(0.06)	7.74	.281
68	WRIST-THUMBTIP LENGTH	53.17	(3.99)	0.79	(0.04)	5.93	.242
69	CROTCH 1 HEIGHT	25.52	(2.88)	0.48	(0.03)	4.28	.186
70	CROTCH 2 HEIGHT	51.27	(3.62)	0.65	(0.04)	5.38	.211
71	CROTCH 3 HEIGHT	53.68	(3.91)	0.62	(0.04)	5.82	.172
72	CROTCH 4 HEIGHT	49.50	(3.89)	0.52	(0.04)	5.78	.128
73	FOREARM-HAND LENGTH	225.46	(13.35)	2.86	(0.15)	19.86	.273
74	ELBOW-WRIST LENGTH	148.05	(9.24)	1.57	(0.10)	13.75	.191
75	ELBOW-CENTER OF GRIP LGTH	185.08	(10.56)	1.93	(0.12)	15.71	.215
76	RADIALE-STYLION LENGTH	122.00	(9.57)	1.63	(0.11)	14.24	.191
77	FOREARM CIRC, FLEXED	68.02	(10.29)	2.61	(0.11)	15.31	.345
78	BICEPS CIRC, FLEXED	68.65	(16.18)	2.99	(0.18)	24.07	.218
79	ARM LENGTH	412.51	(22.96)	4.18	(0.25)	34.15	.213
80	SHOULDER-ELBOW LENGTH	199.98	(11.10)	1.88	(0.12)	16.51	.190
81	ACROMION-RADIALE LENGTH	185.98	(10.69)	1.72	(0.11)	15.91	.175
82	THUMBTIP REACH	396.49	(23.19)	4.48	(0.26)	34.50	.234
83	WRIST WALL LENGTH	344.18	(20.86)	3.73	(0.23)	31.04	.207
84	WRIST WALL LENGTH, EXTND	383.82	(22.49)	4.03	(0.25)	33.45	.208
85	STATURE	1071.85	(39.58)	7.59	(0.44)	58.89	.231
86	WEIGHT	-51.04	(6.20)	1.43	(0.07)	9.22	.305

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 12.
BIVARIATE REGRESSION EQUATIONS FOR FEMALES

Predictions Based on (58) HAND LENGTH DIGITIZED

	Dependent Variable	Intercept	(SE)	HAND LENGTH DIGITIZED Slope	(SE)	SE (Est)	r^2
1	D1 LENGTH	-1.44	(1.63)	0.36	(0.01)	3.25	.548
2	D1 HEIGHT	1.76	(2.67)	0.51	(0.01)	5.30	.472
3	D1 TIP TO WRIST CREASE	11.43	(3.06)	0.64	(0.02)	6.07	.519
4	D1 IP JOINT BREADTH	12.42	(0.59)	0.05	(0.00)	1.18	.129
5	D1 IP JOINT CIRC *	40.90	(3.16)	0.12	(0.02)	2.59	.179
6	D1 LINK LENGTH	15.33	(2.24)	0.54	(0.01)	4.46	.581
7	D1 MC LINK LENGTH	8.84	(2.99)	0.38	(0.02)	5.94	.278
8	D1 PROXIMAL LINK LENGTH	-2.37	(1.30)	0.12	(0.01)	2.59	.174
9	D1 DISTAL LINK LENGTH	4.95	(0.99)	0.15	(0.01)	1.97	.343
10	D2 LENGTH	-0.12	(1.32)	0.39	(0.01)	2.62	.682
11	D2 HEIGHT	11.42	(1.57)	0.86	(0.01)	3.13	.880
12	D2 TIP TO WRIST CREASE	8.25	(1.43)	0.91	(0.01)	2.85	.907
13	D2 PIP JOINT BREADTH	12.86	(0.61)	0.04	(0.00)	1.20	.093
14	D2 PIP JOINT CIRC *	38.70	(3.22)	0.13	(0.02)	2.65	.188
15	D2 DIP JOINT BREADTH	11.64	(0.58)	0.03	(0.00)	1.16	.068
16	D2 DIP JOINT CIRC *	36.99	(3.04)	0.08	(0.02)	2.50	.091
17	D2 LINK LENGTH	7.37	(1.97)	0.52	(0.01)	3.91	.632
18	D2 MC LINK LENGTH	0.88	(1.56)	0.39	(0.01)	3.11	.598
19	D2 DISTAL PHALANX LINK	3.22	(0.85)	0.13	(0.00)	1.69	.347
20	D2 MEDIAL PHALANX LINK	-4.29	(0.84)	0.14	(0.00)	1.67	.412
21	D2 PROXIMAL PHALANX LINK	10.38	(2.36)	0.26	(0.01)	4.69	.227
22	D3 LENGTH	-5.99	(1.15)	0.47	(0.01)	2.28	.803
24	D3 TIP TO WRIST CREASE	0.13	(0.35)	1.00	(0.00)	0.69	.995
25	D3 PIP JOINT BREADTH	10.40	(0.58)	0.05	(0.00)	1.15	.155
26	D3 PIP JOINT CIRC *	38.61	(3.13)	0.13	(0.02)	2.57	.201
27	D3 DIP JOINT BREADTH	10.91	(0.55)	0.03	(0.00)	1.10	.088
28	D3 DIP JOINT CIRC *	34.48	(2.83)	0.10	(0.02)	2.32	.140
29	D3 LINK LENGTH	2.30	(1.69)	0.55	(0.01)	3.35	.723
30	D3 MC LINK LENGTH	-2.17	(1.71)	0.45	(0.01)	3.40	.629
31	D3 DISTAL PHALANX LINK	0.76	(0.84)	0.14	(0.00)	1.67	.419
32	D3 MEDIAL PHALANX LINK	-10.01	(0.98)	0.20	(0.01)	1.94	.498
33	D3 PROXIMAL PHALANX LINK	12.03	(1.94)	0.21	(0.01)	3.85	.226
34	D4 LENGTH	-3.38	(1.36)	0.42	(0.01)	2.70	.705
35	D4 HEIGHT	-2.41	(1.33)	0.94	(0.01)	2.64	.924
36	D4 TIP TO WRIST CREASE	-2.58	(1.25)	0.96	(0.01)	2.48	.936
37	D4 PIP JOINT BREADTH	9.32	(0.57)	0.05	(0.00)	1.12	.166
38	D4 PIP JOINT CIRC *	34.38	(3.16)	0.13	(0.02)	1.59	.202
39	D4 DIP JOINT BREADTH	10.28	(0.56)	0.03	(0.00)	1.10	.070
40	D4 DIP JOINT CIRC *	32.23	(2.76)	0.09	(0.02)	2.27	.122
41	D4 LINK LENGTH	4.57	(1.49)	0.52	(0.01)	2.95	.750
42	D4 MC LINK LENGTH	-7.16	(1.58)	0.44	(0.01)	3.13	.658
43	D4 DISTAL PHALANX LINK	2.46	(0.88)	0.13	(0.00)	1.75	.356

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 12.
BIVARIATE REGRESSION EQUATIONS FOR FEMALES

Predictions Based on (58) HAND LENGTH DIGITIZED
(Continued)

	Dependent Variable	Intercept	(SE)	HAND LENGTH DIGITIZED Slope	(SE)	SE (Est)	r²
44	D4 MEDIAL PHALANX LINK	-10.34	(0.96)	0.19	(0.01)	1.91	.477
45	D4 PROXIMAL PHALANX LINK	12.09	(1.39)	0.20	(0.01)	2.77	.343
46	D5 LENGTH	-0.62	(1.61)	0.33	(0.01)	3.19	.509
47	D5 HEIGHT	-6.01	(2.24)	0.78	(0.01)	4.46	.745
48	D5 TIP TO WRIST CREASE	-5.26	(2.26)	0.85	(0.01)	4.49	.774
49	D5 PIP JOINT BREADTH	9.91	(0.54)	0.04	(0.00)	1.07	.104
50	D5 PIP JOINT CIRC *	31.36	(2.94)	0.11	(0.02)	2.41	.168
51	D5 DIP JOINT BREADTH	10.21	(0.53)	0.03	(0.00)	1.04	.053
52	D5 DIP JOINT CIRC *	31.00	(2.58)	0.07	(0.01)	2.12	.090
53	D5 LINK LENGTH	2.72	(1.73)	0.42	(0.01)	3.43	.592
54	D5 MC LINK LENGTH	-7.99	(2.07)	0.43	(0.01)	4.11	.510
55	D5 DISTAL PHALANX LINK	3.68	(0.87)	0.11	(0.00)	1.72	.291
56	D5 MEDIAL PHALANX LINK	-6.1^	(0.89)	0.13	(0.01)	1.77	.327
57	D5 PROXIMAL PHALANX LINK	5.62	(1.22)	0.18	(0.01)	2.43	.347
59	HAND LENGTH MEASURED	15.43	(1.81)	0.93	(0.01)	3.60	.865
60	HAND CIRCUMFERENCE	91.08	(3.43)	0.54	(0.02)	6.81	.373
61	PALM LENGTH	6.28	(1.15)	0.53	(0.01)	2.28	.840
62	HAND BREADTH DIGITIZED	40.46	(1.88)	0.24	(0.01)	3.73	.285
63	HAND BREADTH MEASURED	37.55	(1.53)	0.24	(0.01)	3.03	.368
64	WRIST BREADTH	36.87	(1.64)	0.11	(0.01)	3.26	.103
65	WRIST CIRCUMFERENCE	84.77	(2.94)	0.37	(0.02)	5.84	.283
66	WRIST-CENTER OF GRIP LGTH	29.50	(2.24)	0.21	(0.01)	4.46	.171
67	WRIST-INDEX FINGER LENGTH	23.37	(2.02)	0.82	(0.01)	4.01	.802
68	WRIST-THUMBTIP LENGTH	17.73	(1.97)	0.56	(0.01)	3.92	.664
69	CROTCH 1 HEIGHT	6.49	(1.71)	0.32	(0.01)	3.39	.456
70	CROTCH 2 HEIGHT	6.47	(1.25)	0.53	(0.01)	2.48	.814
71	CROTCH 3 HEIGHT	2.32	(1.32)	0.55	(0.01)	2.62	.810
72	CROTCH 4 HEIGHT	-2.61	(1.52)	0.51	(0.01)	3.03	.731
73	FOREARM-HAND LENGTH	68.85	(5.75)	2.11	(0.03)	11.42	.766
74	ELBOW-WRIST LENGTH	53.41	(5.26)	1.18	(0.03)	10.46	.549
75	ELBOW-CENTER OF GRIP LGTH	82.92	(5.82)	1.38	(0.03)	11.56	.580
76	RADIALE-STYLION LENGTH	33.20	(5.25)	1.18	(0.03)	10.43	.553
77	FOREARM CIRC, FLEXED	165.78	(7.17)	0.50	(0.04)	14.24	.105
78	BICEPS CIRC, FLEXED	209.16	(11.23)	0.41	(0.41)	22.31	.031
79	ARM LENGTH	161.58	(11.92)	3.16	(0.07)	23.68	.632
80	SHOULDER-ELBOW LENGTH	125.96	(6.76)	1.18	(0.04)	13.43	.426
81	ACROMION-RADIALE LENGTH	115.11	(6.61)	1.11	(0.04)	13.13	.406
82	THUMBTIP REACH	230.57	(12.31)	2.84	(0.07)	24.45	.564
83	WRIST WALL LENGTH	216.54	(11.89)	2.27	(0.07)	23.62	.471
84	WRIST WALL LENGTH, EXTND	282.06	(13.29)	2.24	(0.07)	26.40	.409
85	STATURE	890.91	(24.83)	4.16	(0.14)	49.33	.406
86	WEIGHT	4.66	(3.90)	0.32	(0.02)	7.76	.143

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 12.
BIVARIATE REGRESSION EQUATIONS FOR FEMALES

Predictions Based on (59) HAND LENGTH MEASURED

	Dependent Variable	Intercept	(SE)	HAND LENGTH MEASURED Slope	(SE)	SE (Est)	r^2
1	D1 LENGTH	0.95	(1.76)	0.35	(0.01)	3.44	.492
2	D1 HEIGHT	1.91	(2.75)	0.50	(0.02)	5.38	.455
3	D1 TIP TO WRIST CREASE	18.13	(3.34)	0.60	(0.02)	6.52	.444
4	D1 IP JOINT BREADTH	11.29	(0.59)	0.05	(0.00)	1.15	.161
5	D1 IP JOINT CIRC *	37.14	(3.18)	0.14	(0.02)	2.61	.214
6	D1 LINK LENGTH	19.10	(2.45)	0.51	(0.01)	4.78	.518
7	D1 MC LINK LENGTH	14.22	(3.15)	0.34	(0.02)	6.15	.227
8	D1 PROXIMAL LINK LENGTH	-2.51	(1.33)	0.12	(0.01)	2.60	.171
9	D1 DISTAL LINK LENGTH	6.42	(1.04)	0.13	(0.01)	2.04	.295
10	D2 LENGTH	3.83	(1.53)	0.36	(0.00)	2.99	.587
11	D2 HEIGHT	17.51	(2.14)	0.82	(0.01)	4.19	.785
12	D2 TIP TO WRIST CREASE	17.32	(2.24)	0.84	(0.01)	4.37	.782
13	D2 PIP JOINT BREADTH	12.38	(0.61)	0.04	(0.00)	1.20	.103
14	D2 PIP JOINT CIRC *	37.14	(3.18)	0.14	(0.02)	2.61	.214
15	D2 DIP JOINT BREADTH	11.36	(0.59)	0.03	(0.00)	1.16	.072
16	D2 DIP JOINT CIRC *	35.53	(3.01)	0.09	(0.02)	2.47	.110
17	D2 LINK LENGTH	12.32	(2.22)	0.49	(0.01)	4.33	.548
18	D2 MC LINK LENGTH	5.01	(1.75)	0.36	(0.01)	3.43	.511
19	D2 DISTAL PHALANX LINK	5.92	(0.92)	0.11	(0.01)	1.79	.259
20	D2 MEDIAL PHALANX LINK	-4.14	(0.87)	0.14	(0.00)	1.70	.394
21	D2 PROXIMAL PHALANX LINK	10.55	(2.42)	0.25	(0.01)	4.72	.218
22	D3 LENGTH	-1.89	(1.43)	0.44	(0.01)	2.80	.701
23	D3 HEIGHT	9.70	(1.85)	0.93	(0.01)	3.61	.865
24	D3 TIP TO WRIST CREASE	9.11	(1.83)	0.94	(0.01)	3.58	.868
25	D3 PIP JOINT BREADTH	9.84	(0.58)	0.05	(0.00)	1.14	.169
26	D3 PIP JOINT CIRC *	36.97	(3.08)	0.14	(0.02)	2.53	.229
27	D3 DIP JOINT BREADTH	10.69	(0.56)	0.04	(0.00)	1.10	.091
28	D3 DIP JOINT CIRC *	33.59	(2.81)	0.10	(0.02)	2.30	.155
29	D3 LINK LENGTH	6.26	(1.94)	0.52	(0.01)	3.79	.644
30	D3 MC LINK LENGTH	2.85	(1.95)	0.42	(0.01)	3.81	.534
31	D3 DISTAL PHALANX LINK	3.85	(0.93)	0.13	(0.01)	1.82	.314
32	D3 MEDIAL PHALANX LINK	-9.98	(1.01)	0.19	(0.01)	1.98	.481
33	D3 PROXIMAL PHALANX LINK	12.60	(1.98)	0.21	(0.01)	3.88	.211
34	D4 LENGTH	-0.31	(1.55)	0.40	(0.00)	3.03	.628
35	D4 HEIGHT	8.52	(2.30)	0.86	(0.01)	4.47	.781
36	D4 TIP TO WRIST CREASE	4.51	(2.05)	0.01	(0.01)	4.01	.832
37	D4 PIP JOINT BREADTH	9.31	(0.58)	0.05	(0.00)	1.13	.161
38	D4 PIP JOINT CIRC *	34.19	(3.16)	0.13	(0.02)	2.59	.204
39	D4 DIP JOINT BREADTH	9.96	(0.56)	0.03	(0.00)	1.10	.076
40	D4 DIP JOINT CIRC *	31.96	(2.76)	0.09	(0.02)	2.26	.126
41	D4 LINK LENGTH	8.18	(1.74)	0.49	(0.01)	3.39	.670
42	D4 MC LINK LENGTH	-3.67	(1.77)	0.42	(0.01)	3.46	.581
43	D4 DISTAL PHALANX LINK	4.80	(0.95)	0.12	(0.01)	1.85	.279

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 12.
BIVARIATE REGRESSION EQUATIONS FOR FEMALES

Predictions Based on (59) HAND LENGTH MEASURED
(Continued)

	Dependent Variable	Intercept	(SE)	HAND LENGTH MEASURED Slope	(SE)	SE (Est)	r^2
44	D4 MEDIAL PHALANX LINK	-9.90	(1.00)	0.18	(0.01)	1.96	.449
45	D4 PROXIMAL PHALANX LINK	12.65	(1.44)	0.20	(0.01)	2.82	.322
46	D5 LENGTH	1.74	(2.72)	0.31	(0.01)	3.36	.454
47	D5 HEIGHT	5.21	(2.83)	0.70	(0.02)	5.52	.608
48	D5 TIP TO WRIST CREASE	-1.23	(2.61)	0.81	(0.01)	5.10	.709
49	D5 PIP JOINT BREADTH	9.85	(0.55)	0.04	(0.00)	1.07	.103
50	D5 PIP JOINT CIRC *	29.89	(2.90)	0.12	(0.02)	2.38	.194
51	D5 DIP JOINT BREADTH	10.12	(0.53)	0.03	(0.00)	1.04	.056
52	D5 DIP JOINT CIRC *	30.51	(2.58)	0.07	(0.01)	2.11	.097
53	D5 LINK LENGTH	5.66	(1.89)	0.40	(0.01)	3.69	.528
54	D5 MC LINK LENGTH	4.23	(2.17)	0.41	(0.01)	4.23	.479
55	D5 DISTAL PHALANX LINK	5.71	(0.92)	0.10	(0.00)	1.80	.227
56	D5 MEDIAL PHALANX LINK	-6.93	(0.90)	0.13	(0.00)	1.76	.340
57	D5 PROXIMAL PHALANX LINK	6.93	(1.28)	0.17	(0.01)	2.50	.309
58	HAND LENGTH DIGITIZED	9.68	(1.85)	0.93	(0.01)	3.61	.865
60	HAND CIRCUMFERENCE	87.76	(3.45)	0.55	(0.02)	6.74	.387
61	PALM LENGTH	11.42	(1.53)	0.50	(0.01)	2.98	.726
62	HAND BREADTH DIGITIZED	39.52	(1.90)	0.24	(0.01)	3.72	.288
63	HAND BREADTH MEASURED	36.19	(1.54)	0.24	(0.01)	3.00	.380
64	WRIST BREADTH	31.65	(1.62)	0.14	(0.01)	3.16	.158
65	WRIST CIRCUMFERENCE	81.05	(2.94)	0.39	(0.02)	5.75	.306
66	WRIST-CENTER OF GRIP LGTH	23.23	(2.20)	0.24	(0.01)	4.31	.227
67	WRIST-INDEX FINGER LENGTH	10.97	(1.36)	0.88	(0.01)	2.66	.913
68	WRIST-THUMBTIP LENGTH	9.53	(1.73)	0.60	(0.01)	3.37	.752
69	CROTCH 1 HEIGHT	9.27	(1.82)	0.30	(0.01)	3.57	.399
70	CROTCH 2 HEIGHT	12.68	(1.65)	0.49	(0.01)	3.22	.687
71	CROTCH 3 HEIGHT	9.85	(1.77)	0.50	(0.01)	3.46	.667
72	CROTCH 4 HEIGHT	5.77	(1.93)	0.45	(0.01)	3.77	.582
73	FOREARM-HAND LENGTH	57.19	(5.57)	2.14	(0.03)	10.88	.788
74	ELBOW-WRIST LENGTH	57.19	(5.57)	1.14	(0.03)	10.88	.512
75	ELBOW-CENTER OF GRIP LGTH	80.42	(5.97)	1.38	(0.03)	11.66	.572
76	RADIALE-STYLION LENGTH	32.01	(5.41)	1.17	(0.03)	10.57	.541
77	FOREARM CIRC, FLEXED	157.64	(7.22)	0.53	(0.04)	14.11	.121
78	BICEPS CIRC, FLEXED	197.37	(11.36)	0.47	(0.06)	22.20	.041
79	ARM LENGTH	130.74	(11.30)	3.28	(0.06)	22.08	.680
80	SHOULDER-ELBOW LENGTH	116.52	(6.73)	1.21	(0.04)	13.14	.450
81	ACROMION-RADIALE LENGTH	105.15	(6.56)	1.14	(0.04)	12.83	.433
82	THUMBTIP REACH	211.91	(12.19)	2.90	(0.07)	23.81	.587
83	WRIST WALL LENGTH	203.78	(11.93)	2.31	(0.07)	23.31	.485
84	WRIST WALL LENGTH, EXTND	258.86	(13.12)	2.33	(0.07)	25.63	.443
85	STATURE	855.25	(24.70)	4.29	(0.14)	48.26	.431
86	WEIGHT	-1.42	(3.91)	0.35	(0.02)	7.64	.169

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 12.
BIVARIATE REGRESSION EQUATIONS FOR FEMALES

Predictions Based on (63) HAND BREADTH MEASURED

	Dependent Variable	Intercept	(SE)	HAND BREADTH MEASURED Slope	(SE)	SE (Est)	r^2
1	D1 LENGTH	23.46	(2.57)	0.50	(0.03)	4.44	.158
2	D1 HEIGHT	33.25	(3.88)	0.75	(0.05)	6.71	.152
3	D1 TIP TO WRIST CREASE	43.80	(4.52)	1.03	(0.06)	7.82	.202
4	D1 IP JOINT BREADTH	5.13	(0.59)	0.19	(0.01)	1.02	.348
5	D1 IP JOINT CIRC *	28.07	(3.29)	0.44	(0.04)	2.34	.334
6	D1 LINK LENGTH	40.44	(3.48)	0.88	(0.04)	6.01	.238
7	D1 MC LINK LENGTH	26.38	(3.81)	0.62	(0.05)	6.58	.114
8	D1 PROXIMAL LINK LENGTH	6.89	(1.61)	0.16	(0.02)	2.79	.043
9	D1 DISTAL LINK LENGTH	10.52	(1.29)	0.25	(0.02)	2.27	.160
10	D2 LENGTH	18.00	(2.28)	0.65	(0.03)	3.94	.282
11	D2 HEIGHT	52.94	(4.20)	1.41	(0.05)	7.26	.355
12	D2 TIP TO WRIST CREASE	56.40	(4.40)	1.43	(0.06)	7.61	.338
13	D2 PIP JOINT BREADTH	7.91	(0.65)	0.15	(0.01)	1.13	.206
14	D2 PIP JOINT CIRC *	23.39	(3.24)	0.48	(0.04)	2.30	.386
15	D2 DIP JOINT BREADTH	6.80	(0.63)	0.13	(0.01)	1.09	.174
16	D2 DIP JOINT CIRC *	21.19	(3.09)	0.38	(0.04)	2.19	.298
17	D2 LINK LENGTH	37.63	(3.30)	0.79	(0.04)	5.70	.217
18	D2 MC LINK LENGTH	18.77	(2.46)	0.64	(0.03)	4.25	.248
19	D2 DISTAL PHALANX LINK	9.11	(1.12)	0.21	(0.01)	1.93	.142
20	D2 MEDIAL PHALANX LINK	3.77	(1.17)	0.22	(0.01)	2.02	.145
21	D2 PROXIMAL PHALANX LINK	26.74	(2.98)	0.37	(0.04)	5.14	.071
22	D3 LENGTH	16.69	(2.44)	0.76	(0.03)	4.22	.321
23	D3 HEIGHT	53.74	(4.51)	1.56	(0.06)	7.80	.368
24	D3 TIP TO WRIST CREASE	53.32	(4.52)	1.57	(0.06)	7.82	.370
25	D3 PIP JOINT BREADTH	4.90	(0.60)	0.18	(0.01)	1.04	.306
26	D3 PIP JOINT CIRC *	23.74	(3.14)	0.48	(0.04)	2.23	.399
27	D3 DIP JOINT BREADTH	6.07	(0.59)	0.14	(0.01)	1.02	.211
28	D3 DIP JOINT CIRC *	20.35	(0.39)	0.39	(0.04)	2.02	.349
29	D3 LINK LENGTH	31.28	(3.14)	0.87	(0.04)	5.43	.271
30	D3 MC LINK LENGTH	22.04	(2.83)	0.70	(0.04)	4.89	.232
31	D3 DISTAL PHALANX LINK	7.84	(1.16)	0.23	(0.01)	2.00	.167
32	D3 MEDIAL PHALANX LINK	1.88	(1.45)	0.29	(0.02)	2.51	.165
33	D3 PROXIMAL PHALANX LINK	21.20	(2.40)	0.36	(0.03)	4.16	.010
34	D4 LENGTH	13.73	(2.37)	0.74	(0.03)	4.10	.319
35	D4 HEIGHT	47.61	(4.49)	1.47	(0.06)	7.76	.343
36	D4 TIP TO WRIST CREASE	47.91	(4.55)	1.52	(0.06)	7.87	.352
37	D4 PIP JOINT BREADTH	4.47	(0.60)	0.17	(0.01)	1.03	.295
38	D4 PIP JOINT CIRC *	20.46	(3.23)	0.47	(0.04)	2.29	.378
39	D4 DIP JOINT BREADTH	5.39	(0.60)	0.13	(0.01)	1.03	.189
40	D4 DIP JOINT CIRC *	18.24	(2.79)	0.37	(0.03)	1.98	.331
41	D4 LINK LENGTH	26.36	(2.79)	0.89	(0.04)	4.83	.332
42	D4 MC LINK LENGTH	21.55	(2.77)	0.63	(0.03)	4.78	.201
43	D4 DISTAL PHALANX LINK	8.45	(1.16)	0.22	(0.01)	2.01	.150

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

TABLE 12.
BIVARIATE REGRESSION EQUATIONS FOR FEMALES

Predictions Based on (63) HAND BREADTH MEASURED
(Continued)

	Dependent Variable	Intercept	(SE)	HAND BREADTH MEASURED Slope	(SE)	SE (Est)	r^2
44	D4 MEDIAL PHALANX LINK	0.49	(1.40)	0.28	(0.01)	2.42	.164
45	D4 PROXIMAL PHALANX LINK	16.50	(1.77)	0.40	(0.02)	3.06	.200
46	D5 LENGTH	10.96	(2.28)	0.60	(0.03)	3.95	.249
47	D5 HEIGHT	39.02	(4.40)	1.17	(0.06)	7.61	.256
48	D5 TIP TO WRIST CREASE	46.02	(4.72)	1.25	(0.06)	8.16	.255
49	D5 PIP JOINT BREADTH	4.81	(0.57)	0.15	(0.01)	0.98	.248
50	D5 PIP JOINT CIRC *	17.95	(3.00)	0.42	(0.04)	2.13	.353
51	D5 DIP JOINT BREADTH	5.74	(0.57)	0.11	(0.01)	0.98	.161
52	D5 DIP JOINT CIRC *	17.69	(2.63)	0.32	(0.03)	1.87	.294
53	D5 LINK LENGTH	19.03	(2.64)	0.74	(0.03)	4.57	.234
54	D5 MC LINK LENGTH	26.99	(3.20)	0.51	(0.04)	5.53	.112
55	D5 DISTAL PHALANX LINK	8.17	(1.10)	0.19	(0.01)	1.90	.132
56	D5 MEDIAL PHALANX LINK	0.15	(1.17)	0.20	(0.01)	2.02	.128
57	D5 PROXIMAL PHALANX LINK	11.23	(1.58)	0.33	(0.02)	2.73	.179
58	HAND LENGTH DIGITIZED	53.74	(4.51)	1.56	(0.06)	7.80	.368
59	HAND LENGTH MEASURED	54.77	(4.47)	1.58	(0.06)	7.72	.380
60	HAND CIRCUMFERENCE	13.44	(1.33)	2.18	(0.02)	2.29	.929
61	PALM LENGTH	36.90	(2.78)	0.80	(0.03)	4.80	.291
62	HAND BREADTH DIGITIZED	11.74	(1.61)	0.90	(0.02)	2.77	.604
64	WRIST BREADTH	24.38	(1.78)	0.41	(0.02)	3.07	.205
65	WRIST CIRCUMFERENCE	51.53	(2.87)	1.26	(0.04)	4.97	.482
66	WRIST-CENTER OF GRIP LGTH	35.89	(2.70)	0.38	(0.03)	4.68	.088
67	WRIST-INDEX FINGER LENGTH	57.68	(4.18)	1.41	(0.05)	7.22	.355
68	WRIST-THUMBTIP LENGTH	41.44	(3.29)	0.96	(0.04)	5.69	.292
69	CROTCH 1 HEIGHT	20.21	(2.38)	0.53	(0.03)	4.12	.196
70	CROTCH 2 HEIGHT	37.27	(2.82)	0.80	(0.04)	4.88	.278
71	CROTCH 3 HEIGHT	36.47	(2.99)	0.80	(0.04)	5.17	.260
72	CROTCH 4 HEIGHT	31.62	(3.00)	0.71	(0.04)	5.18	.214
73	FOREARM-HAND LENGTH	167.54	(11.31)	3.47	(0.14)	19.55	.314
74	ELBOW-WRIST LENGTH	112.78	(7.99)	1.89	(0.10)	13.81	.213
75	ELBOW-CENTER OF GRIP LGTH	148.66	(9.02)	2.27	(0.11)	15.58	.235
76	RADIALE-STYLION LENGTH	97.95	(8.06)	1.83	(0.10)	13.95	.200
77	FOREARM CIRC, FLEXED	92.58	(7.46)	2.03	(0.09)	12.90	.265
78	BICEPS CIRC, FLEXED	106.67	(12.18)	2.20	(0.15)	21.05	.137
79	ARM LENGTH	291.22	(19.12)	5.44	(0.24)	33.04	.283
80	SHOULDER-ELBOW LENGTH	171.13	(9.18)	2.07	(0.12)	15.87	.199
81	ACROMION-RADIALE LENGTH	158.85	(8.90)	1.93	(0.11)	15.38	.186
82	THUMBTIP REACH	332.77	(18.30)	5.06	(0.23)	31.62	.272
83	WRIST WALL LENGTH	291.45	(16.41)	4.14	(0.21)	28.37	.236
84	WRIST WALL LENGTH, EXTND	349.01	(17.61)	4.16	(0.22)	30.44	.214
85	STATURE	975.96	(32.27)	8.23	(0.41)	55.78	.240
86	WEIGHT	-24.42	(4.21)	1.09	(0.05)	7.28	.246

* Regression equations based upon a smaller data set that used directly measured finger circumference values.

CHAPTER IV

VARIATIONS BY RACE AND SEX

So far, the presentation of hand data has focused on the demographically balanced Army population. General research questions often ask how demographic components differ within a population. In short, these are questions of whether, or how, males are different from females, or Blacks are different from Whites. Designers can make use of this information by anticipating demographic shifts of groups that are substantially different from the population as a whole by weighting demographic components to match a particular user group. This type of question is best addressed through an analysis of variance (ANOVA).

The analysis of variance presented here is a Race by Sex (5 x 2) analysis; the racial group 'Mixed/Other' was dropped since it has no biological meaning. These tests were conducted using the larger hand data pool (1,108 males, and 1,746 females) since they do not depend on the demographic balance of the working data base. The ANOVA tables that follow address questions of race and sex variation by presenting the results of three comparisons. First is the comparison of variation among racial groups, listed in the ANOVA tables under "Main Effects: RACE." This comparison tests for differences among the mean values for racial groups when variation due to sex is controlled. The next comparison tests for differences between the mean values for the sexes when variation due to race is controlled, listed in the ANOVA tables under "Main Effects: SEX." Last, listed in the ANOVA tables under "2-Way Interactions: RACE x SEX," is a test for variation due to group interactions while controlling for the variations due to race or sex alone.

Interpretations of these tests are based upon a $p=.05$ significance level corrected for 86 comparisons (Sokal and Rohlf 1981; Cheverud, et al. 1990). Therefore, F values associated with $p \leq .00058$ were interpreted as being statistically significant. The ANOVA tables are interpreted by first examining their interaction terms. These tests showed that Race by Sex interactions were not significant for any dimension. Thus, statistically significant patterns of racial variation do not vary by sex and vice versa. Statistical variations for each of the main effects can now be examined. These tests showed that men and women are significantly different for all dimensions. Racial groups were also significantly different for all dimensions with four exceptions: DIGIT 2 DISTAL INTERPHALANGEAL JOINT BREADTH, DIGIT 2 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE, DIGIT 3 PROXIMAL PHALANX LINK LENGTH, and DIGIT 4 PROXIMAL PHALANX LINK LENGTH.

Scheffe's test is considered a post hoc test since it properly follows the results of an ANOVA. Here, it addresses the question: since we know that there are significant differences among racial groups when considered separately by sex, which pairs of groups are significantly different? Racial groups are

compared separately within each sex. For each dimension, results are presented as a matrix of comparison pairs (Table 14 for Males, Table 15 for Females). An asterisk (*) at the junction of a group pairing indicates that those two groups have mean values that are significantly different at the p=.05 level.

Two notable observations come from these tables. First, for both males and females, limb length dimensions show the greatest number of differences among racial groups. These results conform to previously documented differences among racial groups (Brues 1977; Underwood 1979) The second observation is that, in males, HAND BREADTH DIGITIZED shows no significant differences among racial groups, while HAND BREADTH MEASURED shows four pairings where racial groups are significantly different. In females, these two dimensions show more comparable differences among racial group pairs. These results may be due to tissue compression that might be associated with caliper measurements. Compressed tissue would have a normalizing effect on measurement distributions (reducing the observed variance), which could enhance the probability of achieving a statistical difference between group means. This possibility is supported by the CV values (reported in Chapter 2) for the two dimensions (Measured: Males 4.7%, Females 4.8%; Digitized: Males 6.1%, Females 5.3%). Digitized dimensions show greater dispersion about their means. However, since the female CV values are more similar than the values for males, one would expect to see more similar results in their Scheffe comparisons.

The results of ANOVA and Scheffe tests should be applied during the development of handwear sizing and equipment accommodation systems. The ANOVA tests indicated that significant differences occur between the sexes. This signifies that sex specific designs cannot be expected to accommodate both sexes. The results of the Scheffe tests should be consulted to determine if racial variation will similarly influence item design. If key dimensions are shown to have significant differences among racial groups, then designers should be aware of those differences during the planning process. Designers should also be aware that the relationships among two or more dimensions will not necessarily be uniform across all race/sex groups. It is possible that two race/sex groups can have identical means for specific dimensions, but differ in the relationship between those dimensions. This type of question is examined through an analysis of covariance (ANCOVA). Pertinent information is not presented in this report because of the potentially overwhelming combinations of all dimensions within each race/sex group. Nonetheless, designers should be aware of this potential complication in their attempts to accommodate user populations.

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX

1. DIGIT 1 LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	32810.706	5	6562.141	315.483	.00000
RACE	6241.504	4	1560.376	75.017	.00000
SEX	30380.723	1	30380.723	1460.591	.00000
2-Way Interactions	53.678	4	13.420	.645	.63103
RACE x SEX	53.678	4	13.420	.645	.63103
Explained	32864.384	9	3651.598	175.555	.00000
Residual	57908.017	2784	20.800		
Total	90772.401	2793	32.500		

2. DIGIT 1 HEIGHT

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	53481.110	5	10696.222	217.389	.00000
RACE	13466.476	4	3366.619	68.423	.00000
SEX	47436.079	1	47436.079	964.086	.00000
2-Way Interactions	196.659	4	49.165	.999	.40920
RACE x SEX	196.659	4	49.165	.999	.40920
Explained	53677.770	9	5964.197	121.216	.00000
Residual	136981.536	2784	49.203		
Total	190659.306	2793	68.263		

3. DIGIT 1 TIP TO WRIST CREASE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	130179.728	5	26035.946	400.365	.00000
RACE	33010.563	4	8252.641	126.904	.00000
SEX	115276.646	1	115276.646	1772.656	.00000
2-Way Interactions	74.517	4	18.629	.286	.88684
RACE x SEX	74.517	4	18.629	.286	.88684
Explained	130254.245	9	14472.694	222.553	.00000
Residual	181044.817	2784	65.030		
Total	311299.063	2793	111.457		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

4. DIGIT 1 INTERPHALANGEAL JOINT BREADTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	7753.977	5	1550.795	971.139	.00000
RACE	132.104	4	33.026	20.682	.00000
SEX	7692.807	1	7692.807	4817.390	.00000
2-Way Interactions	18.961	4	4.740	2.968	.02066
RACE x SEX	18.961	4	4.740	2.968	.02066
Explained	7772.938	9	863.660	540.841	.00000
Residual	4445.722	2784	1.597		
Total	12218.660	2793	4.375		

5. DIGIT 1 INTERPHALANGEAL JOINT CIRCUMFERENCE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	57630.629	5	11526.126	1690.865	.00000
RACE	548.422	4	137.105	20.113	.00000
SEX	56956.377	1	56956.377	8355.415	.00000
2-Way Interactions	78.568	4	19.642	2.881	.02378
RACE x SEX	78.568	4	19.642	2.881	.02378
Explained	57709.197	9	6412.133	940.650	.00000
Residual	18977.700	2784	6.817		
Total	76686.897	2793	27.457		

6. DIGIT 1 LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	121787.057	5	24357.411	550.080	.00000
RACE	11675.181	4	2918.795	65.917	.00000
SEX	119550.228	1	119550.228	2699.887	.00000
2-Way Interactions	31.990	4	7.997	.181	.94805
RACE x SEX	31.990	4	7.997	.181	.94805
Explained	121819.047	9	13535.450	305.681	.00000
Residual	123274.747	2784	44.280		
Total	245093.794	2793	87.753		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

7. DIGIT 1 METACARPAL LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	42812.030	5	8562.406	193.525	.00000
RACE	15444.251	4	3861.063	87.267	.00000
SEX	34180.960	1	34180.960	772.549	.00000
2-Way Interactions	101.671	4	25.418	.574	.68180
RACE x SEX	101.671	4	25.418	.574	.68180
Explained	42913.702	9	4768.189	107.769	.00000
Residual	123176.450	2784	44.244		
Total	166090.152	2793	59.467		

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8. DIGIT 1 PROXIMAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	3325.984	5	665.197	78.008	.00000
RACE	807.385	4	201.846	23.671	.00000
SEX	2960.778	1	2960.778	347.213	.00000
2-Way Interactions	35.908	4	8.977	1.053	.38102
RACE x SEX	35.908	4	8.977	1.053	.38102
Explained	3361.892	9	373.544	43.806	.00000
Residual	23739.930	2784	8.527		
Total	27101.822	2793	9.703		

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9. DIGIT 1 DISTAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	10248.551	5	2049.710	345.822	.00000
RACE	1012.967	4	253.242	42.726	.00000
SEX	10046.090	1	10046.090	1694.951	.00000
2-Way Interactions	3.354	4	.839	.141	.96677
RACE x SEX	3.354	4	.839	.141	.96677
Explained	10251.906	9	1139.101	192.186	.00000
Residual	16500.955	2784	5.927		
Total	26752.861	2793	9.579		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

10. DIGIT 2 LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	26816.954	5	5363.391	257.370	.00000
RACE	4468.703	4	1117.176	53.609	.00000
SEX	25291.766	1	25291.766	1213.662	.00000
2-Way Interactions	37.298	4	9.325	.447	.77451
RACE x SEX	37.298	4	9.325	.447	.77451
Explained	26854.253	9	2983.806	143.182	.00000
Residual	58016.398	2784	20.839		
Total	84870.650	2793	30.387		

11. DIGIT 2 HEIGHT

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	175103.952	5	35020.790	474.682	.00000
RACE	26532.052	4	6633.013	89.906	.00000
SEX	166860.874	1	166860.874	2261.683	.00000
2-Way Interactions	40.024	4	10.006	.136	.96888
RACE x SEX	40.024	4	10.006	.136	.96888
Explained	175143.976	9	19460.442	263.773	.00000
Residual	205396.022	2784	73.777		
Total	380539.999	2793	136.248		

12. DIGIT 2 TIP TO WRIST CREASE LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	189352.267	5	37870.453	482.516	.00000
RACE	33603.251	4	8400.813	107.037	.00000
SEX	177505.876	1	177505.876	2261.641	.00000
2-Way Interactions	61.708	4	15.427	.197	.93974
RACE x SEX	61.708	4	15.427	.197	.93974
Explained	189413.975	9	21045.997	268.152	.00000
Residual	218503.405	2784	78.485		
Total	407917.380	2793	146.050		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

13. DIGIT 2 PROXIMAL INTERPHALANGEAL JOINT BREADTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	6408.057	5	1281.611	659.156	.00000
RACE	52.575	4	13.144	6.760	.00004
SEX	6137.431	1	6137.431	3156.590	.00000
2-Way Interactions	26.341	4	6.585	3.387	.01045
RACE x SEX	26.341	4	6.585	3.387	.01045
Explained	6434.398	9	714.933	367.703	.00000
Residual	5412.996	2784	1.944		
Total	11847.394	2793	4.242		

14. DIGIT 2 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	34249.050	5	6849.810	1970.677	.00000
RACE	81.373	4	20.343	5.853	.00018
SEX	33154.555	1	33154.555	9538.503	.00000
2-Way Interactions	46.756	4	11.689	3.363	.01087
RACE x SEX	46.756	4	11.689	3.363	.01087
Explained	34295.806	9	3810.645	1096.315	.00000
Residual	9676.810	2784	3.476		
Total	43972.615	2793	15.744		

15. DIGIT 2 DISTAL INTERPHALANGEAL JOINT BREADTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	5039.974	5	1007.995	576.662	.00000
RACE	25.497	4	6.374	3.647	.00682
SEX	4874.151	1	4874.151	2788.444	.00000
2-Way Interactions	31.355	4	7.839	4.484	.00172
RACE x SEX	31.355	4	7.839	4.484	.00172
Explained	5071.328	9	563.481	322.361	.00000
Residual	4866.384	2784	1.748		
Total	9937.712	2793	3.558		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

16. DIGIT 2 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	28425.908	5	5685.182	1861.409	.00000
RACE	62.189	4	15.547	5.090	.00063
SEX	27545.436	1	27545.436	9018.764	.00000
2-Way Interactions	43.645	4	10.911	3.572	.00772
RACE x SEX	43.645	4	10.911	3.572	.00772
Explained	28469.553	9	3163.284	1035.704	.00000
Residual	8502.993	2784	3.054		
Total	36972.547	2793	13.238		

17. DIGIT 2 LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	55314.297	5	11062.859	274.493	.00000
RACE	10669.190	4	2667.298	66.181	.00000
SEX	51186.834	1	51186.834	1270.053	.00000
2-Way Interactions	40.557	4	10.139	.252	.90820
RACE x SEX	40.557	4	10.139	.252	.90820
Explained	55354.854	9	6150.539	152.608	.00000
Residual	112203.315	2784	40.303		
Total	167558.169	2793	59.992		

18. DIGIT 2 METACARPAL LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	40159.343	5	8031.869	387.099	.00000
RACE	6539.697	4	1634.924	78.796	.00000
SEX	38052.065	1	38052.065	1833.936	.00000
2-Way Interactions	92.347	4	23.087	1.113	.35151
RACE x SEX	92.347	4	23.087	1.113	.35151
Explained	40251.691	9	4472.410	215.550	.00000
Residual	57764.806	2784	20.749		
Total	98016.497	2793	35.094		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

19. DIGIT 2 DISTAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	6200.070	5	1240.014	276.366	.00000
RACE	499.101	4	124.775	27.809	.00000
SEX	6117.918	1	6117.918	1363.519	.00000
2-Way Interactions	9.650	4	2.412	.538	.70798
RACE x SEX	9.650	4	2.412	.538	.70798
Explained	6209.719	9	689.969	153.775	.00000
Residual	12491.421	2784	4.487		
Total	18701.140	2793	6.696		

20. DIGIT 2 MEDIAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	2976.320	5	595.264	125.316	.00000
RACE	1523.030	4	380.757	80.158	.00000
SEX	1988.143	1	1988.143	418.549	.00000
2-Way Interactions	18.090	4	4.523	.952	.43501
RACE x SEX	18.090	4	4.523	.952	.43501
Explained	2994.410	9	332.712	70.043	.00000
Residual	13224.240	2784	4.750		
Total	16218.650	2793	5.807		

21. DIGIT 2 PROXIMAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	16151.783	5	3230.357	106.743	.00000
RACE	3207.296	4	801.824	26.495	.00000
SEX	14883.689	1	14883.689	491.814	.00000
2-Way Interactions	62.700	4	15.675	.518	.72259
RACE x SEX	62.700	4	15.675	.518	.72259
Explained	16214.483	9	1801.609	59.532	.00000
Residual	84251.683	2784	30.263		
Total	100466.166	2793	35.971		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

22. DIGIT 3 LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	38575.874	5	7715.175	316.720	.00000
RACE	9272.282	4	2318.070	95.160	.00000
SEX	34547.918	1	34547.918	1418.246	.00000
2-Way Interactions	16.202	4	4.051	.166	.95543
RACE x SEX	16.202	4	4.051	.166	.95543
Explained	38592.076	9	4288.008	176.029	.00000
Residual	67817.148	2784	24.360		
Total	106409.224	2793	38.099		

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23. DIGIT 3 HEIGHT

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	226320.832	5	45264.166	562.852	.00000
RACE	53109.161	4	13277.290	165.101	.00000
SEX	203593.372	1	203593.372	2531.648	.00000
2-Way Interactions	73.811	4	18.453	.229	.92190
RACE x SEX	73.811	4	18.453	.229	.92190
Explained	226394.643	9	25154.960	312.798	.00000
Residual	223887.309	2784	80.419		
Total	450281.951	2793	161.218		

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24. DIGIT 3 TIP TO WRIST CREASE LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	224713.367	5	44942.673	555.786	.00000
RACE	53387.633	4	13346.908	165.055	.00000
SEX	201691.099	1	201691.099	2494.225	.00000
2-Way Interactions	67.317	4	16.829	.208	.93378
RACE x SEX	67.317	4	16.829	.208	.93378
Explained	224780.684	9	24975.632	308.863	.00000
Residual	225123.274	2784	80.863		
Total	449903.959	2793	161.083		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

25. DIGIT 3 PROXIMAL INTERPHALANGEAL JOINT BREADTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	6481.006	5	1296.201	686.385	.00000
RACE	54.418	4	13.605	7.204	.00002
SEX	6352.072	1	6352.072	3363.651	.00000
2-Way Interactions	22.798	4	5.700	3.018	.01905
RACE x SEX	22.798	4	5.700	3.018	.01905
Explained	6503.804	9	722.645	382.667	.00000
Residual	5257.432	2784	1.888		
Total	11761.236	2793	4.211		

26. DIGIT 3 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	45297.010	5	9059.402	2469.219	.00000
RACE	139.528	4	34.882	9.507	.00000
SEX	44353.434	1	44353.434	12088.914	.00000
2-Way Interactions	56.191	4	14.048	3.829	.00506
RACE x SEX	56.191	4	14.048	3.829	.00506
Explained	45353.200	9	5039.244	1373.490	.00000
Residual	10214.314	2784	3.669		
Total	55567.514	2793	19.895		

27. DIGIT 3 DISTAL INTERPHALANGEAL JOINT BREADTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	4730.826	5	946.165	601.997	.00000
RACE	65.327	4	16.332	10.391	.00000
SEX	4686.066	1	4686.066	2981.504	.00000
2-Way Interactions	25.694	4	6.423	4.087	.00331
RACE x SEX	25.694	4	6.423	4.087	.00331
Explained	4756.519	9	528.502	336.259	.00000
Residual	4375.646	2784	1.572		
Total	9132.165	2793	3.270		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

28. DIGIT 3 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	31777.340	5	6355.468	2477.353	.00000
RACE	118.298	4	29.575	11.528	.00000
SEX	31203.895	1	31203.895	12163.239	.00000
2-Way Interactions	43.976	4	10.994	4.285	.00239
RACE x SEX	43.976	4	10.994	4.285	.00239
Explained	31821.316	9	3535.702	1378.212	.00000
Residual	7142.147	2784	2.565		
Total	38963.463	2793	13.950		

29. DIGIT 3 LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	70804.542	5	14160.908	352.209	.00000
RACE	10168.975	4	2542.244	63.230	.00000
SEX	67852.832	1	67852.832	1687.628	.00000
2-Way Interactions	105.251	4	26.313	.654	.62470
RACE x SEX	105.251	4	26.313	.654	.62470
Explained	70909.793	9	7878.866	195.962	.00000
Residual	111933.607	2784	40.206		
Total	182843.400	2793	65.465		

30. DIGIT 3 METACARPAL LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	45241.188	5	9048.238	333.900	.00000
RACE	17127.212	4	4281.803	158.008	.00000
SEX	35575.452	1	35575.452	1312.812	.00000
2-Way Interactions	53.550	4	13.388	.494	.74015
RACE x SEX	53.550	4	13.388	.494	.74015
Explained	45294.738	9	5032.749	185.719	.00000
Residual	75442.705	2784	27.099		
Total	120737.443	2793	43.229		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

31. DIGIT 3 DISTAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	8118.605	5	1623.721	327.637	.00000
RACE	1018.215	4	254.554	51.364	.00000
SEX	7819.835	1	7819.835	1577.897	.00000
2-Way Interactions	8.361	4	2.090	.422	.79266
RACE x SEX	8.361	4	2.090	.422	.79266
Explained	8126.966	9	902.996	182.208	.00000
Residual	13797.166	2784	4.956		
Total	21924.082	2793	7.850		

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32. DIGIT 3 MEDIAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	6011.603	5	1202.321	202.604	.00000
RACE	4949.181	4	1237.295	208.498	.00000
SEX	2016.827	1	2016.827	339.858	.00000
2-Way Interactions	11.568	4	2.892	.487	.74528
RACE x SEX	11.568	4	2.892	.487	.74528
Explained	6023.172	9	669.241	112.775	.00000
Residual	16521.162	2784	5.934		
Total	22544.334	2793	8.072		

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33. DIGIT 3 PROXIMAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	16942.989	5	3388.598	156.557	.00000
RACE	118.851	4	29.713	1.373	.24460
SEX	16479.746	1	16479.746	761.380	.00000
2-Way Interactions	68.990	4	17.248	.797	.52838
RACE x SEX	68.990	4	17.248	.797	.52838
Explained	17011.980	9	1890.220	87.330	.00000
Residual	60258.464	2784	21.645		
Total	77270.444	2793	27.666		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

34. DIGIT 4 LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	40049.616	5	8009.923	349.303	.00000
RACE	7983.807	4	1995.952	87.041	.00000
SEX	37023.312	1	37023.312	1614.540	.00000
2-Way Interactions	30.684	4	7.671	.335	.85418
RACE x SEX	30.684	4	7.671	.335	.85418
Explained	40080.300	9	4453.367	194.206	.00000
Residual	63840.399	2784	22.931		
Total	103920.699	2793	37.208		

35. DIGIT 4 HEIGHT

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	212155.443	5	42431.089	547.931	.00000
RACE	51605.952	4	12901.488	166.603	.00000
SEX	189565.703	1	189565.703	2447.945	.00000
2-Way Interactions	118.632	4	29.658	.383	.82064
RACE x SEX	118.632	4	29.658	.383	.82064
Explained	212274.075	9	23586.008	304.576	.00000
Residual	215589.408	2784	77.439		
Total	427863.483	2793	153.191		

36. DIGIT 4 TIP TO WRIST CREASE LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	228319.681	5	45663.936	587.805	.00000
RACE	58324.532	4	14581.133	187.694	.00000
SEX	202038.134	1	202038.134	2600.719	.00000
2-Way Interactions	39.451	4	9.863	.127	.97253
RACE x SEX	39.451	4	9.863	.127	.97253
Explained	228359.131	9	25373.237	326.615	.00000
Residual	216276.424	2784	77.685		
Total	444635.555	2793	159.196		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

37. DIGIT 4 PROXIMAL INTERPHALANGEAL JOINT BREADTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	6039.729	5	1207.946	700.745	.00000
RACE	93.916	4	23.479	13.621	.00000
SEX	5998.374	1	5998.374	3479.734	.00000
2-Way Interactions	19.260	4	4.815	2.793	.02741
RACE x SEX	19.260	4	4.815	2.793	.02741
Explained	6058.989	9	673.221	390.544	.00000
Residual	4799.067	2784	1.724		
Total	10858.056	2793	3.888		

38. DIGIT 4 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	37494.825	5	7498.965	2122.734	.00000
RACE	202.712	4	50.678	14.345	.00000
SEX	36955.137	1	36955.137	10460.898	.00000
2-Way Interactions	55.819	4	13.955	3.950	.00415
RACE x SEX	55.819	4	13.955	3.950	.00415
Explained	37550.644	9	4172.294	1181.052	.00000
Residual	9835.016	2784	3.533		
Total	47385.660	2793	16.966		

39. DIGIT 4 DISTAL INTERPHALANGEAL JOINT BREADTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	4916.756	5	983.351	626.929	.00000
RACE	44.133	4	11.033	7.034	.00003
SEX	4837.952	1	4837.952	3084.406	.00000
2-Way Interactions	24.358	4	6.090	3.882	.00464
RACE x SEX	24.358	4	6.090	3.882	.00464
Explained	4941.114	9	549.013	350.020	.00000
Residual	4366.760	2784	1.569		
Total	9307.874	2793	3.333		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

40. DIGIT 4 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	32307.279	5	6461.456	2958.666	.00000
RACE	111.313	4	27.828	12.742	.00000
SEX	31734.310	1	31734.310	14530.971	.00000
2-Way Interactions	40.266	4	10.067	4.609	.00140
RACE x SEX	40.266	4	10.067	4.609	.00140
Explained	32347.546	9	3594.172	1645.752	.00000
Residual	6080.001	2784	2.184		
Total	38427.547	2793	13.759		

41. DIGIT 4 LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	71860.248	5	14372.050	428.267	.00000
RACE	11247.941	4	2811.985	83.793	.00000
SEX	68362.040	1	68362.040	2037.094	.00000
2-Way Interactions	53.281	4	13.320	.397	.81066
RACE x SEX	53.281	4	13.320	.397	.81066
Explained	71913.529	9	7990.392	238.103	.00000
Residual	93427.176	2784	33.559		
Total	165340.704	2793	59.198		

42. DIGIT 4 METACARPAL LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	45985.155	5	9197.031	386.100	.00000
RACE	18392.951	4	4598.238	193.039	.00000
SEX	35353.464	1	35353.464	1484.173	.00000
2-Way Interactions	23.851	4	5.963	.250	.90942
RACE x SEX	23.851	4	5.963	.250	.90942
Explained	46009.006	9	5112.112	214.611	.00000
Residual	66315.742	2784	23.820		
Total	112324.748	2793	40.217		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

43. DIGIT 4 DISTAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	9443.692	5	1888.738	390.054	.00000
RACE	999.130	4	249.782	51.584	.00000
SEX	9202.566	1	9202.566	1900.476	.00000
2-Way Interactions	11.536	4	2.884	.596	.66593
RACE x SEX	11.536	4	2.884	.596	.66593
Explained	9455.228	9	1050.581	216.962	.00000
Residual	13480.806	2784	4.842		
Total	22936.034	2793	8.212		

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44. DIGIT 4 MEDIAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	5146.828	5	1029.366	181.144	.00000
RACE	3732.071	4	933.018	164.189	.00000
SEX	2316.910	1	2316.910	407.721	.00000
2-Way Interactions	11.116	4	2.779	.489	.74381
RACE x SEX	11.116	4	2.779	.489	.74381
Explained	5157.944	9	573.105	100.853	.00000
Residual	15820.318	2784	5.683		
Total	20978.262	2793	7.511		

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45. DIGIT 4 PROXIMAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	13720.222	5	2744.044	210.253	.00000
RACE	246.747	4	61.687	4.727	.00115
SEX	13649.985	1	13649.985	1045.882	.00000
2-Way Interactions	23.252	4	5.813	.445	.77596
RACE x SEX	23.252	4	5.813	.445	.77596
Explained	13743.474	9	1527.053	117.005	.00000
Residual	36334.468	2784	13.051		
Total	50077.942	2793	17.930		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

46. DIGIT 5 LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	29403.722	5	5880.744	278.910	.00000
RACE	2521.730	4	630.433	29.900	.00000
SEX	28976.392	1	28976.392	1374.285	.00000
2-Way Interactions	34.796	4	8.699	.413	.79916
RACE x SEX	34.796	4	8.699	.413	.79916
Explained	29438.518	9	3270.946	155.134	.00000
Residual	58699.821	2784	21.085		
Total	88138.339	2793	31.557		

47. DIGIT 5 HEIGHT

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	148985.529	5	29797.106	421.481	.00000
RACE	33675.776	4	8418.944	119.086	.00000
SEX	134857.011	1	134857.011	1907.559	.00000
2-Way Interactions	265.220	4	66.305	.938	.44293
RACE x SEX	265.220	4	66.305	.938	.44293
Explained	149250.749	9	16583.417	234.573	.00000
Residual	196818.027	2784	70.696		
Total	346068.776	2793	123.906		

48. DIGIT 5 TIP TO WRIST CREASE LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	180355.429	5	36071.086	478.546	.00000
RACE	45565.109	4	11391.277	151.125	.00000
SEX	159997.357	1	159997.357	2122.645	.00000
2-Way Interactions	230.324	4	57.581	.764	.54982
RACE x SEX	230.324	4	57.581	.764	.54982
Explained	180585.753	9	20065.084	266.198	.00000
Residual	209847.912	2784	75.376		
Total	390433.665	2793	139.790		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

49. DIGIT 5 PROXIMAL INTERPHALANGEAL JOINT BREADTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	4695.589	5	939.118	670.085	.00000
RACE	103.190	4	25.798	18.407	.00000
SEX	4666.898	1	4666.898	3329.954	.00000
2-Way Interactions	13.437	4	3.359	2.397	.05157
RACE x SEX	13.437	4	3.359	2.397	.05157
Explained	4709.026	9	523.225	373.335	.00000
Residual	3901.749	2784	1.401		
Total	8610.775	2793	3.083		

50. DIGIT 5 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	34575.760	5	6915.152	2293.518	.00000
RACE	205.961	4	51.490	17.078	.00000
SEX	34076.950	1	34076.950	11302.150	.00000
2-Way Interactions	34.847	4	8.712	2.889	.02348
RACE x SEX	34.847	4	8.712	2.889	.02348
Explained	34610.607	9	3845.623	1275.461	.00000
Residual	8393.998	2784	3.015		
Total	43004.605	2793	15.397		

51. DIGIT 5 DISTAL INTERPHALANGEAL JOINT BREADTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	4717.142	5	943.428	716.092	.00000
RACE	35.276	4	8.819	6.694	.00000
SEX	4619.311	1	4619.311	3506.201	.00000
2-Way Interactions	22.117	4	5.529	4.197	.00276
RACE x SEX	22.117	4	5.529	4.197	.00276
Explained	4739.259	9	526.584	399.694	.00000
Residual	3667.834	2784	1.317		
Total	8407.093	2793	3.010		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

52. DIGIT 5 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	29282.927	5	5856.585	2590.025	.00000
RACE	124.503	4	31.126	13.765	.00000
SEX	28767.076	1	28767.076	12721.995	.00000
2-Way Interactions	31.147	4	7.787	3.444	.00952
RACE x SEX	31.147	4	7.787	3.444	.00952
Explained	29314.074	9	3257.119	1440.433	.00000
Residual	6295.203	2784	2.261		
Total	35609.277	2793	12.749		

53. DIGIT 5 LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	53267.257	5	10653.451	373.331	.00000
RACE	6777.313	4	1694.328	59.375	.00000
SEX	51529.297	1	51529.297	1805.750	.00000
2-Way Interactions	49.889	4	12.472	.437	.78178
RACE x SEX	49.889	4	12.472	.437	.78178
Explained	53317.146	9	5924.127	207.600	.00000
Residual	79444.852	2784	28.536		
Total	132761.999	2793	47.534		

54. DIGIT 5 METACARPAL LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	40231.817	5	8046.363	276.236	.00000
RACE	17272.675	4	4318.169	148.245	.00000
SEX	29927.631	1	29927.631	1027.431	.00000
2-Way Interactions	90.426	4	22.607	.776	.54196
RACE x SEX	90.426	4	22.607	.776	.54196
Explained	40322.243	9	4480.249	153.809	.00000
Residual	81094.020	2784	29.129		
Total	121416.263	2793	43.472		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

55. DIGIT 5 DISTAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	8979.110	5	1795.822	407.737	.00000
RACE	381.843	4	95.461	21.674	.00000
SEX	8944.908	1	8944.908	2030.918	.00000
2-Way Interactions	19.042	4	4.761	1.081	.36701
RACE x SEX	19.042	4	4.761	1.081	.36701
Explained	8998.152	9	999.795	227.001	.00000
Residual	12261.756	2784	4.404		
Total	21259.908	2793	7.612		

56. DIGIT 5 MEDIAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	2218.501	5	443.700	103.134	.00000
RACE	1340.046	4	335.012	77.870	.00000
SEX	1282.844	1	1282.844	298.186	.00000
2-Way Interactions	11.817	4	2.954	.687	.60172
RACE x SEX	11.817	4	2.954	.687	.60172
Explained	2230.318	9	247.813	57.602	.00000
Residual	11977.230	2784	4.302		
Total	14207.548	2793	5.087		

57. DIGIT 5 PROXIMAL PHALANX LINK LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	9889.149	5	1977.830	195.189	.00000
RACE	777.745	4	194.436	19.189	.00000
SEX	9787.145	1	9787.145	965.877	.00000
2-Way Interactions	42.774	4	10.694	1.055	.38000
RACE x SEX	42.774	4	10.694	1.055	.38000
Explained	9931.923	9	1103.547	108.907	.00000
Residual	28210.023	2784	10.133		
Total	38141.946	2793	13.656		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

58. HAND LENGTH FROM DIGITIZER

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	226320.832	5	45264.166	562.852	.00000
RACE	53109.161	4	13277.290	165.101	.00000
SEX	203593.372	1	203593.372	2531.648	.00000
2-Way Interactions	73.811	4	18.453	.229	.92190
RACE x SEX	73.811	4	18.453	.229	.92190
Explained	226394.643	9	25154.960	312.798	.00000
Residual	223887.309	2784	80.419		
Total	450281.951	2793	161.218		

59. HAND LENGTH MEASURED

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	166998.316	5	33399.663	425.141	.00000
RACE	49717.941	4	12429.485	158.214	.00000
SEX	142283.123	1	142283.123	1811.107	.00000
2-Way Interactions	102.541	4	25.635	.326	.86032
RACE x SEX	102.541	4	25.635	.326	.86032
Explained	167100.857	9	18566.762	236.334	.00000
Residual	218715.009	2784	78.561		
Total	385815.866	2793	138.137		

60. HAND CIRCUMFERENCE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	510391.688	5	102078.338	1297.644	.00000
RACE	9747.478	4	2436.870	30.978	.00000
SEX	507210.742	1	507210.742	6447.785	.00000
2-Way Interactions	261.295	4	65.324	.830	.50747
RACE x SEX	261.295	4	65.324	.830	.50747
Explained	510652.983	9	56739.220	721.283	.00000
Residual	219001.516	2784	78.664		
Total	729654.499	2793	261.244		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

61. PALM LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	78000.319	5	15600.064	575.902	.00000
RACE	18192.628	4	4548.157	167.903	.00000
SEX	70220.812	1	70220.812	2592.319	.00000
2-Way Interactions	83.073	4	20.768	.767	.54785
RACE x SEX	83.073	4	20.768	.767	.54785
Explained	78083.392	9	8675.932	320.287	.00000
Residual	75413.087	2784	27.088		
Total	153496.479	2793	54.958		

62. HAND BREADTH FROM DIGITIZER

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	99364.383	5	19872.877	821.275	.00000
RACE	1070.069	4	267.517	11.056	.00000
SEX	98068.891	1	98068.891	4052.838	.00000
2-Way Interactions	291.576	4	72.894	3.012	.01924
RACE x SEX	291.576	4	72.894	3.012	.01924
Explained	99655.958	9	11072.884	457.603	.00000
Residual	67366.082	2784	24.198		
Total	167022.040	2793	59.800		

63. HAND BREADTH MEASURED

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	80392.570	5	16078.514	1056.086	.00000
RACE	1952.913	4	488.228	32.068	.00000
SEX	79834.663	1	79834.663	5243.785	.00000
2-Way Interactions	40.669	4	10.167	.668	.61490
RACE x SEX	40.669	4	10.167	.668	.61490
Explained	80433.239	9	8937.027	587.011	.00000
Residual	42385.355	2784	15.225		
Total	122818.594	2793	43.974		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

64. WRIST BREADTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	52413.569	5	10482.714	725.596	.00000
RACE	860.140	4	215.035	14.884	.00000
SEX	48740.106	1	48740.106	3373.710	.00000
2-Way Interactions	118.372	4	29.593	2.048	.08908
RACE x SEX	118.372	4	29.593	2.048	.08908
Explained	52531.942	9	5836.882	404.019	.00000
Residual	40220.549	2784	14.447		
Total	92752.491	2793	33.209		

65. WRIST CIRCUMFERENCE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	352337.818	5	70467.564	1301.129	.00000
RACE	3706.692	4	926.673	17.110	.00000
SEX	342484.417	1	342484.417	6323.711	.00000
2-Way Interactions	310.598	4	77.649	1.434	.22405
RACE x SEX	310.598	4	77.649	1.434	.22405
Explained	352648.415	9	39183.157	723.487	.00000
Residual	150778.028	2784	54.159		
Total	503426.444	2793	180.246		

66. WRIST-CENTER OF GRIP LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	11623.567	5	2324.713	101.927	.00000
RACE	3057.735	4	764.434	33.517	.00000
SEX	10223.232	1	10223.232	448.238	.00000
2-Way Interactions	90.367	4	22.592	.991	.41351
RACE x SEX	90.367	4	22.592	.991	.41351
Explained	11713.934	9	1301.548	57.066	.00000
Residual	63496.321	2784	22.808		
Total	75210.255	2793	26.928		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

67. WRIST-INDEX FINGER LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	116078.104	5	23215.621	326.145	.00000
RACE	27166.543	4	6791.636	95.412	.00000
SEX	104044.831	1	104044.831	1461.673	.00000
2-Way Interactions	90.592	4	22.648	.318	.86572
RACE x SEX	90.592	4	22.648	.318	.86572
Explained	116168.696	9	12907.633	181.333	.00000
Residual	198170.698	2784	71.182		
Total	314339.394	2793	112.545		

68. WRIST-THUMBTIP LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	46667.517	5	9333.503	231.780	.00000
RACE	16755.892	4	4188.973	104.025	.00000
SEX	37455.937	1	37455.937	930.147	.00000
2-Way Interactions	143.715	4	35.929	.892	.46968
RACE x SEX	143.715	4	35.929	.892	.46968
Explained	46811.232	9	5201.248	129.163	.00000
Residual	112108.478	2784	40.269		
Total	158919.709	2793	56.899		

69. CROTCH 1 HEIGHT

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	33725.715	5	6745.143	357.587	.00000
RACE	8223.121	4	2055.780	108.985	.00000
SEX	30104.093	1	30104.093	1595.939	.00000
2-Way Interactions	145.392	4	36.348	1.927	.10733
RACE x SEX	145.392	4	36.348	1.927	.10733
Explained	33871.107	9	3763.456	199.516	.00000
Residual	52514.403	2784	18.863		
Total	86385.510	2793	30.929		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

70. CROTCH 2 HEIGHT

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	81761.421	5	16352.284	581.146	.00000
RACE	16901.858	4	4225.465	150.169	.00000
SEX	75123.468	1	75123.468	2669.822	.00000
2-Way Interactions	63.271	4	15.818	.562	.69050
RACE x SEX	63.271	4	15.818	.562	.69050
Explained	81824.692	9	9091.632	323.109	.00000
Residual	78336.199	2784	28.138		
Total	160160.890	2793	57.344		

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71. CROTCH 3 HEIGHT

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	83339.004	5	16667.801	560.849	.00000
RACE	23212.421	4	5803.105	195.267	.00000
SEX	72286.401	1	72286.401	2432.340	.00000
2-Way Interactions	49.829	4	12.457	.419	.79483
RACE x SEX	49.829	4	12.457	.419	.79483
Explained	83388.834	9	9265.426	311.769	.00000
Residual	82737.342	2784	29.719		
Total	166126.176	2793	59.479		

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72. CROTCH 4 HEIGHT

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	69663.516	5	13932.703	495.475	.00000
RACE	20839.871	4	5209.968	185.277	.00000
SEX	59317.848	1	59317.848	2109.462	.00000
2-Way Interactions	110.495	4	27.624	.982	.41840
RACE x SEX	110.495	4	27.624	.982	.41840
Explained	69774.010	9	7752.668	275.700	.00000
Residual	78285.779	2784	28.120		
Total	148059.790	2793	53.011		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

73. FOREARM-HAND LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	1430419.284	5	286083.857	677.258	.00000
RACE	361235.627	4	90308.907	213.792	.00000
SEX	1266907.711	1	1266907.711	2999.200	.00000
2-Way Interactions	1218.103	4	304.526	.721	.57849
RACE x SEX	1218.103	4	304.526	.721	.57849
Explained	1431637.387	9	159070.821	376.575	.00000
Residual	1176003.884	2784	422.415		
Total	2607641.271	2793	933.635		

74. ELBOW-WRIST LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	621219.323	5	124243.865	660.482	.00000
RACE	142976.330	4	35744.082	190.016	.00000
SEX	560051.068	1	560051.068	2977.241	.00000
2-Way Interactions	847.257	4	211.814	1.126	.34536
RACE x SEX	847.257	4	211.814	1.126	.34536
Explained	622066.580	9	69118.509	367.435	.00000
Residual	523700.360	2784	188.111		
Total	1145766.940	2793	410.228		

75. ELBOW-CENTER OF GRIP LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	802192.357	5	160438.471	641.197	.00000
RACE	187374.952	4	46843.738	187.212	.00000
SEX	721608.793	1	721608.793	2883.929	.00000
2-Way Interactions	811.539	4	202.885	.811	.51945
RACE x SEX	811.539	4	202.885	.811	.51945
Explained	803003.896	9	89222.655	356.581	.00000
Residual	696604.770	2784	250.217		
Total	1499608.666	2793	536.917		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

76. RADIALE-STYLION LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	590240.847	5	118048.169	635.470	.00000
RACE	163487.101	4	40871.775	220.019	.00000
SEX	512222.357	1	512222.357	2757.367	.00000
2-Way Interactions	425.397	4	106.349	.572	.68325
RACE x SEX	425.397	4	106.349	.572	.68325
Explained	590666.244	9	65629.583	353.294	.00000
Residual	517169.766	2784	185.765		
Total	1107836.010	2793	396.647		

77. FOREARM CIRCUMFERENCE, FLEXED

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	1678267.149	5	335653.430	1248.529	.00000
RACE	31814.648	4	7953.662	29.585	.00000
SEX	1665755.194	1	1665755.194	6196.106	.00000
2-Way Interactions	2213.878	4	553.470	2.059	.08757
RACE x SEX	2213.878	4	553.470	2.059	.08757
Explained	1680481.028	9	186720.114	694.542	.00000
Residual	748447.893	2784	268.839		
Total	2428928.921	2793	869.649		

78. BICEPS CIRCUMFERENCE, FLEXED

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	2192888.668	5	438577.734	740.762	.00000
RACE	44132.633	4	11033.158	18.635	.00000
SEX	2184601.569	1	2184601.569	3689.812	.00000
2-Way Interactions	11168.689	4	2792.172	4.716	.00117
RACE x SEX	11168.689	4	2792.172	4.716	.00117
Explained	2204057.357	9	244895.262	413.630	.00000
Residual	1648303.736	2784	592.063		
Total	3852361.093	2793	1379.291		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

79. ARM LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	3481234.579	5	696246.916	549.103	.00000
RACE	609631.077	4	152407.769	120.198	.00000
SEX	3257714.598	1	3257714.598	2569.235	.00000
2-Way Interactions	5503.192	4	1375.798	1.085	.36504
RACE x SEX	5503.192	4	1375.798	1.085	.36504
Explained	3486737.771	9	387415.308	305.540	.00000
Residual	3530030.444	2784	1267.971		
Total	7016768.215	2793	2512.269		

80. SHOULDER-ELBOW LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	791358.054	5	158271.611	533.339	.00000
RACE	53131.412	4	13282.853	44.760	.00000
SEX	769743.666	1	769743.666	2593.859	.00000
2-Way Interactions	1736.930	4	434.233	1.463	.21483
RACE x SEX	1736.930	4	434.233	1.463	.21483
Explained	793094.985	9	88121.665	296.950	.00000
Residual	826169.309	2784	296.756		
Total	1619264.294	2793	579.758		

81. ACROMION-RADIALE LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	611435.881	5	122287.176	449.715	.00000
RACE	51161.998	4	12790.499	47.037	.00000
SEX	592638.948	1	592638.948	2179.448	.00000
2-Way Interactions	1901.039	4	475.260	1.748	.13088
RACE x SEX	1901.039	4	475.260	1.748	.13088
Explained	613336.919	9	68148.547	250.618	.00000
Residual	757029.776	2784	271.922		
Total	1370366.696	2793	490.643		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

82. THUMBTIP REACH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	3337428.281	5	667485.656	534.270	.00000
RACE	490143.195	4	122535.799	98.080	.00000
SEX	3172850.608	1	3172850.608	2539.618	.00000
2-Way Interactions	2819.680	4	704.920	.564	.68905
RACE x SEX	2819.680	4	704.920	.564	.68905
Explained	3340247.962	9	371138.662	297.067	.00000
Residual	3478167.716	2784	1249.342		
Total	6818415.678	2793	2441.252		

83. WRIST-WALL LENGTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	2740663.475	5	548132.695	556.039	.00000
RACE	336284.762	4	84071.190	85.284	.00000
SEX	2638604.578	1	2638604.578	2676.666	.00000
2-Way Interactions	2693.763	4	673.441	.683	.60449
RACE x SEX	2693.763	4	673.441	.683	.60449
Explained	2743357.238	9	304817.471	309.214	.00000
Residual	2744412.557	2784	985.780		
Total	5487769.795	2793	1964.830		

84. WRIST WALL LENGTH EXTENDED

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	3344823.568	5	668964.714	580.617	.00000
RACE	322427.297	4	80606.824	69.961	.00000
SEX	3255902.018	1	3255902.018	2825.905	.00000
2-Way Interactions	6562.129	4	1640.532	1.424	.22731
RACE x SEX	6562.129	4	1640.532	1.424	.22731
Explained	3351385.697	9	372376.189	323.198	.00000
Residual	3207620.863	2784	1152.163		
Total	6559006.560	2793	2348.373		

Table 13.

ANALYSIS OF VARIANCE: RACE x SEX
(Continued)

85. STATURE

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	11104841	5	2220968.193	548.280	.00000
RACE	396584	4	99145.982	24.476	.00000
SEX	10421368	1	10421367.778	2572.672	.00000
2-Way Interactions	12023	4	3005.818	.742	.56439
RACE x SEX	12023	4	3005.818	.742	.56439
Explained	11116864	9	1235207.138	304.930	.00000
Residual	11277413	2784	4050.795		
Total	22394277	2793	8018.001		

86. WEIGHT

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	18550367	5	3710073.394	413.825	.00000
RACE	459021	4	114755.361	12.800	.00000
SEX	17971041	1	17971040.908	2004.504	.00000
2-Way Interactions	27649	4	6912.255	.771	.54523
RACE x SEX	27649	4	6912.255	.771	.54523
Explained	18578016	9	2064223.999	230.245	.00000
Residual	24959474	2784	8965.328		
Total	43537490	2793	15588.074		

Table 14.

SCHEFFE POST HOC RACE COMPARISONS FOR MALES

1. DIGIT 1 LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 5	G r p 1	G r p 2
67.2273	Asian/Pacific Islanders	Grp 4					
68.5532	Hispanics	Grp 3					
68.7143	American Indians	Grp 5					
69.1707	Whites	Grp 1					
71.8013	Blacks	Grp 2	*	*		*	

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2. DIGIT 1 HEIGHT

Mean	Race	Group	G r p 3	G r p 1	G r p 4	G r p 5	G r p 2
97.7021	Hispanics	Grp 3					
99.3625	Whites	Grp 1					
99.9545	Asian/Pacific Islanders	Grp 4					
100.1429	American Indians	Grp 5					
103.0842	Blacks	Grp 2	*	*			

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3. DIGIT 1 TIP TO WRIST CREASE

Mean	Race	Group	G r p 1	G r p 3	G r p 4	G r p 5	G r p 2
136.1269	Whites	Grp 1					
136.8936	Hispanics	Grp 3					
137.0909	Asian/Pacific Islanders	Grp 4					
139.1429	American Indians	Grp 5					
143.1785	Blacks	Grp 2	*	*	*		

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

4. DIGIT 1 INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 5 1 2
22.9545	Asian/Pacific Islanders	Grp 4	
23.4681	Hispanics	Grp 3	
24.0000	American Indians	Grp 5	
24.0141	Whites	Grp 1	*
24.1785	Blacks	Grp 2	* *

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5. DIGIT 1 INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 5 1 2
69.9700	Asian/Pacific Islanders	Grp 4	
71.0998	Hispanics	Grp 3	
72.2700	American Indians	Grp 5	
72.3010	Whites	Grp 1	*
72.6626	Blacks	Grp 2	* *

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6. DIGIT 1 LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 3 5 4 1 2
121.5319	Hispanics	Grp 3	
121.5714	American Indians	Grp 5	
122.0000	Asian/Pacific Islanders	Grp 4	
122.5233	Whites	Grp 1	
126.4512	Blacks	Grp 2	* *

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

7. DIGIT 1 METACARPAL LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 1 3 5 4 2
80.9210	Whites	Grp 1	
82.8936	Hispanics	Grp 3	
83.0000	American Indians	Grp 5	
83.5909	Asian/Pacific Islanders	Grp 4	
85.9899	Blacks	Grp 2	*

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8. DIGIT 1 PROXIMAL PHALANX LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 2 5
19.5455	Asian/Pacific Islanders	Grp 4	
20.1915	Hispanics	Grp 3	
20.9958	Whites	Grp 1	
21.8249	Blacks	Grp 2	* * *
22.1429	American Indians	Grp 5	

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9. DIGIT 1 DISTAL PHALANX LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 3 4 5 1 2
33.8085	Hispanics	Grp 3	
33.9545	Asian/Pacific Islanders	Grp 4	
34.0000	American Indians	Grp 5	
34.2102	Whites	Grp 1	
35.3636	Blacks	Grp 2	* *

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

10. DIGIT 2 LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 3 4 1 5 2
73.9362	Hispanics	Grp 3	
74.0909	Asian/Pacific Islanders	Grp 4	
74.7165	Whites	Grp 1	
75.2857	American Indians	Grp 5	
77.3670	Blacks	Grp 2	* * *

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11. DIGIT 2 HEIGHT

Mean	Race	Group	G G G G G r r r r r p p p p p 3 4 1 5 2
176.1702	Hispanics	Grp 3	
176.1818	Asian/Pacific Islanders	Grp 4	
178.6361	Whites	Grp 1	
182.5714	American Indians	Grp 5	
184.7104	Blacks	Grp 2	* * *

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12. DIGIT 2 TIP TO WRIST CREASE

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
181.1818	Asian/Pacific Islanders	Grp 4	
181.7660	Hispanics	Grp 3	
183.5740	Whites	Grp 1	
187.1429	American Indians	Grp 5	
190.3973	Blacks	Grp 2	* * *

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

13. DIGIT 2 PROXIMAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 2 1 5
21.9091	Asian/Pacific Islanders	Grp 4	
22.7660	Hispanics	Grp 3	
22.7710	Blacks	Grp 2	
23.1044	Whites	Grp 1	*
23.8571	American Indians	Grp 5	

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14. DIGIT 2 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 2 1 5
67.2982	Asian/Pacific Islanders	Grp 4	
68.1623	Hispanics	Grp 3	
68.2084	Blacks	Grp 2	
68.5763	Whites	Grp 1	*
68.7343	American Indians	Grp 5	

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15. DIGIT 2 DISTAL INTERPHALANGEAL JOINT BREADTH

NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

16. DIGIT 2 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	G r p 4	G r p 3	G r p 5	G r p 2	G r p 1
56.4314	Asian/Pacific Islanders	Grp 4					
57.1351	Hispanics	Grp 3					
57.1614	American Indians	Grp 5					
57.2066	Blacks	Grp 2					
57.5327	Whites	Grp 1	*				

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17. DIGIT 2 LINK LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 5	G r p 1	G r p 2
105.5909	Asian/Pacific Islanders	Grp 4					
105.9149	Hispanics	Grp 3					
107.1429	American Indians	Grp 5					
107.4838	Whites	Grp 1					
111.5118	Blacks	Grp 2	*	*		*	

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18. DIGIT 2 METACARPAL LINK LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 2	G r p 5
75.5909	Asian/Pacific Islanders	Grp 4					
75.8511	Hispanics	Grp 3					
76.0903	Whites	Grp 1					
78.8855	Blacks	Grp 2	*	*	*		
80.0000	American Indians	Grp 5					

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

19. DIGIT 2 DISTAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 5	G r p 4	G r p 3	G r p 1	G r p 2
27.8571	American Indians	Grp 5					
27.9545	Asian/Pacific Islanders	Grp 4					
28.0638	Hispanics	Grp 3					
28.1876	Whites	Grp 1					
29.0943	Blacks	Grp 2					*

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20. DIGIT 2 MEDIAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 3	G r p 4	G r p 1	G r p 5	G r p 2
21.4681	Hispanics	Grp 3					
21.5000	Asian/Pacific Islanders	Grp 4					
22.1946	Whites	Grp 1					
23.1429	American Indians	Grp 5					
23.8485	Blacks	Grp 2	*	*	*		

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21. DIGIT 2 PROXIMAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 5	G r p 4	G r p 3	G r p 1	G r p 2
58.7143	American Indians	Grp 5					
59.0000	Asian/Pacific Islanders	Grp 4					
59.6170	Hispanics	Grp 3					
60.3300	Whites	Grp 1					
62.5387	Blacks	Grp 2				*	*

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

22. DIGIT 3 LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
82.1818	Asian/Pacific Islanders	Grp 4					
82.2128	Hispanics	Grp 3					
82.9140	Whites	Grp 1					
84.0000	American Indians	Grp 5					
86.7778	Blacks	Grp 2	*	*	*		

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23. DIGIT 3 HEIGHT

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
189.0000	Asian/Pacific Islanders	Grp 4					
190.3191	Hispanics	Grp 3					
192.0028	Whites	Grp 1					
198.0000	American Indians	Grp 5					
200.7710	Blacks	Grp 2	*	*	*		

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24. DIGIT 3 TIP TO WRIST CREASE

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
189.4091	Asian/Pacific Islanders	Grp 4					
190.8298	Hispanics	Grp 3					
192.3329	Whites	Grp 1					
198.1429	American Indians	Grp 5					
201.0943	Blacks	Grp 2	*	*	*		

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

25. DIGIT 3 PROXIMAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	G r p 4	G r p 3	G r p 5	G r p 2	G r p 1
21.4545	Asian/Pacific Islanders	Grp 4					
22.1489	Hispanics	Grp 3					
22.2857	American Indians	Grp 5					
22.4781	Blacks	Grp 2					
22.5529	Whites	Grp 1	*				

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26. DIGIT 3 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	G r p 4	G r p 3	G r p 5	G r p 2	G r p 1
68.2655	Asian/Pacific Islanders	Grp 4					
69.2117	Hispanics	Grp 3					
69.2243	American Indians	Grp 5					
69.6524	Blacks	Grp 2	*				
69.7072	Whites	Grp 1	*				

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27. DIGIT 3 DISTAL INTERPHALANGEAL JOINT BREADTH

NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

28. DIGIT 3 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	G r p 4	G r p 5	G r p 3	G r p 1	G r p 2
56.8164	Asian/Pacific Islanders	Grp 4					
57.3871	American Indians	Grp 5					
57.5647	Hispanics	Grp 3					
57.8972	Whites	Grp 1	*				
57.9047	Blacks	Grp 2	*				

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29. DIGIT 3 LINK LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
108.4545	Asian/Pacific Islanders	Grp 4					
108.4681	Hispanics	Grp 3					
108.9535	Whites	Grp 1					
112.2857	American Indians	Grp 5					
112.7811	Blacks	Grp 2		*	*		

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30. DIGIT 3 METACARPAL LINK LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
80.9545	Asian/Pacific Islanders	Grp 4					
82.3617	Hispanics	Grp 3					
83.3794	Whites	Grp 1					
85.8571	American Indians	Grp 5					
88.3131	Blacks	Grp 2	*	*	*		

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

31. DIGIT 3 DISTAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
28.7727	Asian/Pacific Islanders	Grp 4					
28.8936	Hispanics	Grp 3					
29.5120	Whites	Grp 1					
29.5714	American Indians	Grp 5					
30.7508	Blacks	Grp 2	*	*	*		

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32. DIGIT 3 MEDIAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 4	G r p 1	G r p 3	G r p 5	G r p 2
25.1364	Asian/Pacific Islanders	Grp 4					
25.5966	Whites	Grp 1					
25.7234	Hispanics	Grp 3					
27.4286	American Indians	Grp 5					
28.4781	Blacks	Grp 2	*	*	*		

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33. DIGIT 3 PROXIMAL PHALANX LINK LENGTH

NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

34. DIGIT 4 LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 3 1 4 5 2
78.0426	Hispanics	Grp 3	
78.2595	Whites	Grp 1	
78.7273	Asian/Pacific Islanders	Grp 4	
79.5714	American Indians	Grp 5	
81.9158	Blacks	Grp 2	* *

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35. DIGIT 4 HEIGHT

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
175.4545	Asian/Pacific Islanders	Grp 4	
177.8298	Hispanics	Grp 3	
177.9915	Whites	Grp 1	
184.5714	American Indians	Grp 5	
186.9360	Blacks	Grp 2	* * *

---

36. DIGIT 4 TIP TO WRIST CREASE

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
180.2273	Asian/Pacific Islanders	Grp 4	
181.9574	Hispanics	Grp 3	
182.6417	Whites	Grp 1	
188.5714	American Indians	Grp 5	
192.1717	Blacks	Grp 2	* * *

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

37. DIGIT 4 PROXIMAL INTERPHALANGEAL JOINT BREADTH

NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

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38. DIGIT 4 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

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39. DIGIT 4 DISTAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	G r p 4	G r p 5	G r p 3	G r p 2	G r p 1
17.5455	Asian/Pacific Islanders	Grp 4					
18.0000	American Indians	Grp 5					
18.1064	Hispanics	Grp 3					
18.5421	Blacks	Grp 2	*				
18.5726	Whites	Grp 1	*				

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

40. DIGIT 4 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

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41. DIGIT 4 LINK LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
105.7727	Asian/Pacific Islanders	Grp 4					
105.8511	Hispanics	Grp 3					
105.8928	Whites	Grp 1					
109.0000	American Indians	Grp 5					
110.0269	Blacks	Grp 2	*	*	*		

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42. DIGIT 4 METACARPAL LINK LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
74.4545	Asian/Pacific Islanders	Grp 4					
76.1064	Hispanics	Grp 3					
76.7489	Whites	Grp 1					
79.5714	American Indians	Grp 5					
82.1448	Blacks	Grp 2	*	*	*		

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

43. DIGIT 4 DISTAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 5	G r p 1	G r p 2
28.8636	Asian/Pacific Islanders	Grp 4					
28.9787	Hispanics	Grp 3					
29.1429	American Indians	Grp 5					
29.3907	Whites	Grp 1					
30.4714	Blacks	Grp 2		*		*	

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44. DIGIT 4 MEDIAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 1	G r p 4	G r p 3	G r p 5	G r p 2
23.5783	Whites	Grp 1					
23.5909	Asian/Pacific Islanders	Grp 4					
23.8936	Hispanics	Grp 3					
25.4286	American Indians	Grp 5					
26.1818	Blacks	Grp 2	*	*	*		

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45. DIGIT 4 PROXIMAL PHALANX LINK LENGTH

NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

46. DIGIT 5 LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 3 4 1 5 2
63.2979	Hispanics	Grp 3	
64.0455	Asian/Pacific Islanders	Grp 4	
64.3089	Whites	Grp 1	
64.8571	American Indians	Grp 5	
66.2727	Blacks	Grp 2	* *

---

47. DIGIT 5 HEIGHT

Mean	Race	Group	G G G G G r r r r r p p p p p 4 1 3 5 2
141.0000	Asian/Pacific Islanders	Grp 4	
143.4852	Whites	Grp 1	
143.8511	Hispanics	Grp 3	
148.5714	American Indians	Grp 5	
150.9933	Blacks	Grp 2	* * *

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48. DIGIT 5 TIP TO WRIST CREASE

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
157.1818	Asian/Pacific Islanders	Grp 4	
157.3191	Hispanics	Grp 3	
157.6347	Whites	Grp 1	
162.8571	American Indians	Grp 5	
166.5286	Blacks	Grp 2	* * *

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

49. DIGIT 5 PROXIMAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	G r p 4	G r p 5	G r p 3	G r p 1	G r p 2
18.2273	Asian/Pacific Islanders	Grp 4					
19.0000	American Indians	Grp 5					
19.0851	Hispanics	Grp 3					
19.1551	Whites	Grp 1	*				
19.3199	Blacks	Grp 2	*				

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50. DIGIT 5 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	G r p 4	G r p 5	G r p 3	G r p 1	G r p 2
56.4423	Asian/Pacific Islanders	Grp 4					
57.3657	American Indians	Grp 5					
57.6640	Hispanics	Grp 3					
57.8262	Whites	Grp 1	*				
58.0139	Blacks	Grp 2	*				

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51. DIGIT 5 DISTAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	G r p 5	G r p 4	G r p 3	G r p 2	G r p 1
16.4286	American Indians	Grp 5					
16.5000	Asian/Pacific Islanders	Grp 4					
17.1489	Hispanics	Grp 3					
17.3838	Blacks	Grp 2		*			
17.4330	Whites	Grp 1		*			

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

52. DIGIT 5 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	Grp 4	Grp 5	Grp 3	Grp 1	Grp 2
47.9709	Asian/Pacific Islanders	Grp 4					
48.4929	American Indians	Grp 5					
48.9800	Hispanics	Grp 3					
49.1987	Whites	Grp 1	*				
49.2900	Blacks	Grp 2	*				

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53. DIGIT 5 LINK

Mean	Race	Group	Grp 3	Grp 4	Grp 1	Grp 5	Grp 2
84.8298	Hispanics	Grp 3					
84.9545	Asian/Pacific Islanders	Grp 4					
85.2355	Whites	Grp 1					
87.0000	American Indians	Grp 5					
88.5387	Blacks	Grp 2	*	*			

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54. DIGIT 5 METACARPAL LINK LENGTH

Mean	Race	Group	Grp 4	Grp 1	Grp 3	Grp 5	Grp 2
72.2273	Asian/Pacific Islanders	Grp 4					
72.3992	Whites	Grp 1					
72.4894	Hispanics	Grp 3					
75.8571	American Indians	Grp 5					
77.9899	Blacks	Grp 2	*	*	*		

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

55. DIGIT 5 DISTAL PHALANX LINK LENGTH

Mean	Race	Group	Grp 3	Grp 5	Grp 4	Grp 1	Grp 2
26.4894	Hispanics	Grp 3					
26.5714	American Indians	Grp 5					
27.0909	Asian/Pacific Islanders	Grp 4					
27.1425	Whites	Grp 1					
27.8485	Blacks	Grp 2	*			*	

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56. DIGIT 5 MEDIAL PHALANX LINK LENGTH

Mean	Race	Group	Grp 4	Grp 3	Grp 1	Grp 5	Grp 2
16.5909	Asian/Pacific Islanders	Grp 4					
16.9149	Hispanics	Grp 3					
17.0790	Whites	Grp 1					
17.5714	American Indians	Grp 5					
18.6902	Blacks	Grp 2	*	*	*		

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57. DIGIT 5 PROXIMAL PHALANX LINK LENGTH

Mean	Race	Group	Grp 1	Grp 4	Grp 3	Grp 2	Grp 5
41.2779	Whites	Grp 1					
41.5455	Asian/Pacific Islanders	Grp 4					
41.8085	Hispanics	Grp 3					
42.2862	Blacks	Grp 2	*				
42.5714	American Indians	Grp 5					

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

58. HAND LENGTH FROM DIGITIZER

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
189.0000	Asian/Pacific Islanders	Grp 4					
190.3191	Hispanics	Grp 3					
192.0028	Whites	Grp 1					
198.0000	American Indians	Grp 5					
200.7710	Blacks	Grp 2	*	*	*		

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59. HAND LENGTH MEASURED

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
187.7273	Asian/Pacific Islanders	Grp 4					
188.7660	Hispanics	Grp 3					
192.1016	Whites	Grp 1					
199.4286	American Indians	Grp 5					
200.5589	Blacks	Grp 2	*	*	*		

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60. HAND CIRCUMFERENCE

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 2	G r p 5
207.6818	Asian/Pacific Islanders	Grp 4					
209.2340	Hispanics	Grp 3					
213.5388	Whites	Grp 1					
216.1650	Blacks	Grp 2	*	*	*		
216.8571	American Indians	Grp 5					

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

61. PALM LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
106.7273	Asian/Pacific Islanders	Grp 4					
108.3830	Hispanics	Grp 3					
109.2638	Whites	Grp 1					
114.1429	American Indians	Grp 5					
114.1785	Blacks	Grp 2	*	*	*		

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62. HAND BREADTH FROM DIGITIZER

NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

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63. HAND BREADTH MEASURED

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 2	G r p 5
87.0909	Asian/Pacific Islanders	Grp 4					
88.3617	Hispanics	Grp 3					
90.2228	Whites	Grp 1	*				
91.3636	Blacks	Grp 2	*	*	*		
91.7143	American Indians	Grp 5					

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

64. WRIST BREADTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 2 1 5
62.2273	Asian/Pacific Islanders	Grp 4	
64.2340	Hispanics	Grp 3	
65.1313	Blacks	Grp 2	
66.3047	Whites	Grp 1	* * *
66.4286	American Indians	Grp 5	

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65. WRIST CIRCUMFERENCE

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 2 1 5
167.1818	Asian/Pacific Islanders	Grp 4	
169.7447	Hispanics	Grp 3	
174.4478	Blacks	Grp 2	* *
174.7137	Whites	Grp 1	* *
178.0000	American Indians	Grp 5	

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66. WRIST CENTER OF GRIP LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 2 5
68.5909	Asian/Pacific Islanders	Grp 4	
68.8936	Hispanics	Grp 3	
69.2130	Whites	Grp 1	
71.7508	Blacks	Grp 2	* *
72.0000	American Indians	Grp 5	

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

67. WRIST INDEX FINGER LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
175.4545	Asian/Pacific Islanders	Grp 4	
176.2340	Hispanics	Grp 3	
179.7236	Whites	Grp 1	
185.7143	American Indians	Grp 5	
185.7475	Blacks	Grp 2	* * *

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68. WRIST-THUMBTIP LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
121.1364	Asian/Pacific Islanders	Grp 4	
121.8511	Hispanics	Grp 3	
123.4767	Whites	Grp 1	
127.4286	American Indians	Grp 5	
127.9024	Blacks	Grp 2	* * *

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69. CROTCH 1

Mean	Race	Group	G G G G G r r r r r p p p p p 3 1 4 5 2
68.1064	Hispanics	Grp 3	
68.2934	Whites	Grp 1	
69.0909	Asian/Pacific Islanders	Grp 4	
69.8571	American Indians	Grp 5	
71.2525	Blacks	Grp 2	* *

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

70. CROTCH 2

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
107.3182	Asian/Pacific Islanders	Grp 4	
107.9787	Hispanics	Grp 3	
109.2750	Whites	Grp 1	
113.2857	American Indians	Grp 5	
113.9596	Blacks	Grp 2	* * *

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71. CROTCH 3

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
106.4091	Asian/Pacific Islanders	Grp 4	
107.7447	Hispanics	Grp 3	
108.4612	Whites	Grp 1	
112.8571	American Indians	Grp 5	
114.2963	Blacks	Grp 2	* * *

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72. CROTCH 4

Mean	Race	Group	G G G G G r r r r r p p p p p 4 1 3 5 2
93.5000	Asian/Pacific Islanders	Grp 4	
95.0874	Whites	Grp 1	
95.1915	Hispanics	Grp 3	
99.4286	American Indians	Grp 5	
100.9697	Blacks	Grp 2	* * *

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

73. FOREARM-HAND LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
466.2727	Asian/Pacific Islanders	Grp 4	
469.1702	Hispanics	Grp 3	
479.0324	Whites	Grp 1	*
497.1429	American Indians	Grp 5	* *
500.4276	Blacks	Grp 2	* * *

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74. ELBOW-WRIST LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
278.5455	Asian/Pacific Islanders	Grp 4	
280.4043	Hispanics	Grp 3	
286.9309	Whites	Grp 1	*
297.7143	American Indians	Grp 5	*
299.8687	Blacks	Grp 2	* * *

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75. ELBOW-CENTER OF GRIP LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
347.1364	Asian/Pacific Islanders	Grp 4	
349.2979	Hispanics	Grp 3	
356.1439	Whites	Grp 1	
369.7143	American Indians	Grp 5	* *
371.6195	Blacks	Grp 2	* * *

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

76. RADIALE-STYLION LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
257.7273	Asian/Pacific Islanders	Grp 4	
259.4894	Hispanics	Grp 3	
265.6121	Whites	Grp 1	
275.7143	American Indians	Grp 5	
280.4781	Blacks	Grp 2	* * *

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77. FOREARM CIRCUMFERENCE, FLEXED

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
290.1364	Asian/Pacific Islanders	Grp 4	
294.5532	Hispanics	Grp 3	
302.3780	Whites	Grp 1	
302.5714	American Indians	Grp 5	
310.0236	Blacks	Grp 2	* * *

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78. BICEPS CIRCUMFERENCE, FLEXED

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
324.8182	Asian/Pacific Islanders	Grp 4	
330.5745	Hispanics	Grp 3	
335.4824	Whites	Grp 1	
342.4286	American Indians	Grp 5	
348.3771	Blacks	Grp 2	* * *

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

79. ARM LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
764.5455	Asian/Pacific Islanders	Grp 4	
766.0000	Hispanics	Grp 3	
785.0621	Whites	Grp 1	*
807.1429	American Indians	Grp 5	
809.7239	Blacks	Grp 2	* * *

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80. SHOULDER-ELBOW LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 2 5
353.6818	Asian/Pacific Islanders	Grp 4	
356.8511	Hispanics	Grp 3	
369.2708	Whites	Grp 1	* *
373.3199	Blacks	Grp 2	* * *
379.4286	American Indians	Grp 5	* *

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81. ACROMION-RADIALE LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 2 5
326.8182	Asian/Pacific Islanders	Grp 4	
330.6596	Hispanics	Grp 3	
340.8829	Whites	Grp 1	* *
345.2694	Blacks	Grp 2	* * *
352.0000	American Indians	Grp 5	* *

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

82. THUMBTIP REACH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
770.0000	Asian/Pacific Islanders	Grp 4	
774.9787	Hispanics	Grp 3	
796.4415	Whites	Grp 1	* *
811.5714	American Indians	Grp 5	
820.2290	Blacks	Grp 2	* * *

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83. WRIST WALL LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
651.7727	Asian/Pacific Islanders	Grp 4	
658.1064	Hispanics	Grp 3	
677.0733	Whites	Grp 1	* *
689.4286	American Indians	Grp 5	
696.6027	Blacks	Grp 2	* * *

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84. WRIST WALL LENGTH EXTENDED

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
712.1364	Asian/Pacific Islanders	Grp 4	
719.5745	Hispanics	Grp 3	
744.0197	Whites	Grp 1	* *
758.8571	American Indians	Grp 5	
762.8384	Blacks	Grp 2	* * *

Table 14.

SCHEFFE POST-HOC RACE COMPARISONS FOR MALES
(Continued)

85. STATURE

Mean	Race	Group	Grp 4	Grp 3	Grp 2	Grp 1	Grp 5
1707.0455	Asian/Pacific Islanders	Grp 4					
1713.1064	Hispanics	Grp 3					
1757.1178	Blacks	Grp 2	*			*	
1761.5684	Whites	Grp 1	*				
1794.7143	American Indians	Grp 5					

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86. WEIGHT

Mean	Race	Group	Grp 4	Grp 3	Grp 1	Grp 2	Grp 5
697.0909	Asian/Pacific Islanders	Grp 4					
746.2340	Hispanics	Grp 3					
787.5543	Whites	Grp 1					
795.6768	Blacks	Grp 2	*				
858.8571	American Indians	Grp 5	*				

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES

1. DIGIT 1 LENGTH

Mean	Race	Group	G r p 4	G r p 5	G r p 3	G r p 1	G r p 2
60.2800	Asian/Pacific Islanders	Grp 4					
60.7143	American Indians	Grp 5					
60.7600	Hispanics	Grp 3					
62.1734	Whites	Grp 1					
65.2433	Blacks	Grp 2	*	*	*	*	*

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2. DIGIT 1 HEIGHT

Mean	Race	Group	G r p 3	G r p 1	G r p 4	G r p 5	G r p 2
88.9000	Hispanics	Grp 3					
90.3337	Whites	Grp 1					
91.5200	Asian/Pacific Islanders	Grp 4					
92.7143	American Indians	Grp 5					
95.2254	Blacks	Grp 2	*	*			

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3. DIGIT 1 TIP TO WRIST CREASE LENGTH

Mean	Race	Group	G r p 4	G r p 1	G r p 3	G r p 5	G r p 2
121.4000	Asian/Pacific Islanders	Grp 4					
122.6520	Whites	Grp 1					
123.7600	Hispanics	Grp 3					
125.2857	American Indians	Grp 5					
129.9757	Blacks	Grp 2	*	*	*		

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

4. DIGIT 1 INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
20.0400	Asian/Pacific Islanders	Grp 4	
20.2800	Hispanics	Grp 3	
20.4157	Whites	Grp 1	
20.8571	American Indians	Grp 5	
20.8835	Blacks	Grp 2	* * *

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5. DIGIT 1 INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
61.8784	Asian/Pacific Islanders	Grp 4	
62.3488	Hispanics	Grp 3	
62.6147	Whites	Grp 1	
63.4800	American Indians	Grp 5	
63.5316	Blacks	Grp 2	* * *

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6. DIGIT 1 LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 5 1 2
107.2000	Asian/Pacific Islanders	Grp 4	
107.5600	Hispanics	Grp 3	
108.2143	American Indians	Grp 5	
108.7838	Whites	Grp 1	
113.0230	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

7. DIGIT 1 METACARPAL LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 1 3 5 2
73.4000	Asian/Pacific Islanders	Grp 4	
73.7138	Whites	Grp 1	
75.5600	Hispanics	Grp 3	
76.0000	American Indians	Grp 5	
78.6658	Blacks	Grp 2	* * *

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8. DIGIT 1 PROXIMAL PHALANX LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
18.2000	Asian/Pacific Islanders	Grp 4	
18.6200	Hispanics	Grp 3	
18.6995	Whites	Grp 1	
18.9286	American Indians	Grp 5	
19.8515	Blacks	Grp 2	*

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9. DIGIT 1 DISTAL PHALANX LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 3 4 1 5 2
29.5800	Hispanics	Grp 3	
29.8000	Asian/Pacific Islanders	Grp 4	
30.2387	Whites	Grp 1	
30.3571	American Indians	Grp 5	
31.4584	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

10. DIGIT 2 LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 3 4 1 5 2
66.6000	Hispanics	Grp 3	
67.7200	Asian/Pacific Islanders	Grp 4	
68.5701	Whites	Grp 1	
69.0000	American Indians	Grp 5	
70.9629	Blacks	Grp 2	* * *

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11. DIGIT 2 HEIGHT

Mean	Race	Group	G G G G G r r r r r p p p p p 3 4 1 5 2
159.7800	Hispanics	Grp 3	
159.8000	Asian/Pacific Islanders	Grp 4	
162.5095	Whites	Grp 1	
163.6429	American Indians	Grp 5	
168.6530	Blacks	Grp 2	* * *

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12. DIGIT 2 TIP TO WRIST CREASE LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
163.5200	Asian/Pacific Islanders	Grp 4	
164.1200	Hispanics	Grp 3	
166.9382	Whites	Grp 1	
168.5714	American Indians	Grp 5	
173.9449	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

13. DIGIT 2 PROXIMAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 2	G r p 5
19.0800	Asian/Pacific Islanders	Grp 4					
19.6800	Hispanics	Grp 3					
19.8599	Whites	Grp 1					
19.9411	Blacks	Grp 2	*				
20.1429	American Indians	Grp 5					

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14. DIGIT 2 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 2	G r p 5
60.0348	Asian/Pacific Islanders	Grp 4					
60.9190	Hispanics	Grp 3					
61.1762	Whites	Grp 1					
61.3873	Blacks	Grp 2	*				
61.8157	American Indians	Grp 5					

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15. DIGIT 2 DISTAL INTERPHALANGEAL JOINT BREADTH

NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

16. DIGIT 2 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 2 5
49.7756	Asian/Pacific Islanders	Grp 4	
50.5542	Hispanics	Grp 3	
50.7781	Whites	Grp 1	
50.9934	Blacks	Grp 2	*
51.4129	American Indians	Grp 5	

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17. DIGIT 2 LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
95.9600	Asian/Pacific Islanders	Grp 4	
96.3400	Hispanics	Grp 3	
98.7031	Whites	Grp 1	
99.4286	American Indians	Grp 5	
102.3739	Blacks	Grp 2	* * *

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18. DIGIT 2 METACARPAL LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
67.5600	Asian/Pacific Islanders	Grp 4	
67.7800	Hispanics	Grp 3	
68.2352	Whites	Grp 1	
69.1429	American Indians	Grp 5	
71.5711	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

19. DIGIT 2 DISTAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 3	G r p 4	G r p 5	G r p 1	G r p 2
24.4800	Hispanics	Grp 3					
24.6000	Asian/Pacific Islanders	Grp 4					
25.0000	American Indians	Grp 5					
25.1675	Whites	Grp 1					
25.9437	Blacks	Grp 2	*	*		*	

---

20. DIGIT 2 MEDIAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 3	G r p 4	G r p 1	G r p 5	G r p 2
19.9600	Hispanics	Grp 3					
20.4800	Asian/Pacific Islanders	Grp 4					
20.5036	Whites	Grp 1					
21.0000	American Indians	Grp 5					
21.9001	Blacks	Grp 2	*	*	*		

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21. DIGIT 2 PROXIMAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
53.9200	Asian/Pacific Islanders	Grp 4					
54.2600	Hispanics	Grp 3					
55.5843	Whites	Grp 1					
57.1429	American Indians	Grp 5					
57.5903	Blacks	Grp 2	*	*	*		

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

22. DIGIT 3 LENGTH

Mean	Race	Group	G r p 3	G r p 4	G r p 1	G r p 5	G r p 2
74.3400	Hispanics	Grp 3					
74.6400	Asian/Pacific Islanders	Grp 4					
75.6829	Whites	Grp 1					
76.8571	American Indians	Grp 5					
79.2996	Blacks	Grp 2	*	*	*		

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23. DIGIT 3 HEIGHT

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
170.7200	Asian/Pacific Islanders	Grp 4					
172.0800	Hispanics	Grp 3					
174.1817	Whites	Grp 1					
176.5000	American Indians	Grp 5					
183.0858	Blacks	Grp 2	*	*	*		

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24. DIGIT 3 TIP TO WRIST CREASE LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
171.0800	Asian/Pacific Islanders	Grp 4					
172.5800	Hispanics	Grp 3					
174.5748	Whites	Grp 1					
177.1429	American Indians	Grp 5					
183.5378	Blacks	Grp 2	*	*	*		

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

25. DIGIT 3 PROXIMAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	Grp 4	Grp 1	Grp 3	Grp 2	Grp 5
18.6800	Asian/Pacific Islanders	Grp 4					
19.2530	Whites	Grp 1					
19.3200	Hispanics	Grp 3					
19.5339	Blacks	Grp 2	*	*			
19.5714	American Indians	Grp 5					

---

26. DIGIT 3 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	Grp 4	Grp 1	Grp 3	Grp 2	Grp 5
60.3556	Asian/Pacific Islanders	Grp 4					
61.1482	Whites	Grp 1					
61.2866	Hispanics	Grp 3					
61.6731	Blacks	Grp 2	*	*			
61.7686	American Indians	Grp 5					

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27. DIGIT 3 DISTAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	Grp 4	Grp 1	Grp 3	Grp 2	Grp 5
16.6800	Asian/Pacific Islanders	Grp 4					
16.9430	Whites	Grp 1					
17.0600	Hispanics	Grp 3					
17.3291	Blacks	Grp 2				*	
17.4286	American Indians	Grp 5					

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

28. DIGIT 3 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	Grp 4	Grp 1	Grp 3	Grp 2	Grp 5
50.1236	Asian/Pacific Islanders	Grp 4					
50.7093	Whites	Grp 1					
50.8572	Hispanics	Grp 3					
51.2331	Blacks	Grp 2	*	*			
51.3471	American Indians	Grp 5					

---

29. DIGIT 3 LINK LENGTH

Mean	Race	Group	Grp 3	Grp 4	Grp 1	Grp 5	Grp 2
96.3800	Hispanics	Grp 3					
97.9600	Asian/Pacific Islanders	Grp 4					
98.7506	Whites	Grp 1					
99.8571	American Indians	Grp 5					
102.5915	Blacks	Grp 2	*	*	*		

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30. DIGIT 3 METACARPAL LINK LENGTH

Mean	Race	Group	Grp 4	Grp 1	Grp 3	Grp 5	Grp 2
73.1200	Asian/Pacific Islanders	Grp 4					
75.8242	Whites	Grp 1					
76.2000	Hispanics	Grp 3					
77.2857	American Indians	Grp 5					
80.9462	Blacks	Grp 2	*	*	*		

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

31. DIGIT 3 DISTAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 3	G r p 4	G r p 5	G r p 1	G r p 2
25.0800	Hispanics	Grp 3					
25.2000	Asian/Pacific Islanders	Grp 4					
25.5000	American Indians	Grp 5					
26.0986	Whites	Grp 1	*				
27.1665	Blacks	Grp 2	*	*		*	

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32. DIGIT 3 MEDIAL PHALANX LINK LENGTH

Mean	Race	Group	G r p 1	G r p 3	G r p 4	G r p 5	G r p 2
23.8587	Whites	Grp 1					
23.9600	Hispanics	Grp 3					
24.1600	Asian/Pacific Islanders	Grp 4					
25.0714	American Indians	Grp 5					
26.6069	Blacks	Grp 2	*	*	*		

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33. DIGIT 3 PROXIMAL PHALANX LINK LENGTH

NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

34. DIGIT 4 LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 3 4 1 5 2
69.9400	Hispanics	Grp 3	
70.0800	Asian/Pacific Islanders	Grp 4	
70.7815	Whites	Grp 1	
72.7143	American Indians	Grp 5	
74.1895	Blacks	Grp 2	* * *

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35. DIGIT 4 HEIGHT

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
157.0800	Asian/Pacific Islanders	Grp 4	
159.4000	Hispanics	Grp 3	
160.9703	Whites	Grp 1	
164.0000	American Indians	Grp 5	
169.6876	Blacks	Grp 2	* * *

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36. DIGIT 4 TIP TO WRIST CREASE LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
161.8000	Asian/Pacific Islanders	Grp 4	
163.7600	Hispanics	Grp 3	
165.0071	Whites	Grp 1	
168.6429	American Indians	Grp 5	
174.3252	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

37. DIGIT 4 PROXIMAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	Grp 4	Grp 3	Grp 1	Grp 5	Grp 2
17.7200	Asian/Pacific Islanders	Grp 4					
18.1600	Hispanics	Grp 3					
18.2280	Whites	Grp 1					
18.5714	American Indians	Grp 5					
18.6761	Blacks	Grp 2	*		*		

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38. DIGIT 4 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	Grp 4	Grp 3	Grp 1	Grp 5	Grp 2
56.4456	Asian/Pacific Islanders	Grp 4					
56.9976	Hispanics	Grp 3					
57.1160	Whites	Grp 1					
57.7571	American Indians	Grp 5					
57.7958	Blacks	Grp 2	*		*		

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39. DIGIT 4 DISTAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	Grp 4	Grp 3	Grp 1	Grp 2	Grp 5
15.5200	Asian/Pacific Islanders	Grp 4					
15.6200	Hispanics	Grp 3					
15.6841	Whites	Grp 1					
15.9590	Blacks	Grp 2				*	
16.0714	American Indians	Grp 5					

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

40. DIGIT 4 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 2 5
46.2044	Asian/Pacific Islanders	Grp 4	
46.5502	Hispanics	Grp 3	
46.6499	Whites	Grp 1	
47.1664	Blacks	Grp 2	*
47.2136	American Indians	Grp 5	

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41. DIGIT 4 LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
94.3600	Asian/Pacific Islanders	Grp 4	
94.4000	Hispanics	Grp 3	
95.6473	Whites	Grp 1	
97.5714	American Indians	Grp 5	
99.7554	Blacks	Grp 2	* * *

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42. DIGIT 4 METACARPAL LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 1 3 5 2
67.4400	Asian/Pacific Islanders	Grp 4	
69.3599	Whites	Grp 1	
69.3600	Hispanics	Grp 3	
71.0714	American Indians	Grp 5	
74.5698	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

43. DIGIT 4 DISTAL PHALANX LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 5 1 2
24.3600	Asian/Pacific Islanders	Grp 4	
24.7800	Hispanics	Grp 3	
25.3571	American Indians	Grp 5	
25.6010	Whites	Grp 1	
26.7657	Blacks	Grp 2	* * *

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44. DIGIT 4 MEDIAL PHALANX LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 1 3 5 2
21.6000	Asian/Pacific Islanders	Grp 4	
21.7803	Whites	Grp 1	
21.9400	Hispanics	Grp 3	
23.0714	American Indians	Grp 5	
24.1152	Blacks	Grp 2	* * *

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45. DIGIT 4 PROXIMAL PHALANX LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 3 1 4 2 5
47.5000	Hispanics	Grp 3	
48.2055	Whites	Grp 1	
48.3600	Asian/Pacific Islanders	Grp 4	
48.8348	Blacks	Grp 2	*
49.3571	American Indians	Grp 5	

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

46. DIGIT 5 LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
55.8000	Asian/Pacific Islanders	Grp 4					
56.7000	Hispanics	Grp 3					
57.6686	Whites	Grp 1					
58.8571	American Indians	Grp 5					
59.4481	Blacks	Grp 2	*	*	*		

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47. DIGIT 5 HEIGHT

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
125.0000	Asian/Pacific Islanders	Grp 4					
127.1400	Hispanics	Grp 3					
129.3789	Whites	Grp 1					
131.2857	American Indians	Grp 5					
136.1549	Blacks	Grp 2	*	*	*		

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48. DIGIT 5 TIP TO WRIST CREASE LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
138.6000	Asian/Pacific Islanders	Grp 4					
140.6800	Hispanics	Grp 3					
142.2518	Whites	Grp 1					
146.0714	American Indians	Grp 5					
150.2407	Blacks	Grp 2	*	*	*		

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

49. DIGIT 5 PROXIMAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	Grp 4	Grp 3	Grp 1	Grp 5	Grp 2
15.9600	Asian/Pacific Islanders	Grp 4					
16.3000	Hispanics	Grp 3					
16.3504	Whites	Grp 1					
16.7143	American Indians	Grp 5					
16.7875	Blacks	Grp 2	*		*		

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50. DIGIT 5 PROXIMAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	Grp 4	Grp 3	Grp 1	Grp 2	Grp 5
49.7500	Asian/Pacific Islanders	Grp 4					
50.1860	Hispanics	Grp 3					
50.3687	Whites	Grp 1					
50.9809	Blacks	Grp 2	*	*	*		
51.0900	American Indians	Grp 5					

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51. DIGIT 5 DISTAL INTERPHALANGEAL JOINT BREADTH

Mean	Race	Group	Grp 4	Grp 3	Grp 1	Grp 2	Grp 5
14.3200	Asian/Pacific Islanders	Grp 4					
14.4000	Hispanics	Grp 3					
14.6390	Whites	Grp 1					
14.8412	Blacks	Grp 2				*	
15.2143	American Indians	Grp 5					

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

52. DIGIT 5 DISTAL INTERPHALANGEAL JOINT CIRCUMFERENCE

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 2 5
41.8188	Asian/Pacific Islanders	Grp 4	
42.1120	Hispanics	Grp 3	
42.3507	Whites	Grp 1	
42.8132	Blacks	Grp 2	* * *
43.0857	American Indians	Grp 5	

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53. DIGIT 5 LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
74.5600	Asian/Pacific Islanders	Grp 4	
75.0800	Hispanics	Grp 3	
76.4133	Whites	Grp 1	
78.4286	American Indians	Grp 5	
79.4661	Blacks	Grp 2	* * *

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54. DIGIT 5 METACARPAL LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
64.0400	Asian/Pacific Islanders	Grp 4	
65.6000	Hispanics	Grp 3	
65.8385	Whites	Grp 1	
67.6429	American Indians	Grp 5	
70.7746	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

55. DIGIT 5 DISTAL PHALANX LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
22.3200	Asian/Pacific Islanders	Grp 4	
23.0000	Hispanics	Grp 3	
23.4204	Whites	Grp 1	
23.8571	American Indians	Grp 5	
24.0922	Blacks	Grp 2	* * *

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56. DIGIT 5 MEDIAL PHALANX LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
15.3200	Asian/Pacific Islanders	Grp 4	
15.6200	Hispanics	Grp 3	
15.7589	Whites	Grp 1	
16.0714	American Indians	Grp 5	
17.0858	Blacks	Grp 2	* * *

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57. DIGIT 5 PROXIMAL PHALANX LINK LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 3 4 1 2 5
36.6800	Hispanics	Grp 3	
37.1200	Asian/Pacific Islanders	Grp 4	
37.3919	Whites	Grp 1	
38.5032	Blacks	Grp 2	* *
38.6429	American Indians	Grp 5	

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

58. HAND LENGTH FROM DIGITIZER

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
170.7200	Asian/Pacific Islanders	Grp 4					
172.0800	Hispanics	Grp 3					
174.1817	Whites	Grp 1					
176.5000	American Indians	Grp 5					
183.0858	Blacks	Grp 2	*	*	*		

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59. HAND LENGTH MEASURED

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
173.2400	Asian/Pacific Islanders	Grp 4					
174.6000	Hispanics	Grp 3					
177.2185	Whites	Grp 1					
180.2143	American Indians	Grp 5					
185.6095	Blacks	Grp 2	*	*	*		

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60. HAND CIRCUMFERENCE

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 2	G r p 5
180.8800	Asian/Pacific Islanders	Grp 4					
183.3200	Hispanics	Grp 3					
184.9608	Whites	Grp 1					
188.4878	Blacks	Grp 2	*	*	*		
189.0000	American Indians	Grp 5					

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

61. PALM LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
96.2400	Asian/Pacific Islanders	Grp 4	
97.9800	Hispanics	Grp 3	
98.6770	Whites	Grp 1	
100.0714	American Indians	Grp 5	
103.9910	Blacks	Grp 2	* * *

---

62. HAND BREADTH FROM DIGITIZER

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 2 5
80.2400	Asian/Pacific Islanders	Grp 4	
82.1400	Hispanics	Grp 3	
82.6805	Whites	Grp 1	
84.0269	Blacks	Grp 2	* *
84.5000	American Indians	Grp 5	

---

63. HAND BREADTH MEASURED

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
76.7600	Asian/Pacific Islanders	Grp 4	
77.9400	Hispanics	Grp 3	
78.8872	Whites	Grp 1	
80.2857	American Indians	Grp 5	
80.3867	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

64. WRIST BREADTH

Mean	Race	Group	G r p 4	G r p 3	G r p 2	G r p 1	G r p 5
55.2000	Asian/Pacific Islanders	Grp 4					
56.2800	Hispanics	Grp 3					
56.7593	Blacks	Grp 2					
57.2720	Whites	Grp 1					
58.9286	American Indians	Grp 5	*				

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65. WRIST CIRCUMFERENCE

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 2	G r p 5
146.2800	Asian/Pacific Islanders	Grp 4					
147.8800	Hispanics	Grp 3					
151.0808	Whites	Grp 1	*	*			
152.0154	Blacks	Grp 2	*	*			
153.2857	American Indians	Grp 5					

---

66. WRIST CENTER OF GRIP LENGTH

Mean	Race	Group	G r p 5	G r p 3	G r p 1	G r p 4	G r p 2
65.2857	American Indians	Grp 5					
65.3200	Hispanics	Grp 3					
65.4038	Whites	Grp 1					
65.4800	Asian/Pacific Islanders	Grp 4					
67.3880	Blacks	Grp 2		*			

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

67. WRIST INDEX FINGER LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
162.0400	Asian/Pacific Islanders	Grp 4	
163.4800	Hispanics	Grp 3	
167.0724	Whites	Grp 1	
168.7857	American Indians	Grp 5	
172.9667	Blacks	Grp 2	* * *

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68. WRIST-THUMBTIP LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
113.3200	Asian/Pacific Islanders	Grp 4	
113.9400	Hispanics	Grp 3	
115.6223	Whites	Grp 1	
115.8571	American Indians	Grp 5	
120.7529	Blacks	Grp 2	* * *

---

69. CROTCH 1

Mean	Race	Group	G G G G G r r r r r p p p p p 1 3 4 5 2
61.0665	Whites	Grp 1	
61.2600	Hispanics	Grp 3	
62.6000	Asian/Pacific Islanders	Grp 4	
64.4286	American Indians	Grp 5	
65.0115	Blacks	Grp 2	* *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

70. CROTCH 2

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
96.1600	Asian/Pacific Islanders	Grp 4	
97.4000	Hispanics	Grp 3	
98.2993	Whites	Grp 1	
99.8571	American Indians	Grp 5	
103.4405	Blacks	Grp 2	* * *

---

71. CROTCH 3

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
95.4400	Asian/Pacific Islanders	Grp 4	
97.1000	Hispanics	Grp 3	
97.8397	Whites	Grp 1	
99.0714	American Indians	Grp 5	
103.7631	Blacks	Grp 2	* * * *

---

72. CROTCH 4

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
82.8400	Asian/Pacific Islanders	Grp 4	
84.5200	Hispanics	Grp 3	
85.7173	Whites	Grp 1	
87.0000	American Indians	Grp 5	
91.1319	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

73. FOREARM-HAND LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
420.8400	Asian/Pacific Islanders	Grp 4	
428.1800	Hispanics	Grp 3	
433.8563	Whites	Grp 1	*
442.9286	American Indians	Grp 5	*
457.0960	Blacks	Grp 2	* * *

---

74. ELBOW-WRIST LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
247.6000	Asian/Pacific Islanders	Grp 4	
253.5800	Hispanics	Grp 3	
256.6378	Whites	Grp 1	*
262.7143	American Indians	Grp 5	*
271.4866	Blacks	Grp 2	* * *

---

75. ELBOW-CENTER OF GRIP LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
313.0800	Asian/Pacific Islanders	Grp 4	
318.9000	Hispanics	Grp 3	
322.0416	Whites	Grp 1	
328.0000	American Indians	Grp 5	
338.8745	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

76. RADIALE-STYLION LENGTH

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
228.8000	Asian/Pacific Islanders	Grp 4					
234.1600	Hispanics	Grp 3					
237.0178	Whites	Grp 1					
242.0000	American Indians	Grp 5					
252.5941	Blacks	Grp 2	*	*	*		

---

77. FOREARM CIRCUMFERENCE, FLEXED

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 5	G r p 2
245.0400	Asian/Pacific Islanders	Grp 4					
247.1600	Hispanics	Grp 3					
252.2090	Whites	Grp 1					
256.2143	American Indians	Grp 5					
256.7375	Blacks	Grp 2	*	*	*		

---

78. BICEPS CIRCUMFERENCE, FLEXED

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 2	G r p 5
275.8000	Asian/Pacific Islanders	Grp 4					
276.6600	Hispanics	Grp 3					
279.5950	Whites	Grp 1					
284.3086	Blacks	Grp 2				*	
292.1429	American Indians	Grp 5					

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

79. ARM LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
684.1600	Asian/Pacific Islanders	Grp 4	
698.3800	Hispanics	Grp 3	
712.0333	Whites	Grp 1	*
724.6429	American Indians	Grp 5	*
741.8143	Blacks	Grp 2	* * *

---

80. SHOULDER-ELBOW LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
313.5200	Asian/Pacific Islanders	Grp 4	
325.3600	Hispanics	Grp 3	
333.7613	Whites	Grp 1	* *
336.8571	American Indians	Grp 5	*
340.2868	Blacks	Grp 2	* * *

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81. ACROMION-RADIALE LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
290.6000	Asian/Pacific Islanders	Grp 4	
302.3000	Hispanics	Grp 3	
309.6306	Whites	Grp 1	* *
311.8571	American Indians	Grp 5	*
316.6492	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

82. THUMBTIP REACH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
695.7600	Asian/Pacific Islanders	Grp 4	
714.4600	Hispanics	Grp 3	
725.4347	Whites	Grp 1	*
736.2857	American Indians	Grp 5	*
750.1959	Blacks	Grp 2	* * *

---

83. WRIST WALL LENGTH

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
583.9600	Asian/Pacific Islanders	Grp 4	
603.9400	Hispanics	Grp 3	
612.4335	Whites	Grp 1	*
622.7857	American Indians	Grp 5	*
632.3816	Blacks	Grp 2	* * *

---

84. WRIST WALL LENGTH EXTENDED

Mean	Race	Group	G G G G G r r r r r p p p p p 4 3 1 5 2
643.3600	Asian/Pacific Islanders	Grp 4	
664.1200	Hispanics	Grp 3	
672.2328	Whites	Grp 1	*
682.0714	American Indians	Grp 5	*
690.6415	Blacks	Grp 2	* * *

Table 15.

SCHEFFE POST HOC RACE COMPARISONS FOR FEMALES
(Continued)

85. STATURE

Mean	Race	Group	G r p 4	G r p 3	G r p 2	G r p 5	G r p 1
1557.6800	Asian/Pacific Islanders	Grp 4					
1587.0600	Hispanics	Grp 3					
1631.0935	Blacks	Grp 2	*	*			
1631.6429	American Indians	Grp 5	*				
1634.1817	Whites	Grp 1	*	*			

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86. WEIGHT

Mean	Race	Group	G r p 4	G r p 3	G r p 1	G r p 2	G r p 5
560.2800	Asian/Pacific Islanders	Grp 4					
602.4600	Hispanics	Grp 3					
618.8575	Whites	Grp 1	*				
626.4545	Blacks	Grp 2	*				
671.7143	American Indians	Grp 5	*				

PRINCIPAL COMPONENTS ANALYSIS

The analysis has, thus far, emphasized the differences among race and sex groups. From the ANOVA and Scheffe's tests, a sense has developed that hand morphology is more distinctive because of sex differences than because of race differences. However, the question now asked is: which two groups show the most general similarity? This is a multivariate question that is addressed here through an application of principal components analysis.

Each subject in the data base is described by 86 different dimensions. If these dimensions are pared down to eliminate close duplicates and non-hand related dimensions (STATURE, WEIGHT, HAND LENGTH MEASURED, HAND BREADTH MEASURED, and the Finger Circumferences) each subject would then be described by 72 dimensions. The problem is to describe the relationships among 10 groups based on a simultaneous consideration of all these dimensions. The function of principal components analysis is to reduce the information contained in the descriptor variables, so that groups can be described by fewer new variables. These new variables (abbreviated PCA) are called the principal components. In this analysis the variation described by the 72 anthropometric variables was reduced to seven principal components -- each component having an eigenvalue greater than one. Each principal component, in effect, describes clumps of variation. Together, these seven components describe over 84% of the variation contained in the original 72 dimensions (see Table 16). Therefore, good comparisons among groups can be based upon these seven components in lieu of the 72 dimensions.

Table 16.

PRINCIPAL COMPONENTS ANALYSIS SUMMARY

PCA	Eigenvalue	Percent of Variation	Cumulative Percent
1	47.901	65.6	65.6
2	5.600	7.7	73.3
3	2.431	3.3	76.6
4	1.955	2.7	79.3
5	1.488	2.0	81.3
6	1.252	1.7	83.1
7	1.086	1.5	84.5

Table 17.

PRINCIPAL COMPONENTS CORRELATION MATRIX

	Dimension	Principal Component						
		PCA1	PCA2	PCA3	PCA4	PCA5	PCA6	PCA7
1	D1 LENGTH	.326	.349	.427	.270	.373	.253	.197
2	D1 HEIGHT	.219	.402	.372	.307	.284	.214	.234
3	D1 TIP TO WRIST	.352	.377	.312	.218	.245	.215	.604
4	D1 IP BREADTH	.723	.202	.115	.301	.218	.129	.179
6	D1 LINK	.490	.339	.344	.264	.316	.256	.314
7	D1 METACARPAL LINK	.254	.323	.170	.100	.097	.158	.746
8	D1 PROX LINK	.129	.219	.456	.298	.051	.153	-.027
9	D1 DIST LINK	.440	.260	.180	.195	.540	.186	.229
10	D2 LENGTH	.252	.281	.549	.271	.488	.306	.155
11	D2 HEIGHT	.343	.519	.422	.326	.343	.330	.179
12	D2 TIP TO WRIST	.321	.522	.432	.319	.336	.353	.234
13	D2 PIP BREADTH	.848	.180	.092	.155	.150	.119	.093
15	D2 DIP BREADTH	.847	.144	.085	.107	.176	.108	.083
17	D2 LINK	.245	.323	.462	.274	.373	.412	.231
18	D2 METACARPAL LINK	.335	.642	.277	.292	.197	.181	.175
19	D2 DISTAL LINK	.318	.268	.154	.196	.750	.152	.136
20	D2 MEDIAL LINK	.110	.232	.722	.191	.085	.172	.185
21	D2 PROXIMAL LINK	.187	.240	.220	.202	.040	.482	.253
22	D3 LENGTH	.251	.316	.567	.295	.472	.308	.122
23	D3 HEIGHT	.325	.567	.439	.322	.345	.329	.177
24	D3 TIP TO WRIST	.322	.569	.439	.322	.345	.329	.176
25	D3 PIP BREADTH	.862	.188	.122	.175	.143	.135	.092
27	D3 DIP BREADTH	.872	.157	.105	.108	.153	.121	.092
29	D3 LINK	.288	.256	.442	.289	.397	.569	.146
30	D3 METACARPAL LINK	.266	.782	.303	.267	.177	-.065	.160
31	D3 DISTAL LINK	.331	.297	.181	.204	.748	.148	.121
32	D3 MEDIAL LINK	.016	.279	.778	.209	.093	.082	.131
33	D3 PROXIMAL LINK	.251	.097	.140	.222	.145	.811	.101
34	D4 LENGTH	.298	.296	.573	.270	.466	.318	.106
35	D4 HEIGHT	.309	.579	.437	.293	.346	.330	.170
36	D4 TIP TO WRIST	.337	.590	.445	.302	.339	.305	.144
37	D4 PIP BREADTH	.838	.191	.156	.159	.172	.122	.092
39	D4 DIP BREADTH	.856	.165	.109	.094	.146	.133	.078
41	D4 LINK	.349	.291	.476	.267	.417	.512	.116
42	D4 METACARPAL LINK	.249	.820	.308	.278	.170	-.016	.146
43	D4 DISTAL LINK	.376	.304	.188	.204	.716	.148	.075
44	D4 MEDIAL LINK	.061	.269	.776	.196	.107	.097	.129
45	D4 PROXIMAL LINK	.336	.141	.238	.224	.204	.778	.074

Underlined values identify the highest correlation value for each dimension.

Table 17.
(Continued)

PRINCIPAL COMPONENTS CORRELATION MATRIX

Dimension	Principal Component						
	PCA1	PCA2	PCA3	PCA4	PCA5	PCA6	PCA7
46 D5 LENGTH	.342	.247	.587	.173	.450	.291	.076
47 D5 HEIGHT	.270	.561	.440	.239	.338	.313	.166
48 D5 TIP TO WRIST	.329	.602	.465	.244	.301	.264	.117
49 D5 PIP BREADTH	.831	.236	.128	.123	.148	.131	.053
51 D5 DIP BREADTH	.850	.183	.081	.100	.156	.151	.051
53 D5 LINK	.379	.264	.536	.191	.405	.437	.099
54 D5 METACARPAL LINK	.195	.804	.274	.238	.116	.016	.107
55 D5 DISTAL LINK	.417	.269	.223	.189	.672	.136	.085
56 D5 MEDIAL LINK	.111	.220	.767	.078	.093	.105	.112
57 D5 PROXIMAL LINK	.343	.161	.361	.164	.190	.655	.057
58 HAND LENGTH DIG	.325	.567	.439	.322	.345	.329	.177
60 HAND CIRC	.744	.256	.213	.321	.232	.197	.124
61 PALM LENGTH	.347	.710	.279	.305	.198	.307	.200
62 HAND BREADTH DIG	.831	.196	.210	.203	.143	.190	.145
64 WRIST BREADTH	.797	.117	.165	.277	.094	.163	.137
65 WRIST CIRC	.747	.237	.158	.352	.208	.218	.126
66 WRIST-CENTER OF GRIP	.184	.178	.246	.244	.139	.073	.590
67 WRIST-INDEX FINGER	.291	.432	.480	.388	.271	.302	.255
68 WRIST-THUMBTIP	.221	.384	.467	.339	.245	.244	.393
69 CROTCH 1 HEIGHT	.321	.426	.252	.264	.281	.184	.465
70 CROTCH 2 HEIGHT	.352	.661	.270	.305	.285	.288	.214
71 CROTCH 3 HEIGHT	.303	.718	.269	.285	.295	.268	.184
72 CROTCH 4 HEIGHT	.266	.725	.268	.259	.292	.250	.168
73 FOREARM-HAND LENGTH	.351	.433	.384	.598	.237	.227	.192
74 ELBOW-WRIST LENGTH	.343	.379	.302	.680	.201	.182	.169
75 ELBOW-CENTER OF GRIP	.341	.371	.319	.649	.206	.175	.280
76 RADIALE-STYLION	.313	.390	.311	.684	.191	.170	.161
77 FOREARM CIRC, FLEXED	.739	.200	.131	.333	.191	.151	.126
78 BICEPS CIRC, FLEXED	.713	.149	.109	.278	.162	.128	.107
79 ARM LENGTH	.350	.390	.322	.663	.212	.237	.140
80 SHOULDER-ELBOW LGTH	.404	.295	.222	.711	.197	.229	.100
81 ACROMION-RADIALE LGTH	.373	.293	.224	.727	.183	.222	.094
82 THUMBTIP REACH	.372	.334	.293	.696	.218	.222	.165
83 WRIST WALL LENGTH	.390	.311	.250	.721	.201	.206	.126
84 WRIST WALL LGTH, EX	.392	.291	.246	.728	.200	.188	.121

Underlined values identify the highest correlation value for each dimension.

Each principal component is built upon a consideration of all the variables used in the analysis. However, each component is more strongly associated with some variables than with others. These associations are identified by examining the principal components correlation matrix (Table 17). This table presents the association among components and the original dimensions. It is interpreted by identifying the principal component with the highest absolute correlation for each dimension. By identifying the similarities among the dimensions correlated with each component, the components can be interpreted as reflecting a specific aspect of hand morphology (Table 18). Statements on the variation of hand morphology can be based upon these interpretations. For example, the first principal component shows that approximately 65% of variation in the hand is due to differences in breadth and circumference dimensions.

At this point in the analysis, each subject is associated with seven principal component scores. Table 19 presents the mean values of these scores for each race and sex group. The relationship among groups can be illustrated by plotting these mean scores. This presents some problem in that it is difficult to depict, or even conceptualize, a seven dimensional space. One way around this problem is to plot only a few components at a time. The selection of components can be determined by the amounts of variation they describe, or by their association with the original dimensions. Figure 8 shows the first three principal component scores, and thus depicts relationships based on 76.6% of the total variation. Similarity among groups is judged by their proximity in this space. Thus, there appear to be four basic groups of hand similarity. The first group, in the lower right corner, is made up of American Indian Females, Hispanic Females, White Females, and Asian/Pacific Islander Females. A second group is made up of only Black Females. The third group, close to the center, is made up of Hispanic Males, American Indian Males, and White Males. The fourth group, in the upper left, is made up of Black Males and Asian/Pacific Islander Males. Each of these four groups can be interpreted as a cluster of similarity based on hand morphology. Problems with this type of presentation are that it is not based on all the available data and that perspective can make judgement of group positions difficult.

Another way of presenting multidimensional data is with Chernoff Faces (Figure 9). The Chernoff Face was developed from the idea that the human mind is "pre-programmed" to judge facial similarity (Dillon and Goldstein 1984). Chernoff Faces are a more comprehensive depiction of multivariate space since they need not be based on a subset of the available dimensions; these faces are based on a consideration of all seven components. Each component is assigned to a different part of the face, in this case: Component 1 is eye vertical width, Component 2 is eye spacing, Component 3 is nose length, Component 4 is brow length, Component 5 is brow slant, Component 6 is ear length, and Component 7 is mouth length. Group relationships are identified by judging the similarity between faces.

The Chernoff faces show that greater distinctions lie between the sexes than among racial groups. The isolation of Black Females, implied from figure 8, does not seem appropriate when all the components are considered. There also appears to be less of an affinity between Black and Asian/Pacific Islander

Table 18.

INTERPRETIVE SUMMARY OF PRINCIPAL COMPONENTS

Component 1: Breadth and Circumference Dimensions

Component 2: Hand Length Dimensions

Component 3: Finger Length Dimensions

Component 4: Arm and Forearm Length Dimensions

Component 5: Distal Phalanx Link Lengths

Component 6: Proximal Phalanx Link Lengths

Component 7: Miscellaneous Dimensions Associated with Digit 1

Table 19.

MEAN PRINCIPAL COMPONENT SCORES FOR RACE AND SEX GROUPS

	Whites		Blacks		Hispanics		Asians/Pacific Islanders		American Indians	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Component 1	1.01	-0.50	0.68	-0.65	0.83	-0.45	0.45	-0.63	0.60	-0.26
Component 2	0.07	-0.50	0.78	0.21	0.23	-0.40	0.02	-0.67	0.69	-0.35
Component 3	-0.13	-0.32	0.57	0.29	-0.16	-0.30	-0.26	-0.21	0.17	0.00
Component 4	0.40	-0.31	0.53	-0.13	-0.29	-0.60	-0.28	-1.07	0.92	-0.28
Component 5	0.27	-0.17	0.36	-0.17	0.21	-0.51	0.52	-0.33	-0.21	-0.55
Component 6	0.25	-0.04	0.04	-0.23	0.45	-0.31	0.60	0.06	0.44	0.04
Component 7	-0.05	-0.26	0.37	0.16	0.16	-0.02	0.43	0.11	0.04	-0.18

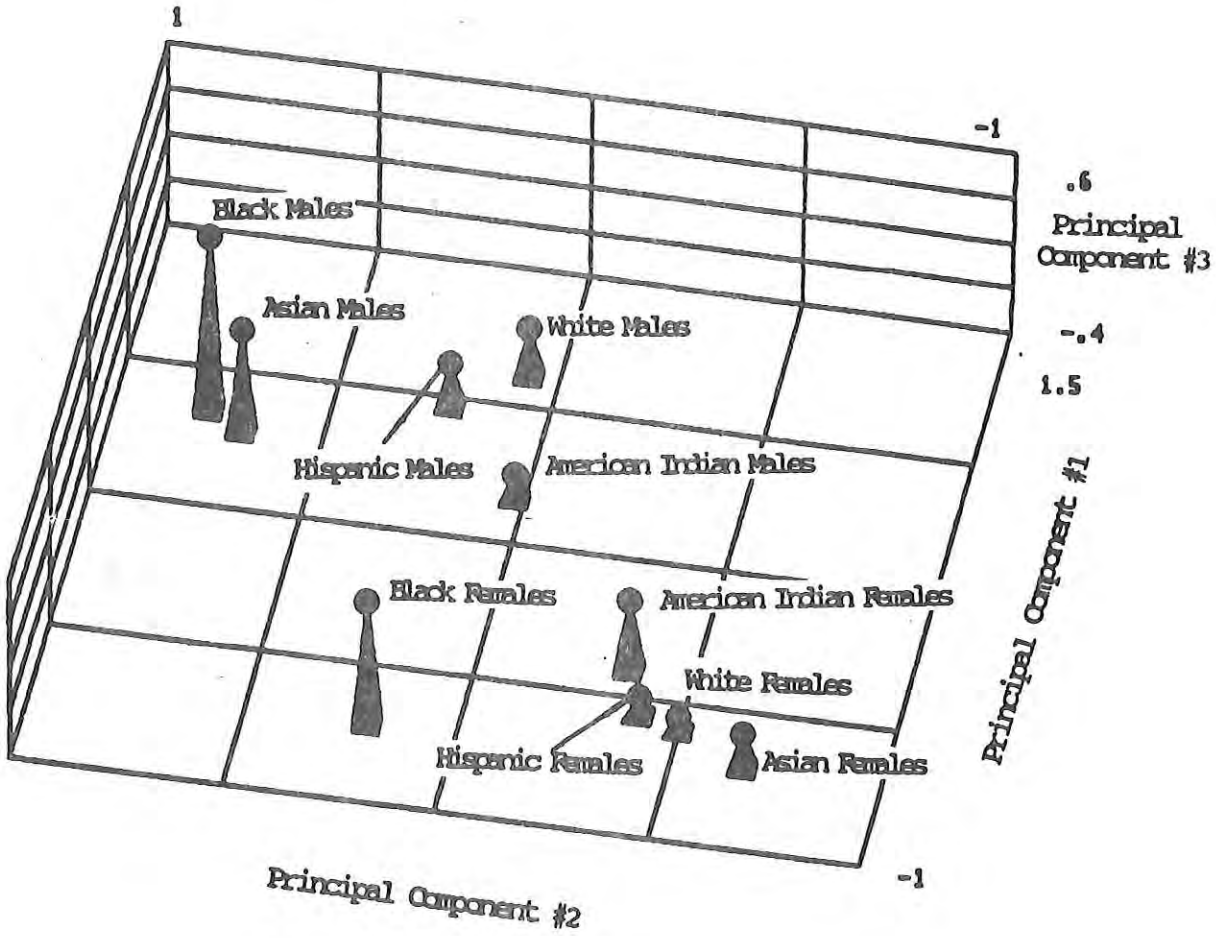


Figure 8. Three Dimensional Plot of the First Three Principal Components.

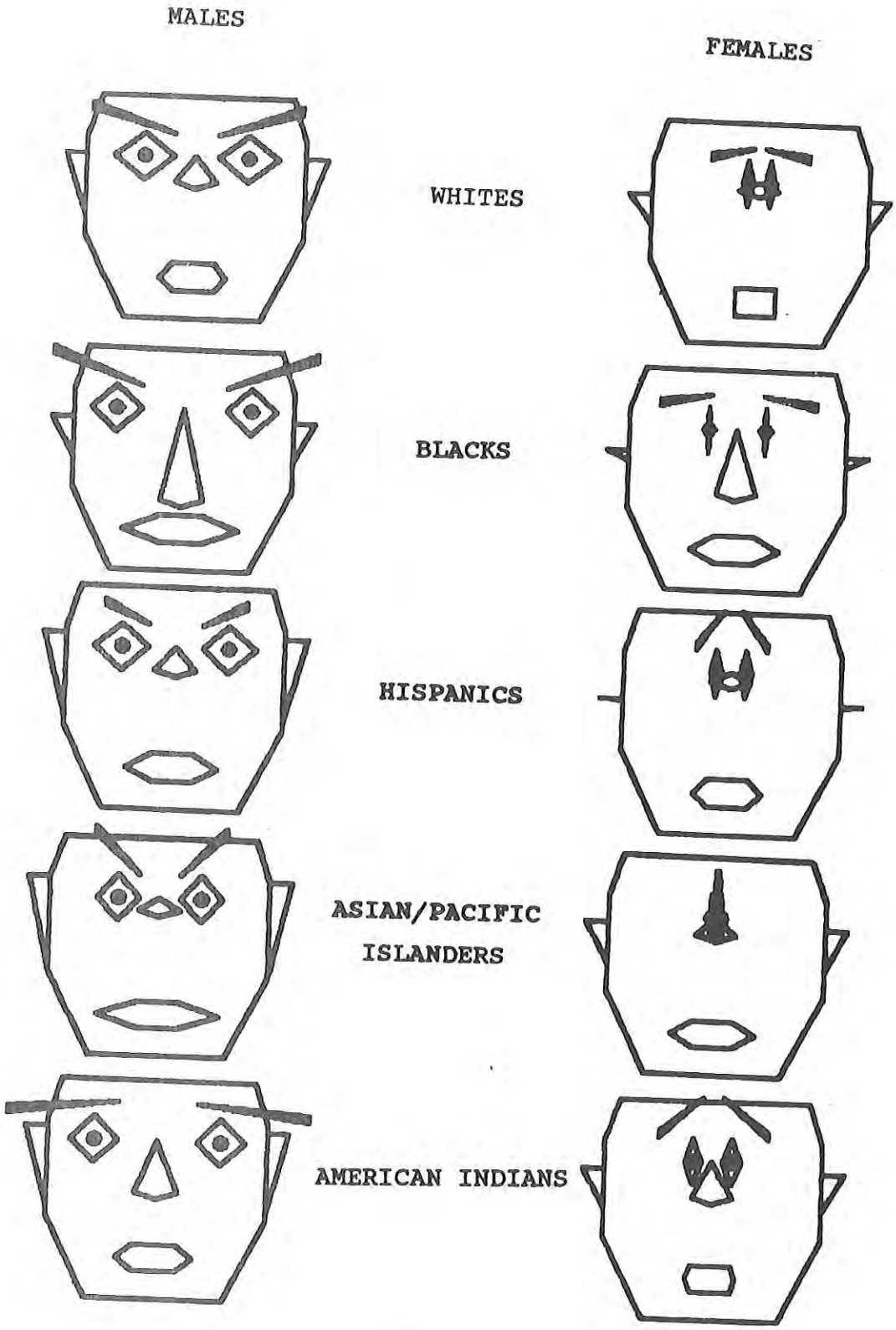


Figure 9. Chernoff Faces Showing Relationships Based on All Seven Principal Components.

Males. Instead, Black and American Indian Males seem more similar. Females still appear to be tightly clustered, more so than males, but American Indian Females now stand out as being the most distinctly different. As might be expected because of their common European heritage, Whites and Hispanics appear to be the most similar among the groups for both males and females.

Several conclusions can be drawn from the principal components analysis. First, most of the variability in hand morphology arises from differences in the breadth and circumference dimensions. This suggests that a consideration of at least one of these dimensions should be incorporated into all handwear and equipment design. Second, finger phalangeal link lengths account for less than 4% of observed variation. This suggests that the biomechanical variations of the fingers need not be stressed in most designs. Third, the greatest population differences in hand morphology do not occur among racial groups, but rather occur between men and women. This suggests that racial variation need not be emphasized in most attempts to accommodate user populations, but that the differences between the sexes must be considered.

CHAPTER V

NONMETRIC TRAIT COMPARISONS

Gathering nonmetric hand data was not a specific goal of the Anthropometric Survey. However, the visual record of the palm of each subject provided an opportunity to count the frequencies of several nonmetric traits. Nonmetric means that the traits are qualitative, and therefore cannot be measured. Instead, they are noted as either being present or absent (as in the simian crease), or are scored as a series of alternatives (as in handedness). Values associated with nonmetric traits have no numerical meaning, and so they cannot be compared using the usual statistics of mean and standard deviation. Instead, nonmetric traits are compared according to their frequencies within groups. Trait frequency distributions among groups are compared using the Chi-Square test. This test determines if the observed differences in frequency distributions might be due to chance. The data for each nonmetric trait is presented first by comparing males with females, and then by comparing race groups within each sex.

HANDEDNESS:

Two of the nonmetric traits presented in this analysis are definitions of handedness. Data on the preferred hand for writing and for weapon firing were gathered from biographical forms used during the survey and are presented in Tables 20 and 21. Lateral dominance, in the form of hand preference, is generally considered a unique human characteristic. Although it has its greatest expression in humans, hand preference has also been experimentally documented in other primates. Non-human primates, however, seem to express a greater preference for the left hand (Napier 1980). The results of Chi-Square tests show that there are no significant differences between the sexes for writing handedness (Chi-Square=1.89; df=3; p=.595) or weapon firing handedness (Chi-Square=5.60; df=3; p=.133). These results concur with the findings of a 1976 study of weapon firing handedness (USA Military Personnel Center, 1976). Similarly, no significant differences were found among the races for writing handedness (Males: Chi-Square=6.36; df=8; p=.606; Females: Chi-Square=15.29; df=8; p=.054) or for weapon firing handedness (Males: Chi-Square=5.86; df=8; p=.663; Females: Chi-Square=6.87; df=8; p=.551). These results indicate that handedness preference is uniform throughout the subgroups of the Army populations. This, in turn, suggests that there are little, or no, biocultural variations that might influence the determination of hand preference.

These data confirm the commonly held belief that right handedness dominates human populations. However, there is some debate whether the low occurrence of left handedness may be in part due to accommodations to a "right hander's world." The incidence of left hand dominance is cited as normally lying between 4 and 10 percent of the population. Some specialists argue, however, that the incidence of left handedness might be as high as 34% if its expression

Table 20.

DISTRIBUTIONS OF WRITING HANDEDNESS

Distribution by Sex:

	Males		Females	
	Frequency	Percent	Frequency	Percent
Right	885	88.3	1160	89.2
Left	112	11.2	131	10.1
Either	5	0.5	10	0.8
MISSING DATA	1		3	
Total	1003	100.0	1304	100.1

Distribution by Race:

MALES:

	RACE					
Hand	Whites	Blacks	Hispanics	Asian/ Pacific	American Indian	Row
Right	620 87.6%	262 88.2%	46 97.9%	20 90.9%	6 85.6%	954
Left	85 12.0%	32 10.8%	1 2.1%	2 9.1%	1 14.3%	121
Either	3 0.4%	3 1.0%	0 0.0%	0 0.0%	0 0.0%	6
Column	708	297	47	22	7	1081

FEMALES:

	RACE					
Hand	Whites	Blacks	Hispanics	Asian/ Pacific	American Indian	Row
Right	743 88.3%	689 88.4%	43 86.0%	24 96.0%	12 85.7%	1511
Left	93 11.1%	84 10.8%	5 10.0%	1 4.0%	1 7.1%	184
Either	5 0.6%	6 0.8%	2 4.0%	0 0.0%	1 7.1%	14
Column	841	779	50	25	14	1709

Table 21.

DISTRIBUTIONS OF WEAPON FIRING HANDEDNESS

Distribution by Sex:

	Males		Females	
	Frequency	Percent	Frequency	Percent
Right	863	86.1	1132	87.0
Left	109	10.9	148	11.4
Either	30	3.0	21	1.6
MISSING DATA	1		3	
Total	1003	100.0	1304	100.0

Distribution by Race:

MALES:

	RACE					
Hand	Whites	Blacks	Hispanics	Asian/ Pacific	American Indian	Row
Right	616 86.9%	248 83.5%	39 83.0%	21 95.5%	6 85.7%	930
Left	70 9.9%	41 13.8%	6 12.8%	1 4.5%	1 14.3%	119
Either	23 3.2%	8 2.7%	2 4.3%	0 0.0%	0 0.0%	33
Column	709	297	47	22	7	1082

FEMALES:

	RACE					
Hand	Whites	Blacks	Hispanics	Asian/ Pacific	American Indian	Row
Right	724 86.0%	674 86.6%	41 82.0%	24 96.0%	14 100.0%	1477
Left	106 12.6%	93 12.0%	7 14.0%	1 4.0%	0 0.0%	207
Either	12 1.4%	11 1.4%	2 4.0%	0 0.0%	0 0.0%	25
Column	842	778	50	25	14	1709

were more tolerated by society (Napier 1980). Cultural pressures on handedness might result in the right hand being preferred for common tasks, such as writing, while the left hand would show a higher incidence of preference for uncommon tasks, such as firing a weapon. This type of task oriented specialization is often cited as an explanation for people who claim to be ambidextrous (able to use both hands with equal facility). The data presented here shows that hand preferences for writing and weapon firing are not identical (Males: Chi-Square=327.89; df=4; p=.000; Females: Chi-Square=597.26; df=4; p=.000). Therefore, these results could be interpreted as indicating that cultural influences may play an important role in maintaining the high frequency of right hand preference.

DERMATOGLYPHICS:

Before the advent of genetic screening, dermatoglyphics were used as one criterion for diagnosing genetic abnormalities in newborns. Dermatoglyphics is the scientific study of hand lines and fingerprint patterns. This contrasts with chiromancy, which is the magical art of predicting the future based upon hand line patterns. The association between these two disciplines should be considered in the same vein as the association of astronomy with astrology. The use of dermatoglyphic characteristics to identify a person's chromosomal pattern can be thought of as reading a significant aspect of that person's future in their palm. The frequencies of three dermatoglyphic features (simian lines, Sydney lines, and a double distal flexion crease on digit 3) are reported here. Each of these features has been associated with a specific chromosomal, or genetic, defect. Examining these traits in the Army population provide a means of counting their frequencies in a phenotypically "normal" population.

Two additional traits were also sought in this examination. One was for the presence of a triphalangeal thumb, a thumb that is skeletally constructed like the other digits. This trait did not occur once in the over 8000 hands examined in the survey. This may be partly due to entrance physical exams, which might have excluded people with this trait from the Army. Army medical standards (Army Regulation 40-501, 1989) do not specifically mention that this trait is grounds for exclusion. However, exclusions from military service can be based on limitations of normal thumb mobility, which might be associated with the triphalangeal condition. The other trait that was sought, was the absence of a distal flexion crease on the fifth digit. This trait is associated with Trisomy-18, the presence of an extra 18th chromosome (Cohen and Nadler 1983). Trisomy-18 is generally fatal within the first two years of life. Therefore, if the association is strong then a low incidence of the missing distal flexion crease would be expected. This trait appeared in 5 subjects. These subjects, however, were not among those selected during the construction of the working data base. Therefore, the incidence of a missing distal flexion crease on digit 5 can be said to occur less than 1 time in 1000 in a phenotypically normal population.

The simian line (see Figure 9 and Table 22) is a widely studied trait (Sarkar 1961; De Lestrange 1969; Bhanu 1972). As a genetic marker, it has been associated with Trisomy-21, a condition known as Down's syndrome. This defect results in mental retardation, and so can be thought of as a factor that would normally exclude a person from the Army population. The simian line is defined as any combination of palm flexion lines that cause the distal transverse palm crease to extend from one edge of the palm to the other (Schaumann and Alter 1976). This line frequently takes the form of being the only transverse palm crease. Variants in flexion crease patterns, such as this, are associated with appropriate changes in the bones of the palm and their joint locations (Popich and Smith 1970; Schaumann and Alter 1976). The simian line derives its name from its common appearance in arboreal monkeys. In these primates, the hand and fingers act primarily as a hook for climbing and brachiation, and therefore make little use of independent finger action.

The incidence of the simian line in phenotypically normal populations is much debated; values have been reported that range from 0.4% (Napier 1980) to 11.8% (De Lestrange 1969). These differences may, in part, be the results of sample size, sample definition, and the definition of the simian crease itself. The fuel for this debate is demonstrated by the data presented here, which reports two significantly different frequencies for men and women (Chi-Square=4.12; df=1; p=.042). Comparisons among racial groups show no significant differences among the races for males (Chi-Square=4.43; df=4; p=.351), but does show a significant differences among the races for females (Chi-Square=20.42; df=4; p=.000) with Black females showing the highest frequency. In each case, males show a higher frequency for this trait than do females. However, when the sexes are compared separately for each racial group, only Whites show a significant difference between the sexes (Chi-Square=8.74 ;df=1; p=.003). Since Whites in the Army have their greatest representation among men, it appears that the observed frequency difference between males and females is being driven by the White male population. This observation further complicates an estimate of the frequency of simian lines in a phenotypically normal population. If the frequencies for males and females are weighted to equalize their proportions, the incidence of the simian line would be 6.2% in a phenotypically normal population. However, the disproportionate representation of White males and Black females in the Army population would indicate that most populations would probably exhibit a slightly lower frequency for this trait.

The Sydney line (see Figure 10 and Table 23) is the extension of the proximal transverse palm crease from one edge of the palm to the other. It is distinguished from the simian line in that with Sydney lines a distinctly separate distal transverse palm crease is always present. The Sydney line was first clinically described in a population from Sydney, Australia, although it has been known to chiromancer's for centuries as an indicator of a person with a strong versatile mind (Johnson and Opitz 1973; Costavile 1988). The Sydney line has been clinically associated with several abnormalities, such as learning disabilities, congenital rubella, and Down's syndrome (Johnson and Opitz 1973; Schaumann and Alter 1976). I have found no reports in the literature that state an expected frequency of Sydney lines in phenotypically

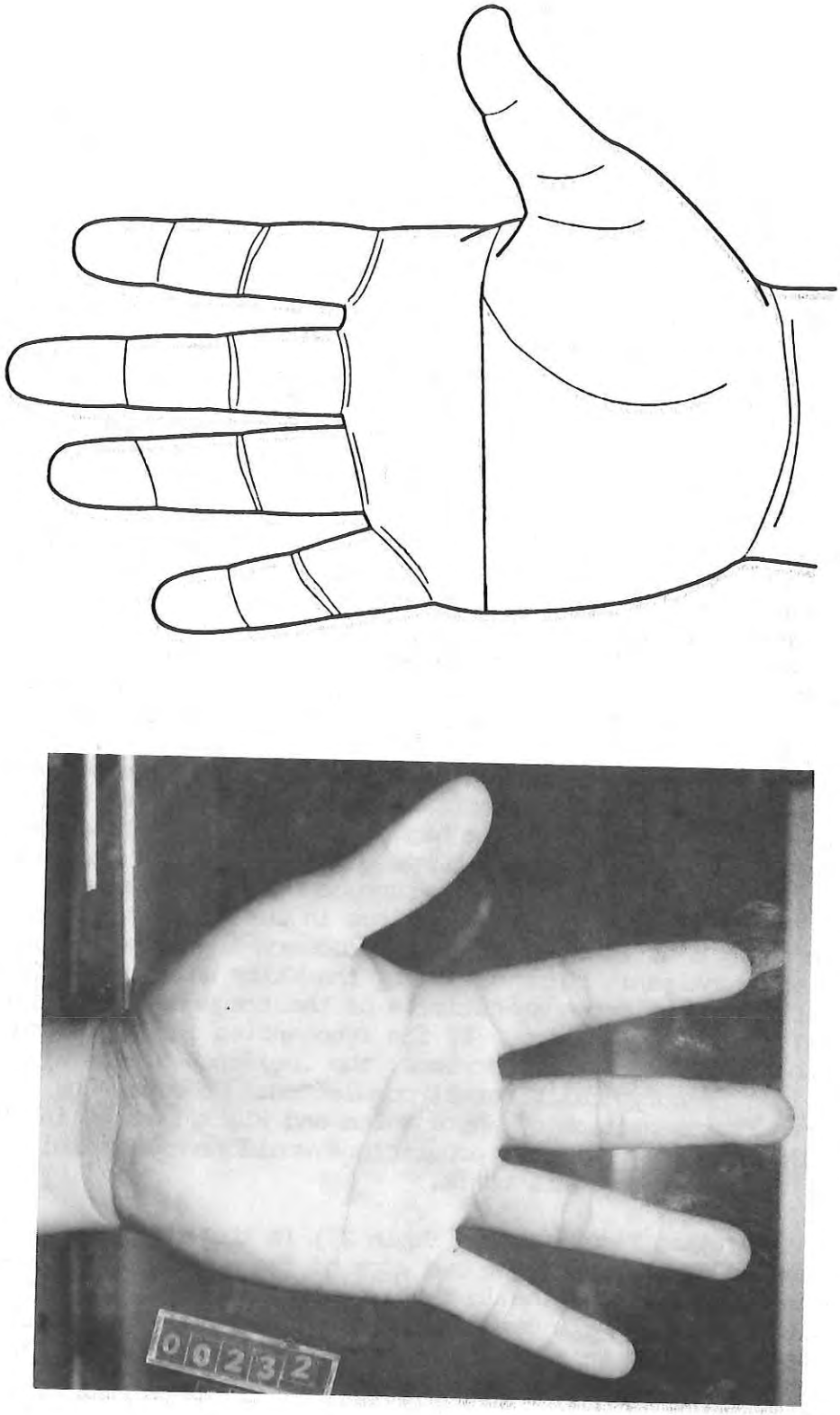


Figure 10. The Simian Line

Table 22.

DISTRIBUTIONS OF THE SIMIAN LINE

Distribution by Sex:

	Males		Females	
	Frequency	Percent	Frequency	Percent
Absent	931	92.8	1235	94.9
Present	72	7.2	67	5.1
MISSING DATA	0		2	
Total	1003	100.0	1304	100.0

Distribution by Race:

MALES:

	RACE					
Crease	Whites	Blacks	Hispanics	Asian/ Pacific	American Indian	Row
Absent	666 93.9%	271 91.2%	44 93.6%	19 86.4%	6 85.7%	1006
Present	43 6.1%	26 8.8%	3 6.4%	3 13.6%	1 14.3%	76
Column	709	297	47	22	7	1082

FEMALES:

	RACE					
Crease	Whites	Blacks	Hispanics	Asian/ Pacific	American Indian	Row
Absent	815 97.0%	720 92.2%	49 98.0%	24 96.0%	13 92.9%	1621
Present	25 3.0%	61 7.8%	1 2.0%	1 4.0%	1 7.1%	89
Column	840	781	50	25	14	1710

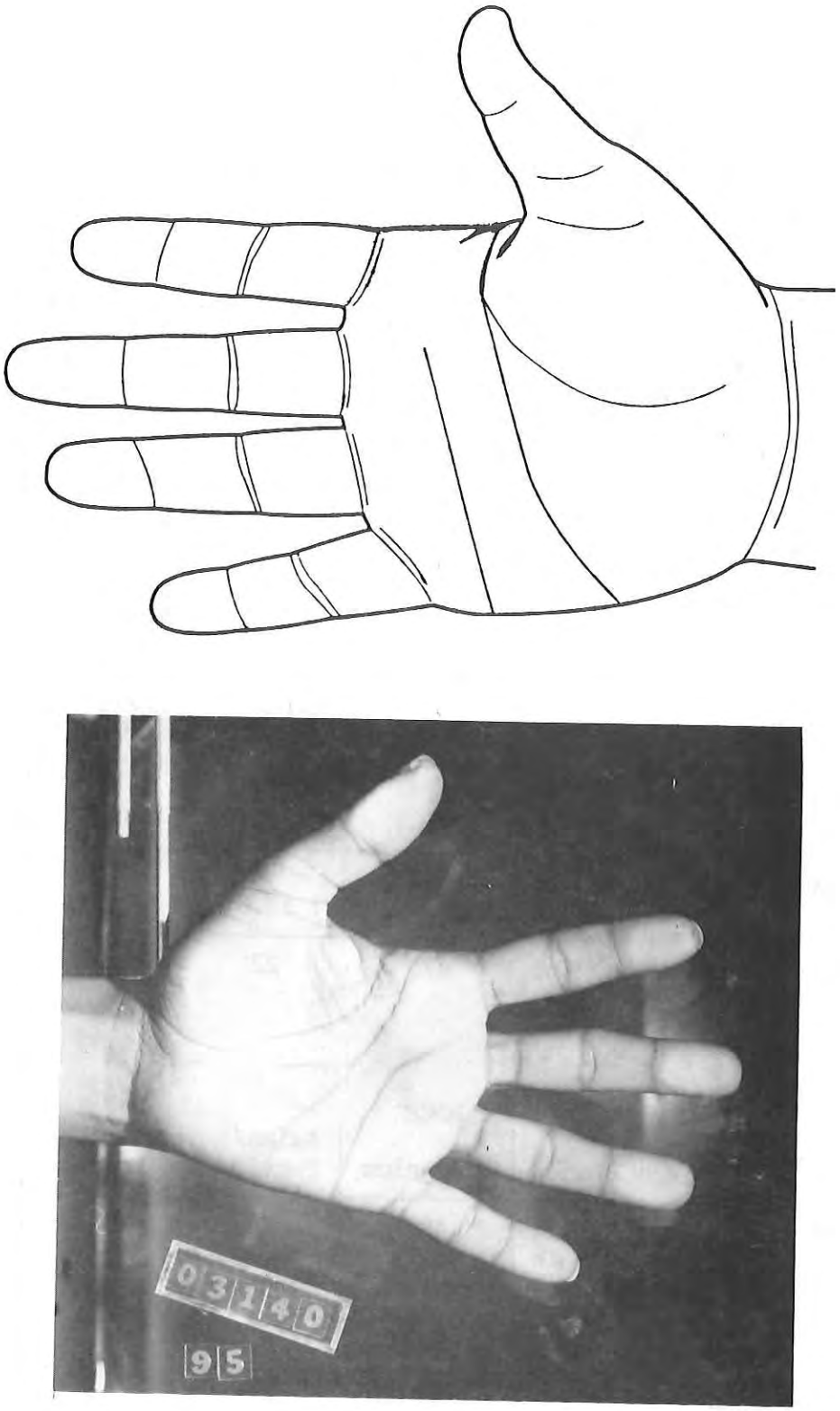


Figure 11. The Sydney Line

Table 23.

DISTRIBUTIONS OF THE SYDNEY LINE

Distribution by Sex:

	Males		Females	
	Frequency	Percent	Frequency	Percent
Absent	969	96.6	1230	94.5
Present	34	3.4	72	5.5
MISSING DATA	0		2	
Total	1003	100.0	1304	100.0

Distribution by Race:

MALES:

	RACE					
Crease	Whites	Blacks	Hispanics	Asian/ Pacific	American Indian	Row
Absent	679 95.8%	291 98.0%	46 97.9%	21 95.5%	6 85.7%	1043
Present	30 4.2%	6 2.0%	1 2.1%	1 4.5%	1 14.3%	39
Column	709	297	47	22	7	1082

FEMALES:

	RACE					
Crease	Whites	Blacks	Hispanics	Asian/ Pacific	American Indian	Row
Absent	781 93.0%	757 96.9%	47 94.0%	24 96.0%	14 100.0%	1623
Present	59 7.0%	24 3.1%	3 6.0%	1 4.0%	0 0.0%	87
Column	840	781	50	25	14	1710

normal populations. Therefore the values reported here are unique. Like the simian line, the incidence of the Sydney line is significantly different for men and women (Chi-Square=5.91; df=1; p=.015). Similarly, there are no significant differences among the races for males (Chi-Square=5.60; df=4; p=.231), and there are significant differences among the races for females (Chi-Square=13.98; df=4; p=.007). Unlike the simian line, however, the Sydney line has a greater incidence in women, and an even higher incidence among women of European ancestry (Whites and Hispanics). When populations are compared as European versus non-European ancestry, frequency differences are still not significant for males (Chi-Square=1.78; df=1; p=.182) and remain significant for females (Chi-Square=13.56; df=1; p=.000). If the frequencies are weighted to equalize the proportions of men and women, the incidence of the Sydney line would be 4.5% in a phenotypically normal population. However, the disproportionately lower number of White and Hispanic women in the Army population would indicate that most populations would probably exhibit a slightly higher frequency for this trait.

Mosaicism is one of the more common explanations for the occurrence of the simian and Sydney lines in a phenotypically normal person (Schaumann and Alter 1976). A person who is mosaic has a proportion of their body cells that exhibit the genetic defect. The magnitude of this proportion, and its phenotypic effect, can vary so that the proportion of effected cells may only be high enough to produce the dermatoglyphic pattern without exhibiting any other deleterious effect. Inasmuch as both the simian and Sydney lines are used as indicators of Trisomy-21, then a comparison of their frequencies should provide a useful test of the mosaicism theory. If persons with the simian or Sydney line are mosaic for Trisomy-21, then there should be a relationship between these two trait frequencies in the population. Chi-Square tests showed, however, that there are no similarities between these two trait frequencies for either men (Chi-Square=1.11; df=1; p=.292) or women (Chi-Square=1.57; df=1; p=.208). These results suggest that mosaicism may not be the best explanation for the occurrence of these flexion crease patterns.

Normally, distal interphalangeal joints are associated with a single flexion crease. Occasionally, however, these joints form two creases. In clinical applications, the double distal flexion crease, especially on digit 3 (see Figure 11 and Table 24), has been used as a dermatoglyphic indicator of sickle cell anemia. Discussions of sickle cell anemia must distinguish between persons who are carriers, and do not fully display the anemia, from persons who are truly affected. Sickle cell anemia evolved in human populations as a response to the malaria parasite. Those persons who are carriers of the trait exhibit some resistance to malaria; while persons who fully express the sickle cell trait lead limited lives, and rarely survive past the age of forty (Zizmor 1973). Sickle cell carriers are not excluded from military service as long as "the hemoglobin is within the examining laboratory's normal limits" (Army Regulations 40-501, 1989:2-4a). Clinical studies have reported a frequency of 10% for this trait in "control" populations (Zizmor 1973). These studies, however, do not focus on the association of the double distal flexion crease with sickle cell carriers, but instead only focus with those persons who fully express the sickle cell trait (Zizmor 1973; Schaumann and Alter 1976).

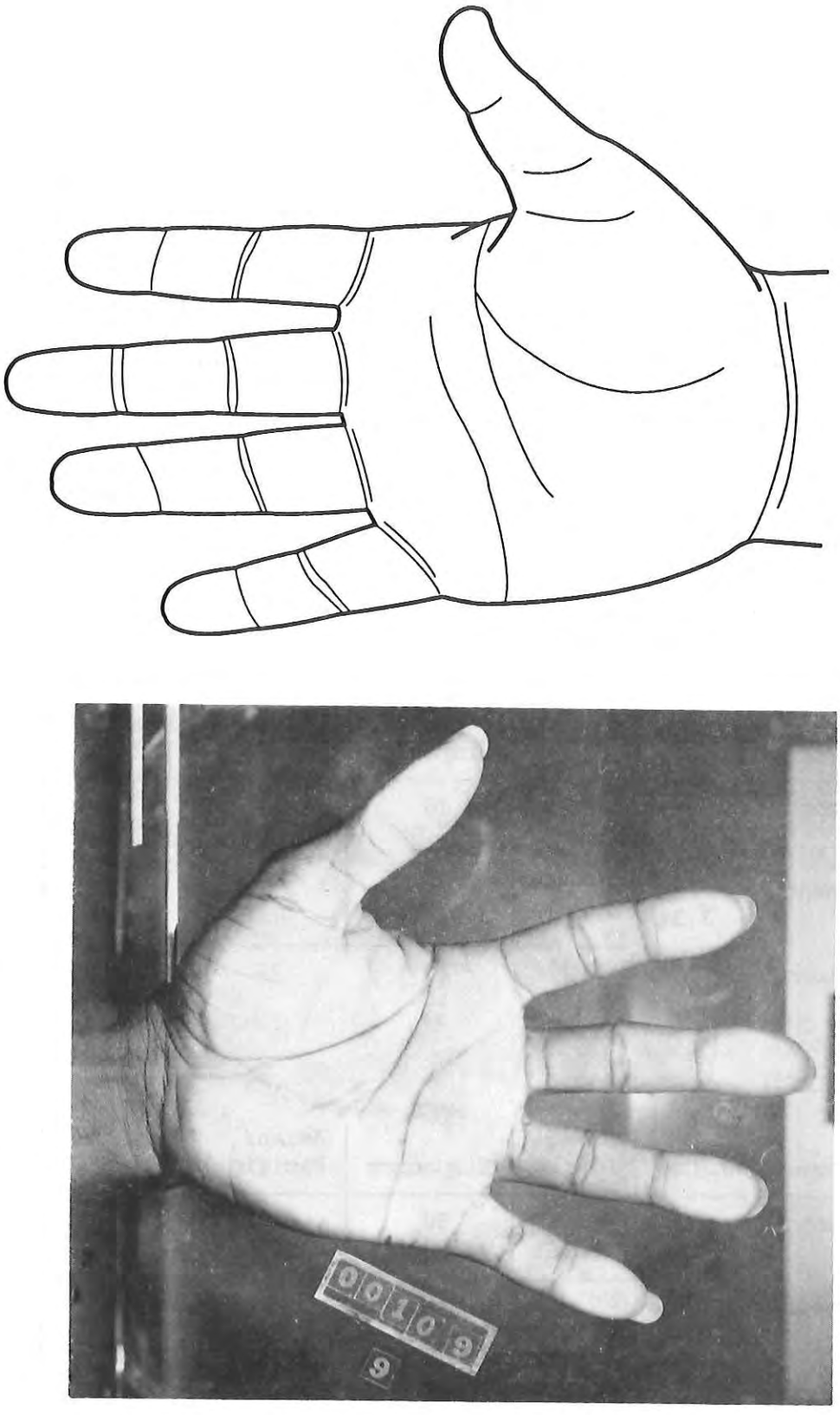


Figure 12. The Digit 3 Double Distal Flexion Crease

Table 24.

DISTRIBUTIONS OF THE DOUBLE DISTAL FLEXION CREASE ON DIGIT 3

Distribution by Sex:

	Males		Females	
	Frequency	Percent	Frequency	Percent
Absent	962	96.2	1249	96.2
Present	38	3.8	50	3.8
MISSING DATA	3		5	
Total	1003	100.0	1304	100.0

Distribution by Race:

MALES:

	RACE					
Crease	Whites	Blacks	Hispanics	Asian/ Pacific	American Indian	Row
Absent	683 96.7%	283 95.3%	46 97.9%	20 90.9%	7 100.0%	1039
Present	23 3.3%	14 4.7%	1 2.1%	2 9.1%	0 0.0%	40
Column	706	297	47	22	7	1079

FEMALES:

	RACE					
Crease	Whites	Blacks	Hispanics	Asian/ Pacific	American Indian	Row
Absent	823 98.2%	724 92.8%	50 100.0%	25 100.0%	14 100.0%	1636
Present	15 1.8%	56 7.2%	0 0.0%	0 0.0%	0 0.0%	71
Column	838	780	50	25	14	1707

Therefore, the reported trait frequencies from these studies may be biased by the small sample sizes of the clinical population.

The results of Chi-Square tests showed that the differences of the double distal flexion crease trait frequencies between men and women is not significant (Chi-Square=0.004; df=1; p=.951). Comparisons among racial groups showed no significant differences among the races for men (Chi-Square=3.63; df=4; p=.459), but showed that there are significant differences among the races for women (Chi-Square=33.51; df=4; p=.000). If sickle cell carriers show a higher incidence of the double distal flexion crease, then there should be a higher incidence of this trait among persons who trace their ancestry to areas with a high incidence of malaria and the sickle cell trait. Of all the racial groups identified in this analysis, Blacks most closely fit this requirement. There should therefore be a significantly higher incidence of this trait in Blacks when compared to the rest of the population. This expectation is reflected in the data, where the frequency of this trait in Blacks is generally greater than the rest of the population; the reported frequency for Asian/Pacific Islander males could be dismissed as an accident of small sample size. However, only females show a significant difference in frequencies (Chi-Square=32.86; df=1; p=.000) when Blacks are compared to the rest of the population. These results lend equivocal support for the hypothesis that links the double distal flexion crease with sickle cell carriers. An estimate for this trait's frequency in a phenotypically normal population can again be estimated by adjusting the frequencies by sex. This produces a trait frequency estimate of 3.8% of the population.

CHAPTER VI

OBSERVER ERROR

Some error is associated with all data collection. A full discussion of observer error associated with anthropometric surveys is given in Gordon, et al. (1989). The information presented in this chapter is intended to complement that discussion.

The hand photographs used in this survey were contained on 830 rolls of film. The hands on these film rolls were digitized in numerical order by one person over the course of two years. The effects of observer error were minimized through a two step process. First, at the end of each digitizing session, calculated hand measurements were compared to previously established minimum and maximum values. Hands that had dimensions outside these limits were redigitized. If the redigitized hands still stood out as having extreme values then new extreme values were established. Second, after all the hands were digitized a regression equation was developed for each dimension using hand length and hand breadth as predictors. Hands with dimension residuals greater than 3 SEE units were also redigitized.

At the end of the digitization process, and its associated error checking routines, data were collected on observer error by redigitizing the hands contained on 10 rolls of film that were randomly selected from the first 10% of the film rolls. Presumably, changes in judgement associated with the digitizing process would be greatest between the first and last digitized hands. Therefore, by collecting data at the end of the digitizing process, these data test the worst case scenario for drift in data collection methods.

Original hand dimensions (Trial 1) were matched to the redigitized dimensions (Trial 2) for each subject. The significance of the difference between these two values was evaluated using a paired t-test (Table 25). When corrected for 55 comparisons, only two dimensions (DIGIT 1 TIP TO WRIST CREASE LENGTH, and DIGIT 3 MEDIAL PHALANX LINK LENGTH) had values that were significantly different at the p=.05 level. Therefore, drift in judgement criteria does not seem critical for most dimensions.

Gordon, et al. (1989) present data on the mean absolute differences in observer error trials, and so comparable data are presented here (Table 26). Absolute means are based on differences between error trials without regard to the direction of that difference. Thus, the mean of the absolute values of -2 and 4 would be 3, not 1. Mean absolute values give a sense of the magnitude of error associated with each dimension. These values are reported separately for both males and females. The differences between the sexes, however, are not significant (p=.05, corrected for 55 comparisons) for any digitized hand dimension.

Table 25.

COMPARISON OF HAND ERROR TRIALS

	Dimension	Trial 1 Mean	SD	Trial 2 Mean	SD	t	df	Prob.
1	D1 LENGTH	65.75	5.94	66.47	5.94	1.72	74	.08961
2	D1 HEIGHT	96.45	8.85	95.84	9.29	1.31	74	.19425
3	D1 TIP TO WRIST CREASE	129.80	11.00	127.32	10.72	4.62	74	.00001
6	D1 LINK LENGTH	113.72	8.45	113.28	8.76	0.68	74	.49863
7	D1 MC LINK LENGTH	76.39	8.42	75.04	7.74	2.76	74	.00728
8	D1 PROXIMAL PHALANX LINK	21.03	3.57	19.95	2.91	3.35	74	.00127
9	D1 DISTAL PHALANX LINK	32.39	3.20	32.33	3.19	0.18	74	.85764
10	D2 LENGTH	73.23	5.58	72.41	5.53	2.81	74	.00633
11	D2 HEIGHT	171.67	11.71	170.33	12.34	2.13	74	.03650
12	D2 TIP TO WRIST CREASE	176.85	11.52	175.77	11.96	1.80	74	.07594
13	D2 PIP JOINT BREADTH	20.48	2.11	20.85	1.98	1.89	74	.06267
15	D2 DIP JOINT BREADTH	18.05	1.87	18.37	1.89	1.55	74	.12541
17	D2 LINK LENGTH	104.53	7.39	103.74	7.33	1.58	73	.11837
18	D2 MC LINK LENGTH	72.45	5.77	72.21	6.27	0.62	73	.53716
19	D2 DISTAL PHALANX LINK	27.47	2.61	27.27	2.77	0.85	74	.39807
20	D2 MEDIAL PHALANX LINK	22.15	2.45	21.63	2.25	2.91	74	.00477
21	D2 PROXIMAL PHALANX LINK	58.07	5.42	57.34	5.39	1.40	73	.16569
22	D3 LENGTH	81.33	6.34	80.59	6.57	1.98	74	.05142
23	D3 HEIGHT	185.41	12.83	184.31	13.24	1.59	74	.11610
24	D3 TIP TO WRIST CREASE	185.79	12.67	184.71	13.25	1.52	74	.13272
25	D3 PIP JOINT BREADTH	20.16	2.19	20.41	2.18	1.12	74	.26634
27	D3 DIP JOINT BREADTH	17.72	1.78	18.08	1.78	1.92	74	.05871
29	D3 LINK LENGTH	106.12	8.54	105.04	8.21	1.85	73	.06831
30	D3 MC LINK LENGTH	79.84	6.27	79.91	6.88	0.16	73	.87332
31	D3 DISTAL PHALANX LINK	28.40	3.13	28.49	2.99	0.39	74	.69766
32	D3 MEDIAL PHALANX LINK	26.48	3.06	25.75	3.10	3.69	74	.00043
33	D3 PROXIMAL PHALANX LINK	52.16	5.20	51.49	4.36	1.74	72	.08602

Table 25.

COMPARISON OF HAND ERROR TRIALS
(Continued)

Dimension	Trial 1 Mean	Trial 1 SD	Trial 2 Mean	Trial 2 SD	t	df	Prob.
34 D4 LENGTH	75.95	6.15	75.83	6.11	0.39	74	.69766
35 D4 HEIGHT	171.88	12.17	170.99	12.30	1.30	74	.19764
36 D4 TIP TO WRIST CREASE	175.88	12.56	175.01	12.89	1.51	74	.13530
37 D4 PIP JOINT BREADTH	19.15	1.96	19.36	1.80	1.15	74	.25385
39 D4 DIP JOINT BREADTH	16.55	1.77	16.81	1.75	1.28	74	.20454
41 D4 LINK LENGTH	102.18	7.95	101.97	7.57	.043	73	.66845
42 D4 MC LINK LENGTH	73.88	6.14	73.26	6.52	1.75	73	.08432
43 D4 DISTAL PHALANX LINK	27.99	3.00	28.16	3.09	0.81	74	.42054
44 D4 MEDIAL PHALANX LINK	24.09	2.94	23.67	2.91	2.66	74	.00958
45 D4 PROXIMAL PHALANX LINK	50.11	4.18	50.08	3.93	0.09	73	.92853
46 D5 LENGTH	61.05	5.34	61.67	5.24	2.22	74	.02948
47 D5 HEIGHT	138.51	10.58	137.75	10.35	1.22	74	.22634
48 D5 TIP TO WRIST CREASE	150.91	11.81	150.35	12.30	1.23	74	.22259
49 D5 PIP JOINT BREADTH	17.28	1.86	17.40	1.70	0.82	74	.41485
51 D5 DIP JOINT BREADTH	15.32	1.76	15.64	1.67	2.14	74	.03565
53 D5 LINK LENGTH	81.24	6.84	81.72	6.43	1.32	73	.19096
54 D5 MC LINK LENGTH	69.88	6.72	68.84	7.46	2.91	73	.00479
55 D5 DISTAL PHALANX LINK	25.28	2.72	25.63	2.73	1.40	74	.16569
56 D5 MEDIAL PHALANX LINK	16.99	2.27	16.72	2.19	1.57	74	.12068
57 D5 PROXIMAL PHALANX LINK	39.11	3.56	39.46	3.24	1.42	73	.15986
58 HAND LENGTH DIGITIZED	185.41	12.83	184.31	13.24	1.59	74	.11610
61 PALM LENGTH	104.31	7.33	103.85	7.47	1.11	74	.27059
62 HAND BREADTH DIGITIZED	85.51	7.30	86.99	7.14	2.01	74	.04808
64 WRIST BREADTH	59.07	5.97	59.21	6.03	0.25	74	.80328
69 CROTCH 1 HEIGHT	65.63	6.08	65.64	6.55	0.03	74	.97615
70 CROTCH 2 HEIGHT	104.29	7.36	103.79	7.85	1.34	74	.18435
71 CROTCH 3 HEIGHT	104.29	7.81	103.79	7.98	1.15	74	.25385
72 CROTCH 4 HEIGHT	91.47	7.23	91.45	7.35	0.03	74	.97615

The error values presented for the hand data in table 26 seem much greater than the values reported for dimensions directly measured during the survey. This may, in part, be because errors associated with the hand digitization process were actually the result of differences in landmark location. The computer calculated all dimension values, and so there was no actual measurement error. Many of the error values for dimensions reported from the Anthropometric Survey were based on remeasurements that used the same landmark identifications. For those dimensions, error values are more properly considered as errors associated with the use of the measuring devices, rather than as errors associated with the landmark location and measuring process.

Only one dimension, hand breadth, is reported that should be comparable between its measured and digitized dimensions. Both of these dimensions aimed to describe the breadth of the hand across the metacarpo-phalangeal joints. There are, however, differences between the definition of these dimensions. The measured dimension was defined by palpated skeletal landmarks approached from the hand's dorsal side, and the measurement was taken so as to be perpendicular to the axis of the forearm, and the measurement was taken with the fingers in an adducted position (Gordon, et al. 1989). The digitized dimension was defined by a visual location of the metacarpo-phalangeal joints approached from the hand's palmar side with the added aim of defining landmarks that would produce a maximum value for hand breadth, and the measurement was taken with the fingers in an abducted position. Despite the similarities between these two definitions, the abducted versus adducted finger positions could have a marked effect on the hand breadth measurement, which would result in an increased breadth measurement for the hand with the abducted fingers. In addition, as was stated earlier, caliper measurements would be expected to be associated with some tissue compression. This would also result in the caliper measurement being slightly smaller than a digitized measurement. These expectations are seen in the reported hand breadth values, with the digitized measurement between about 0.5 mm larger than the caliper measurement. This implies that there is about 0.5 mm of soft tissue that might account for the error differences between the two measuring techniques. However, if tissue compression was an important aspect of observer error one would expect there to be varying levels of pressure applied by the measurers. This would mean that there would be a greater observer error associated with the measured dimension than with the digitized dimension, which is not the case. Given the influence of finger positions, it is difficult to draw firm conclusions on the relevance of the measurement differences. These results, however, might be used to support the conclusion that visually defined, computer aided, measurements are not as accurate as direct measurement based on palpated skeletal landmarks.

Table 26.

MEAN ABSOLUTE DIFFERENCES IN OBSERVER ERROR TRIALS

	DIMENSION	MALES		FEMALES	
1	D1 LENGTH	35	3.43	40	2.05
2	D1 HEIGHT	35	3.37	40	3.30
3	D1 TIP TO WRIST CREASE	35	3.83	40	4.40
4*	D1 IP JOINT BREADTH	247	0.20	160	0.20
6	D1 LINK LENGTH	35	4.11	40	4.32
7	D1 MC LINK LENGTH	35	3.91	40	3.10
8	D1 PROXIMAL PHALANX LINK	35	2.37	40	2.25
9	D1 DISTAL PHALANX LINK	35	1.94	40	2.15
10	D2 LENGTH	35	2.20	40	1.90
11	D2 HEIGHT	35	4.20	40	3.92
12	D2 TIP TO WRIST CREASE	35	4.34	40	3.67
13	D2 PIP JOINT BREADTH	35	1.69	40	1.17
15	D2 DIP JOINT BREADTH	35	1.40	40	1.42
17	D2 LINK LENGTH	35	3.49	39	3.23
18	D2 MC LINK LENGTH	35	2.69	39	1.87
19	D2 DISTAL PHALANX LINK	35	2.00	40	1.32
20	D2 MEDIAL PHALANX LINK	35	1.03	40	1.27
21	D2 PROXIMAL PHALANX LINK	35	3.26	39	3.54
22	D3 LENGTH	35	2.60	40	2.52
23	D3 HEIGHT	35	4.77	40	3.90
24	D3 TIP TO WRIST CREASE	35	4.89	40	3.90
25	D3 PIP JOINT BREADTH	35	1.51	40	1.55
27	D3 DIP JOINT BREADTH	35	1.34	40	1.25
29	D3 LINK LENGTH	35	4.57	39	3.49
30	D3 MC LINK LENGTH	35	3.34	39	2.21
31	D3 DISTAL PHALANX LINK LENGTH	35	1.63	40	1.55
32	D3 MEDIAL PHALANX LINK LENGTH	35	1.63	40	1.35
33	D3 PROXIMAL PHALANX LINK LENGTH	34	2.76	39	2.44
34	D4 LENGTH	35	2.37	40	1.75
35	D4 HEIGHT	35	4.89	40	3.50
36	D4 TIP TO WRIST CREASE	35	3.94	40	3.17
37	D4 PIP JOINT BREADTH	35	1.40	40	1.17
39	D4 DIP JOINT BREADTH	35	1.29	40	1.37
41	D4 LINK LENGTH	35	3.66	39	2.44
42	D4 MC LINK LENGTH	35	2.91	39	2.10
43	D4 DISTAL PHALANX LINK	35	1.49	40	1.22

* Data on mean absolute error for these values are taken from Gordon, et al. (1989).

Table 26.

MEAN ABSOLUTE DIFFERENCES IN OBSERVER ERROR TRIALS
(Continued)

	DIMENSION	MALES		FEMALES	
44	D4 MEDIAL PHALANX LINK	35	1.09	40	1.15
45	D4 PROXIMAL PHALANX LINK	35	2.00	39	2.00
46	D5 LENGTH	35	1.97	40	1.77
47	D5 HEIGHT	35	4.60	40	3.40
48	D5 TIP TO WRIST CREASE	35	3.46	40	3.02
49	D5 PIP JOINT BREADTH	35	0.94	40	0.95
51	D5 DIP JOINT BREADTH	35	1.06	40	0.92
53	D5 LINK LENGTH	35	2.46	39	2.18
54	D5 MC LINK LENGTH	35	2.89	39	2.36
55	D5 DISTAL PHALANX LINK	35	1.46	40	1.82
56	D5 MEDIAL PHALANX LINK	35	1.06	40	1.12
57	D5 PROXIMAL PHALANX LINK	35	1.51	39	1.51
58	HAND LENGTH FROM DIGITIZER	35	4.77	40	3.90
59*	HAND LENGTH MEASURED	247	1.17	160	0.99
60*	HAND CIRCUMFERENCE	247	0.96	160	0.56
61	PALM LENGTH	35	3.09	40	2.00
62	HAND BREADTH FROM DIGITIZER	35	5.34	40	5.15
63*	HAND BREADTH MEASURED	247	0.32	160	0.42
64	WRIST BREADTH	35	4.09	40	3.80
65*	WRIST CIRCUMFERENCE	256	1.38	169	1.14
66*	WRIST-CENTER OF GRIP LENGTH	247	1.47	160	1.56
67*	WRIST-INDEX FINGER LENGTH	247	0.98	160	0.79
68*	WRIST-THUMBTIP LENGTH	247	0.89	160	1.16
69	CROTCH 1 HEIGHT	35	2.63	40	2.87
70	CROTCH 2 HEIGHT	35	2.86	40	2.70
71	CROTCH 3 HEIGHT	35	3.06	40	2.52
72	CROTCH 4 HEIGHT	35	3.29	40	2.25
73*	FOREARM-HAND LENGTH	256	1.94	169	1.93
74*	ELBOW-WRIST LENGTH		3.11		2.92
75*	ELBOW-CENTER OF GRIP LENGTH		4.58		4.48
76*	RADIALE-STYLION LENGTH	256	2.87	169	2.33
77*	FOREARM CIRCUMFERENCE, FLEXED	256	2.61	169	2.16
78*	BICEPS CIRCUMFERENCE, FLEXED	256	2.48	169	2.92
79*	ARM LENGTH		10.88		9.60
80*	SHOULDER-ELBOW LENGTH	256	1.99	169	2.15
81*	ACROMION-RADIALE LENGTH	256	1.41	169	1.81
82*	THUMBTIP REACH	240	11.05	155	10.30
83*	WRIST WALL LENGTH	240	11.31	155	10.77
84*	WRIST WALL LENGTH, EXTENDED	240	11.60	155	13.80
85*	STATURE	256	2.94	169	2.72
86*	WEIGHT	246	0.12 Kgs.	162	0.08 Kgs.

* Data on mean absolute error for these values are taken from Gordon, et al. (1989).

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GLOSSARY

Abduction: A description of movement about a joint. Abduction is the process through which a limb is moved away from the midline. Abducting a finger refers to moving the finger away from the midline of the hand. Abducting the whole hand refers to moving the the hand away from the midline of the forearm. Abducting the arm refers to moving the arm away from the midline of the body. Thus, when you spread your fingers you abduct them. Opposite of Adduction.

Acromion: An anthropometric landmark defined by the acromial process of the scapula. The landmark is used as a means of locating the shoulder joint.

Adduction: A description of movement about a joint. Adduction is process through which a limb is moved towards the midline. Adducting a finger refers to moving the finger toward the midline of the hand. Adducting the whole hand refers to moving the hand back in line with the midline of the forearm. Adducting the arm refers to moving the arm toward the midline of the body. Thus, when you cup your hand, you adduct your fingers. Opposite of Abduction.

Carpal: The generic name for any of the eight wrist bones. The individual names for these bones are: Capitate, Hamate, Lunate, Pisiform, Scaphoid, Triquetral, Trapezium, and Trapezoid.

Chiromancy: The mystic art of predicting the future based on the patterns of the palm flexion creases.

Clavicle: The strut-like bone of the upper chest that attaches the shoulder joint to the sternum. The clavicle is colloquially known as the collar bone.

Coefficient of Variation: A statistic that permits comparisons of distributions that is not influenced by the scale of measurement. Calculated by expressing the standard deviation as a percentage of the mean.

Dactylion: An anthropometric landmark associated with the tip of Digit 3. In the 1988 Anthropometric Survey the tip of each digit was referred to as dactylion. Thus, Dactylion 3 refers to the tip of Digit 3.

Dermatoglyphics: The scientific study of the print, and flexion crease patterns of the hands and feet. Just as finger prints are uniquely associated with individuals, broader patterns can be associated with families, racial groups, or persons with other genetic similarities.

Digit: The generic terms for the thumb and fingers. Each digit is numbered starting with the thumb, digit 1. This naming sequence is preferred because there is no standardized colloquial naming system.

DIP Joint: Abbreviation for Distal Interphalangeal Joint. Refers to the distal most joint in digits 2 through 5.

Distal: A term used to describe the locations of anatomical structures along the length of a limb. Distal structures are those furthest from the torso. Thus, the fingertips are distal to the elbow joint. Opposite of Proximal.

Distal Transverse Palm Crease: The distal most palm flexion crease associated with flexion of digits 3 through 5. This crease approximates the location of the center of rotation in the metacarpo-phalangeal joints for digits 3 through 5. In chiromancy this crease is called the heart line.

Distal Wrist Crease: The distal most flexion crease of the wrist. Because of its frequent braided appearance, this crease is also known as the bracelet crease. The crease serves as a useful landmark for the axis of flexion/extension of the wrist.

Extension: A description of movement about a joint. Extending a joint is the process of straightening out the limb. Thus, when pointing with the index finger, the joints of that finger are in extension, or have been extended. Opposite of Flexion.

Flexion: A description of movement about a joint. Flexing a joint is the process of folding the limb. Thus, when making a fist, the joints of the fingers are in flexion, or have been flexed. Opposite of Extension.

Flexor Retinaculum: A fibrous tendon that binds the carpal bones and prevents bowing of the hand's flexor tendons. The distal edge of this tendon is indicated by the distal flexion crease of the wrist. This crease, therefore, serves as a useful landmark of the axis of rotation for flexion/extension at the wrist.

Hypothenar: A term referring to the muscle mass of the hand dedicated to moving the fifth digit.

IP Joint: Abbreviation for Interphalangeal Joint. Refers to the joint between the two phalanges of digit 1.

Kurtosis: A statistical description of the shape of a distribution that centers on the value three. Kurtosis greater than three indicates that the population is bunched around the mean. Kurtosis less than three indicates that the population is spread out away from the mean.

Lateral: A term used to describe the locations of anatomical structures relative to the midline. Generally this terms refers to the midline of the body. Thus, the ears are lateral to the nose. Because the hand, unlike the body in general, is not symmetrical about its midline this term is rarely used in describing locations on the hand. For this reason, the terms Radial and Ulnar are preferred in lieu of Lateral in the context of the hand. See: Medial, Radial, and Ulnar.

Mean: An index of central tendency in a sample population. The mean is calculated by adding all values and dividing this sum by the sample size. The mean is the single value in the population that is closest to the value of all other points.

Medial: A term used to describe the positions of anatomical structures relative to the midline. Generally this term refers to the midline of the body. When used in the context of the hand, however, it refers to the midline of the hand, which is a line running down the middle finger that would split the hand into two halves. Thus, the index finger is medial to the thumb. Opposite of Lateral, but see also Radial and Ulnar.

Metacarpal: The generic name for the five hand bones. Each of these bones is numbered according to its articulating digit. Thus, the first metacarpal articulates with the first digit, or thumb.

Metacarpale: An anthropometric landmark used in the 1988 Survey. This landmark is defined by the most appropriate projection of the MP joint to the surface of the skin.

MP Joint: Abbreviation for metacarpo-phalangeal Joint. Refers to the joint between the proximal phalanx of each digit and its associated metacarpal bone. Colloquially called the knuckle.

Percentile: An ordering of population values so that a percentile value indicates the proportion of the population that has a greater dimension value. For example, the 10th percentile value for Digit 1 Length in Females is 5.75 mm. This means that 90% of women have first digits that are longer than 5.75 mm, and 10% of women have first digits that are shorter than 5.75 mm.

Phalanx (pl. Phalanges): The name for the bones of the fingers. The thumb has only two phalanges, proximal and distal, all the other fingers have three phalanges, proximal, medial, and distal.

PIP Joint: Abbreviation for Proximal Inter-Phalangeal Joint. Refers to the proximal most joint in digits 2 through 5.

Pronation: A term that describes one of the special movements of the forearm and hand. With your hand held out in front of you, you pronate by twisting you forearm so that your palm faces downward. Opposite of Supination.

Proximal: A term used to describe the locations of anatomical structures along the length of a limb. Proximal structures are those closest to the torso. Thus, the elbow joint is proximal to the wrist joint. Opposite of Distal.

Proximal Transverse Palm Crease: The proximal most palm flexion crease associated with the independent action of the index finger. This crease approximates the location of the center of rotation in the Digit 2 metacarpo-phalangeal joint. In chiromancy this crease is called the head line.

Radial: A term used to describe locations of anatomical structures in the hand. Radial structures are those closest to the side of the hand that articulates with the radius, or the thumb side. Thus, the index finger is radial to the ring finger. See: Ulnar, and Medial.

Radiale: An anthropometric landmark defined as the projection of the outside edge of the proximal end of the radius. The landmark is used to locate the elbow joint.

Radius: The bone of the forearm that articulates with the thumb side of the hand. Rotations of the radius result in the movements of Pronation and Supination. See Ulna.

Scapula: The flat bone of the upper back that contributes to the shoulder joint.

Simian Line: A variant of the distal transverse palm crease that crosses the entire palm. The presence of this crease has traditionally been linked to genetic anomalies such as trisomy-21 (Down's Syndrome). See Sydney Line.

Standard Deviation: A description of the sample's, or population's, distribution about the mean. The higher the standard deviation value the more spread out will be the values in the population.

Standard Error (Abbreviated SE): A description of the accuracy, or confidence, of a sample statistic in describing a population statistic. The standard error describes the range of likely deviations of the sample statistic from the actual population value.

Stylion: An anthropometric landmark used in the 1988 Anthropometric Survey. Stylion is associated with a small bony projection of the radius (the radial styloid process) located close to the base of digit 1. Ideally the position of stylion should be identical to the radial edge of the distal wrist crease.

Supination: A term that describes one of the special movements of the forearm and hand. With your hand held out in front of you, you supinate by twisting your forearm so that your palm faces upward. Opposite of Pronation.

Sydney Line: A variant of the proximal transverse palm crease that crosses the entire palm. Not as common as the simian line, the presence of this crease has also been linked to genetic anomalies such as trisomy-21 (Down's Syndrome). See Simian Line.

Symmetry: Also known as skew. A statistical description of the shape of a distribution that centers on the value zero. Positive skew indicates that the population is bunched into values less than the mean. Negative skew indicates that the population is bunched into values greater than the mean.

Thenar: A term referring to the muscle mass of the hand dedicated to moving the first digit. Colloquially known as the ball of the thumb or hand.

Thenar Crease: The palm flexion crease that surrounds the thenar eminence associated with the independent action of the thumb. The base of this crease approximates the location of the First carpometacarpal joint. In chiromancy this crease is called the life line.

Trisomy: The presence of an extra chromosome. Humans normally have 46 chromosomes that come in 23 pairs. Occasionally an extra copy of one chromosome appears, so that a person has three copies of one chromosome instead of the usual two copies. Trisomy often results in deleterious conditions. These conditions are sometimes reflected in the line patterns of the palm. See Dermatoglyphics.

Ulna: The bone of the forearm that articulates with the little finger side of the hand. The ulna is the primary bone of the elbow joint and is involved only with the flexion and extension of the wrist joint. See: Radius.

Ulnar: A term used to describe locations of anatomical structures in the hand. Ulnar structures are those closest to the side of the hand that articulates with the ulna, or the little finger side. Thus, the ring finger is ulnar to the index finger. See: Radial, and Medial.